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from Interweave Press

volume II, number 5
November 1981
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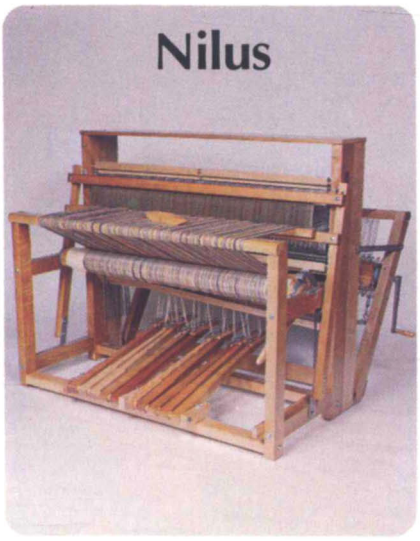

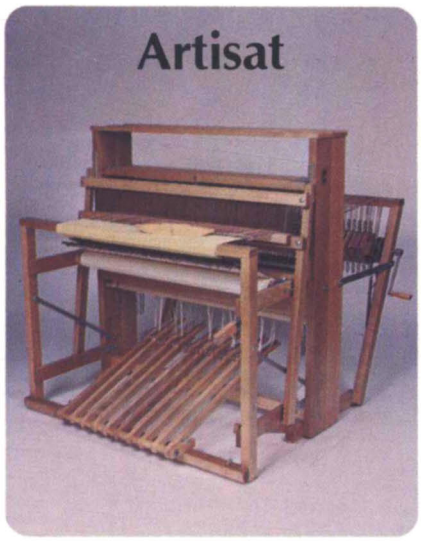

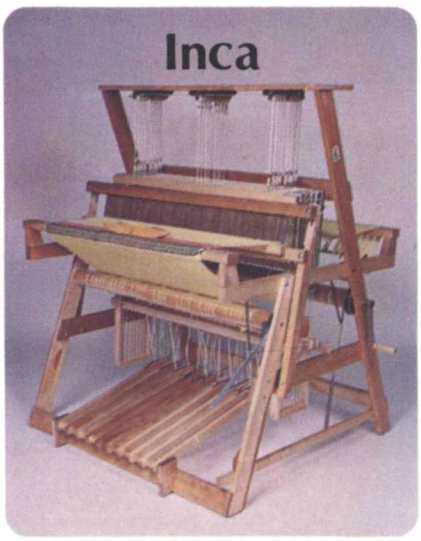

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November 1981

FEATURES

REGULAR FEATURES

Departments

Project Index

On the Cover: Linen pillowcases with hemstitching and tatted edge by Linda Ligon. See article on page 58. PHOTO BY JOE COCA

ADVERTISERS' INDEX

EDITOR'S PAGE

My youngest son, Day, just completed a two-year hitch in Montessori School. He picked up a lot of good concepts and behavior patterns there (hurrah for Maria Montessori!), but one that interested me a lot was the concept of finishing. The attitude was never, "Your fingerpainting is done, now clean up the mess." Instead, it was, "Now *finish* your fingerpainting." Cleaning up, following through, tying up loose ends were always treated as an integral part, the *"finishing"*, of any activity. A positive part, no less—even a fun part!

When we decided to do a whole issue of the magazine on finishing, I must confess I had sort of a castor oil attitude toward it—it would be so good for us all. I had seen (and done myself) so much thready, stiff yardage; so many overhand knot fringes just because I didn't want to bother with anything more taxing. I know this is a common (though not universal) problem among American handweavers. Jack Lenor Larson says that the main difference between weavers in this country and the European weavers that designers buy their finest yardage from is attention to and understanding of proper finishing.

So I just gritted my teeth and started planning and weaving a lot, thinking I'd better educate myself. And in really giving it my attention, I began to find real pleasure in tasks that I used to despise such as hemstitching, long and careful fulling, pressing, tailoring, trimming—in other words, the *finishing* half of the weaving process.

I hope you'll find the information our authors have pulled together in this issue interesting and useful. The 15+ projects that we've shown to demonstrate various techniques and principles are basically very simple cloth—plain weave, twill—so they show dramatically the magic that happens to handwoven fabric in the tub or washer, or with that special little "just right" embellishment.

A couple of new things we've added in this issue are a "People" column at the end of the magazine, and a feedback form on the mailing wrapper. Our printer has located a paper made especially rugged for bind-on wrappers which we hope will solve the problem of grubby and ripped covers that the Denver and Newark bulk mail centers seem to specialize in. If there's anything you'd like to let us know about, and we do depend heavily on our readers for future planning, just fold up the back of the wrapper, stamp it and pop it in the mail. No envelope needed.

I'm finished.

Linda Ligon, editor

This issue concludes volume II of HANDWOVEN. Even with 104 pages, space in the magazine is at such a premium that we've decided not to use the three or four pages it would take to run a complete index. Instead, for those of you who want an index for continuing reference, send a long (#10) self-addressed envelope. It will take 'til the first of the year to finish preparing the index (we printed a lot of stuff in 1981!) so don't expect to receive it immediately.

Also on the subject of keeping your libraries in order: we've often been asked why we don't offer, as many magazines do, special binders or boxes to keep volumes of the magazine in. The main reason from my point of view is that, tightwad that I am, I'm a little offended by the price. At minimum $5 plus postage each, you could go out and buy a good paperback (or two Agatha Christies!) or a couple of magazines for the price of an empty box.

What we do here at Interweave, and what I'd recommend to you, is this: go to your local office supply store and buy or order Bankers Box Magazine Files #7223-SP. They come four to a package for $6.40. They're handy, cheap and presentable, if not gorgeous.

Then, if you want to know at a glance what's in your magazine files, stick in a dollar with your self-addressed envelope (for your annual index, above), and we'll include a sheet of Interweave Press sticky labels.

COMING UP:

We're hard at work on the January issue on tapestry. Tapestry weaving is not my cup of tea personally, but I'm feeling thrilled and inspired by our special "gallery" section, and by the designs that incorporate tapestry techniques or that develop loom-controlled tapestry effects. I'm even ready to try some myself.

In the final planning stages are the March issue, in which a number of production weavers share designs and hints for streamlining your home studio operation. The May issue celebrates our American weaving heritage—and if you think that's all overshot coverlets, you're in for a surprise. These two issues aren't completely filled yet, so if you have an idea or suggestion, drop me a line. □

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HANDWOVEN is published five times a year (January, March, May, September and November) by Interweave Press, Inc., 306 North Washington, Loveland, Colorado 80537 (303/669-7672).

ISSN 0198-8212 (USPS #129-210)

Subscription rate is $15/year in the U.S., $18.75 in Canada and other foreign countries. Second class postage paid at Loveland, Colorado and additional offices. POSTMASTER: Send address change form 3579 to Interweave Press, Inc., 306 North Washington, Loveland, CO 80537. Subscribers please allow 6 weeks for processing address changes.

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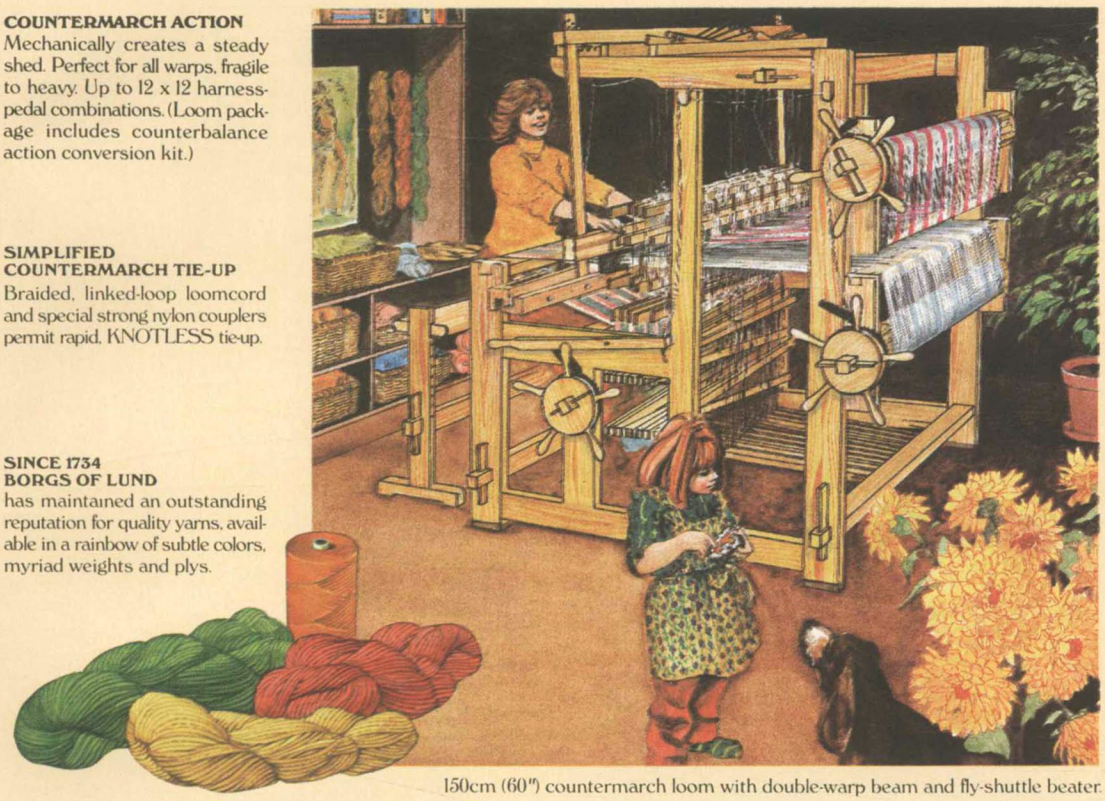

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A MATTER OF

STYLE

In a recent column in the *New York Times*, Wm. Safire says:

"These [metallic-look] fabrics with an evil glint are part of the Opulent Era. (In fashionese, an "era" is a month or so; if it lasts a whole season, it is an "epoch". The ultimate length of time—"age"—is not used in the fashion industry, but "ice age" aptly describes that time of life when a woman feels free to wear all her diamonds.) Although ostentating is derogated by snob dressing, "opulent" is a work-ethic word, from opus, "a work", which leads to riches. In this, fashion is once again leading politics, anticipating a return to the gold standard. . . .

Gothic describes soft, willowy clothes like those worn in the 14th century by young women being chased through secret passageways in castles. The heroine dress is romantic but dramatic, usually in white with embroidery and lace, and should not be confused with last year's innocent dress, worn by models on the verge of screaming. The opposite of the young, romantic look is called Proustian or Edwardian, which are sumptuous and sophisticated versions of the same period.

The new heroines are wearing what Lord & Taylor copywriters describe as "burnished brown". The adjective usually means "polished", but perhaps this usage is taken from the French *brunir*, "to make brown". Ben Brantley of *Women's Wear Daily* reports big sweep is the phrase for huge shawls, long and strong refers to the silhouette of midcalf skirts, and the Sir Tom Jones look calls up visions of milkmaids in full sleeves.

Whatever became of yesteryear's occasion dressing, which was the modern translation of "Sunday go-to-meetin' clothes"? It was replaced last year by mood dressing and is now replaced by attitude dressing, which is said to "create an image of yourself", making a fashion statement, which is more of a throat-clearing. When successful, such an outfit becomes a drop-dead dress, which causes all those in the room entered to freeze in admiration or horror.

An unfortunate new term is sweaterings, which is to sweaters what shirtings is to shirts. Pants have not becoming pantings because that word calls up images of slavering hounds, but trouserings may soon be expected. I fear such participlization; horses should sweater while men perspirer and women glower."

Levity aside, both scarves and metallics are "in", interesting threads are available, and they are fun to weave! All sorts of glitter is available from Scott's Woolen Mill, School Products, Folklorico and many other sources. We wove up a couple of scarves in CUM 24/2 worsted—as light and soft a wool as is generally available to handweavers—accented with CUM's new

gold and silver thread. We set both scarves at 18 e.p.i. for a sheer, floating fabric; for dress or shirt-weight goods, 24 e.p.i. would result in a crisper hand. The only real trick in weaving these scarves is to use a light hand on the beater *just* to lay the weft in position, and to quickly establish a rhythm. Consistent light beat is more important than good edges in this case; if you can't have both, opt for the beat. The fabric is sheer enough to do rolled hems on the selvedges.

And what to do when the metallic look goes "out"? Simply pull the metallic threads carefully out of the web, leaving a pattern of open ribs. Or tie a contrasting color of fine, smooth yarn to the end of the metallic with a tiny knot and pull it into position. *Voila'!* A new scarf! Complete instructions for the two scarves begin on p. 82.

PLANNING AHEAD

For winter, a dramatic, rich ethnic look —patterned borders on big skirts, shawls, big-sleeved shirts—in jewel tones, brick, teal, plum, rich, earthy shades, sparked with gold, silver, copper.

For handweavers, this means the time to show off the unique patterning opportunities our looms give us that power looms can't duplicate. Thread a fine, dark warp in one of the many small overshot or twill novelties you can find in Davidson and other standard texts (threadings like 'Weaver's Fancy', 'Marie Andree', 'Carol Porter', for example). Weave the body of your skirt or whatever in plain weave, and then really cut loose with color and pattern in a deep border. Separate the border motifs with a couple of picks of a much heavier thread—perhaps with a metallic touch. If you're feeling *really* showy, stripe your warp with bold stripes of close value (i.e. burgundy and deep plum with a fine, dark chocolate pin stripe separating the wider stripes). Then work patterned borders in shades of brick, terra cotta, bronze, with just a touch of a strong accent color—maybe turquoise, or flame.

Companion prints are also very important now and on into spring, and here's where handweavers can really shine. It's easy to weave a stripe and companion plaid or check on the same warp, or a solid and weft-stripe. Or consider threading alternate dark-light ends on a broken twill threading; then weave it with solid dark, solid light, and alternate dark-light weft sequences for three different fabrics that might make body, collar and cuffs, and front facings of a shirt-jacket. Or a rib-weave body with plainweave sleeves. The important fashion look just now, though, is less conservative than that; companion fabrics that just *barely* go together, perhaps sharing two yarns, and having two or three others that are different for a bold plaid and a quiet plaid.

For spring, stripes. Pin stripes, bold, colorful, wide stripes, white on white textured stripes, candycane stripes, fine checks and window-pane plaids. Big, loose cotton blouses in chocolate/berry/blue/chartreuse stripes, with a companion-striped skirt. Lots of khaki.

Linen. Thick-thin nubby, unbleached/white herringbone, plaided, checked, striped linen. Big, bold colorful linen plaids—black, brown, teal, orange. Crisp, boxy linen jackets in fuschia, orange, turquoise, sailor blue—and white. Lots of white. White linen with a textured raised white stripe. White linen with a fine black overplaid.

Seersucker—big, bold puckery seersucker in natural, clay, terracotta, olive, curry stripes for boxy jackets, long, loose tops (see HANDWOVEN, March 1981 for Olive Linder's all-cotton seersucker). And lace. White cottons with leno stripes. *Plan ahead!* □

Reader response to this column in the last issue was overwhelming—my "Matter of Style" pigeonhole got filled up many times over. In addition to noting trends, I'd like to give some column space to ways that you as a handweaver are using this kind of information in your own work. For instance, Karen Schomberger of Petaluma, CA, is weaving traditional tartans in "now" colors—an exciting idea! Let's hear what you have to share. —ed.

BOUNCE BACK

Is there something to it?

There may be so few Gemini weavers because we are not noted for being consistent and staying with things. Just about everything I make is really one-of-a-kind because as soon as I see how a particular yarn, pattern, warp sett or whatever is going to work out, repeating it is a bore. I made four placemats for a present last Christmas and doing the "other three" was a real chore. I'm not a believer in astrology but I do have to admit that there seem to be some general characteristics for each sign that apply in a surprising number of cases. It would be fun to see how weavers show up under each sign, so I hope you'll include whatever answers you got in your survey report. JEANNE BURKE HALEY

It's rather easy to know why there are not many Gemini weavers—good weavers have to: "Stick with it", be patient, alert to details, persistent, work alone—none of these are Gemini traits. We are "masters of none". For instance, I spin a little, weave some, knit a bit, display a lot, sell some, promote others a bunch, dye here and there, experiment some, etc. No depth — lots of range! E. CLINE, YAKIMA, WA

I'm looking forward to the "serious report on the survey" to come. Since I was/am a professional astrologer before becoming a professional fiber worker, I am *very* curious as to why there are so few Gemini weavers. It is the sign ruled by Mercury, *the planet of weavers!* MARY ANN MILLER, OMAHA, NB.

The serious report is still pending—our computer ate a lot of raw data and got indigestion. —ed.

Oh, Teacher . . .

I *love* the new magazine, but one thing troubles me—where, oh where, is "Your Weaving Teacher"? Please, please, please don't forget all your readers that are just beginning to weave and find no one nearby to teach them the ways around the early frustrations, fumbles and foibles of weaving! KRISTINE PAIGE, CLEVELAND HTS., OH.

"Your Weaving Teacher", Debbie Redding, is back with us on page 73. She would love to hear from you beginners about what subjects you'd like to see her tackle next. —ed.

The East responds:

Sheep Debate II

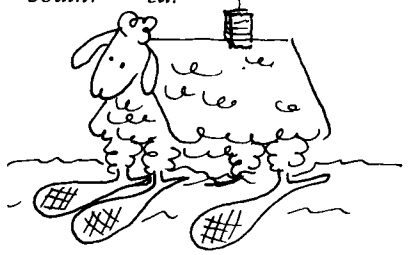
I feel obligated to respond to your plea to hear from the East Coast in the "great blackface breed controversy". In my experience there is indeed a regional difference. The one Western Hamp I've worked with did indeed have a rough hand and was excessively dusty and dirty. However, year after year I buy local (Maryland) Hamp fleeces with excellent results. White Hamp fleeces are few and far between here thanks to a colored sheep breeders association. What we do have are silver gray to charcoal gray fleeces with a 3" to 5" staple, soft handle, fairly fine count and rarely tippy. Our local wool festival separates the fleeces into the course long wool breeds, the medium and the fine wools. The Hamps generally end up at the fine end of medium. On the other hand the scratchiest fleeces I've ever worked with were a Cheviot, a Montedale and an Oxford-Shropshire. The worst for felting were a black Finn-Ram and a Romney. The lesson I learned was that wool varies not only from breed to breed and region to region, but from flock to flock, and even within a flock. My advice to beginners looking for fleece is to shop with an experienced friend if at all possible and try to get to a sheep and wool festival where you have the widest possible selection of breeds and breeders. HELEN A. PEASE, SILVER SPRING, MD

As long as you're soliciting responses from the East coast in the area of sheep breeds in our peculiar climate, I couldn't resist the opportunity to reply. We, of course, have one factor in common throughout our six-state region, and that is *winter*. Up here in the Northeast Kingdom of Vermont, however, we get the best of both worlds from each side of the border: heavier snows than our southern neighbors, coupled with the longest winter, and colder temperatures than our northern neighbors, due in part to geographic formations and the St. Lawrence Seaway. We have been working on a special breed for our micro-climate which would also be well adapted to the rest of New England. Of course, all of our work is still in the experimental stages, but I don't see any harm in giving you a scoop.

Now, developing a new breed is not all that far removed from designing a house —the climate and lay of the land are strong influences. Our first consideration, then, was insulation—the fleece on our new breed must meet modern standards, with an R-rating of at least 12 and with potential up to R-20. Next we face the necessity of keeping our little woolly friends from getting lost in our annual 6' to 12' snowfall. Very careful backbreeding has led to the development of a steeply pitched sheep, therefore allowing no buildup of heavy snow. Next, we have been encouraging development of a very broad foot to enable the sheep to walk on the surface of the snow rather than underneath it—a similar development has been noted in our region in domestic cats, whereby inbreeding has resulted in the multiple-toed or double-footed cat, known affectionately as "snowshoe cats".

There was early research conducted in the potential of fitting our four-legged beasties with a snowplow attachment, but this was shelved in light of the broad-foot developments. Two other exciting possibilities which I must mention before closing are our most recent projects: the "foliage-camouflage factor" and llama shepherds. The "foliage-camouflage factor" is very simple in concept but difficult to realize in practice: many animals in the wild experience a color change in their pelts with the changing of the seasons, thereby allowing them to blend in with their environment as its colors change in winter and summer. The foliage aspect is quite simple—we would develop a fleece which would change color along with the deciduous trees in autumn, changing to yellow, orange, red and brown as the season progressed, thereby allowing the sheep to blend in with their environment, disguised as small scrubby trees in an otherwise clear pasture. This would provide protection against near-sighted hunters and their dogs, as well as offering a tasteful addition to

Now let's hear it from the South. —ed.



the glorious tableau of autumn in Vermont. The llama shepherd idea is not really an experiment at all, but a tried and true method—llamas provide the sheep with protection through their greater curiosity and intelligence, as well as their ability to empty the entire contents of their stomach by spitting at intruders—with an accuracy from distances up to 50 feet. The drawbacks of keeping a llama with the flock include the necessity to make friends with your llama *very* quickly and the prohibitive cost—$1,000 to $3,000 for a single animal. If anyone knows of a more inexpensive source for young llamas, please do let me know.

We are hoping to have established our Northeast Kingdom breed by 1984, and will keep you advised. However, the possibilities of obtaining a high-quality spinning fleece or a good meat ani-

mal in addition to all these other qualities seems unlikely—we're still working on it. We hope to bring Vermont back to its prime as a sheep state and push out all the Corriedale, Dorset and Suffolk flocks with our better breed, guaranteed winter-proof Yankee sheep. MELISSA WEAVER, WEST WHEELOCK, VERMONT.

P.S. I learned to spin on a Dorset fleece, which is a common breed locally, and produces a good fleece with many problems. We have a lot of people around here who "keep a few sheep", generally cross-breeds, and many of these people spin themselves, and have focused their breeding on quality fleece production rather than a registered breed. I myself have Scottish Blackface x Suffolk/Corriedale ladies who provide me with a very long stapled but reasonably fine wool—a nice spinning fleece. We have our share of Romney, Cheviot, Kharakul crosses, but I would say the Corriedale has a strong standing in New England, along with Dorsets, Suffolks, Montadale and Hampshire.

Loom Directory oversight

Mention of the Gallinger floor loom, widely acclaimed in the eastern part of our country, was somehow omitted from your excellent May, 1981 loom survey. This loom has been carefully crafted for more than 50 years and is sold by the Mannings (successors to the Gallingers) who maintain a thriving handweaving school and weaver's supply center at East Berlin, Pennsylvania. It was at this school (founded by Milo and Osma Gallinger) that the Gallinger floor loom was born in 1930. It came about as the result of a privately-financed study costing $37,000. Weaving experts, including Osma Gallinger (now Osma Gallinger Tod), skilled loom craftsmen, including Milo Gallinger, and medical specialists participated in the planning. The medical advice was sought for the benefit of physically handicapped weavers as well as the able-bodied.

The sturdy four-harness counter-balanced loom has four treadles in a unique direct tie-up that eliminates any troublesome lams. The exceptionally wide shed permits easy "unbalanced" 3/1 weaving; the highly effective friction brake and the nicely balanced weighty beater are other distinctive features, as is the built-in raddle on the back-bar above the sectional warp beam.

During the first 25 years Gallinger floor looms were made by Milo Gallinger assisted by Richard S. Starner. Since Gallinger's death in 1956 Starner has continued to operate the Gallinger loom factory, making looms exclusively for the Mannings. The looms are made in 24", 36" and 42" widths in oak, cherry and black walnut. GILBERT WRIGHT, SILVER SPRING, MD

Tit for tat

I trust that the blushing Victorian lady mentioned on the editorial page in the Sept. issue of HANDWOVEN didn't have oily hair. I am trying to visualize her behind the anti-macassar. Poor woman, she must have been most uncomfortable.

Though I have never seen any, macassar is the proprietary name of hair oil, the oil probably coming from Macassar in East Indonesia. I gather you haven't heard of this hair oil or the gadget put over the backs of sofas or chairs to supply the "anti" to macassar.

I trust that you don't need antimacassars in your home! MADELINE SMITH, WINDSOR, ONTARIO

Actually, what I had in mind was that proper Victorian lady taking refuge behind the antimacassar that she was tatting—*though the ones I grew up with were mostly crocheted. Do I date myself?—ed.*

An annual October event

Spinning & Weaving Week Celebrated Nationwide

In case you missed it, National Spinning and Weaving Week happened last month. Sponsored by the Spinning and Weaving Council, an organization of manufacturers, retailers and wholesalers of spinning and weaving supplies, the week drew special attention to these crafts all over the country.

Here are just a few of the things that happened: The Lebanon Valley Weaving and Spinning Guild of Jonestown, Pennsylvania, ventured forth into the public schools. Hands-on spinning and weaving were done by 145 third graders, and 150 fourth graders got demonstrations. A newspaper photo shows a lot of kids holding a lot of thread! "The real success," according to Kathryn Otto, "was the kids' strong response to spinning and weaving."

The Connecticut Handweavers Guild held a flax day, and threaded an historic loom in a museum.

In Ukiah, California, Mayor Charles Myers proclaimed, with much fanfare and publicity, Ukiah Spinning and Weaving Week. Articles on the Mendocino County weaving cottage industry, special exhibits and workshops, and the "wool connection" with local 4-H kids who raise and spin their own wool (it was also National 4-H Week).

Spinners in the San Francisco Bay Area joined together for a spin-in at Golden Gate State Park. Advance newspaper, tv and radio coverage, plus beautiful weather, resulted in a large turnout of interested on-lookers; jugglers on unicycles added to the generally festive atmosphere.

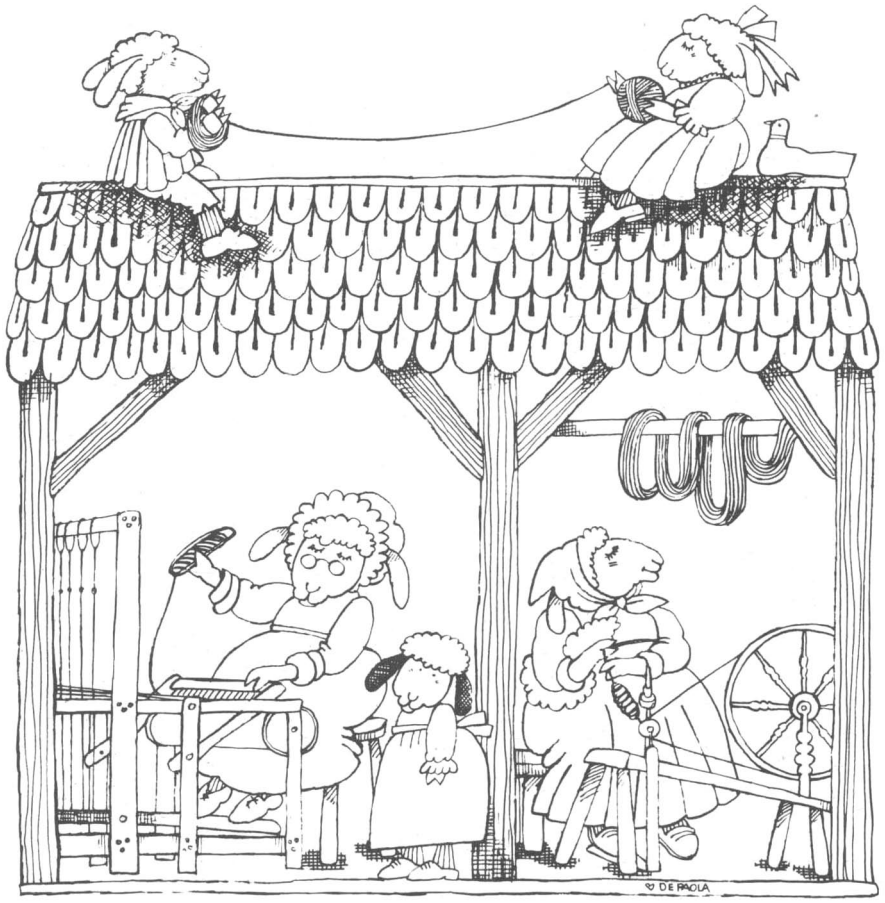
In Bettendorf, Iowa, the Fiber Shop sponsored an all-day sheep-to-shawl demonstration. The local guild sold raffle tickets for the completed shawl, thus raising money for their guild library. Other sheep-to-shawls and demonstrations were held by the Flying Shuttle in Saginaw, Michigan, the Woodland Weavers and Spinners Guild of Cocheton, New York, WoodsEdge Farm of Kingston, New Jersey, and many more.

The County Ageing Services in Salt Lake City, Utah, coordinated the national event with their already-planned gift and craft fair by adding special spinning and weaving demonstrations and displays.

The San Juan Weavers Guild of Montrose, Colorado, took their craft directly to young and old alike—a local retirement home and a day care center. Lynda Rowan reports that many oldsters recalled their mothers or grandmothers spinning and weaving.

continued

national spinning & weaving week
october 5–11, 1981



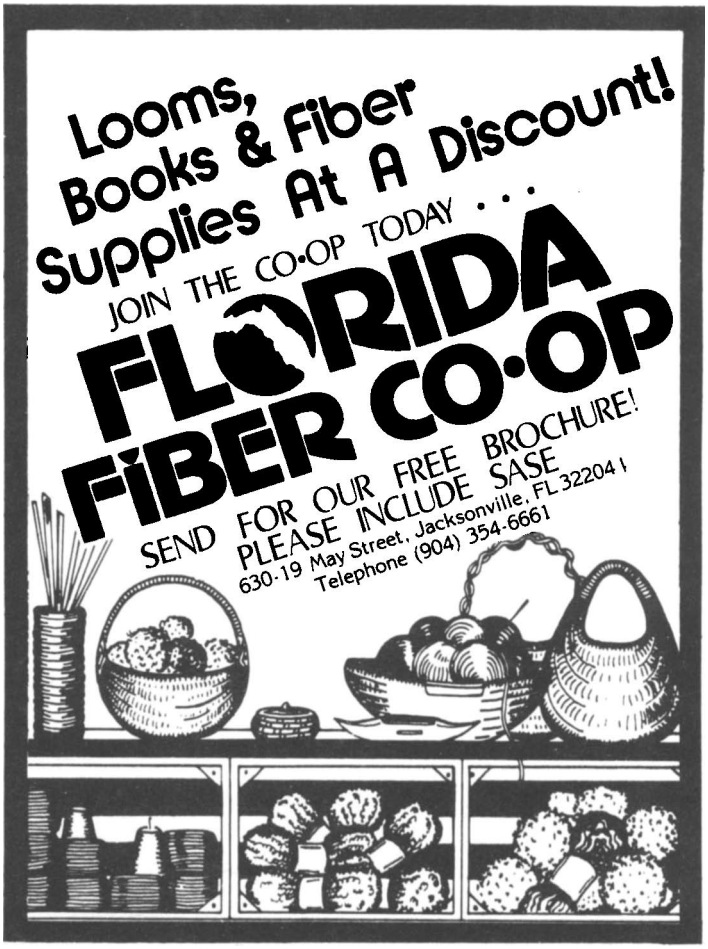
Special poster art for National Spinning and Weaving Week was created for the Weaving and Spinning Council by Tomie de Paola, author of popular children's book, Charlie Needs a Cloak. *Some groups duplicated the poster in quantity and held coloring contests for local children, giving copies of de Paola's book as prizes.*

Special articles, features and notices related to the week appeared in such diverse places as the *New York Times, Boston Globe,* and *San Francisco Daily Examiner;* on the Chicago edition of "PM Magazine"; on Denver's Channel 7; and in *Pace* airline magazine.

WEAVING & SPINNING COUNCIL

In all, it was a week of reaching out, of sharing the fun and satisfaction that weavers experience with the rest of the world. Next year's special week will be October 4-10—put it on your calendar! □

Interweave Press staffers Debbie Redding, Linda Ligon and Jane Patrick wore their official National Spinning and Weaving Week tee-shirts while competing in the "Spin, Weave and Wear" contest at the Colorado State Fair. Tee-shirts were sold at cost to guilds and weaving shops by the Weaving and Spinning Council, which sponsored the week. Sheepy chapeaux were created by Debbie.



TRICKS of the TRADE

WARP AND WET

For those who beam front to back or raddle—I have found when using an unmercerized cotton warp, tangles are easily combed out by dipping my hands in water and then running them lengthwise over the yarns, gently pulling. This doesn't require the cotton to be drenched, only slightly combed with damp hands. GINGER HAIN, LAKE JUNALUSKA, NC.

THE TIE BEHIND

To tie up a Leclerc loom, you have to push a rod through screw eyes on the treadles and loops of cord attached to the lams. The treadles are quite long and it's very awkward to sit on them. Here's the trick: sit on the floor *behind* the loom and push the rods from back to front. Why didn't I think of this sooner? MUFFY YOUNG, BROOKLINE VILLAGE, MA

AT LOOSE ENDS

When using a fine yarn at 20 ends per inch, I measure several extra warp threads. Then when threading the loom I leave one of these extra threads every 2" or 3" hanging loose. That way, when a thread breaks in the warp, I just pull one of the threads into the heddle and reed and don't have to worry about weighting a single thread to the proper tension. RONA RONES, ELBERON, NJ

ORDER IN THE WARP!

I always use a sectional warping system, and was having difficulty keeping the warp yarns in order while threading the heddles since there are no lease sticks. This is my solution: before I cut the yarns from the tension box I place a piece of masking tape to keep the yarn ends in the same order that they are in the tension box. Then I cut the yarns and fasten them to the wound section. When all the sections are wound and the heddles are ready to be threaded, the warp ends are in perfect order. Just peel them off the tape one at a time. JOHN MCHALE, CHESTER, MA

BYE-BYE PONYTAIL

I have found that on an Ashford spinning wheel or other Scotch tension wheels, that a covered rubber band like those used for ponytails works very well in place of the spring or rubber bands the wheel comes with. The covered rubber band will last forever and is easy to unhook or hook. Also, it is very easy to get just the right tension with the covered rubber band. DOROTHY MATHESON, ELGIN, TX

CONES BOB-BOB-BOBBIN ALONG?

It was a pleasant surprise to discover that the leftover cone that once held Borg's Cottolin 22/2 [also Noviwool and some other yarns] makes a perfect, sturdy, 6" bobbin that just fits my boat shuttle. AND, the texture of the cones is made to resist yarn slippage! PAMELA FAIVALYA, BLOCKSBURY, CA

BACKLIGHT

I recently completed my first (and possibly last) weaving project of the finger-manipulated weave, Danish Medallion. I had been warned what a tedious process I was letting myself in for but was not totally prepared for the visual complications. The warp selected was gray and the weft a dark brown. Working the pattern across the warp became markedly more tedious when the web advanced sufficiently to become the background of the work area. The brightest light directed at the work area didn't help; a contrasting piece of fabric laid across the web under the work area did! With a white fabric reflecting light from under the work area, picking out the number of

warp ends needed for each medallion and retrieving the weft thread for each became visually much easier. Presumably a dark fabric under light material would produce the same effective contrast to aid in working weaves of this type. ROD MCNARY, MIAMI, FL

PEG O' MY WARP

I put a wooden expandable cup holder on the floor beneath my warping board. I can put cones, balls or spools of yarn on the wooden pegs and wind the warp without its rolling all over the floor. Also, there are enough pegs for warping several colors at once. BETTY BOLLEY, LAWRENCE, KA

Have a trick to share? Shortcut? Nifty threading draft? Send it to "Tricks of the Trade", Interweave Press, 306 N. Washington, Loveland, CO 80537. For every idea we use, we'll send you a surprise small weaving tool!

WE'D LIKE TO KNOW:

How do you make warping quicker, more efficient, pleasant, even fun? We're planning a special warping insert for the March issue of HANDWOVEN, and would welcome your input.

Susan Druding, editor of *Textile Artist Newsletter* and generally knowledgeable lady of the West Coast weaving scene, has offered to do a "Q. and A." column on chemical dyeing of all kinds. If you have questions, she will provide the answers. Send your questions to us here at Interweave Press, 306 N. Washington, Loveland, Colorado 80537.

Ruth Loewi is determined to learn to weave, but she has three deteriorated discs in her lower back, and ends up spending the day after a weaving lesson in bed. Has anybody out there learned to cope with a similar problem? Write Ruth at 215 Kearney St., Denver, Colorado 80220.

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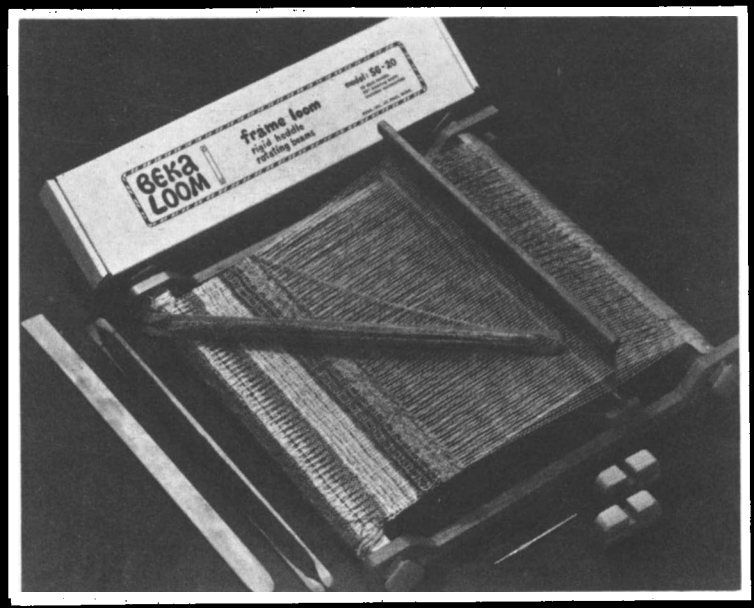

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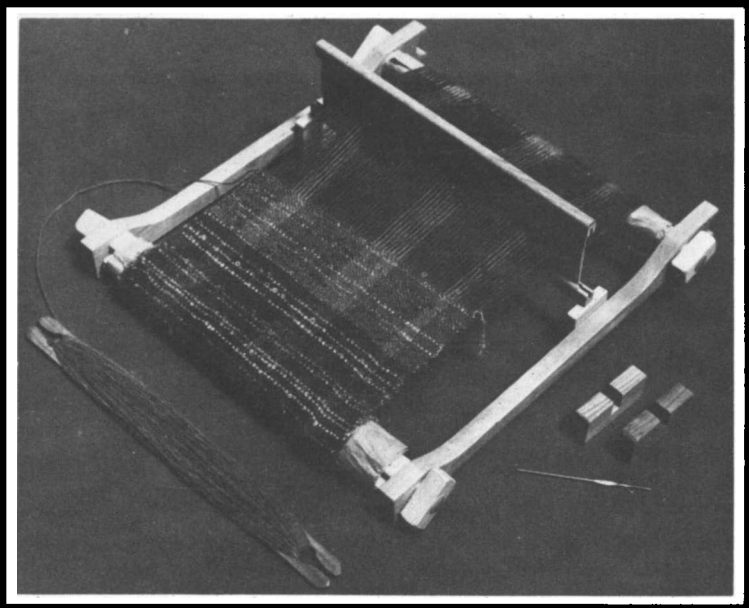

14" maple model

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. . . MANY GIFTS LATER

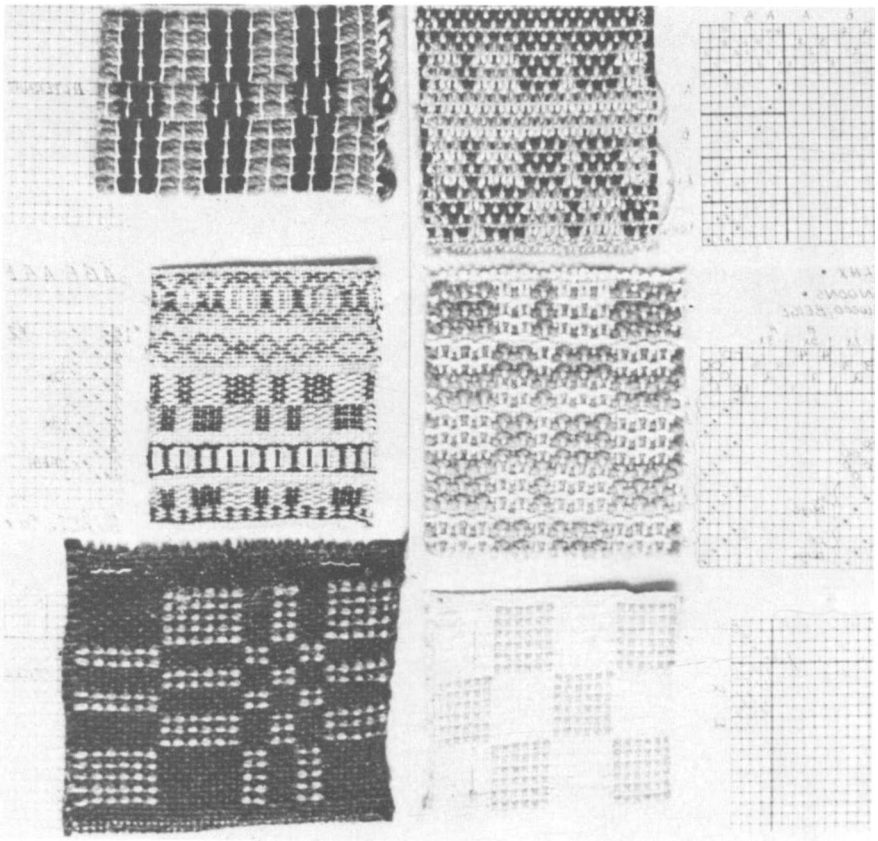
ACTION

A STUDY GROUP PROJECT

by Nancy M. Searles

Wouldn't it be nice to have one source that contains as many of the variations as are available for each of our better-known weaves? It's frustrating to have to consult five or six sources to find different treadlings for summer & winter, or threadings and treadlings for twill. In some cases, a monograph will include a good deal of information about a weave, but even then it's impossible to cover all of the variations.

A group of weavers at Fernwood, Inc. in Buchanan, Michigan decided to tackle this project. We formed a



Six summer & winter variations on four harnesses, each shown on its information card.

study group of 16 members (12-16 is ideal for this), and met 12 times from September to June (roughly once every three weeks except during Christmas). At the end of our 12 sessions, each participant had an extensive library of woven samples, and an in-depth knowledge of each of our better-known weave families. Everything you ever wanted to know about a weave in one place, with room to add new variations as you discover them! The idea worked so well for our group that we felt it was worth sharing.

We decided last September to study ten 4-harness weaves during the year. They included plain and basket weave, twill, overshot, monk's belt (and other 2- and 3-block opposites), summer & winter, M's & O's, Bronson, huck, laid-in and honeycomb.

For each session, I prepared a lecture about the particular weave to be studied, using as many sources and samples as I could unearth. It would be quite reasonable, though, and a good experience as well, for the group to share the responsibility for the preparation of each lecture.

continued

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Bette Hochberg
Author of *Handspinners' Handbook*
Santa Cruz, CA

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Carol Anne Munson
Brewery Gulch Spinster
Camp Verde, AZ

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Entries must be postmarked by Dec. 31, 1981. Send your inspired entry to: "Why I Love My Ashford", c/o Textile Artists' Supply, 3006 San Pablo Ave., Berkeley, CA 94702. All entries and artwork become the property of TAS.

Ashford Handicrafts of New Zealand has been manufacturing—and upgrading—the Ashford spinning wheel since the 1940's. There are good reasons that this versatile, reasonably priced tool is the most widely used spinning wheel in the world. Visit one of the dealers listed below and see why.

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3006 San Pablo Ave., Berkeley, CA 94702.

For Ashford products and a wide selection of fibers, visit these dealers:

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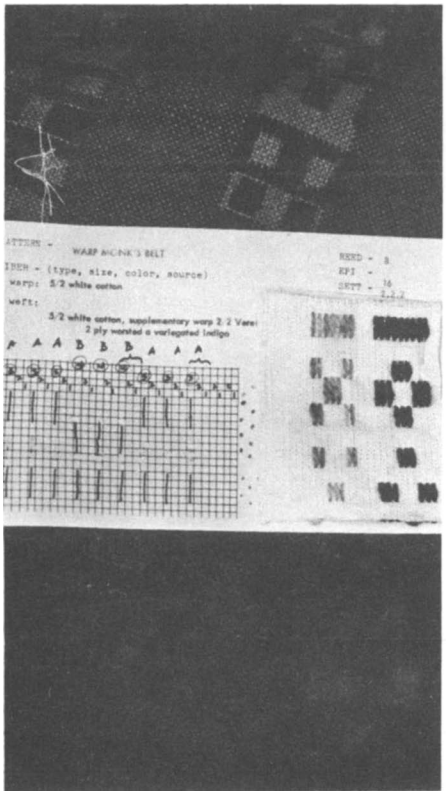
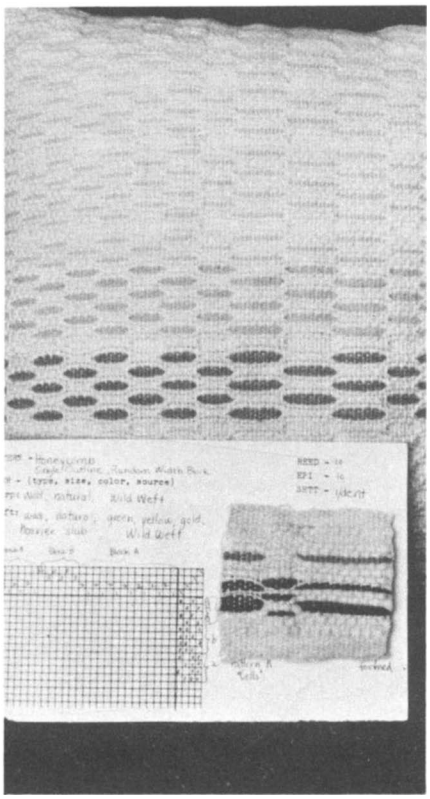


Four-harness monk's belt sample, and a table runner, woven by Ann Christensen.

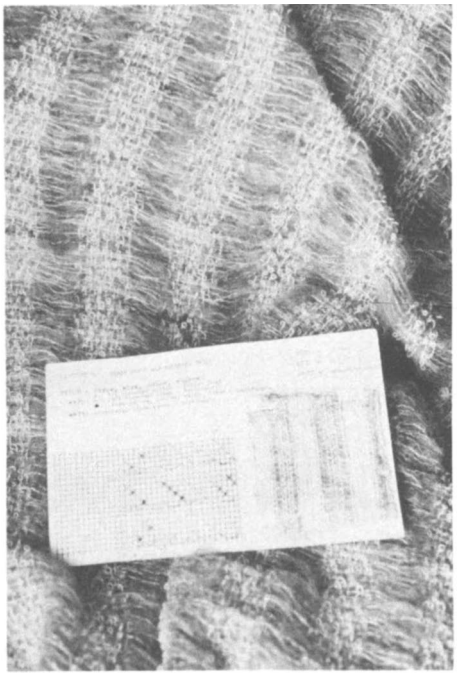


Four-harness honeycomb sample, and a pillow woven by Ebbie Creden.

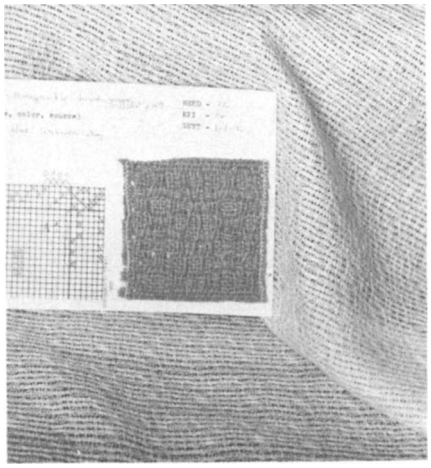
Following the lecture, individual assignments were made. For 16 participants, up to 16 variations could be woven, although the same assignment given to two or three people resulted in excitingly different interpretations of the same variation. As an example, see the first photo for eight of the summer & winter variations which were woven by our group.

Each weaver wove her assignment during the next three to four weeks, and cut the sampler into 3" x 3" squares, one for each member. A woven piece measuring just 12" x 12" yields 16 3" x 3" squares. We found that a water-soluble glue or fabric glue, prevents the cut edges of the samples from ravelling.

These samples were then stapled to cards on which the information about the weave had been written. On the back of the card we added suggested uses for the weave, and any pertinent notes. The card was signed and dated. The cards we had printed measured 5" x 8" and fit nicely into a 5" x 8" file box.



Four-harness plain weave with sett variation sample, and a stole woven by Linda Rockwell.



Four-harness overshot treadled for lace sample, and a table runner woven by Cheryl Lemarre.

These woven samples were shared with the rest of the study group when they next met. After the samples were distributed and discussed, we went on to the next weave.

Toward the end of the year, during the tenth and eleventh sessions, I asked each member to select one sample from her library and to weave a project based on that particular sample. This exercise not only helped to answer questions about the particular weave, but it also gave the group an inkling of the myriad of projects which can evolve from the small 3" x 3" samples.

We spent the final session answering questions about individual cards in the libraries. Each weaver had reviewed her entire library as if she was actually going to weave from each card. This raised still more questions, and also offered a good review.

We have just completed this study group project, and the libraries are already being put to good use for project ideas and as a valuable teaching aid. As a new season gets underway, why not form such a group and begin your own weaving libraries. □

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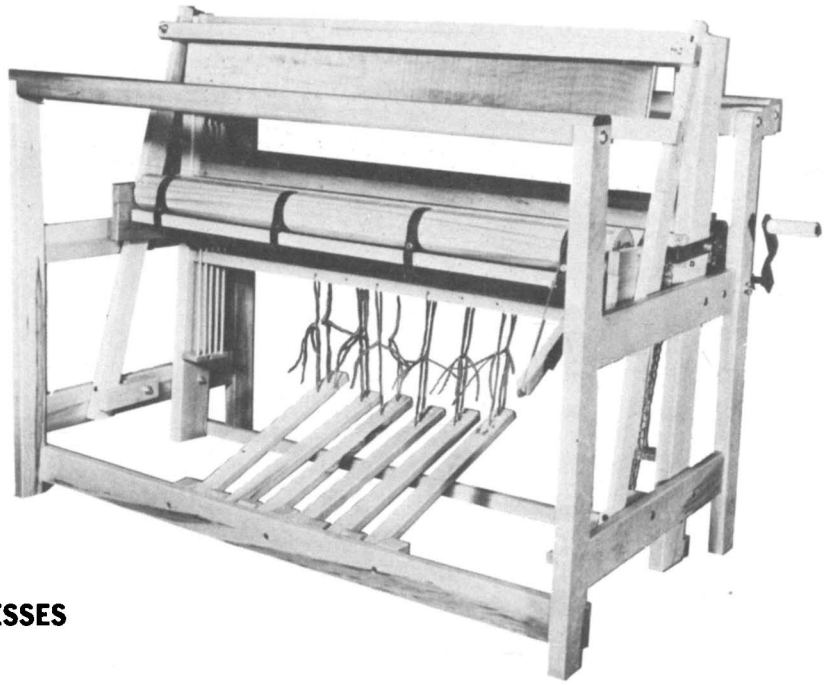

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These looms are made mostly of hard eastern maple, some birch and other hardwoods. All wood parts are finished with a semi-gloss interior clear wood finish and waxed prior to the assembly.

Note the slanting seat of the bench for more comfort when weaving than one with a flat seat. Full length drawer which will extend out either end.

The loom illustrated is 40" 4 harness—our most popular size. These compact looms are available in 4 and 8 harness and in 22", 32", 40", 46" and 54" widths.

WRITE FOR A FREE BROCHURE

FORUM

A POINT TO PONDER

excerpted from a new book by
Daniel Yankelovich,
New Rules in American Life
Random House, hardcover, $15.95

. . . In 1979 Louis Harris conducted a poll in which 57 percent of the respondents said they were "deeply worried" about the poor quality of the products they were buying. Seventy-seven percent expressed the feeling that "manufacturers don't care about me." Based on a separate sampling of national opinion, *U.S. News and World Report* concluded, "Dissatisfaction runs wider and deeper than many experts suspected." Of the people responding to the pollsters' questions, 59 percent said they had returned one or more unsatisfactory products to the place of purchase during the preceding 12 months. A year later, the figure rose to 70 percent.

What caused such an outpouring of defective and shoddy products? The problem cannot be that we literally don't know how to make a good toaster anymore. A nation capable of putting a whole computer on a thumbnail-size wafer and of sending astronauts to the moon and space probes to Saturn must surely possess the technical know-how necessary for making a reliable toaster.

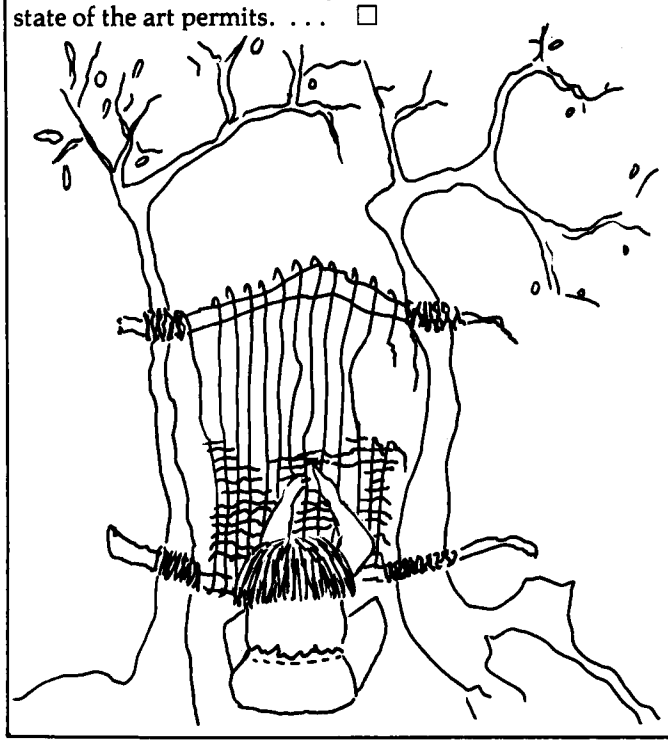
Some reflection about the material culture of prehistoric and preindustrial peoples may help to show how this situation has come about in the United States. A single visit to a museum that displays artifacts used by preindustrial societies is sufficient to dispel the notion that quality is dependent on technology. Artifacts may be of simple, even primitive design, and yet be built to serve their intended purpose in a reliable manner during a lifetime of use. We acknowledge that [fact] when we honor the label "handmade" and pay extra for the jewelry, sweaters, and handbags turned out by the dwindling breed of modern-day craftspeople.

What is the source of quality that one finds, let us say, in a Pomo Indian basket so tightly woven that it was used to hold boiling water and never leaked a drop, or an Eskimo skin boat with its matchless combination of lightness, strength, and seaworthiness? Was it merely the fact that those items were handmade? I don't think so. In unskilled or uncaring hands a handmade basket or boat

can fall apart as quickly as baskets or boats made by machines. I rather think that the reason we honor the label "handmade" is not because it evokes a technological relationship between producer and product, but a social relationship between producer and consumer. Throughout prehistory, the fact that producers and consumers were either one and the same individuals or close kin guaranteed the highest degree of reliability and durability in manufactured items. Men made their own spears, bows and arrows, and projectile points; women wove their own baskets and carrying nets, fashioned their own clothing from animal skins, bark, or fiber. Later, as technology advanced and material culture grew more complex, different members of the band or village adopted craft specialties such as pottery making, basket weaving, or canoe building. Although many items were obtained through barter and trade, the connection between producer and consumer still remained intimate, permanent, and caring.

I rather think that the reason we honor the label "handmade" is not because it evokes a technological relationship between producer and product, but a social relationship between producer and consumer.

A man is not likely to fashion a spear for himself whose point will fall off in midflight; nor is a women who weaves her own basket likely to make it out of rotted straw. Similarly, if one is sewing a parka for a husband who is about to go hunting for the family with the temperature at 60° below, all stitches will be perfect. And when the men who make boats are the uncles and fathers of those who sail them, they will be as seaworthy as the state of the art permits. . . . □



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The Fiber Shop
1542 State St.
Bettendorf, IA 52722

The Shop In
R.R. 1, Box 98A
Villisca, IA 50864

The Weaving Studio
812 So. Summit
Iowa City, IA 52240

KANSAS

The Blue Warp
939 Parklane
Wichita, KS 67218

LOUISIANA

Loom Room
623 Royal Street
New Orleans, LA 70130

MAINE

Nancy Whitman
The Goose Eyed Shuttle
6 Kell Street
Orono, ME 04473

Martha Hall
46 Main Street
Yarmouth, ME 04096

MARYLAND

Avis' Cottage Crafts
5114 Montgomery Rd.
Ellicott City, MD 21043

Hemlock Hill Handspinners
P.O. Box 48
Mt. Airy, MD 21771

The Weaver's Place
4900 Wetheredsville Rd.
Baltimore, MD 21207

MASSACHUSETTS

Batik & Weaving Supplier
102 Mass. Ave.
Arlington, MA 02175

Linsey Woolsey
East India Sq. Mall
Salem, MA 01970

The Weaver's Shop
at the Brewster Rooster
Route 6A & Old North Rd.
Brewster, MA 02631

Webs
109 Main Street
P.O. Box 349
Amherst, MA 01004

MICHIGAN

Arachne's Web
110 West St. Claire
Romeo, MI 48065

Old Town Studio/Gallery
2415 Cedar
Holt, MI 48842

Traditional Handcrafts
154 Mary Alexander Court
Northville, MI 48167

The Wild Weft
415 No. Fifth Ave.
Kerrytown II
Ann Arbor, MI 48104

The Yarn Merchant
120 N. Church St.
Kalamazoo, MI 49007

MISSOURI

The Weavers' Store
110 North 10th St.
Columbia, MO 65201

MISSISSIPPI

Sara Jane's
5749 Old Canton Rd.
Jackson, MS 39211

MONTANA

Joseph's Coat
131 West Main (upstairs)
Missoula, MT 59801

Two Bobbins Full
Third Level
Old Milwaukee Station
Great Falls, MT 59403

NEBRASKA

5 Fingers
101 E. 9th
Lexington, NE 68850

The Loom
3905 South 48th Street
Lincoln, NE 68506

NEW HAMPSHIRE

Andes Quality Yarns
R.F.D., Rte. 16-B
Union, NH 03887

Canterbury Yarns
Located at the O.K. Garage
Craft Shop
Loudon Rd., RFD #10
Concord, NH 03301

The Weavery
Box 281, Kearsarge St.
No. Conway, NH 03860

NEW JERSEY

The Golden Fleece
1400 Texas Avenue
Store #4
Cape May, NJ 08204

Oldebrooke Spinnery
Mountain Road
Lebanon, NJ 08833

Wool Farm/Joe's Fruit Farm
Washington Valley Road
Martinsville, NJ 08836

NEW MEXICO

Village Wools
3801 San Mateo N.E.
Albuquerque, NM 87110

NEW YORK

Barbara Evans Decker
155 William Street
Geneva, NY 14456

Bonnie Brae Weavers
66 Meyers Road
Conewago Valley, NY 14726

Daft Dames Handcrafts
P.O. Box 148
13384 Main Road
Akron, NY 14001

Dariff Design Associates
80 Fifth Ave., Rm. 904
New York, NY 10011

Dutch Barn Weave Shop
RD #1, Box 281
Cobleskill, NY 12043

Helen Brown-
The Fiber Shop, Inc.
1321 Pinnacle Road
Henrietta, NY 14467

Greenfield Farmstead
RD 1, Box 510
Johnson Road
Stone Ridge, NY 12484

Jean Balentine's
Needlecrafters
Old Route 5
Camillus, NY 13031

The Moonspinner
116 East Main Street
Port Jefferson, NY 11777

The Tabby Shop
49 German Crossroad
Ithaca, NY 14850

NORTH CAROLINA

Griffin's
Route 7, Box 958
Greensboro, NC 27407

Riverwood Handweaving
Box 310, US Hwy. 441
Dillsboro, NC 28725

The Weaver's Web
12 Wall St.
Asheville, NC 28801

OHIO

Cellar Weaves Studio
27976 Belgrave Road
Pepper Pike, OH 44124

The Loom Shed
35 West College
Oberlin, OH 44074

Three Bags Full
Martha Fraker
1545 Langdon Drive
Centerville, OH 45459

Wild & Wooly
1509 S. Water St.
Kent, OH 44240

OREGON

The Knotting Chamber
3257 SE Hawthorne Blvd.
Portland, OR 97214

Millstream Yarns
260 Twelfth St. S.E.
Salem, OR 97301

The Woodside Weaver
60443 Woodside Loop
Bend, OR 97701

PENNSYLVANIA

Ann Ar Design Center
202 N. Ninth Street
Allentown, PA 18102

Dotty Lewis
Box 134, RD 6
Lancaster, PA 17603

Fiber Lady
RD 5, Box 363
at the Roll Arena
Bedford, PA 15522

Handcrafter's Studio
Jan & Rhoda Russell
2461 Freemansburg Ave.
Easton, PA 18042

Knots & Treadles
c/o Peggy Cost
101 E. Pittsburgh St.
Delmont, PA 15626

The Weaver's Garden
45 E. State St.
Media, PA 19063

SOUTH CAROLINA

The Weaver's Knot
121 Cleveland Street
Greenville, SC 29601

TENNESSEE

Joyous Song
Wood Whittlers' Creative Marketplace
Highway 73-E
Gatlinburg, TN 37738

Kay Hultquist Weavings
1599 Sunrise Drive
Maryville, TN 37801

TEXAS

Beck's Warp 'N Weave
3021 34th Street
Lubbock, TX 79410

Handweavers of Houston
6128 Village Parkway
Houston, TX 77005

Hill Country Weavers
620A West 34th
Austin, TX 78705

Padre Island Weavers
453 Louisiana
Corpus Christi, TX 78404

VERMONT

Northern Vermont School of Fiberarts
RD 2
St. Johnsbury, VT 05819

The Yarn Shop
Jean Hanzl
Craftsbury, VT 05826

VIRGINIA

The Golden Ram
P. O. Box 246
Corner of Park & Evans
Christiansburg, VA 24073

Handweaver
340 Coventry Rd.
Virginia Beach, VA 23462

The River Farm
Rt. 1, Box 401
Timberville, VA 22853

WASHINGTON

Coupeville Weaving Shop
P.O. Box 555
15 Front Street
Coupeville, WA 98239

Fibers, Etc.
7216—27th West
Tacoma, WA 98466

Looms & Lessons of Olympia
6030 Glenwood Dr. S.W.
Olympia, WA 98502

Looms & Wheels Unlimited
Gilman Village
Issaquah, WA 98027

WISCONSIN

The Handweaver's Shed
218 N. Franklin St.
Port Washington, WI 53074

Suzan Kupperman Handweaving
W337 N6725 Stonefield Way
Oconomowoc, WI 53066

The Looms
Shake Rag St.
Mineral Point, WI 53565

Treadlery
219 E. Mill Rd.
Galesville, WI 54630

Weaving Workshop
817½ East Johnson Street
Madison, WI 53703

The Wool Works
1812 N. Farwell Avenue
Milwaukee, WI 53202

Other dealer listings will be supplied upon request

CALENDAR

CONFERENCES

__ **First New Mexico State Weaver's Conference** sponsored by Las Aranas Spinners and Weavers Guild of Albuquerque will be held at the Regent Hotel in Albuquerque, Feb. 26-27, 1982. Workshops, exhibits, fashion show and commercial exhibits. Write to Wanda Orear, 4619 Trumbull S.E., Albuquerque, NM 87108 for more info.

__ **Shared Horizons II Southwest Weaving.** Seminar May 10-12, 1982, Santa Fe, NM. Collectors, dealers, museums and weavers will converge in Santa Fe exchanging and sharing their perspectives, experiences, horizons. Info from Noel Bennett, PO Box 1175, Corrales, NM 87048. (505) 898-7211.

__ **Convergence '82.** July 15-18, 1982. Seattle, WA. Biennial meeting of the Handweavers Guild of America. Four-day fiber extravaganza preceded and followed by workshops.

WORKSHOPS

__ **Pendleton Fabric Craft School** announces its 1981-82 Fall/Winter schedule of classes for both beginning and advanced weavers and spinners. For a complete schedule and application write to Pendleton Fabric Craft School, PO Box 233, 465 Jordan Rd., Sedona, AZ 86336.

__ **Oregon School of Arts and Crafts,** Portland. "Paper Marbeling" workshop led by Peggy Skycraft, Nov. 23-24, 1981. Workshop registration is required seven days before beginning date. Contact: 8245 S.W. Barnes Rd., Portland, OR 97225. (503) 297-5544.

__ **New York Guild of Handweavers** presents the following workshops at the YMCA, 215 W. 23rd St., New York City, NY. Rose Roth, lecture/demonstration, *Cochineal Dyes,* Saturday, Dec. 5, 1981 at 2 p.m.; Theresa Schoenholzer, slide lecture/demonstration on *Conservation of Textiles or Laces and Weaving* (plus a one-day workshop), Saturday, Jan. 30, 1982 also at 2 p.m.

__ **The River Farm fall/winter 1982 Handspinning Workshops** by Priscilla Blosser-Rainey, Jan. 29-31, 1982 for beginners, and Feb. 5-7, 1982 for intermediates. Advance registration required. For complete information write Priscilla Blosser-Rainey, Spinning Instructor, The River Farm, Rt. 1, Box 401, Timberville, VA 22853. (703) 896-9931.

TO ENTER

__ **The Creative Living Section of the 1982 Calgary Exhibition and Stampede,** July 9-18, 1982 will feature a showing of the works of many of the best creative craftsmen from Canada and the U.S. For judging, interested craftsmen are requested to submit slides of their work (minimum of 3) as well as a full description of media used, price range of articles to sell, and an autobiography. Deadline for receipt of this information is *Dec. 1, 1981.* Information packages should be forwarded to: Mrs. Dianne McKay, Creative Living Committee, R.R. 3, High River, Alberta, Canada T0L 1B0.

__ **Craftsmen's Gallery,** Omaha, NE is sponsoring a juried exhibition to all American craftspeople. "Furnishings", Jan. 30-March 10, 1982. Only handmade furniture and rugs are eligible. *Slides due by Dec. 15, 1981.* Entry fee $10.

__ **Clay/Fiber/Paper-as-Medium** at The Octagon Center for the Arts, Ames, IA. Jan. 10-Feb. 14, 1982. Open to artists living within a 500-mile radius of Ames working in clay, fiber or paper as a medium. Entry fee of $15 for one to three items. Work must be received by *Dec. 15, 1981.* Awards in each category. Write to Martha Benson, Director, The Octagon, 5th & Douglas, Ames, IA 50010.

__ **Designer-Craftsman Exhibition** of wood, fiber, clay, glass and metal at the 41st Annual Cedar City Art Exhibition, April 1-30, 1982 at the Southern Utah State College Braithwaite Fine Arts Gallery. Cash awards, purchase awards and sale. *Slides due Jan. 4, 1982.* Juried show. Write for prospectus to Iron County School District, Cedar City Art Committee, PO Box 879, Cedar City, UT 84720.

__ **Currents '82** (Limited Edition Crafts for the Marketplace), 7th Biennial Crafts Exhibition sponsored by Middle Tennessee State Univ., Feb. 28-March 19, 1982. *Deadline for slide entries is Jan. 8, 1982.* Open to all U.S. craftspeople working in fibers, metal, clay and mixed media. $5 for maximum of three entries. Write: Currents '82, Art Dept., PO Box 25, Middle Tennessee State Univ., Murfreesboro, TN 37132.

__ **Kansas Fiber Directions '82,** a juried weaving exhibition for Kansas residents and former residents at the Wichita Art Museum, Feb. 7-March 7, 1982. Co-sponsored by the Wichita Art Museum and the Wichita Handweaver Spinners and Dyers Guild. Shipped entries due *Jan. 4-8;* hand-delivered entries due *Jan. 9-10, 1982.* For entry info write: Fiber Directions '82, 960 Valleyview, Wichita, KS 67212.

Surrounded by an exquisite selection of fiber arts from Hawaii, Elaine Zinn (left) *and Elizabeth Akana, craft specialist from the islands, are readying for the* **Pacific Friendship Fibre Arts Conference,** *June 27-July 2, 1982 at the Ilikai Hotel on Waikiki Beach. Inquiries: toll-free (800) 367-5130 or write Jordan Leisure, 2222 Kalakaua Ave., Suite 1001, Honolulu, HI 96815.*

__ **The 11th Annual Crafts and Arts Exposition** of the Houston Festival 1982 is accepting applications from local and national artists and craftspersons interested in participating, March 18-28, 1982. Featured will be a juried crafts and arts fair, open-entry market, five special feature areas and an auction. All those interested should contact: The Houston Festival, Crafts and Arts Exposition Committee, 6128 Village Parkway, Houston, TX 77005. *Deadline for entries Jan. 30, 1982.*

__ **Embellishment-Decorated Textiles** at Saint Mary's Univ. Art Gallery April 22-May 29, 1982, in conjunction with the Northeast Surface Design '82 Conference to be held in Halifax, Nova Scotia, May 27-29, 1982. Open to all craftsmen in the northeast U.S. and eastern Canada to Lake Superior. *Deadline for slides Feb. 1, 1982.* Entry fee of $15 for up to three entries. Entry forms and info: Northeast Surface Design '82, Nova Scotia College of Art and Design, 5163 Duke St., Halifax, Nova Scotia, Canada B3J 3J6. (902) 422-7381, ext 173.

__ **Innovations in Fibre II,** March 29-April 16, 1982. A national juried fiber exhibition open to all fiber related mediums. Awards and cash prizes. *Entry deadline Feb. 12, 1982.* Sponsored by Skyloom Fibres in cooperation with Boettcher Concert Hall and First of Denver Bank. For info send SASE to Skyloom Fibres, 1905 S. Pearl, Denver, CO 80210.

__ **Needle Expressions '82** at the Tennessee State Museum, Nashville, TN 37219. Sept. 6-Dec. 31, 1982. Sponsored by the National Standards Council of American Embroiderers. Cash awards. *Slide entry deadline May 1, 1982.* Entry blank and info: Adel Cole, 9812 N.E. 14th St., Bellevue, WA 98004.

EXHIBITS

__ **Beyond Tradition: 25th Anniversary Exhibition** opened Oct. 3 and is running through Jan. 10, 1982 at the American Craft Museum, New York City. Reflects the changing aesthetic in American craft with individual areas being devoted to clay, fiber, metal, wood and glass.

__ **Enchanted Threads,** a regional juried fiber show held its opening reception at the Reed Whipple Cultural Center, Las Vegas, NV on Oct. 18 and the show will continue through Nov. 13, 1981.

__ **Victoria Handweavers' and Spinner's Guild,** Victoria, British Columbia, Canada. Annual sale and exhibition is Nov. 13 and 14, 1981 in St. Luke's Parish Hall, Cedar Hill Cross Rd., Victoria, B.C. Free admission, door prizes, demonstrations of weaving and spinning, raffle, handspun and handwoven items for sale.

__ **Weaving Momentum V,** an annual exhibition and sale of handwoven tapestries, rugs, clothing and other items by the San Antonio Handweavers Guild, Nov. 17-Dec. 5, 1981 at the Southwest Craft Center, 300 Augusta St., San Antonio, TX.

__ **Hand Weavers of Bucks County** will present its fifth annual show and sale, Nov. 20-22, 1981 at Washington Crossing State Park, PA.

__ **The Weavers' Guild of Kalamazoo Exhibit and Sale** will be held at the Kalamazoo Institute of Art, Kalamazoo, MI; Nov. 19-20, 1981.

__ **Fiber Miniatures Exhibit,** Dec. 16, 1981-Jan. 18, 1982. Third international exhibition of miniature textiles developed by the British Crafts Centre in 1978, and represents works no larger than 20cm. Featured at The Worcester Craft Center, Worcester, MA.

__ **The Loge Gallery** of Pioneer Memorial Theatre on the Univ. of Utah campus in Salt Lake City is featuring the work of three Utah fiber artists: John Hess, Sharon Alderman and Barbara Schulman. Also featuring Sandi Fox and Carolyn Dyer of Los Angeles and Dean Koga of Seattle. Exhibit will run through the month of January 1982.

__ **Dualities: Designer as Artist/Artist as Designer** at Paley Design Center, Philadelphia College of Textiles & Science, Philadelphia, PA, Jan. 13-Feb. 13, 1982. Works in fiber.

__ **The Mind's Eye Craft Gallery,** 4200 N. Marshall Way, Scottsdale, AZ. "Clothing Invitational", a selection of wearables, dyed, woven and embroidered. Jan. 14-Feb. 15, 1982.

__ **Sculptural Fiber and Clay** at Craft Alliance Gallery, 6640 Delmar Blvd., St. Louis, MO. Feb. 7-March 3, 1982. Layered-weave, three-dimensional forms by Bracha Fredman. Also on March 7-31, 1982, Ceramics and Wall Hangings. Stuffed and stitched fiber wall pieces by Ute Schweitzer.

__ **Pacific Basin School of Textile Arts Gallery.** Felt by Carole Beadle, March 5-April 6, 1982. This show is in conjunction with the felt workshop that she will be teaching in the spring quarter. For info: Pacific Basin School of Textile Arts, 1659 San Pablo Ave., Berkeley, CA 94702.

__ **The 10th Annual Festival of Weaving** sponsored by the Triangle Weavers and the Chapel Hill Handweavers' Guild will open Friday, March 12, 1982 with a reception for the weavers and their guests. Public invited to view the exhibit March 13-28 at the Horace Williams House, Chapel Hill, North Carolina.

BEYOND THE FRINGE

by Kathryn Wertenberger

Finishing of handwoven textiles falls into three categories: the washing, fulling, pressing, or blocking of the cloth; construction seams and/or mounting devices; and surface embellishment. The designing of the woven piece needs to begin with the ending. You must have at least some idea of what you plan to do with the piece in order to allow for shrinkage, seams, hems or fringes. If in doubt, be generous; surplus may be cut away, but it is very difficult to add later. Start a notebook of finishing ideas and samples.

Almost every fabric needs some form of washing, pressing or blocking to remove the spinning oils and dirt in the yarn and to set the weave. Projects given in HANDWOVEN always give the designer's recommendations. Other methods are usually possible. These have been discussed in previous issues. Sample on a scrap to find the effect you like best.

Construction seams and mounting devices should not impose on the overall effect. Keep them simple and unobtrusive. The controversy over hand vs. machine stitching has gone on for years and probably will never be fully resolved. My feeling is that if machine stitching does not show and/or is needed for strength or washability, then why not? Of course it needs to be neat and done with matching thread. Simple hand stitching such as an outline or chain stitch can cover machine stitching if needed. Be sure to clip and hide thread ends. Good craftsmanship demands that the inside (under side, bottom side) should look as neat as the outside.

Mounting devices such as rods for wall hangings either should not show at all or else they must be considered a design element. Thus the shape, color, texture and material should complement the overall effect.

Embellishments can be as simple as fringe or as complicated as elaborate embroidery. Unfortunately, fringe is often a weaver's cop-out. If fringe is used, it too must be considered a design element. Fringe should not look skimpy; add additional strands if needed. Consider its proportions. Realize that a contrasting fringe (which happens when warp and weft are different values) introduces a strong horizontal design element. Twisting or knotting can control a too-fluffy fringe or make too-small strands look larger. Alternate knotting produces a diamond design which enhances an angular pattern but would be all wrong with a circular design.

Surface embellishment, such as embroidery or braids, should seem to grow out of the textile. This is usually accomplished by echoing the same colors and textures. "Artifacts" should be used with restraint and should really relate to the total design and not look "tacked on".

Evaluate your finished work by looking at it in a mirror. This seems to disassociate you from the piece and allow you to make a realistic appraisal of the result. Be sure that every element really contributes to the design.

A final guideline: complicated pieces need simple finishes, simple pieces can use elaborate finishes. □

A CASE STUDY:

To give a very contemporary look to the pillows on the previous page, I decided to use geometric designs that could all be done on one threading, to use a subtle triad color scheme, and to experiment with tailored edge finishes.

WEAVE STRUCTURE: Plain with inlay. RH 2 8

SIZE: As noted in diagram.

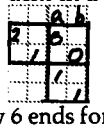
EQUIPMENT: 2-shaft or rigid heddle loom (optional 8-shaft threading given), minimum width 18" (*46cm*). 12-dent (*50/10cm*) reed. 4 shuttles. Tapestry and upholstery needles. Sewing machine with zipper foot.

MATERIALS, Warp and weft: Novitex Novi-wool at 1650 yd/lb (*3317m/kg*) on 4-oz (*113g*) tubes. 5 tubes #39 Beaver, 1 tube #13 Saffron, 1 tube #7 Scarlet, 1 tube #27 Aqua. 2 yd (*2m*) cotton blend fabric for linings. 1/8 yd (*11cm*) synthetic knit suede for binding. 3 lb (*1.5kg*) polyester fiberfill. Sewing thread. 58" (*147cm*) nylon seine cord for piping.

WARPING: 12 e.p.i. (*50/10cm*), 18" (*46cm*) wide, 216 total warp threads 5 yd (*4.5m*) long which allows 1 yd (*91cm*) for take-up and loom waste. Warp with #39 Beaver.

SLEY: 1 end per dent in a 12-dent reed.

THREADING, TIE-UP & TREADLING:



WEAVE: Allow 6 ends for selvedge. Tie a colored yarn through the reed and around the beater cap to mark the blocks. Count 34 warp ends and tie another tie, etc. to form 6 blocks plus a selvedge on each side. Weave ¾" (*2cm*) of warp yarn for seam. Use tabby like the warp. Use pattern yarn double on the shuttle. To weave pattern area: Weave tabby A. Inlay the pattern area in the block indicated in the B shed. Weave tabby B. Weave pattern in B shed again. Repeat. There will be three picks in the same shed in the pattern block. Be sure that the pattern yarn does not pull out of the shed at the turning point. Pillows are woven wrong side up, so a loop of weft may be left at the turning point. In pillows that have more than one color across a horizontal line, weave tabby A, each color in its place, tabby B, each color, etc. Weft threads may be allowed to float on the back between similarly colored blocks or butterflies may be used. Weave blocks to square except for step design. Weave 1½" (*4cm*) between pillows for seams.

FINISHING: Machine stitch ends to secure. Machine wash in warm water on short, gentle cycle. Hang to dry. Clip weft floats. Steam press on wrong side of fabric.

ASSEMBLY: Make an inner pillow of lining fabric ½" (*1.5cm*) larger to allow for stretch of woven fabric. Stuff with fiberfill to desired firmness. Be sure that corners are firmly filled.

PIPED PILLOW

Cut suede into 1½" (*4cm*) wide strips. Piece together if needed to equal about 58" (*147cm*). Fold strip over cord and stitch along the edge of cord using a zipper foot. Do not catch the cord in the stitching.

Lay the piping on the pillow front matching the stitching to the edge of the pattern. The piping faces inward, edges out. Start and stop the piping part way down one edge, not at the corner. Leave ½" (*1.5cm*) loose at the beginning and hand baste carefully. Clip the piping to the stitching line at the corners and take a small backstitch to secure firmly. Leave a ½" tail on the end. Pull out $^{9}/_{16}$" (*1.5cm*) of cord at each end and cut off. Clip the beginning and ending tails to the stitching line at the point where they meet. Overlap the ends very slightly and sharply turn the tails into the seam allowance. Baste very securely. Stitch the end opposite the piping join using a zipper foot.

Lay the back of the pillow on the front, right sides together. Baste, carefully aligning the patterns. Stitch using a zipper foot. Begin and end the stitching 1" (*3cm*) from the corners leaving the end opposite the piping join open for inserting the pillow. Close the seam by hand.

FOLDED PILLOW

Fold the square crosswise matching patterns. Stitch the side seams (along selvedges) at the edge of the pattern. Open the pocket formed and lay the side seams on the bottom fold forming a square; ends will come together in the center; match seam at center. Seam ends together for 1" (*3cm*) at each end. Press all seams open. Insert pillow and sew remaining seam by hand with slip stitch. Sew a square pattern stitch through at the center using a long upholstery needle and double warp yarn. Stitch twice in each direction. Knot ends and run back into pillow with a needle.

EMBROIDERED EDGE PILLOW

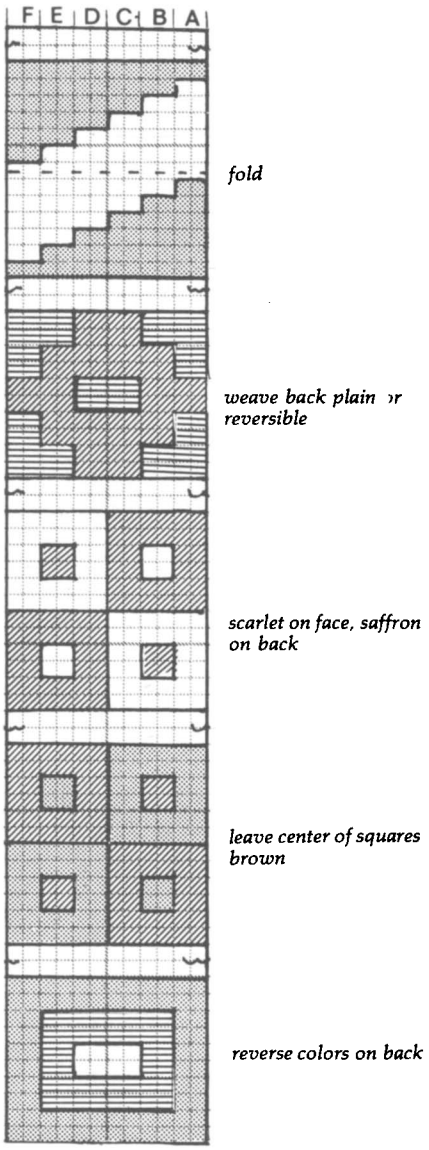
Machine stitch edges together leaving opening 1" (*3cm*) from each end on one side for inserting pillow. Slip-stitch pillow closed with warp yarn. With three strands of warp yarn, work an outline stitch over the seam. Use the pattern as a guide making the stitches three patterns apart.

ROPE EDGE PILLOW

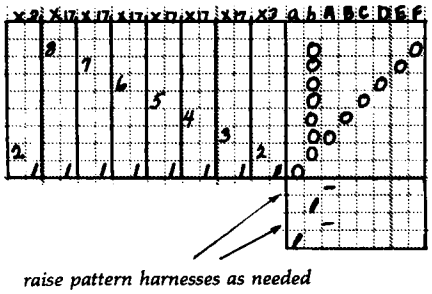
Assemble as for embroidered pillow. Make a twisted rope from four strands of Beaver, one strand each of Scarlet and Saffron, 5 yd (*4.5m*) long. Tie both ends and hook one end on a hook or door knob. Put a pencil through the loop at the other end and spin until the cord twists very tightly (it will kink if the tension is released). Fold the cord in half and twist in the opposite direction. Sew the cord on the seam with warp yarn, slanting the stitches in the direction of the twist. Begin and end on the side with the hand stitching. Start with the looped end. End by tacking cut end to the loop end and tucking the cut end tails into the pillow seam between the hand stitches.

STEPPED PILLOW

This pillow is different from the others in that one side is folded and no extra trim is used because the design flows from one side to the other and should not be interrupted. To look very tailored, the seams must be absolutely straight and smooth. Assemble as for previous pillows. □



ALTERNATE 8-H DRAFT



Stitched finishes in the Guatemalan tradition

by Cherri Pancake, Karen Searle & Sue Baizerman

The textiles studied by the authors and described in this article are part of the collection of Guatemalan Indian textiles at the Museo Ixchel in Guatemala City. The authors are currently collaborating on a book on Guatemalan stitchery and knotting techniques.

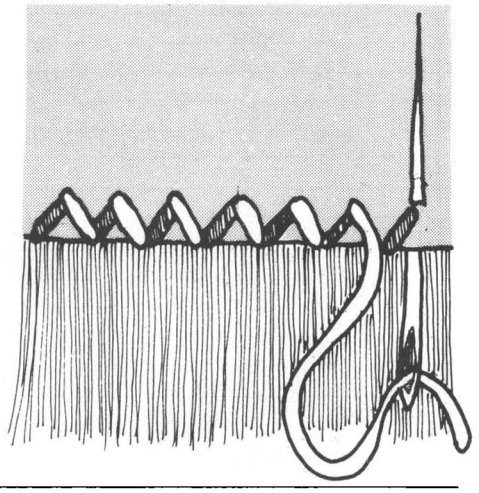
Guatemala's Indian textiles have fascinated and inspired American weavers for several decades. In this small Central American republic, descendants of the ancient Maya continue to create finely crafted garments for daily and ceremonial wear. Weavers from each village use techniques and materials traditional to their community to produce distinctive local costumes.

Most of the pattern and texture in Guatemalan clothing is achieved with brocading or supplementary weft techniques. Other less well known techniques such as stitchery, knotting and tie-dyeing traditions are equally ancient and intriguing. Each was developed in response to a particular set of needs, and each has evolved over the centuries into a separate class of decorative techniques.

Many of the stitched finishes found in today's textiles reflect specific aspects of the looms and weaving techniques used by Indian weavers. Because traditional garments are woven in narrow webs, two or more sections must be joined together to form most items of dress. Joins or "insertion" stitches (called *randas* in Guatemala), however decorative, are primarily intended to provide an effective and durable means of uniting fabric panels. Stitchery techniques are also practical for binding cut or fringed edges to protect them from ravelling. Five of the techniques presented here were developed in answer to these needs; the last two are used simply for their decorative effects.

OVERCAST EDGING

In the village of San Juan Atıtan, Huehuetenango, the two webs of the man's *tzute* (carrying cloth) are woven consecutively on a single warp on a backstrap loom. A section of warp is left unwoven to mark the division between the pieces. When the cloth is cut in half, the unwoven warp area becomes a short fringe. To keep it from ravelling, the weaver overcasts the web with loose stitches of a color (usually yellow, green or purple) which contrasts with the red of the cloth. She then superimposes a second row of stitches over the first, reversing the direction of the overcasting. This row is worked in a second contrasting color to heighten the decorative effect.



Make a straight stitch from the fell line into the second or third weft row. Continue in this fashion across the web. Reverse the direction of the stitching in the second row to produce a chevron effect. Fig. 1

FIGURE EIGHT JOIN

A stitch closely related to the overcast stitch is used to join the two panels of the man's *tzute* in San Juan Atitan. The sections are lined up side by side with no overlapping. The edges are overcast, but with every second stitch the thread passes across the division to penetrate the other web. The two sections are thus held together by the stitch-pairs, which form "figure 8's" in cross section.

SHAPED FIGURE EIGHT JOIN

The figure eight stitching technique is used in a slightly different way in Santo Domingo Xenacoj, Sacatepequez, on the *morga* (woman's skirt). In this case, the fabric is woven on floor looms in weaving centers. Each woman purchases set lengths of the narrow cloth and stitches the sections together to make her skirt. Once again, the panels are laid side by side with no overlap. However, the embroideress varies the length and color of her stitches to form a decorative pattern of filled x's and lozenges.

BUTTONHOLE STITCH JOIN

The buttonhole, or blanket stitch, is used to join the panels of the *morga* in the village of Olintepeque, Quetzaltenango. Here, too, the fabric is purchased by the wearer, who sews the sections together with an insertion stitch. The buttonhole stitch is worked alternately in one and then the other panel, resulting in a join with a distinctive braid-like ridge in the center.

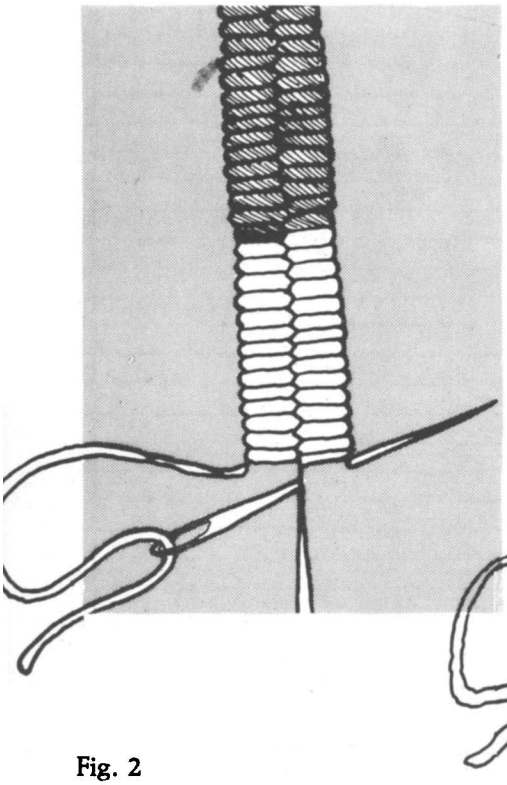


Fig. 2

Make a straight stitch into the fabric from the edge up into the right-side fabric, then from the edge into the left-side fabric. The stitches are put very close together.

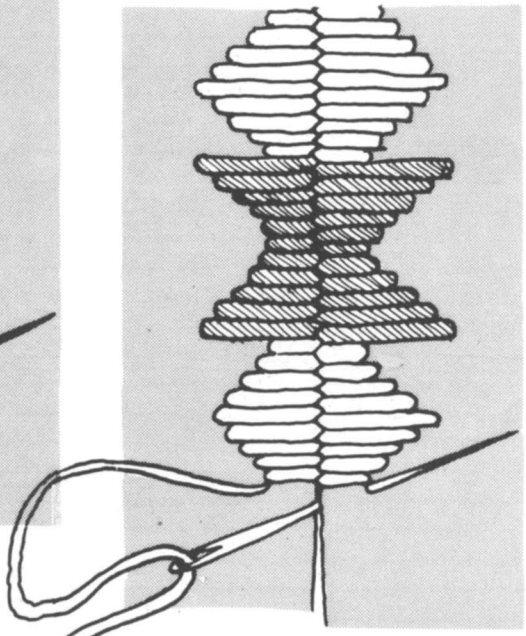


Fig. 3

Stitch as in Fig. 2, with the stitches very close together. Vary the length of the stitches in a regular pattern.

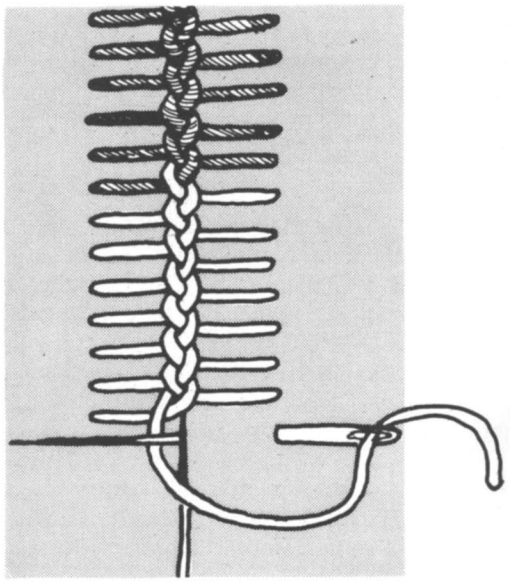


Fig. 4

The needle travels from right to left into the left-side fabric; then from left to right into the right-side fabric, passing under the thread loop with each stitch. The stitches are spaced apart at regular intervals.

SOLID BUTTONHOLE STITCH JOIN

The same insertion stitch is worked very closely in the *randas* used to join

the panels of *tzutes*, *morgas* and *huipiles* (woman's upper garment) in Chichicastenango, Quiche. Each backstrap weaver works the joins of her textiles and, in the case of the *tzutes*, an attempt is generally made to integrate the design and coloration of the stitchery with the brocaded patterning which decorates each panel.

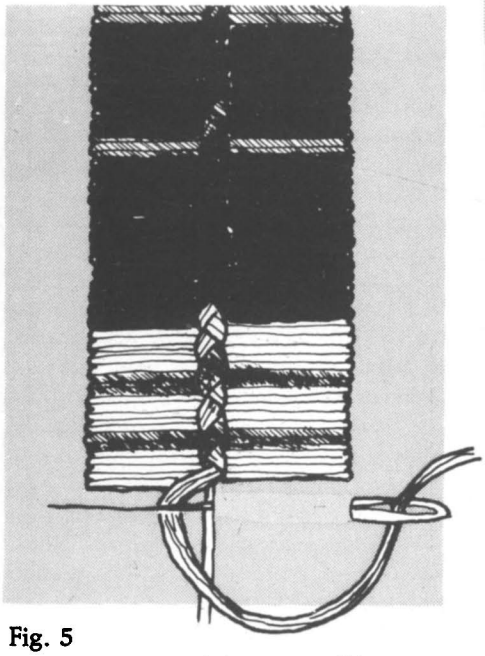


Fig. 5

The buttonhole stitch forms a small knot at the end of each stitch. When the stitches are worked very closely together from one fabric to the other, the knots form a raised ridge with a braid-like appearance. For a very thick join area, the two fabrics may be overlapped under the stitching.

BUTTON STITCH OPENWORK

An unusual application of buttonhole stitching is used to adorn the ends of some men's *bandas* (sashes) in Joyabaj, Quiche. The weaver leaves two or more sections of warp unwoven between subsequent areas of plain weave. She later divides the warp ends into groups and wraps each group with a series of buttonhole stitches. By reversing the stitching direction with each group worked, a zigzag effect is achieved. This decorative stitching may be used as the only design element in a sash, or it may be combined with other embroidery techniques.

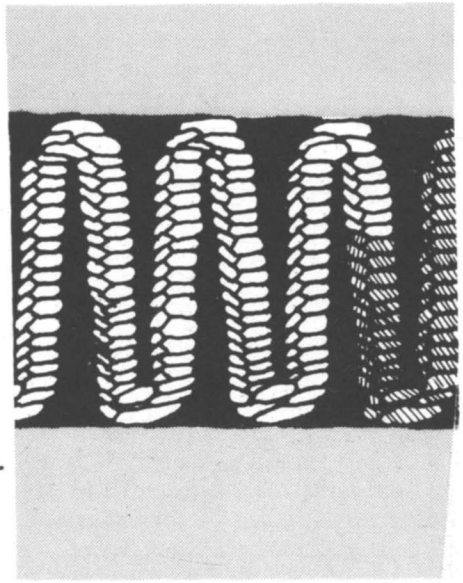


Fig. 6

Work the buttonhole stitch with the needle moving in the same direction on each group of warp ends. The stitching progresses from top to bottom on the first group of warp ends, and from bottom to top on the second group.

BUTTONHOLE STITCH TASSEL

Decorative tassels worked in buttonhole stitch are found hanging from the four corners of most men's *tzutes* made in Chichicastenango prior to 1960. The tassels are worked in silk or wool yarns, generally matching the colors used in the *randa* that joins the two webs. It is often the men who prepare the tassels and stitch them onto cloths woven by their wives.

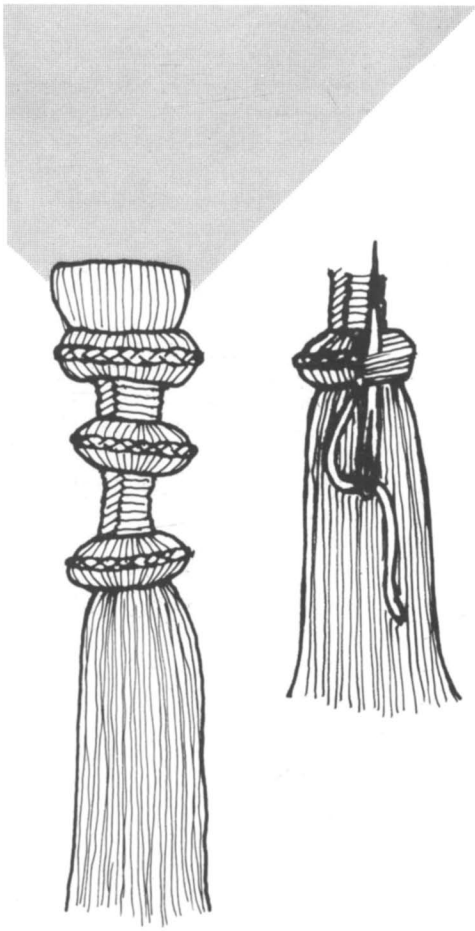


Fig. 7

Form a tassel with a bundle of threads and stitch with buttonhole stitch very tightly along the length of the area to be decorated (Fig. 7a). Where the ridges are desired, wrap the stitching yarn around the tassel core several times. Stitch over the ridge area with the buttonhole stitch in two directions: first, with the needle inserted downward into the core stitching, above the wrap; then with the needle inserted upward into the core stitching below the wrapping and into the ridge of the previous stitch (Fig. 7b).

RUG FINISHES

an overview

by Martha Stanley

STRUCTURALLY, THERE IS an intimate relationship between the fringes of a rug and the body of the rug itself. These warp threads which emerge as fringe at the ends form the skeleton of the rug internally. The rug could not exist without them. Their contribution to the structural integrity of the rug is vital. Consequently whatever solution is employed in finishing them should acknowledge this structural importance, though now in a visual way.

If a rug is simply cut off the loom and put on the floor it will begin to unweave. The weft has been packed in tightly, and with nothing to "fence" it in at either end of the warp, it will begin to work its way out, particularly if the warp is fairly smooth. So part of the finishing of any rug involves securing the final picks of weft. This may be accomplished by knotting, hemming or twining to enumerate but a few solutions.*

And now what about the loose warp ends themselves? We have chosen a yarn as suitable for warp because of its tensile strength, which is not necessarily synonymous with resistance to friction and wear. If the warp yarn is *tightly* spun and plied already (as is the case, for example, with the "belting" yarns manufactured in England by the Multiple Fabric Company and often called "super warp" in the U.S.) it will not need further protection and could be left to flow freely after the weft is secured. Most rug warp ends, if subjected to abrasion, particularly when accompanied by dampness as from wet shoes, begin to assume all the visual glories of a well-used mop. But if braided, knotted, wrapped, plaited, hemmed under, etc., they endure quite handsomely. Hence we must also protect the exposed warp ends.

When choosing and working a finish keep in mind two things: whatever you do must in and of itself be attractively and firmly executed, and it must relate positively to the body of the rug. Failure to meet these two criteria may mean your finish is somewhat less than successful.

Many rugs are visually strengthened by the presence of fringe flowing freely for a short distance from the dense weave. Sensitively chosen and executed finishes help to focus what the rug is about, by echoing or providing a counterpoint to some quality within it. The fringe might be considered the rug's shadow—hinting at its form, softening the line where the rug ends and the floor resumes once more, leading your eye gradually into the rug. Fringe can also help create a sense of movement in this textile whose role is to remain stationary on the floor. And conversely, it can help "keep on the floor" a rug whose design seems to want to wander away.

The following guidelines might be helpful in narrowing the choice of potential finishes as well as refining the techniques you wish to pursue:

- The scale of the fringe element (length, coarseness) should be compatible with the size of the rug.
- The thickness of any finish should not be appreciably greater than the thickness of the rug itself or it will be more vulnerable to wear.
- Whatever technique is used to protect the *weft* from unweaving *must* be worked fairly tightly. Different techniques require varying amounts of warp per inch to be successfully worked so that the width of the rug is not diminished or expanded. In warp-faced rugs you will have to experiment with how many warp strands need to be worked together as a unit so that the width of the rug is not distorted. In weft-faced weaves you may have to discard some techniques for a given rug because of a paucity of warp threads—too few, or not thick enough—to maintain the width of the weft-protecting finish. As an alternative you might add additional strands of "fake" warp to stabilize the problem.
- Some yarn fibers are much more resistant to holding a knot than others. Of particular orneriness are the animal hairs: goat, camel, etc.
- The more complicated or successful the design is in the rug, the simpler the finishing solution should probably be. And, yes, the converse might help to improve a fairly unresolved rug design.

The following strategy is suggested as a way of approaching the problem of finishing a rug. Let us say that you have chosen to finish the warp ends with two-ply fringes. Use the warp threads at one end of the rug to sample all the variations which occur to you. Try several repeats of each idea for a span of 2" to 3" across the rug so that there is enough of each sample to compare with the rug and with each other. Yes, you will have to

*Peter Collingwood's *The Techniques of Rug Weaving* has a particularly succinct chapter on rug finishes, pp. 481-513.

Simple two-harness rugs of Berber wool take on a variety of looks with different finishing treatments. From the top: cardwoven warp/weft protector; Damascus edge; and two-ply twisted warp fringe.

rip them out after you have decided which one to use, but you will never be able to compare the samples as well with the rug as when they emanate from it.

Experiment to see how the fringe will look with two adjacent warp threads plied around each other. You may find that the effect is more striking by taking two neighboring strands together and plying them with the next two warp threads. The fringe of two threads will be more delicate, giving you thinner units and twice as many of them; the greater bulk of the latter might be more suitable on a larger or thicker rug or where there are more warp ends per inch. Now try a 2" to 3" sample of each of these. Step back and see which is more pleasing, which more suitable to the appearance of the rug. If the bulkier seems better looking, try a sample of three or four single warp strands working as a unit, to be plied with a similar-sized unit. Try a sample with one of the plies having more strands in it than the other ply.

While you are trying out these ideas, execute one or two fringes with the twist and ply worked in the reverse directions. You may find that you prefer the look of the S-plied fringe to the Z-plied one. You may like the surprise of an occasional fringe plied in the opposite direction to its neighbors, as counterpoint; or an inch of S-plied followed by an inch of Z-plied fringes across the rug.

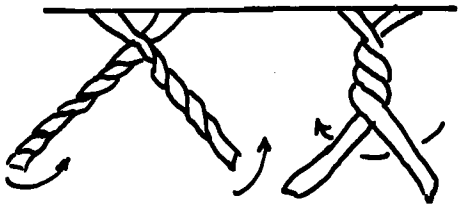
These are but a few of the possibilities you could explore for just one finish. In the course of this playing you are pushing the alternatives open to you a little bit further and refining your skills as a finisher at the same time. Each of the other finishing techniques you will find in print need to be played with in similar fashion to refine their appearance, with the promise of new ideas and discoveries inherent in your play. □

A Sampling of Rug Finishes

There's no better way to become familiar with rug finishes than to try them out. We threaded up a simple 2-harness plain weave warp of hard-twist white wool (640 yd/lb or 1286m/kg) at 4 e.p.i. and wove off several samples using simple weft stripe and pick-and-pick vertical stripe combinations. Our weft was Wilde 3-ply Berber rug yarn (576 yd/lb or 1157m/kg) in light and medium natural shades. Our three finishing treatments are among the many clearly delineated in Peter Collingwood's *The Techniques of Rug Weaving* (Watson-Guptill).

TWISTED WARPS

If your rug is rather plain, this twisted fringe adds a little busyness, and gives weight to a thin warp. There are several ways to achieve this fringe—here's how we went about it:



Hold the left thread(s) which will form one ply in the left hand about 1" from the end of the rug, and the thread(s) which will form the other ply in the right hand.

To make a Z-plied fringe: 1) twist the left hand's threads clockwise by rolling them between thumb and forefinger once or twice. Simultaneously do the same twisting in the right hand in the *same* direction.

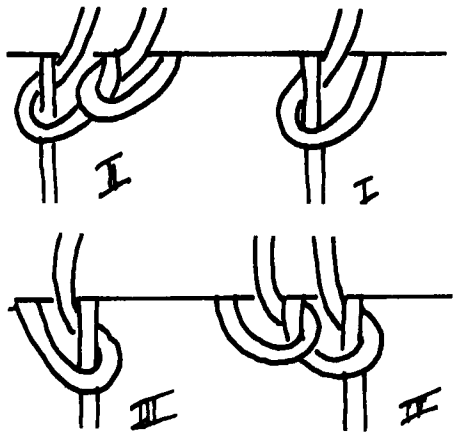
2) Now rotate the plies 180° counterclockwise in the *opposite* direction to #1 by taking the right-hand ply between the third and fourth fingers of the left hand and passing the left-hand ply *over* it to the right thumb and forefinger. With the left thumb and forefinger retrieve the ply from its third and fourth fingers.

Repeat these two steps, continuing to hold each ply about 1" from where it separates from the other.

To make an S-plied fringe reverse the direction of twist in both steps 1 and 2.

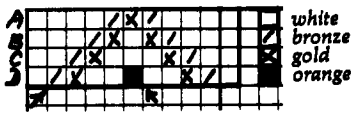
DAMASCUS EDGE

A quick, easy and handsome weft-protector. Our warp is a little skimpy as fringe with this treatment, though. Warp ends could be darned up into the back of the rug, leaving a narrow braid effect on the edge. Or you can repeat the steps for a wider braid.

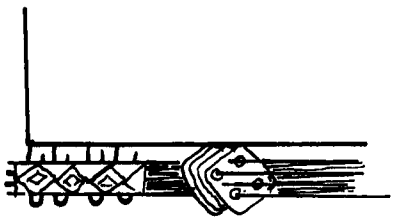


CARDWOVEN EDGE

A challenging but authoritative edge involves using free warp ends as weft in a cardwoven band which pulls up tight against the fell of the rug. We used tapestry yarns in a variety of vegetable-dyed shades of gold, bronze, orange and ecru. Because card weaving yields an essentially 4-ply fabric, it's important to choose thread that's finer than your rug weft; otherwise the edge band will be considerably thicker than the body of the rug. Our draft:



Ends were measured about twice as long as the width of the rug to allow takeup and working room. The card weaving warps were held taut between two clamps on a table edge. The turning sequence was 4 forward, 4 back; each rug warp end passed through the band as weft twice, ending up on the back of the rug:



Loosen the tension on the cardwoven band frequently to make sure it isn't causing the rug to pucker or buckle. You can make adjustments in its tension by skipping rug warps, or by packing the filling more firmly.

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Karellian Red Pick

The elaborate border on Miranda Howard's dress employs a deceptively simple pickup technique. Complete instructions for dress and belt are on p. 90.

by Miranda Howard

Perhaps you have heard of a technique called by this name . . . you are wondering who are Karellians and what is Red Pick. You may have seen Karellian spelled as many as three different ways or heard of a technique simply called Red Picking.

Karellia is a fertile, agricultural region in Eastern Europe. It was part of Finland prior to the second World War; it is presently dominated by Russia. People of this region are known for their creativity and high quality of craftsmanship. The founder of Marimekko Textiles was Karellian. The Red Pick comes in because Karellians love the color red—they are known to be fond of bright, cheerful colors—that was derived from cochineal brought to them by European merchants.

The technique resembles embroidery worked onto a plain weave cloth. In reality it is a pickup technique that is woven selvedge to selvedge. Patterns are not limited to the color red, nor is the technique seen only in Karellia. It is seen in a few other regions of Eastern Europe, but most prevalent in Karellia.

Traditionally the technique is used to embellish household items; towels and aprons are favorites. Dresses and blouses are also enhanced with this work. Linen is the most commonly used fiber for both warp and weft, although cotton has also been used.

There are three threadings for Red Pick, but the straight draw is the most frequently used. Tabby is the basic weave, but there is a pattern treadling. This treadling is used only when executing the pickup to create the pattern.

The pattern treadle, like all other pattern treadlings, has a specific use. If using the jack treadling, every fourth warp is raised. The counterbalance and countermarche treadlings have two threads up, alternated with two threads down. The weaver's natural reaction is to go through this shed that is made with the pattern weft; however, the shed is not used in this way. The treadling marks off units of four threads. Your pattern draft will be graphed so that one square on graph paper equals four warps and three pattern wefts. This unit of four threads made by your pattern shed corresponds with one square of the graphed design.

Karellian Red Pick is woven with the right side facing the weaver. To pick up the design, the weaver will use a pickup stick at least 2" longer than the width of the warp to pick up the units of four threads (both up and down) that make up the background or the blank squares on the graph, suppressing the units that make up the positive image of the design or filled in squares. After picking up the background threads, put the stick on its side and insert the pattern weft in this shed. Since each pattern shed must be repeated three times, there is a lot of picking up of threads to be done. If you are using a counterbalance or countermarche loom the patterns can be saved by inserting a lease stick in the picked up shed behind the harnesses, then pushed toward the back beam. When this shed is to be used again, the weaver can bring the lease stick forward toward the back of the harnesses and turn it on its side. This enables the pattern to be picked up easily in front of the beater.

This lease stick technique is used when weaving a pattern forming a mirrored image, traditional in Karellian Red Pick patterns. Using the sticks behind the harnesses does require that the weaver get up from the loom bench and go behind the harnesses to turn the stick. The weaver has to decide whether using the lease sticks or picking up each pattern shot is more time saving. In between each pattern shot there must be a tabby to hold the pattern and make a firm web, as in overshot weaves. Be sure that each pattern thread goes out to and around the selvedge threads.

Warp sett is important in Red Pick as in all other weaving techniques. The warp sett should not be any wider than 12 e.p.i. but can be as close as the weaver desires and the chosen warp thread dictates. The background of the fabric will be a 50/50 weave. The weaver should keep this in mind when planning a project. The warp sett also will make a difference in how the weaver plans and graphs a pattern. The pattern wefts will form weft floats, again as in overshot. When graphing a pattern, make sure that there are no background or pattern areas longer than 1". For example: if using 5/2 pearl cotton at 12 e.p.i., there should be no areas wider than three squares of graph paper. Keeping in mind that one square equals four warps, three colored-in areas or blank squares in a row will weave up to 1" in width. Closer warp setts allow for more detailed patterns. The thread for weaving the pattern areas should be two to three times thicker than the thread chosen for the warp and tabby weft.

A weaver can begin experimenting with Karellian Red Pick by making a set of placemats or a table runner with Red Pick bands. Hand towels with Red Pick borders are always welcome gifts. Later one can branch out into borders on aprons, dresses or blouses. Charted knitting and counted cross stitch designs are often excellent sources of Red Pick patterns. Start out with those that are highly geometric and gradually work into more detailed designs (see figures). Picking up the first pattern row is always the hardest; after that the following rows will go faster, as a reference point has already been established. □

Directions for Karellian Red Pick Dress and Inkle Belt appear on p. 90.

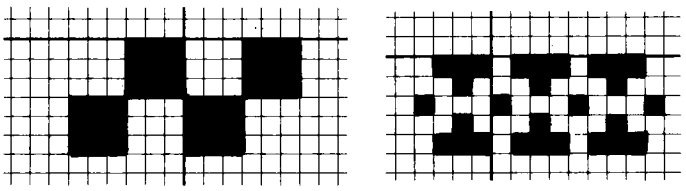


Fig. 1 and 2: *Borders for first Karellian Red Pick projects.*

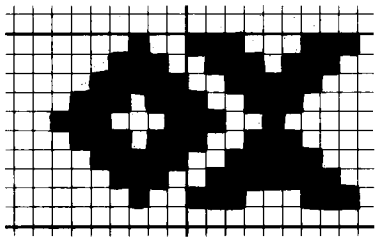


Fig. 3: *Design for a second Red Pick project.*

FANCY COVERLET FRINGES

by Gay McGeary

The fringe along with the border serves as a decorative frame for the main pattern in a handwoven coverlet. To frame their coverlets, the early weavers used three fancy fringe techniques which I have documented and woven for my own handwoven coverlets.

The first fancy fringe I will discuss here was on a coverlet which was purchased for me at an auction in Delaware by Peggy Flowers of Evergreen, Colorado (photo A). When Peggy brought me the coverlet, she thought I might not want it because it was worn and very dirty. I was delighted with it, though, because of its unique fringe which had been woven separately and then sewn onto the coverlet.

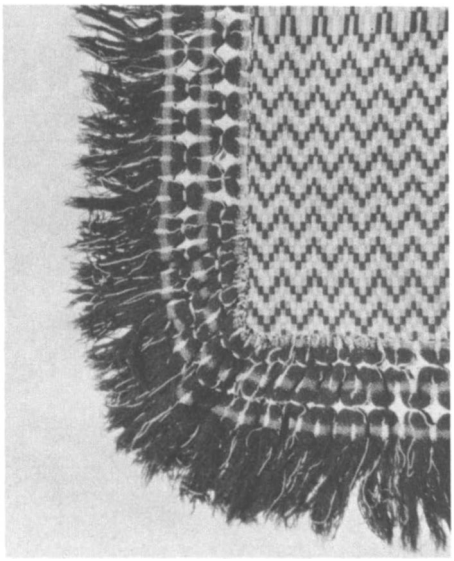


Photo A. *Diagonally-tied fringe on an early overshot coverlet purchased at auction by Peggy Flowers.*

Shortly after I received the coverlet, I sat down with paper and pencil to sketch how the cotton weft had been used to tie the colored wool weft into diagonal bundles. The path of the cotton weft which ties the weft and binds the bands of warp is seen in Fig. 1.

I was intrigued with this handsome fringe and decided to use it for my next coverlet weaving project. I experimented by weaving several samples of the fringe so that I might obtain the right proportion of the yarn, size of warp bands and size of spaces between bands, etc., before I wove fringe of sufficient length for my coverlet. Here's the process I used:

Forty-eight ends of 5/2 cotton set at 24 e.p.i. are used for the warp. In the reed the warp is sleyed in six groups of eight threads of cotton with varying spaces between each band. The warp is sleyed in the following manner: 8 ends sleyed, 1-5/8" space, 8 ends sleyed, 1-5/8" space, 8 ends sleyed, 12" space, 8 ends sleyed, 1-5/8" space, 8 ends sleyed, 1-5/8" space, 8 ends sleyed. This results in a reed width of 21". The threading for each eight-end band is straight draw: 1, 2, 3, 4, 1, 2, 3, 4 (see Fig. 2).

Double strands of 12/3's wool wound on one shuttle are used for the weft. Single strands of 5/2 cotton are wound into finger hanks or butterflies to be woven as the weft which ties the weft stripes and binds the cotton warp bands.

Two lengths of the fringe are being woven at the same. The right three warp bands are woven to form one half of the fringe and are sewn to the edge of one half of the coverlet. The left three bands are woven to form the other half of the fringe which is sewn to the other half of the coverlet. After the fringe is woven, it is cut down the middle of the center 12" space.

The groups of cotton warp are woven with the wool and cotton weft to form bands of plain or tabby weave. It is important to remember that each weft shot must maintain the tabby weave. Two consecutive shots of weft are never in the same shed.

To weave the fringe, two treadles are used, designated as A and B. Harnesses 1 and 3 are tied to A. Harnesses 2 and 4 are tied to B on a jack-type loom.

Starting at the right of the warp 12 shots of wool weft are thrown treadling A then B alternately six times to weave tabby. The wool weft starts at the right and ends at the right to weave the wool stripes as indicated by the two black dots on diagram 1.

Treadle A is pushed down and the cotton butterfly is started at the left. The cotton weft goes through the shed of warp band 1, space 1 and band 2. At space 2 the cotton is wound around the previous 12 wool weft shots by doing two buttonhole or blanket stitches and then pulling on the cotton to tighten the tie. (Normally the blanket stitches would go around 12 wool wefts, two cotton wefts, 12 more wool wefts and one cotton weft or all the wefts not previously tied in that space. But the first time it only includes the 12 wool wefts since that is all that have been entered.)

Next the cotton goes through the shed of warp band 3, the 12" center space and warp band 4. In space 3, 12 shots of wool weft are tied with two blanket stitches as before. The cotton

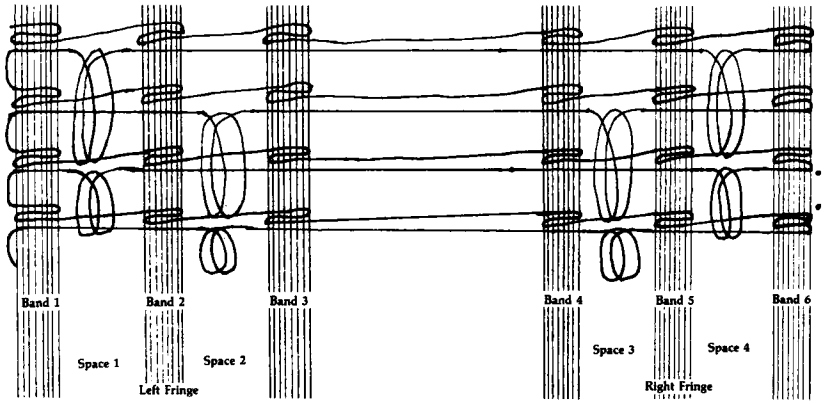


Figure 1. Diagram of the pathway of the cotton weft which binds the warp bands and diagonally ties the weft bundles.

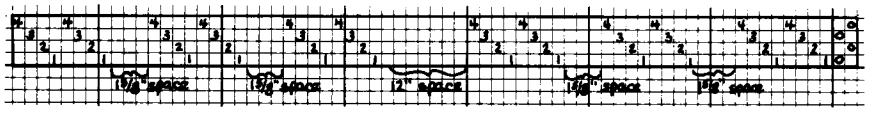


Figure 2. Threading draft and tie-up for the warp of the diagonally tied fringe.

is pulled taut and continues until it reaches the extreme right of the warp. This shot of cotton weft has tied the wool stripes.

As the cotton weft works its way back to the left it will serve to bind the cotton warp bands so that the edge threads of each band do not become loose. This is done by pressing treadle B and passing the cotton weft through warp band 6. Next treadle A is pushed and the cotton passes back to the right through warp band 6. Treadle B is pressed and the cotton passes left through warp band 6, space 4 and warp band 5.

Treadle A is pushed and the cotton is thrown back over to the right through warp band 5. Treadle B is pushed and the cotton is thrown to the left through band 5, space 3 and warp band 4.

The cotton continues going back and forth through the bands of cotton warp and spaces in the above manner until the cotton is at the left. Then treadle A is pushed and the cotton is thrown right. Treadle B is pressed and the cotton is thrown left which ends that row of weaving.

Now the wool weft is picked up at the right. Twelve shots of wool weft are thrown treadling A and B alternately. The cotton weft is carried along the left selvage as the wool is woven.

Again the cotton butterfly is picked up at the left and treadle A is pushed. This time the cotton is carried only through band 1. In space 1 two blanket stitches are done with the cotton weft around the first 12 shots of wool, the previous two shots of cotton and the last 12 shots of wool. The cotton weft is pulled to tighten the blanket stitches. The cotton weft is thrown across to space 4. Two more blanket stitches are done around the existing weft threads in that space. That row is finished when the cotton is thrown all the way to the right past band 6.

Treadle B and A are alternately pushed and the cotton weft is brought back to the left in the same zig-zag fashion as was done when the cotton weft went to the left before.

Thus there are six basic steps in weaving the fringe:

1. Twelve shots of wool are woven by starting at the right and ending at the right. Tabby is being woven by pressing treadles A and B six times.

2. Treadle A is pressed and the cotton weft travels to the right and ties the weft at space 2 and at space 3 with two blanket stitches which are pulled taut. In each tie with the blanket stitches, the cotton should encircle the 12 previous wool shots, two cotton weft shots, the next 12 wool weft shots and one cotton binding shot. (This should include all the wefts in that space which have not been previously tied.)

3. The cotton weft is woven back and forth to the left through each band to bind the edge threads of the band.

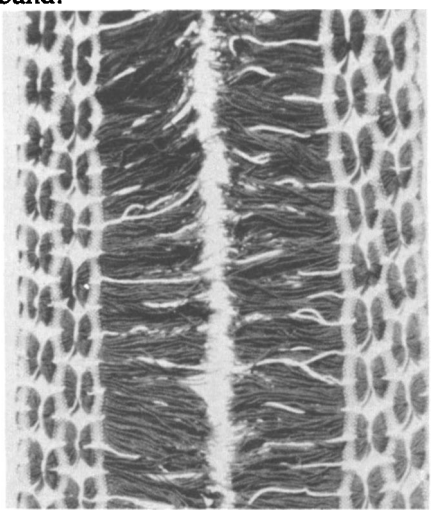


Photo B. *Woven strips of diagonally-tied fringe after it has been cut down the center.*

4. Twelve more shots of wool are woven as in step 1.

5. Treadle A is pressed and the weft shots of space 1 and space 4 are tied with two tightened blanket stitches.

6. The cotton is woven in the same zig-zag fashion as in step 3.

These six steps are repeated until the desired length of the fringe is woven.

After the fringe is woven, it is removed from the loom, soaked in water and laid flat to dry and shrink. Then the fringe is cut down the center of the 12" space to form two lengths of fringe (see photo B).

Next the fringe is sewn to the coverlet. This is started by placing and joining the ends of the two halves of the fringe at the center seam at the foot of the coverlet. One half of the fringe is sewn with small overcasting stitches starting at the center seam at the foot and going along the right bottom edge and up the right side of the coverlet. The other half of the fringe is sewn starting at the center seam at the foot and going along the left bottom edge and left side of the coverlet. The fringe is gathered slightly around each lower corner. The top of the coverlet receives no fringe.

This same technique could easily be used with different weights and types of yarn by varying the number of ends in each band, by varying the size of the spaces between the warp bands and by varying the number of shots in the weft, etc.

The second fancy fringe I documented is similar to the first in appearance except with this fringe the tied bundles of weft are not diagonal but run horizontal when weaving them on the loom.

I learned about the second fringe when Barbara Dinsmore brought me an early overshot coverlet (see photo C) from her husband's family to examine at the workshop I gave on early coverlets at the Pittsburgh Weaver's Guild. Barbara allowed me to borrow the coverlet so that I could make a diagram of the fringe technique and study how it was done.

The fringe for the Dinsmore coverlet was woven in one long section. Figure 3 shows how the fringe appeared on the loom. Each warp band contained 20 warp threads of three-ply cotton set at 24 e.p.i. These bands were threaded and woven in plain weave. The two spaces between the warp bands measure 1". There would have been a guide warp thread 3½" to the right of band 3.

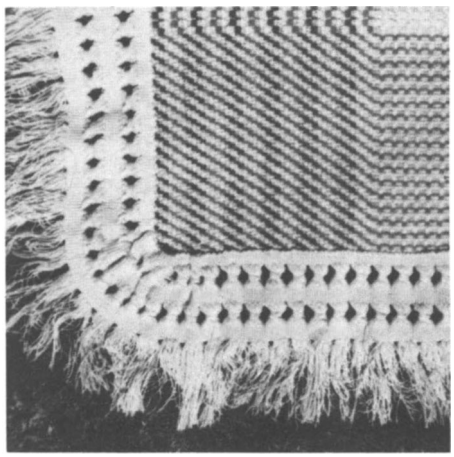


Photo C. *An early overshot coverlet with horizontally-tied fringe owned by Barbara Dinsmore.*

The weft consists of seven strands of the same weight three-ply cotton in the warp. The weaving starts at the black dot on the drawing in Fig. 3. Alternate tabby treadles are used for each weft shot. The weft travels back and forth through the warp bands as described in Fig. 3. The weft shots

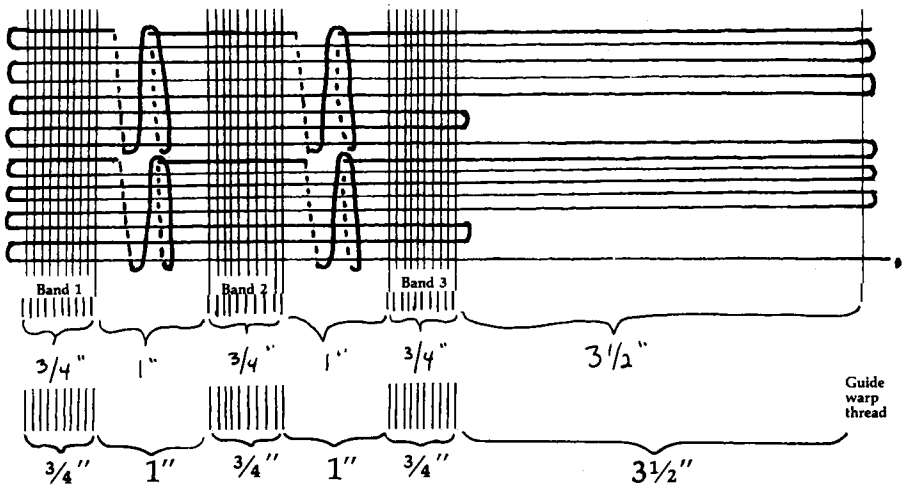


Figure 3. Diagram of the horizontally tied fancy fringe as it would appear on the loom for the early overshot coverlet owned by Barbara Dinsmore.

which do not loop around the guide warp thread but are pulled in next to warp band 3 on the right serve to bind the edge of the woven area of the fringe.

The weft bundles are tied in a different fashion in the Dinsmore coverlet than was done in the first fancy fringe. For this tying method the weft travels through the tabby shed of band 1. In space 1, the weft:

1) goes under the seven previous weft shots,
2) loops over the same weft stripe,
3) goes back under the weft stripe,
4) goes through the end of the loop, and
5) is pulled tight to form the tie.

After the weft travels through the same tabby shed for band 2, the weft ties the previous weft stripe in space 2 the same way it did in space 1.

Once I had woven the desired length of fringe, I washed and dried it then cut the loops. The fringe was sewn to the three sides of the coverlet with cotton in small overcast stitches.

The last of the fancy fringes is the leno lace fringe used on early overshot and summer & winter coverlets. This fringe technique is described briefly by Mary Meigs Atwater on page 330 in *The Shuttle Craft Book on American Handweaving* and by Harold and Dorothy Burnham on page 269 in *Keep Me Warm One Night.*

This fringe (see Photo D) proceeds as follows: after the main part of the coverlet is woven, several weft shots of cotton are woven in plain weave. Then ¾" of the cotton warp is left unwoven. Again, several weft shots of cotton tabby are done followed by a narrow stripe of pattern weaving and ending with several tabby shots. The unwoven warp stripe and the pattern stripe are repeated two more times. Then 3" of cotton warp is left unwoven for the fringe.

After the three unwoven stripes and pattern stripes are done, a large tapestry needle is used with a long thread of 10/2 cotton to do the leno twisting by hand. First the end of the thread is woven into the tabby of the previous woven stripe at the right edge with the needle. Now the leno twisting begins by taking the needle and thread

1) under six warp threads in the unwoven stripe traveling to the left,
2) then back to the right over three warp threads and under three warp threads (see Fig. 4), and
3) finally pulling the thread taut and to the left to twist the warp threads (see Fig. 5).

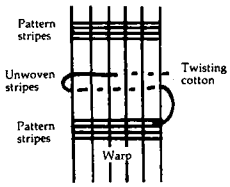


Figure 4. Diagram of step 1 and step 2 of the cotton twisting thread on the six warp threads in the unwoven space.

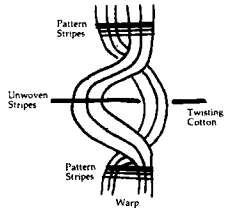


Figure 5. Diagran of how the six warp threads appeared after they have been twisted by pulling the cotton thread taut in step three.

Continue these three steps with each group of six threads until the unwoven stripe has all been twisted. Finish each twisting row by weaving the end of the twisting thread into the left edge of the weaving. Do the same for each unwoven stripe.

Photo D shows a Beiderwand coverlet which I wove using the leno lace fringe. The fringe at the bottom of the coverlet was woven in the same was as described for the hanging. The leno lace fringe on the side of the coverlet was woven on the warp of the coverlet. A section is woven with a stripe of plain weave followed by three alternate stripes of unwoven warp and stripes of pattern as done in the hanging. Several inches of warp were left for the fringe with hemstitching done at the edge of the last stripe of pattern. Two or three of these same sections of stripes of unwoven warp and pattern with fringe were woven and then sewn together to make one long piece to be sewn to the right edge of the coverlet. Then two or three more sections were done for the left edge of the coverlet. The leno twisting was done after the three sections are sewn together so that the twisting thread will continue through the whole unwoven stripe and make the three sections appear as one.

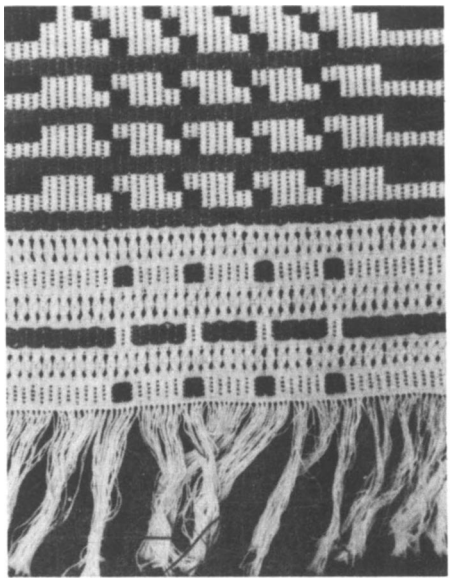
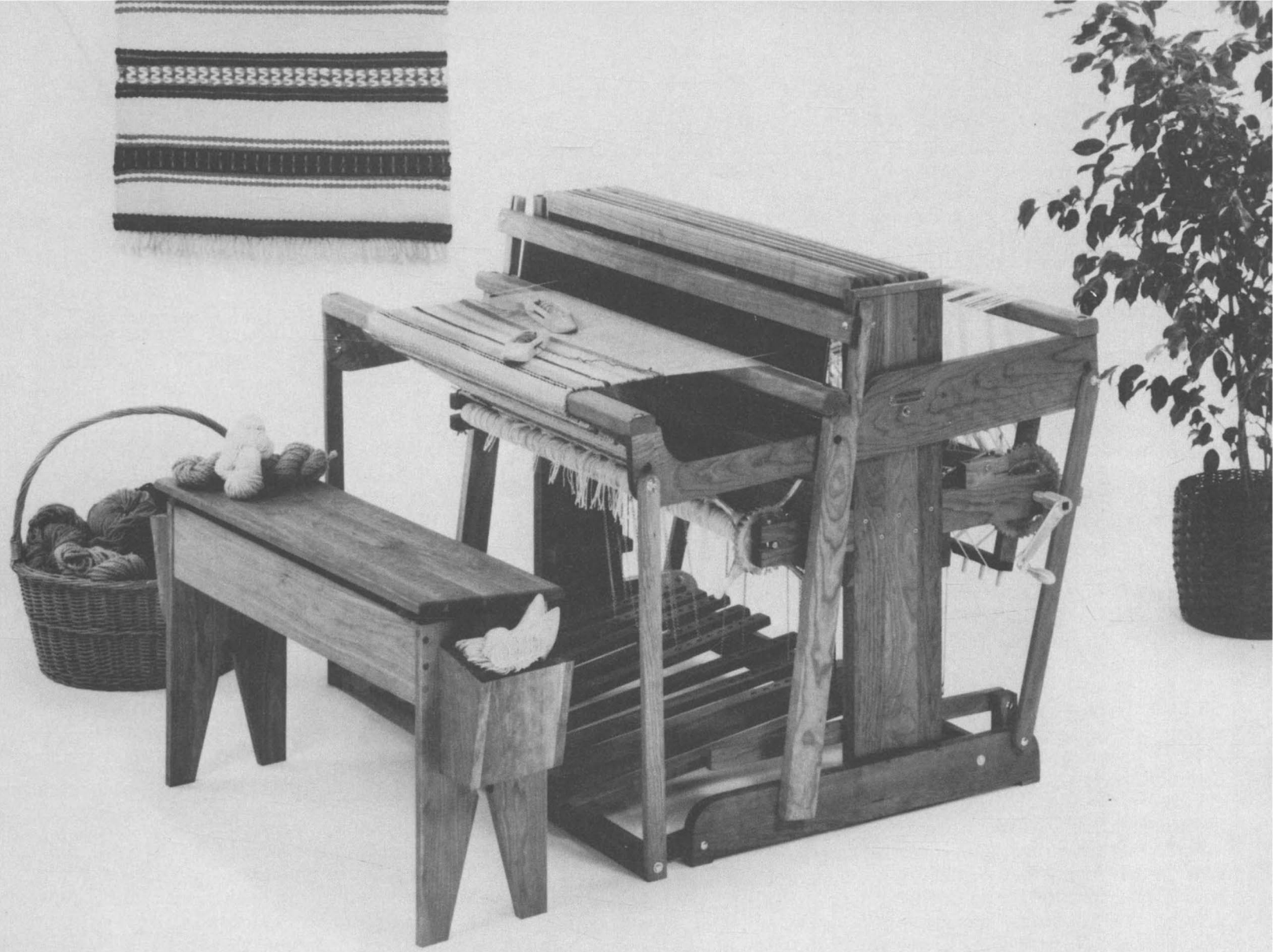


Photo D. *Biederwand "Star with Pinetree Border" coverlet woven by the author with leno lace fringe.*

These three fringes are among the many techniques and ideas that can derive from studying antique textiles. Antique shops and museum textile collections offer rich fields for exploration. □



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Edges, joinings, trims, embellishments,

PRESENTING WORKSHOPS AND slide lectures, jurying textile exhibits, comments on my books and questions asked, all have made me aware of the need and desire among weavers for more finishing skills such as joining methods, edges and end treatments, and suitable closures. Weavers are learning and using these added skills, and it is exciting to see more published and exhibited weavings that show fine finishes and imaginative uses of old techniques. Fewer 'loving hands at home' garments appear in style shows. Weavers are stepping into high fashion with smartly designed and woven garments. Dyepots everywhere yield thrilling colors; handspinners produce just the right yarn for a specific project.

Finishing techniques apply to all weaving—decorative, household and clothing. They are of use to seamstresses and embroiderers working on already-woven cloth. I included some methods and ideas in my book, *Weaving is Creative*, but there is much more to be learned.

Following are excerpts and some brief ideas from my forthcoming book on this infinite subject of edges, joinings, stitches, trims, seams, hems, fringes, tassels, embellishments and closures. Some of the examples here were crowded out of the book!

THINKING TOTAL DESIGN

Where, *what* and *how* are key words when you plan your weaving.

- Where and how will it be used?
- How will it be woven and finished?
- What special preparations must be made for further finishing?

All of these factors determine the selection of warp, weft, sett, size and color of yarn—and sometimes the choice of loom.

Weavers have the beforehand option of choosing the loom, yarns, colors and weaving method. Stitchers begin with carefully selected textiles. The solutions for both are about the same. Think through to the finished piece, and the way it will be used. Worn and washed, or hung passively on a wall? A rug might be under furniture, or receiving lots of traffic. The proposed method of seaming is determined by the proposed use of the textile. Consider its weight, weave and type. For example, a butted seam is most satisfactory to eliminate bulk, and can be joined quietly or flamboyantly.

PHOTO BY RON WILSON

Back view of a doubleweave tunic by Judy Thomas. Shaped on the loom, side seams lap to the back and are sewn part way down. Tiny red applied motifs are crocheted granny squares in fine thread. (*from* Weave With Style).

EDGES, ENDS AND HEMS

Edges are selvedges or cut edges. Ends are warp ends which may be hemmed, fringed or otherwise manipulated. Beyond these simplistic definitions is an almost unlimited scope of techniques and variations. A selvedge can be much more than a strong, evenly woven right and left edge. A cut edge can be more than plain hemmed. A warp end can be more than plain fringe or a turned up hem. An edge is one-half of a join. A join is plain or fancy. A fancy join is a trim. A trim with tassels and fringes and stitches and beads is an embellishment.

SELVEDGES

Selvedges are a basic part of the weaving. Think of them as more than just the margins. Add strength with extra selvedge warps. Add to the richness and design by making the selvedges important with color, woven patterns, warp stripes to guide joining stitches and enrichment with more stitches. An even selvedge is a mark of good weaving and pride of craftsmanship. It shows that the weaver learned and practiced the ways to achieve this. An uneven selvedge can be cut off, or camouflaged with embroidery stitches or an applied woven band.

Accents at the selvedge can be both practical and aesthetic. Weft ends have many possibilities—woven out from the selvedge for fringe, part of a tied joining or woven for tabs. Over-the-edge needle stitches will strengthen and enhance selvedges where appropriate. Embroider along the selvedge as you weave, as a part of a future decorative join.

Weave a patterned border, such as the Peruvian undulating edge, along the selvedge of a jacket—instant trim, all finished on the loom.

WARP ENDS ON AND OFF THE LOOM

Warp ends at top and bottom of a weaving require some kind of treatment so the body of the weaving does not ravel. The finish of the ends should be well thought out before warping the loom is begun, so ample length will be provided, and the proper yarn will be selected. Consider: if the warp ends will be left exposed in a fringe; knotted or braided; long or short; grouped for fringe; tasseled or straight; no fringe with ends darned in, or hemmed; and which of the several warp manipulations will be best to secure the weft, such as the Philippine edge or a similar one. There is a warp end finish for just about any need. Cut ends can be darned in for a smooth edge. A braided look results from the Czech, Indian and other warp end finishes. Fringes, tabs or a few inches woven in matching finer yarn to be turned back and sewn for a hem are other choices.

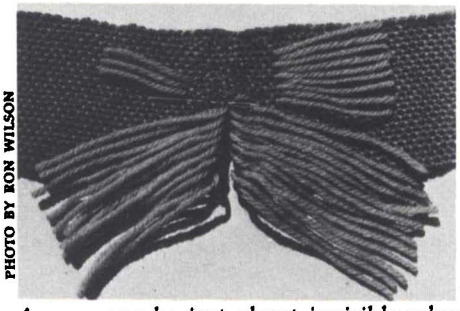

PHOTO BY RON WILSON

A seam can be just about invisible when the weft ends are needle-woven into opposite sides.

HEMS

Hemming methods accommodate the fabric and use. There are numerous choices. Sometimes an unorthodox solution is right, and a hem on a handwoven textile may not be a

closures . . . and more!

by Jean Wilson

truly proper tailoring procedure. For example, hemming a heavy handwoven wool with a turn-in will result in an awkward ridge and a too-thick hem. Instead, try sewing with a covering hand stitch on the cut edge, for a flat edge. Cut edges and warp ends, especially on a loose weave that easily ravels, should be machine-stitched first with matching thread for protection, then covered with hand-stitching or seam binding.

There are often some surprises even when the most carefully planned weaving is ready to finish. The fabric may be more elastic, a bit heavier, or too crisp to flatten in a hem—so be prepared with some remedies. There is usually some way to overcome the problem, and often the solution is better than the planned method. The worn old cliche "necessity is the mother of invention" is very nearly dogma in the world of weaving.

A finer, thinner inch or more of a matching color is often woven at the hem of coarse linen or heavy wool. The hem will be flat and neat. The herringbone stitch proves useful in so many ways that every weaver should master it. It adapts to wide, fine-thread loose stitches such as tailors and dressmakers use, through close stitches for decorative applications. Avoid a lumpy hem in thick wool or linen by hand stitching a closed herringbone stitch. In matching yarn it will be subtle, or in a contrasting yarn an effective trim. Variations of ways to use this versatile stitch can be worked on the top or reverse side. It is also a fine joining stitch.

JOINS AND SEAMS

Any two pieces of cloth fastened together are joined. The join is usually called a seam. The words 'joining' or 'join' as used here usually mean a decorative or noticeable stitch, woven-in ties, loops or slits—an obvious seaming that is an important part of the planned design. The word 'seam' is mostly reserved for the more conventional methods of machine stitching or hand-sewing, usually less conspicuous.

The need for joinings, as all weavers know, evolved in primitive cultures because their narrow looms produced cloth too narrow to wear, use for coverings or windscreens. Joining two or more sections of cloth to create a larger unit is an old device to utilize products of a narrow loom.

The basic techniques for seams are hand needlework, machine stitching, or both: machine stitching for strength, handwork for a truly handcrafted result. Hand-sewn seams were satisfactory before the sewing machine was invented, and appear in garments and other textiles from early cultures. We can profit by observing how much more beautiful an object or garment can be with good craftsmanship in every detail.

Proportion: Think about the width of a decorative seam in proportion to the rest of the piece, especially in clothing. A wide, heavy needle stitch on a lightweight garment may sag, and not be as harmonious as a narrow, fine seam or hem. The proportion of seam to weaving is a consideration with products other than clothing. On joined rug units, sections of drapery or bedspreads, a band of joining stitches could be planned as a major emphasis and large scale with good effect.

My own preference and practice is to seam by hand. I like the control possible, especially on a loose or heavy weave. When I was custom weaving yards and yards of drapery fabric, I always hand-seamed and hemmed them, using the same yarns as those in the weaving. Usually I used a moderately decorative stitch, often worked on both sides of the seam so the join was attractive when seen from the 'wrong' side. It was worth the effort to follow through with that extra touch for a total design.

Handpicked seams are a hallmark of fine tailoring. On handwoven material, especially a heavy wool or crisp linen, it serves to flatten the seam or hem, adding a special hand-stitched look. Topstitched seams by machine accomplish about the same

PHOTO BY JOE COCA

A wealth of stitchery embellishes Anita Mayer's black cotton loom-shaped jacket. Threaded straight twill and woven tabby, the pattern area has woven-in stitching guides that result from raising only one harness. Note seam finishing, too—a decorative braid ending in free-hanging tiny brass bells.

thing, but 'by hand' has more distinction for a handwoven garment. It's often difficult to get a smooth line with machine topstitching on heavier fabrics.

Weavers are becoming more aware of the importance of adding some knowledge of embroidery stitches to

Anita Mayer's logwood-dyed dress is woven in narrow strips. Seams are covered with embroidery, and skirt is shaped with crocheted gussets.

their weaving skills. I was fortunate in having a mother skilled in needlework, so it has always been a natural part of my life and an extension of my weaving. It is always exciting to discover a new stitch, or find new uses for the old familiar ones.

Really look at stitches and diagrams of stitches to see if they can join. Try them out, adapt and vary them. I've found about a dozen surface stitches that have proved to be good joiners. The Roumanian stitch, for example, is such a satisfactory one. It is easy to do and very effective as a wide or narrow, loose or tight, spaced apart or solid joining stitch. It works well on a light or a heavy weave, and in matching pearl cotton or wool it almost disappears.

'Invisible' joins are important, too. You may not always want a showy one. Leave every other weft end extending out at the selvedge, then weave into the opposite edge an inch or so, matching the rows of weft. The fringe can be left on the top side as a trim, or cut short or close on the inside.

Crocheted joins are suitable for handwovens, and provide a variety of tight or flexible joinings. Crocheted edges harmonize, and this blending of techniques is seen on garments as well as throws, bedspreads and other household weavings.

TRIMS, FRINGES, TASSELS, EMBELLISHMENTS & ADDITIONS

Some definitions of trim that come quickly to mind and are appropriate here are embellish, ornament, adorn, decorate. Other definitions apply, too—neat, tidy, in good order, appropriate, properly prepared, in balance. It sounds like a checklist for a weaver!

Some procedures used to fabricate weavings are like trims. In edges and ends you will find examples of trim resulting from the finishing. Some techniques and methods are done on the loom, and many are completed off the loom. A woven pattern may be woven on along an edge, or a band woven then applied to the edge along with tassels or fringe.

Found trims: sharp eyes and imagination provide "found" trims such as embroidered ribbons, laces, fine old

Jean Sullivan has woven jacket sections to shape and joined pieces with closely worked satin stitch. (from Weave With Style).

buttons and buckles—bits and pieces to use in innovative ways. My recent find is a few small bits of Chinese embroidery cut from very old robes. These will be appliqued to embellish a silk garment.

Fringes: they are a natural happening, as extended warp ends. Fringes are wefts extended along selvedge edges. Fringes are applied to ends or edges, through the cloth with a crochet hook, formed off the loom and applied, woven on along a selvedge with lark's heads. Weave a double length of fringe by setting up two headings, weave across back and forth. Cut the unwoven warp down the center and have two strips of cut fringe to sew on. For a full uncut fringe, weave the same way, but sew on like a binding, with one heading on the top, one on the other side. Miles of fast fringe can be formed from the skein, then sewn on as edge trim, or in medallions with embroidery stitches.

Tassels and Pompons: These are festive additions to pillows, sashes, decorative pieces, or whatever seems to need embellishment. A rich source of design, uses and methods is found in the charming little coca bags—*Chuspa*—from Bolivia. I've figured out and made several of these, but my great favorite is a wrapped version. Making these has become mandatory in all of my workshops! Tassels are a huge, fascinating exploration. There are literally unending ways to contrive and embellish tassels, which in turn become embellishments. Tassels for decoration, for fun, for elegance, for finishing. Tassels for pomp, for show of rank and power, for significance. Tassels because yarn ends are there! Tassels are seldom functional. Tassels are happy!

The tassel story is world-wide and centuries old. Historically, tassels have fulfilled a need for symbolism and adornment. Designing and fabricating tassels is fun. Bouncy or dignified, they provide the exact eye

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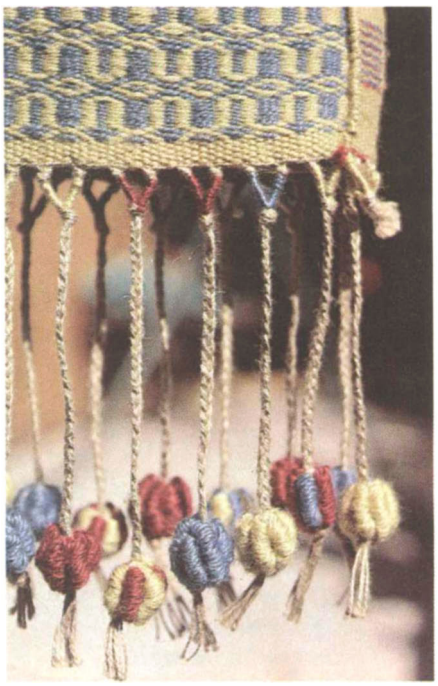


Pompons on twisted warp fringe on a tote-bag and trim inspired by a Bolivian coca bag. By Polly Matsumoto.

OFF THE HOOK: BOSNIAN CROCHET

ONE OF THE outstanding entries in last year's "Teach a Friend to Weave" contest was a loom-shaped coat by Charlotte Winston of Tahlequah, Oklahoma. The basic design is common enough, but Charlotte's adaptation was outstanding—especially her edge and seam finishes. The judges really scratched their heads over her special braid trim, because at first glance it looked just like knitting, but wasn't vertically stretchy—and the back side didn't look like knitting at all! Charlotte explained that it was a technique called "Bosnian crochet"—deceptively simple, and a handsome complement to the woven twill texture. All in all, a useful addition to the weaver's bag of finishing tricks. Complete instructions are on the next page.

BOSNIAN CROCHET COAT 4

WEAVE STRUCTURE: Twill.

FINISHED SIZE: Women's size 12 (53" [*135cm*] from shoulder to hem for a boot-length coat).

EQUIPMENT: 4-shaft loom with a minimum weaving width of 24" (*61cm*). 8-dent (*30/10cm*) reed, stick shuttle, crochet hook, sewing machine.

MATERIALS, warp and weft: The yarns for the Bosnian Crochet Coat shown were solar dyed with vegetable dye concentrate. Blue was achieved by dyeing for 7 days with logwood using an alum mordant. Brazilwood with copper mordant dyed for 7 days made a deep rich maroon. A gold-orange was made by dyeing for 2 days with brazilwood using an alum mordant.

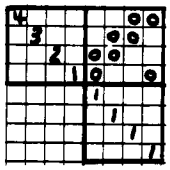
We regret that the yarns used in this coat are no longer available. We have found some substitutions which we think will work up into an equally luscious coat. Elite Specialty Yarns has some wool and mohair yarns which can be used in combination with each other. For the warp we suggest Fresco 100% wool at 714 yd/lb (*1435m/kg*) in Natural #4002 for the background yarn. Try Fresco Camel #4022 and Elite Beau Monde 2-ply Brushed Mohair/Wool yarn at 980 yd/lb (*1970 m/kg*) in Teal #846 and Plum #841 for the design stripes. For the weft use Beau Monde in Natural #816. You will need 80 yd (*73m*) Camel, 50 yd (*46m*) Plum, 105 yd (*96m*) Teal and 1915 yd (*1751m*) Natural.

Another alternative is Novitex Novi-Wool 2-ply at 1650 yd/lb (*3316m/kg*). Yarn should be used double in both warp and weft. Color choices for these yarns are of a brighter value than those shown. You might like the Silver Fox #42 for the background yarn; for the design use Aqua #27, Violet #1 and Persimmon #9. Use Natural #102 or Silver Fox #42 for the weft. You will need 160 yd (*146m*) Persimmon, 100 yd (*91m*) Violet, 210 yd (*192m*) Aqua and 3830 yd (*3502m*) Natural or Silver Fox. The Novitex yarn will produce a smoother fabric than the Elite yarns. Both yarns should be brushed on the right side of fabric after washing.

WARPING: 192 warp ends (if doubling warp measure 384 ends), 5 yd (*4.5m*) long will be needed.

SLEY: 8 e.p.i. for 24" (*61cm*). Sley in the following order: 2 maroon, 2 blue, 8 orange, 3 blue, 4 maroon, 4 orange, alternate blue and white 12 times, 4 maroon, 4 orange, 4 blue, 133 white.

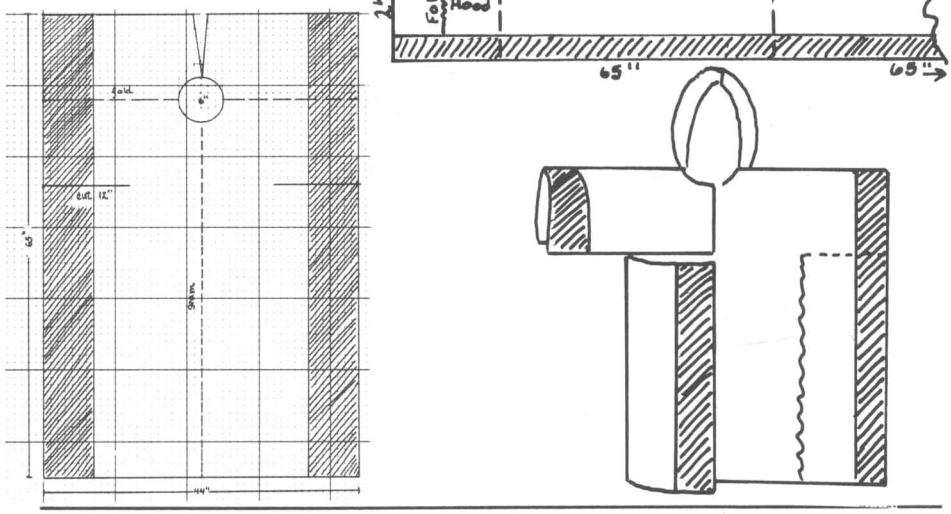
THREADING, TIE-UP AND TREADLING:



WEAVE: 8 p.p.i. for 154" (*391cm*).

FINISHING: Remove cloth from loom and machine stitch ends to prevent ravelling. Soak material in washing machine in warm water and mild soap for about 20 minutes. Rinse twice in water of the same temperature. Spin out excess water after each rinse. Brush fabric on one side for a soft effect.

CONSTRUCTION: Cut, fold and seam as shown. Be sure to machine stitch on each side of lines before cutting. Seams have been made on the right side and covered with Bosnian crocheted braid. Chain is picked up through the fabric. Back seam is joined with braid rather than sewed. Braid is crocheted around all outer edges. Four 6" (*15cm*) long, narrow braids were made for hood and front closures.

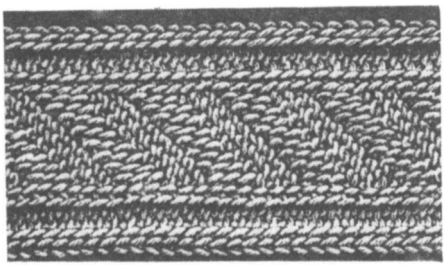


EDGING: Bosnian crochet is a simple but unusual technique. It resembles knitting, but has more dimensional stability, making an attractive and durable edging for soft handwoven fabric. It consists entirely of rows of single crochet, worked as follows:

Chain along edge to be trimmed, inserting needle about ½" (*1.25cm*) in from edge. Work a row of single crochet in chain. Break yarn. Go back to the beginning and work single crochet in the **back** loop of stitch. Proceed in this fashion, always breaking off at the end of each row and joining back at the beginning, so the right side of the work is facing you. Always work each stitch in the **back** loop of the previous row.

For the coat shown, try a size G crochet hook; make a sample to determine the correct tension. It's important to keep your stitches rather loose, moreso than with conventional crochet.

Bosnian crochet can also be worked in one- and two-color patterns. For one-color relief designs, simply work some stitches in the **front** loops of the previous row. These will appear raised. For example:



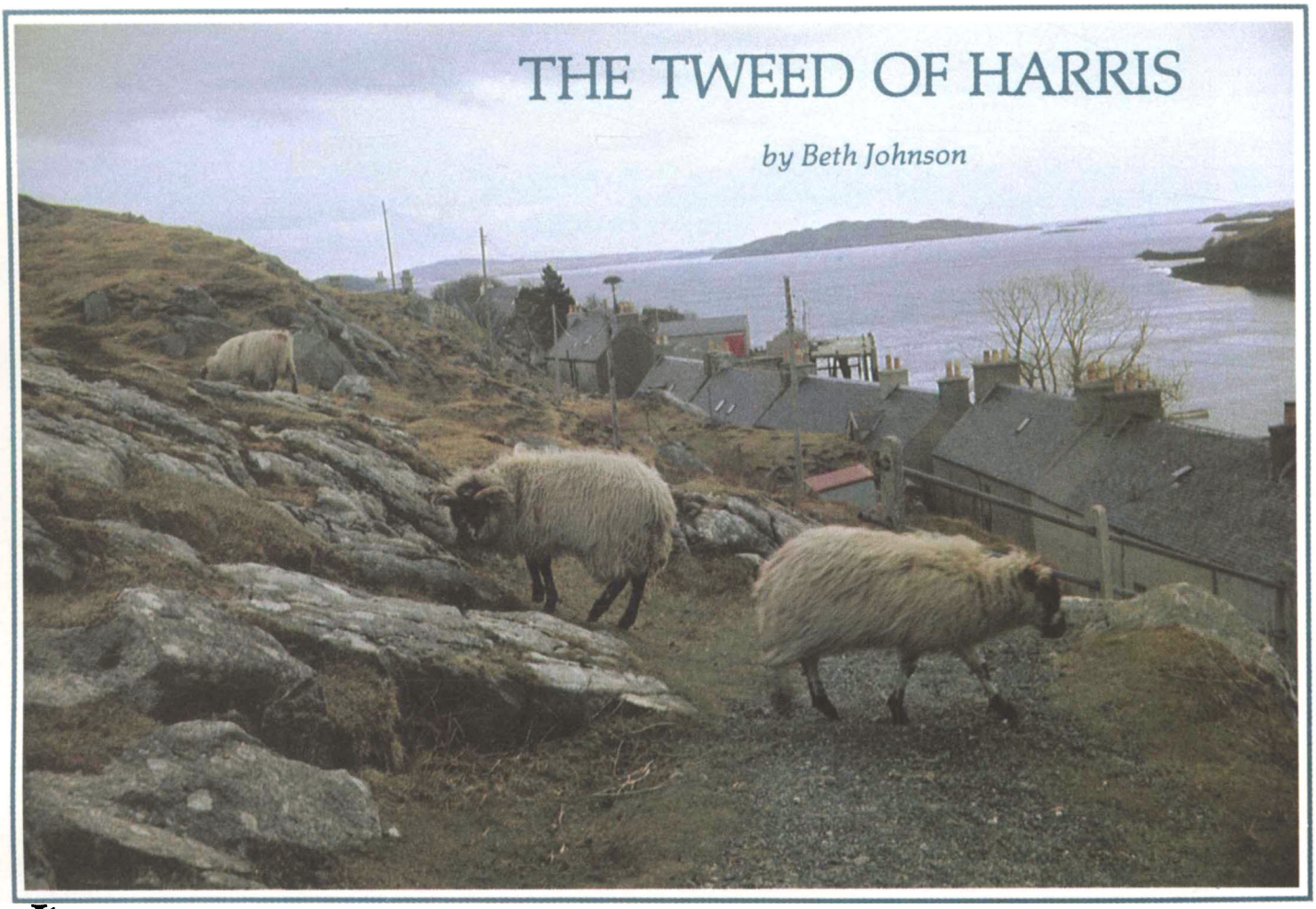
Rows 1, 2 & 3—sc into back loops.
Rows 4 & 5—sc into front loops.
Rows 6 & 7—sc worked into back loops.
Rows 8 to 15—alternately 3 sc into back loops and 3 sc into front loops. In each successive row the design is worked one st farther to the left, to produce diagonal stripes.
Rows 16 & 17—sc worked into back loops.
Rows 18 & 19—sc worked into front loops.
Row 20—sc worked into back loops.

Patterns using two or more colors are worked entirely into the back loops, with colors being carried across the back of the work as in knitting.

These instructions were excerpted from *The Complete Encyclopedia of Needlework* (Philadelphia: Running Press, 1972).

THE TWEED OF HARRIS

by Beth Johnson



It is in the more inaccessible and hostile places of the world—the mountains, islands and deserts—that people, neglected by industrialization, have had to rely on traditional skills for a livelihood: ikats produced on the islands of Mallorca, Okinawa and Indonesia; baskets of the southern Appalachians and Sea Islands; weaving traditions of the Andes and of Harris.

Harris and Lewis comprise the southern and northern portions of a single island, the northern part of an archipelago off the western coast of Scotland called the "Outer Hebrides" or, more poetically, the "Western Isles". I visited the Hebrides in March and April of 1978. I had thought that I was going to Scotland for the spring; however, although the Hebrides are warmer than the interior parts of Scotland, I was as hindered by the cold as by the fact that boats and busses travel on a rather limited schedule until after Easter. The mountains and rocks of Harris are barely covered by the heather and lichen which are still used by some non-industry weavers and knitters for dyeing. Much of Lewis is moorland, low rolling hills ridden with lochs and peat bogs. The weather is harsh. Its very desolation is compelling. Because of the lack of natural resources and the geographical isolation, life has been hard for the Gaelic-speaking islanders.

Woolen tweed has been woven on the island for centuries, primarily for domestic use. Traditionally, Scottish Blackface and Cheviot sheep were raised and the wool was spun, dyed and woven by the women. The finishing process called "waulking", was a social occasion. The length of tweed was soaked in a tub of urine or warm soapy water with ammonia. Women sat on opposite sides of a long grooved board called a "Cleith Luaidh" and the tweed was rubbed across it and pushed down rhythmically to singing and chanting. The process was repeated until the cloth was deemed suitably felted and shrunk. The cloth was then rinsed and rolled up to dry. Dancing, eating and drinking usually followed the consecration of the cloth.

Because there was no direct competition with power-loomed goods, weaving continued to develop on the islands and by the 1840's* Harris women were recognized for their excellent weaving. The 1830's and 1840's were times of crop failure and crofter eviction throughout Scotland. Philanthropists saw the development of home industries as a way to help the highlanders. Under the patronage of Dowager Catherine Herbert, then owner of the Harris estate, tweed began to be produced for export to the mainland. The success of Harris tweed led to the founding of a stocking and embroidery industry on Harris as well as tweed production on the islands of Uist and Lewis by 1881.

The tweed became popular because of its handwoven characteristics. Its durability and ability to repel water made it a favorite among sportsmen. But just as important to its popularity was the philosophy of Ruskin and Morris that was developing at this time. People felt that handwoven cloth was somehow better than power-loomed cloth. Only with the rise of industrial uniformity did

*Much of my information on the early history of the Harris Tweed Industry comes from Francis Thompson's *Harris Tweed* (David and Charles, England, 1969).

aesthetes come to appreciate the uniqueness of Harris tweed; each piece differed from every other and to own one was to own something exclusive.

Harris tweed was originally produced entirely by hand, but by the end of the 19th century, a number of compromises had begun to be made in the production of the cloth. First came the development of synthetic dyestuffs. The Islanders were depleting the area of croatl, one of the lichens used for dyeing. Moreover, some of the natural dyes faded before the cloth actually wore out. Chemical dyes offered a greater degree of colorfastness and reliability.

Carding mills were erected for the first time on Harris and Lewis in the early 1900's. Although some spinners felt that machine carding damages the wool and was the first step toward mechanization, most sent the wool to be carded into roving cheeses and so saved about 160 hours of work for each length of tweed. Next, the fly shuttle was introduced. Owing to the greater strength required to operate the loom and to the growing importance of Harris tweed to the local economy as the fishing industry was failing, men began taking up the task of weaving.

In 1909 the Harris Tweed Association was formed to protect and promote the tweed. Its trademark, an orb with a Maltese cross, was registered. However, the Association did not really become effective in curbing the growth of Harris tweed imitations until the 1930's. At that time, Harris tweed was defined as cloth "made of pure virgin Scottish wool, spun, dyed and finished in the Outer Hebrides and woven by the Islanders in their own homes. . . ." Defining the tweed as being woven at the crofters' homes reinforced the idea that Harris tweed should remain a cottage industry.

Mill-spun yarn, which was virtually impossible to detect when mixed with handspun yarns, was allowed as long as it was made in the Outer Hebrides. However, a special label certifying that the cloth was made with a handspun weft was available until 1956. It was also specified that the tweed be woven with not less than 18 e.p.i.

Another compromise was the introduction of the Hattersly foot-powered domestic treadle loom in the 1920's. Still in use today, the Hattersly Domestic is foot-powered, although it functions exactly as a 6 x 1 revolving box power loom. The weaver sits on a stool and leans on a bar across the breast beam. By alternating the two treadles, the shuttle and beater propulsion shedding mechanism and cloth advancement are worked automatically. Several people in Scotland mentioned to me that it is quite easy to convert the Hattersly Domestic into a power loom by attaching a motor to one of the gears. Having a machine do your work and fooling the inspector are much talked about, although not necessarily common pastimes.

Although the craft originated on Harris and spread throughout the Hebrides, most of the weavers now live on Lewis. There are several spinning and finishing mills on Lewis which design and market tweed. Warp chains (29" x 85') are wound at the mills and delivered to the weavers along with weft yarns. At the same time the webs are picked up and taken back to the mills for finishing. Weavers work at their own pace and may complete two or three lengths of tweed a week. Granted, today's Harris Tweed weaver no longer enjoys the creative satisfaction of designing his own tweeds, but for a traditional weaver such an activity is not so important. Because present-day designs are based on tradition, Harris Tweed is seldom, if ever, ugly.

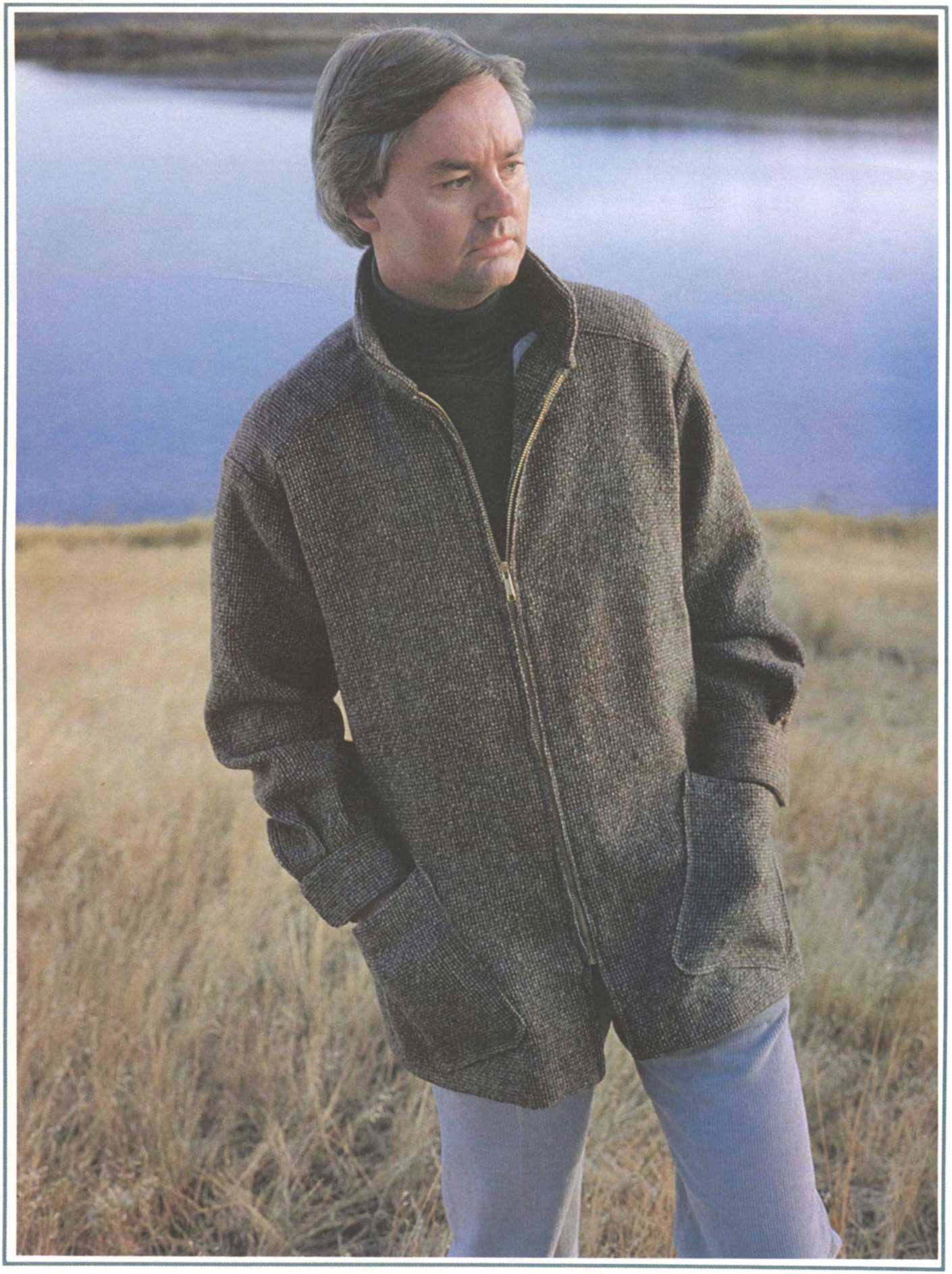
In the seventh decade since the forming of the Harris Tweed Association, there are a number of problems facing the industry. Harris Tweed increased in production in the 1960's, but so did the synthetic fiber industry. This competition, along with the limitations of the 29" width, was blamed for a slump in sales in the '70's. Proposals were made in April of 1976 by the three mills that market the tweed to establish 12 power looms in three plants to weave double-width cloth. These proposals were overwhelmingly rejected in a vote put to the weavers who value their independence too much to work in a factory situation. Mechanization would decrease the number of weavers needed and most of the 500 or so weavers now in their mid-50's would simply retire—and a way of making a living in this remote part of the world would be lost.

Another problem facing the Harris Tweed industry today is the lack of young people to take up the craft. Lewis Castle College, a vocational school in Stornoway, has offered a program to train Harris Tweed weavers for the last two years. Approximately 60 students have completed the course which includes loom maintenance as well as weaving techniques. Most students go on to be weavers. With the development of North Sea oil, however, many young people have preferred the higher paying jobs of the oil industry.

Harris Tweed is unique in that it has been marketed as a handwoven fabric, yet it competes with machine-made cloth. Part of the appeal of Harris Tweed is in the image of the simple crofter blissfully weaving away using techniques hopelessly out of date. Whether or not this image is enough remains to be seen.

There are a few weavers who still work on wooden fly-shuttle looms and who spin and dye their own yarn, but their numbers are dwindling rapidly and the waulking songs are no longer being heard in the hills of Harris.

Many people are disappointed to find out to what extent the industry has been mechanized; a description of the Hattersly Domestic alone is often enough to set off discussions as to exactly where the line is to be drawn between handwoven and machine woven. But perhaps such a distinction need not be made. Harris tweed is an extremely well-made cloth which competes and which is produced in a very efficient way. Proponents of intermediate technology would certainly approve of the technological compromises that have been made. The fact that there are so few American handweavers who successfully compete with power-loomed textiles indicates a need for us to investigate closely weaving traditions like Harris Tweed, which have adapted to the 20th century. □



While most Harris tweed yarns are woven and tailored into men's and women's suits and sportcoats, they are also suitable for more casual wear, as in this tickweave casual jacket. Complete instructions begin on p. 87.

A riot of colors blend into a strong yet subtle plaid in Nell Znamierowski's wrap around shawl. The local laundromat triumphed over other finishing methods for a soft, warm shawl with good drape. A description of the designing and finishing process follows; complete instructions are on p. 86.

FINISHING WOOL: THREE APPROACHES

FULLING AND FELTING—two of wool's most important properties—are all too often overlooked by today's handweavers in their quest for more elaborate interlacements. Yet the simplest twill or tabby can yield a fabric of surpassing beauty when well-finished. And such a variety of surfaces and hands are possible, all depending on sett and finishing treatment.

Traditionally, worsted fabrics (made from worsted-spun yarns—parallel combed long fibers) were given a "clear" finish that would show off the luster of the fiber and the interest of the weave. Gabardines and serges exemplify this style of weaving. Setts were very close, and fulling was not excessive. For woolen fabrics, on the other hand (woven from woolen-spun yarns of shorter staple and a more 'tangled' configuration), setts were wider and the finishing process involved sometimes rigorous steaming, boiling, stretching, brushing and shearing to draw the fabric up close and thick. The object was a surface on which the weave structure was completely obscured. A successful woolen fabric of the traditional sort is not easy for today's handweaver to achieve, except with carefully designed handspun yarn. Most commercial handweaving yarns have already undergone too much processing to result in a "boiled" wool like Tyrolean jackets are made from, or a really thick and sturdy melton cloth such as you find in pea jackets.

The Seattle Handweavers Guild has done an extensive study of woolen finishing, though, and has achieved beautiful thick, sturdy coating fabrics using loosely set 7/2 wool (such as Borgs of Lund, CUM or Marks) and vigorous machine washing *and* drying (see p. 22 for more on this). Harrisville Designs has also devoted research efforts over the years to the finishing possibilities of their woolen-spun singles yarns.

Here are three projects that exploit the fulling properties of woolen yarns—a lofty, warm but light wraparound shawl by master weaver Nell Znamierowski, a twill "mock melton" jacket, and a brushed wool striped shawl designed and woven by Pat Colony. Instructions and finishing notes for the jacket and striped shawl are on pages 00 and 00; Znamierowski gives us a "blow by blow" of her lovely shawl here:

THE WRAPAROUND SHAWL

The genesis of this 100"+ shawl was threefold—there was my desire to have a long rectangular shawl, in my colors, that I could wrap around myself and yet have my arms feel unconstricted; there was the wish of Chick Colony, the owner of Harrisville Designs, for me to work something up with his yarns, and finally there was on the horizon the prospect of a finishing issue of HANDWOVEN—perfect for the Harrisville yarns since finishing brings out their best characteristics.

I worked with weaver Chip McMaster, an employee of Harrisville, who wove the various trials and shawl for me. The trials were both for color and hand.

Color and hand as well as length were determined by the "look" that I wanted, which was this season's flat yet soft texture with an effect of volume. To get this volume I knew that I had to have a length that I could drape around myself in a variety of ways over my coat or jacket. Other thoughts were that I might want to pin or knot it in front or maybe make a deep collar effect around my neck.

The design of the warp I did initially around a piece of cardboard as a warp reeling. The design of the filling I laid out with colored marking pens on a long piece of brown wrapping paper—not every color, but enough to figure out the placement of the most pronounced color changes and where they would fall on me. Prior to all this I played around with a long piece of old sheeting that I tried in various widths and lengths to see the size I needed for the look I was after. For my height (5'7") I decided on at least 100", and 1" or 2" more wouldn't hurt. So my desired finished width and length were established before the warp was made. The color design of the warp called for just a few minimal changes, and as soon as we had experimented with a few filling colors I knew what was needed for a muted, bright effect. What was left were the many trials for finishing, i.e. trying to determine if it was best to go with hand or machine washing, at what temperature, with how much

A fabric with dense surface but enough crispness for light tailoring was Linda Ligon's goal in weaving this cord-trimmed twill jacket in blended shades of red. A hot machine wash and heavy steam pressing yielded the desired results. Instructions are on p. 83. SKIRT AND BLOUSE BY JH COLLECTIBLES, COURTESY OF COUNTRY BOUTIQUE.

agitation and what kind of drying.

The various samples are not pictured here and that may be just as well since in a photograph there would probably be no apparent difference. Here are my observations on the first three samples and finishing methods, all of which included hand washing:

1) **Hand wash with detergent,** hot, long wash, line dry, medium shrinkage, best hand of the three.

2) **hand wash with detergent,** hot, short wash, line dry, least shrinkage.

3) **hand wash with detergent,** hot, short wash, machine cool air-dried for 20 minutes, greatest shrinkage.

None of the three samples had the soft hand that I wanted to achieve without brushing. These observations are very off-the-cuff, since I did not record the temperature of the water, nor the number of minutes of fulling or agitation by my hands. However, for me, a long wash would be approximately five minutes while a short one would be about two minutes. I am a firm believer in detergents since aside from doing the best job of getting any surface dirt or residual grease out, they also open or "bloom" up the fibers so the maximum fulling is obtained.

My next samples were with the washing machine. The first one used was a home, top-loading machine set at gentle/delicate cycle, with low water for more friction. Water was medium hot (about 110°-115°). I put in about ⅓ cup of detergent and every three minutes during the wash cycle I took the shawl out to be sure that it was not tangling around itself. (This was a trial shawl that was woven at the end of the sample warp.) After the rinse and spin cycle, I line-dried it. I felt I was finally getting the shrinkage and hand that I wanted, but I also felt that I had to experiment with the equipment I knew best—a laundromat machine with hardly any fancy cycles or control over water amount. I did this and finally came up with the hand, shrinkage and texture I wanted as well as an easy way to finish.

So my instructions for the most satisfactory finish are as follows: use the colored fabric setting on a commercial (laundromat) machine. Wash will be warm (100°-102°) and rinse is cold. Full cycle goes for 20 minutes—that means 20 minutes of fulling. I put the shawl in with other clothes of mine so there was some friction there and it was not sloshing around in too much water. I recommend line drying in a breeze. Double the scarf over the line and attach with two clothespins, whose marks should come out with steaming. As I was hanging the wet scarf on the line I slightly snapped or stretched it at the selvedges. This is like hand blocking and will insure the desired width. However the hand pressure may cause ripples at the edges which can be steamed out. In my case the ripples appeared more at one selvedge than at the other, either because the strength in one arm did not equal the strength in the other, or unconsciously I pulled more with one arm than the other.

How would I clean the shawl? I definitely feel that the yarns are underfinished with my method of finishing, yet I stopped here because I had gotten the hand I wanted. Cleaning the finished shawl by machine washing would cause more shrinkage and fulling, so I would recommend either washing by hand in a basin with Woolite, or dry cleaning.

I steam pressed the shawl with a heavy hand to get rid of whatever wrinkles there were and also to block out the ripples at the edges. In doing this I managed to increase the length of the shawl by almost 2", so now it measures 102" long rather than 100".

I had toyed with having tassels at the two long ends and gathering these ends up to meet at the tassel. However, the effect was much too formal for me, so I decided on a short fringe. Here's how to achieve this fringe: After weaving a heading to separate the bouts at the apron bar, put in a second heading of four to six picks that will stay in during washing. End the shawl off in the same way with four to six pick heading. After weaving, cut the warp about 1" beyond this last heading.

Before steam pressing, trim off excess warp beyond the heading and take out the heading yarn. The fringe will be somewhat matted. Where matting is too severe and forms clumps, cut open with scissors and undo the clumps. Trim to ½" to ⅝". (A longer fringe would entail more picks of heading.) No machine stitching or binding off is necessary. The soft, feathery fringe that results will keep the weft from ravelling. □

The dramatic change a woolen fabric undergoes in the finishing process is illustrated in these two shawls by Pat Colony. Both are woven on the same warp; one is shown just as it came from the loom, the other after washing and brushing. Instructions are on p. 88.

FINISHING NOTES

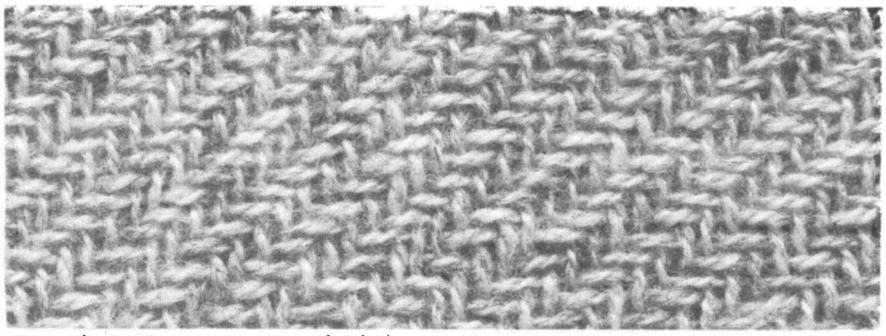
"Finishing handwoven material has been a concern of weavers for centuries and this process, called fulling, caused warp and weft to shrink and the cloth to thicken. The woven goods were often taken to a local craftsman who specialized in this process. William Wigham, fuller, used the following procedure:

> His method of fulling wool is not universally accepted. He favors beating it with a hammer in a trough filled with water, manure, and clay. Others say hot and cold baths will do the same if one is soaking it in a vat of urine. The object either way is to come up with a dense non-ravelling weave that permits edges to be finished raw without hemming. Such edges are prized."

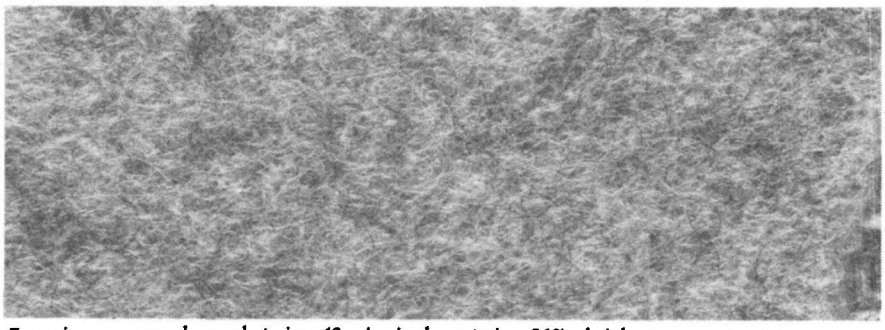
So writes Anita Mayer of the garment study of the Seattle Weavers' Guild. This study group has done extensive experimenting with handwoven wool in pursuit of *wadmal*, a traditional Swedish twill fabric, fulled and napped to a warm, sturdy, ravel-free finish. (For more on *wadmal*, see *Shuttle, Spindle & Dyepot*, Spring, 1980.)

In general, they found that felting takes place more readily in a loosely woven fabric where the fibers have more room to move and interlock during the fulling process. One type of yarn that gave interesting results was 7/2 wool (available from outlets such as Borgs, CUM, Marks, Wilde or Novitex—though different brands might perform differently). Shown here are "before" and "after" samples that demonstrate the effect of different washing and drying sequences and methods.

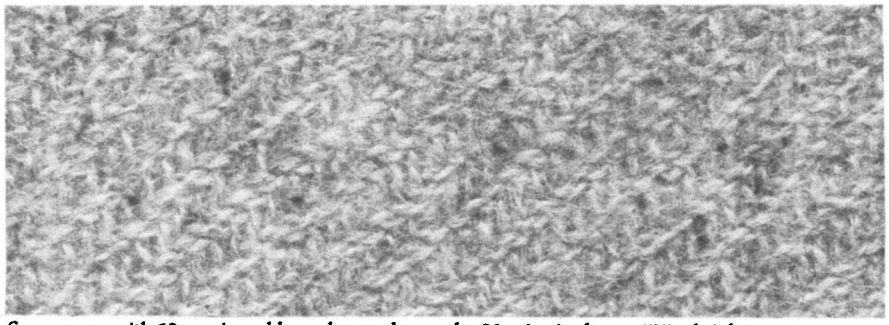
These samples represent the merest suggestion of the myriad possibilities. The important lessons to be learned from them are that straight-off-the-loom fabric and finished fabric are two very different things; and that sampling is the only way to really know what to expect. □



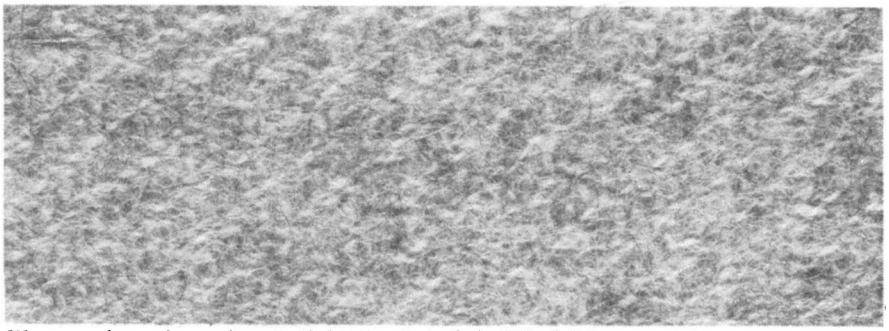
7/2 wool set at 8 e.p.i., 7 p.p.i., unfinished.



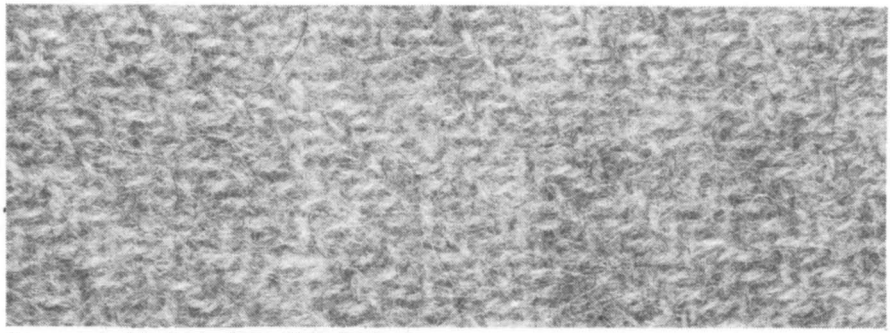
7 p.p.i., warm regular cycle twice, 40 min. in dryer twice. 36% shrinkage.



Same warp with 12 p.p.i., cold regular washer cycle, 20 min. in dryer. 17% shrinkage.

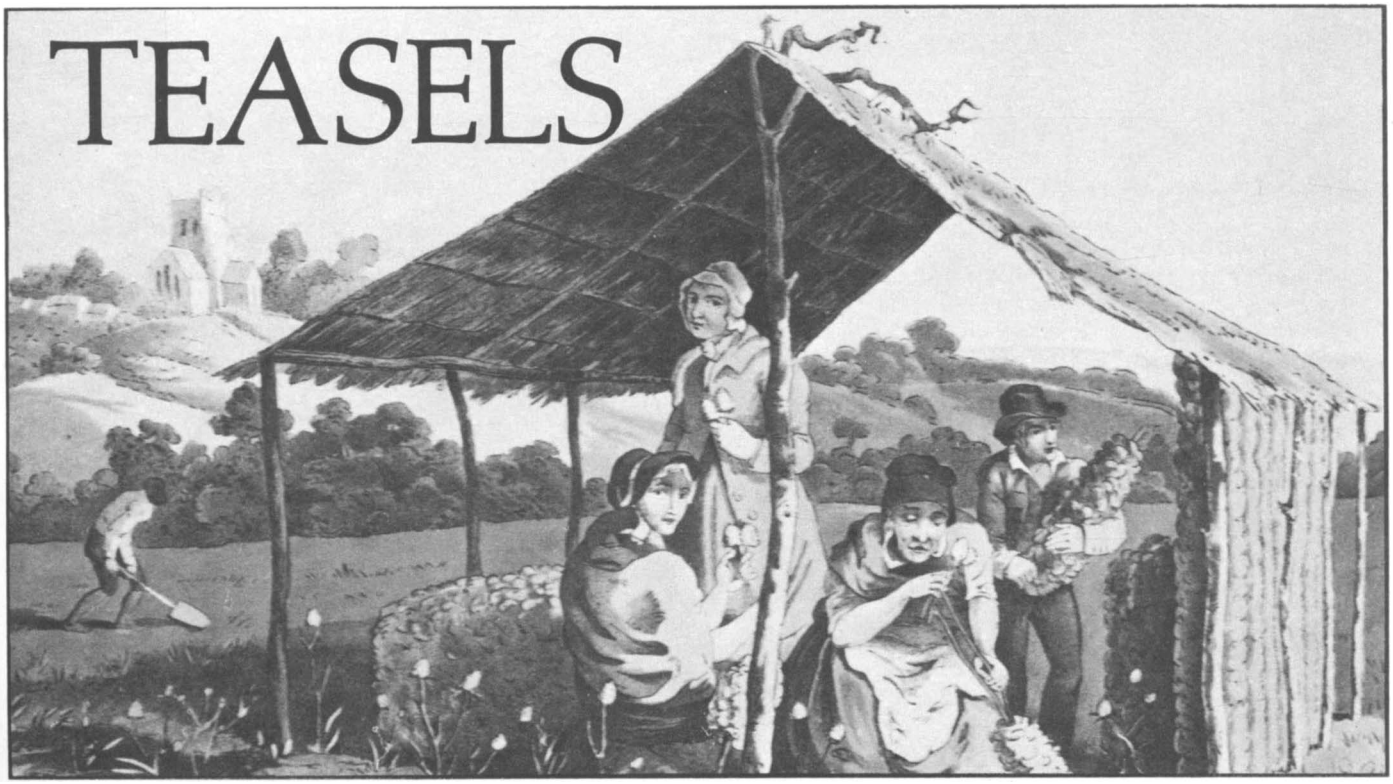


Warm regular cycle, no dryer (rolled in towels to dry). 18% shrinkage.



Warm cycle, 20 min. in dryer. 11% shrinkage.

TEASELS



by Eliza Leadbeater

SINCE THE TIME of the Greeks, the fuller's teasel has reigned supreme as an agricultural plant in the industrial process. It is still employed in the finishing industry for raising the nap on woolen cloths.

Handweavers usually recognize the thistle-like head, but rarely realize its importance. Living so close to the woolen producing region of England, I am often reminded of the teasel's role. Although teasels probably have been cultivated since the reign of Richard I (1189-1199), Britain was introduced to the use of teasels on an increased industrial scale by the second influx of Huguenots who fled to this isle in the 16th century because of religious persecution. The cultivation of teasels flourished like the cloth industry throughout the country, but now the growers have dwindled and producers are scattered. Somerset in the southwest has farms which have grown teasels for generations.

The teasel often "makes" a fabric through a process known as napping, gigging or raising. Cloth after weaving is often unattractive and irregular in its appearance. The fuzzy or protruding fibers give an uneven and shaggy appearance to the surface and the finishing can alter this. The nap on the surface of the cloth is raised mainly to give the cloth more body by making it more compact and this results in fabric that can be softer and smoother in feel, more durable and also warmer. Napping also covers up minor blemishes or defects; even coarse inferior cloth can be made more appealing and appear of better quality than it really is.

Attempts at mechanizing napping were made as early as the 15th century. Yet the tremendous outcry of the English clothworkers and the strength of their guilds meant gig mills were outlawed in 1551. The napping process therefore remained in the control of skilled craftsmen. The cloth was hung vertically while two nappers working a pair of teasel crosses or strikers "scrubbed" the cloth. The wet cloth was worked at least three times over by strokes in the direction of the warp. Then in order to raise all the loose fibers and prepare the cloth for shearing or cropping, the strokes were worked in the direction of the weft. The action of drawing the teasel in the line of the warp means that the hooks of the thistle-head are acting upon the weft at right angles to the softer spun yarn. For the cloth to be properly teaseled it is essential that it have equal tension. The hooks of the teasels became clogged with flocks or bits of wool and were cleaned with an iron comb called a preem. This was the task of the "preemer boy". Because moisture does soften the hooks or points of the teasels and this impairs teaseling power, it was necessary to dry the teasels from time to time.

English woolen manufacturers were finally successful in replacing the nappers with gig mills and a semi-skilled operator during the mid-19th century. By this time the rotary napping machine, having been patented in 1791, was being widely used by American woolen producers. Yet teasels used in the American manufacture were still being imported from Europe until 1832. In this year, Dr. John Snook planted seeds from England in the Skaneateles, New York area. It was a highly profitable crop and the American market was supplied with home-grown teasels until the 1950's when competition from imported teasels and also wire napping caused the plant to vanish. At the beginning of this century over ten million teasels were harvested in Britain, but today imported teasels raised on cheaper land with cheaper labor in sunnier regions threaten the British market.

The Teasel Field from George Walker's Costume of Yorkshire *(1818) showing the teasel poles and drying shed. The poles are still prepared today.*

Preemer Boy from George Walker's Costume of Yorkshire *(1818). "Preeming is the operation of detaching by means of an iron comb or preem, the flocks or bits of wool from the teasels. No doubt a corruption of preem which is the act of trimming feathers." This job was a humble step to cropper.*

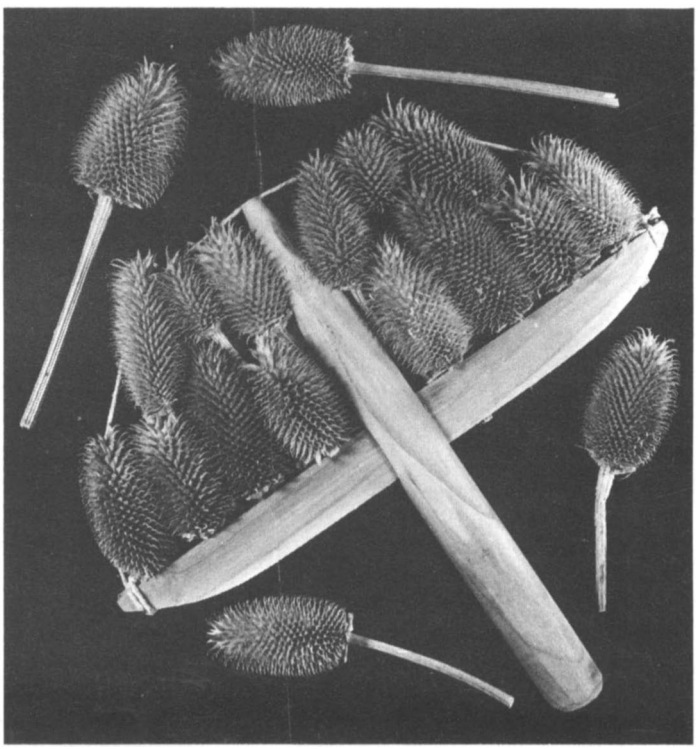
Cultivation of the plant is relatively straightforward with an 18-month cycle. Four pounds of seeds per acre is sufficient. Make certain that you do have the right species, as it is shattering to nourish the wrong variety. *Dipsacus fullonum* is the species which produces the firm head with the tough, hard hooks or points. *D. sylvestris* is the flower-arranger's variety and the one readily available from seed merchants or found in the wild. It has straight, soft spines and does not pain to crush it in your hand. If grown on a large scale, two factors are important: first, that the crop is rotated at a minimum of a five-year cycle as the plants do strip the nourishment from the land, and secondly, that there is suitable drying accommodation.

Seeds are sown in April and by late autumn (November) plants are the size of small cabbages. The plants are then lifted, tap root cut back a little to promote fibrous growth and then transplanted into the growing area. The rows are usually two feet apart with 16"-18" between plants. When established, the plants bolt and produce a main stem. This main stem carries the King Teasel and the smaller heads are produced on the laterals. A good plant will grow to six feet in height and produce up to 25 heads of various sizes. All these heads are useful.

Usually late July or early August crop is ready for harvesting. All heads must have flowered down rly before cutting. Harvesting is ıe by cutting each stem individ- ly to facilitate drying. In actual :, the King Teasel or main stem is dy before the rest and should be first. It is usually saved for seed :he producer, but it is also very ful on its own for brushing or hening mohair or piled goods. : remaining heads are severed ıut 9" down the stem with a cres- t-shaped knife. The heads, tied in ıdles of 50 with a teasel stem, are :ed on long poles to dry. When harvested, the teasels are :ribed as sappy; and so to preserve quality they must be thoroughly :d. The secret of drying is protection from the weather yet with plenty of air to circulate about them. Teasels must be completely dried before storage. Commercially, they are then packed in sacks after drying, each holding approximately 20,000 heads and shipped to the merchant. An acre will usually average 12 sacks. At the merchant's, each teasel is inspected, trimmed and sorted by hand and then sold, graded, to the finisher.

Handweavers are at last giving more attention to the way they finish their woven goods. The teasel can play a role by helping "to make" a fabric, and experimentation is well worthwhile. In napping, a wet raising will produce heavy fulled and matted cloth where the weave does not show, while napping dry cloth gives a more pronounced pile and shows the weave pattern. The effects produced by planned finishing and the possible employment of napping are elements in the entire "design" of any yardage and deserve equal consideration with all aspects of producing the woven goods. □

A print (source unknown) illustrating the varieties of teasels. Left, Fuller's Teasel, Dipsacus fullonum. *Center, Wild Teasel,* D. Sylvestris. *Right, Small Teasel,* D. pilosus.



A teasel cross or striker, 8" to 10" in width. Traditionally used in pairs.

HEM STITCHING

by Virginia West

Hemstitching is a way of encircling warp ends to secure the fringe. It is usually used at the fringe ends of linen mats, stoles, yardage, etc. I also insist that samples at a workshop be hemstitched at both ends, and students are surprised at how quickly it can be done while threads are stretched at tension on the loom.

I also hemstitch between pattern parts for wearables (see *Weaver's Wearables*), and it's such a relief to be able to cut pieces apart without danger of ravelling. Moreover, the inside of these garments is a delight because the seams are so neat. Just don't cut too close to the hemstitching—leave about ¼" of warp.

To practice hemstitching, try a warp of 10/2 linen, set at 15 e.p.i. For a dozen placemats, 1½ pounds of 10/2 linen will make a 10-yard warp of 204 ends (13½" wide). Allow about a pound for weft. Or, a 6½-yard warp will make eight mats. The beauty of the linen as well as the elegance of the hemstitching is accentuated if the mats are plain weave, with the same number of weft shots per inch as warp threads. Like sterling silver, linen improves with age, and the more it is used and laundered, the lovelier it will become.

Directions for hemstitching

There are only two movements involved. At the very beginning of the weaving, the first weft shot, leave an end of weft three times the width of the warp hanging at the right selvage. Weave an inch or so and close the shed. Thread the hanging end into a tapestry needle.

Step 1. At the right selvage insert the needle from right to left under four warp threads and bring it to the surface. (The size of the warp determines the number to be hemstitched.)

Step 2. Take the needle from left to right over the same warp ends, then back diagonally from right to left under the same ends and up to the surface two weft rows, pulling the hemstitching thread tightly. A beautiful picot forms along the horizontal edge. Continue across the web. (See diagram on p. 59.)

For warp use aqua, as shown, then experiment with delft blue, emerald, light blue, purple, orange, yellow and tan—I have used all successfully. Or, if you prefer earth-tone colors, set up your warp in natural linen and use white, tan or brown for weft with lesser accents of orange or black.

Hemstitching as design motif

In addition to its functional use to prevent weft from ravelling, hemstitching may be used as insets in the body of placemats or other household linens, or in a camisole, as a handsome decorative motif. Here are two variations of hemstitching used as design in the placemats shown.

Ladder hemstitching

The ladder hemstitching separates the emerald borders at each end of the blue centered mat.

Weave 4" (2" will be turned under to form hem) plain weave with emerald ending at the right side of the loom. Before putting the shuttle aside, measure the hemstitching thread three times the width of the warp, cut thread it into a tapestry needle.

1. Insert the needle under four warp ends and bring it to the surface between threads 4 and 5.

2. Take the needle to the right over the same four threads, then from right to left and back diagonally two weft rows under the same four threads and bring to the surface. Draw tightly.

Continue to left side and darn thread into the left selvage. Insert a ¼" flat stick or a piece of roving to equal ¼".

With blue at the right, before starting to weave, leave an end three times the width of the warp. Weave two rows. Thread hemstitching yarn into the needle and hemstitch as before over the same groups of four. Continue with blue and weave 14" for center. Final edge: repeat as for first edge.

When the mat is cut off the loom, fold 2" hem up to the line of hemstitching and hand hem.

Trellis hemstitching

Three bands of zig-zag or trellis hemstitching are placed asymmetrically at one end of mat. Trellis is a variation of ladder hemstitching.

Weave 4" plain weave with purple ending at right side. Measure three times the width of warp, cut, thread into tapestry needle and hemstitch over four as in steps 1 and 2 above. Insert ¼" stick or equivalent.

On opposite side of stick, the groups of four will be split to form a "trellis". Leave an end three times the width and weave 1½". Put shuttle aside temporarily. Hemstitch over *first two threads only* to divide the group, resume groups of four and complete row. Weave 1½" with emerald and do another row of trellis. Continue with emerald for another 1½" and repeat the final trellis. Using purple weave 14" to complete mat. Fold hems up and hand hem.

Hemstitching on four sides

Hemstitching is used on all four edges of this aqua napkin. The technique is actually Ladder Hemstitching, and it can be used with a little adaptation. The two horizontal rows are done as in the preceding directions, on the loom, and the two vertical rows are done after the weaving is removed from the loom.

For the warp use a 20/2 linen sett 24 e.p.i., 18" wide (432 ends). One pound, 2 ounces of 20/2 linen is sufficient for a 7-yard warp of 432 ends, enough for a dozen napkins. For the weft use 20/1 linen wound double on the bobbin of the same color or two related colors. One pound is needed for 12 napkins.

Weave 1" of plain weave. You must immediately establish your beat at 23 p.p.i. to make a 50/50 balanced fabric. Twenty-three weft shots on the loom will relax off the loom to the same number of threads per inch as in the warp. There is a reason for stressing the even beat—in the hemstitching you will take groups of four threads, and if there are the same number of threads weftwise as warpwise, the hemstitching will be even in both directions.

After the inch of plain weave, start at the right side 1" from the selvage and hemstitch over groups of four threads, following the directions in Ladder Hemstitching, to 1" from the

left selvage. Insert a contrasting thread, the same size as the warp. This will later be withdrawn.

Weave an inch or so and then, back at the contrasting thread, 1" from the right selvage, hemstitch a second row over the same groups of threads, ending 1" from the left selvage.

Weave 16" plain weave for the body of the napkin and treat the opposite end the same as the beginning. When the napkin is removed from the loom, hemstitch the vertical sides, beginning at the line that forms a right angle with the line of hemstitching already done. Make the corners come out even. Miter the corners and turn a ½" hem all around.

The linen used in these mats is available from Frederick J. Fawcett, Inc. in a variety of colors. Experiment with analogous colors of green, blue-green, blue; or purple, red-purple, red; or try a triadic scheme of blue, yellow, red. You'll be delighted and surprised by the richness of your finished fabric. □

WEAVING A FINE WARP

in which the author overcomes fear of skinny thread, subdues stiff linen, and Learns to Tat

by Linda Ligon

My weaving time has been severely curtailed these last few years since running Interweave Press has become a full-time-plus job. Consequently, I've gravitated toward the quick and dirty, the fat thread, the unconstructed, straightforward, unsewn item. But my 18th wedding anniversary rolled around this fall, and somewhere out of the blue came the idea to weave "his and hers" pillow cases. How sweet. And how much I learned!

Now, 30 e.p.i. isn't really all that fine; Theo Moorman writes of weaving 200 e.p.i. black silk for camera shutters; ancient Egyptians wove 500 e.p.i. cotton mummy wrappings on a backstrap loom. But for me, 30 e.p.i. was about twice as fine as I'd worked in quite a while, and never with an unforgiving fiber like linen.

Psyching up

Step one was to correct my attitude. Sleying and threading a fine warp is exactly like doing a coarse warp, only moreso. Threading 780 threads is equivalent in time and motion to pitting enough cherries for two pies, which are quickly gone and forgotten. Or washing a meal's worth of silverware 48 times or changing the baby. Any of those repetitive tasks we do day after day; the difference about setting up a warp is that once you've done it, it *stays* done.

Designing

A lot of my design decisions were based on the reality that, while I wanted to do this fairly challenging project by a certain deadline, I still had a 40-hour work week to fit it around (plus house, meals, kids, etc.). Forty/two's linen had these advantages: three spools was the right amount, and would allow me to measure the warp using three strands as one; it would then triple-sley in a 10-dent reed, minimizing the time demanded by these two operations. It would almost surely not break or stick during weaving. A sample showed that it would yield a firm but pliable fabric with a nice silky feel. After all, these cases were supposed to be a luxury, not a penance.

I wanted the two cases to coordinate but be quite different (sort of a metaphor of our relationship); and while we try not to be sexist at our house, one case is a bit frilly (mine), one quite tailored (his). What the two have in common is the same materials, a predominantly plain-weave structure, and hemstitched hems. They differ in that "his" has a white-on-white windowpane check of 20/2 linen—very subtle, though it shows up better in reality than in our photo; "hers" has a tiny twill motif on the border, the circular design of which is echoed by the tatted edge. No way was I going to make two separate warps for these cases; instead, I threaded them both up on the "hers" threading with heavier linen pattern thread of "his" doubling up with the finer ends in regularly spaced dents and heddles, and then I simply cut those threads out of the warp after I'd finished weaving "his".

Weaving

The first thing I learned while weaving is that a 26" wide web beats a lot differently than a 4" wide sample. If you *really* want to know how your finished product will look and feel, make your samples substantially wide (at least 12"), and on the same loom that you'll be weaving on. It was hard to pack the weft in as firmly as I had done on the sample, and in fact I never did quite succeed.

I learned, too, that when weaving fine yardage, it's important to advance the web frequently so the beat is easier to maintain, and to have a good-sized shuttle that won't require constant bobbin changes that interrupt your rhythm. Also, linen is pretty springy stuff, and if the shuttle feeds too freely, you get backlash and tangles. So I used heavy paper quills instead of spools, and wound them very firmly. Weaving proceeded at about a yard an hour.

The hemstitching is a very important design element in these cases, and well worth the 30 minutes it took to do it on each end. I used basically the same procedure Virginia West describes in her article on p. 56, but hemstitched only the side toward the body of the case on the loom. I worked the side toward the hem at the same time I made the hem, thus performing these two operations in one pass and halving my time. I threw in a shot of slick, heavier yarn to maintain the spacing until I was ready to do the final hemstitching.

Finishing

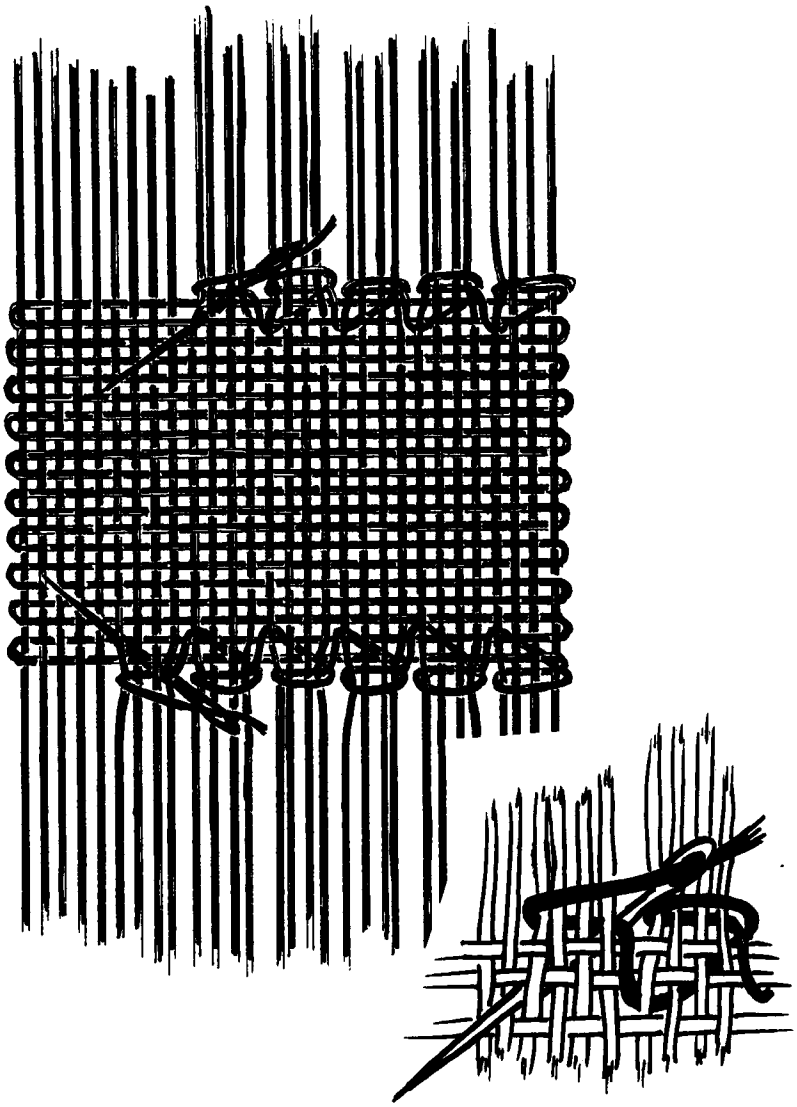
There are lots of approaches to finishing linen. Some people "beetle" it—pound it with a rubber mallet—the old-fashioned way to make the fibers flat, smooth and glossy. Because I used a plied thread instead of a single, beetling wasn't particularly effective on the fabric. Some people alternately boil and freeze linen to soften it up. I tried this on a sample, and it did have a softening effect. I didn't like the mental picture I got of how that must have stressed and damaged those long, skinny linen cells, though. My best solution, the one that yielded the silkiest finish with the least hassle, was to simply scrub the cases on an old-fashioned wash board in hot soapy water, throw them in the washing machine for a regular hot cycle, and then iron them vigorously while they were still quite damp.

Embellishing

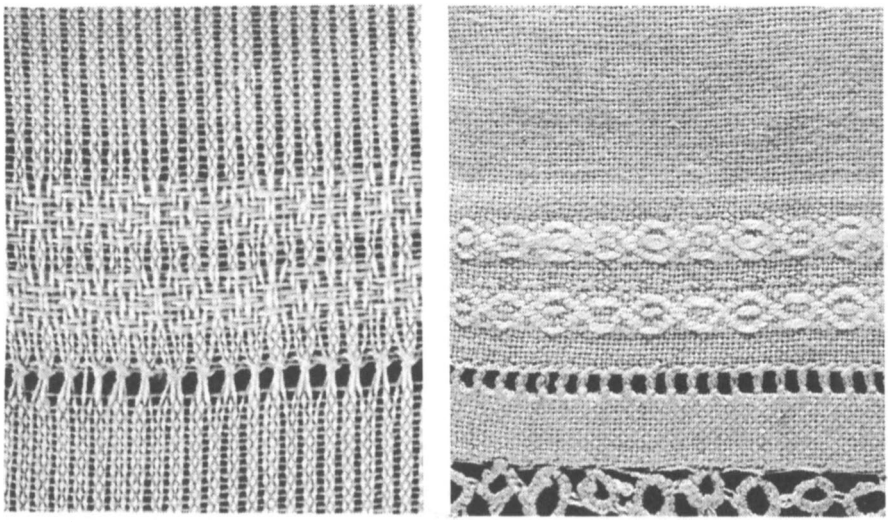
A nice thing about tatting is that you crook your pinky up and look very elegant while doing it. Also, it's so tiny you can keep it in your jeans pocket (not elegant, but handy). And a metal shuttle is only about $.79 at the dimestore. The best learning aide I found is the Coats & Clark "How to Do It" booklet also from the dimestore. I tatted in the car waiting for the kids, at the printer waiting for color, on an airplane, over coffee, in bed. Busy hands are happy hands. The biggest pain about tatting is blocking it—pinning all those little circles out flat. I've read that if it gets limp and shabby, you can press it between waxed paper, which replaces some of the natural waxes found in linen.

Finished

Thus did my project proceed. I spent two mornings before breakfast measuring and sleying, one Saturday morning in between laundry loads threading and winding on, about six hours hemstitching and weaving, and a couple of hours constructing and finishing. Is that a long time, or isn't it? It's quite relative. They're a pleasure to have and use, and I can imagine someone, someday, saying "your great-grandmother wove these." I like that. □



VIRGINIA WEST'S HEMSTITCHING METHOD
(see article on previous page)



Lacy linen pillowcase before and after washing. Really! Instructions for both cases begin on p. 80.

AVOIDING AND REPAIRING WEAVING ERRORS

by Sharon D. Alderman

Nobody's perfect. That isn't news, and while it is discouraging to think that absolute perfection is beyond our grasp, it is comforting to know that everyone else shares our condition. As we weave we make mistakes—all of us do, but there is hope. Many of our weaving errors can be corrected so well that it would be difficult to detect that they had ever occurred.

There are several times in the process of creating cloth when we can make some progress toward that elusive perfection. The first such time comes long before we have begun to weave. As we thread our looms, it is helpful to think of the draft we are using as consisting of units. If we are threading a straight draw on four shafts—that means 1, 2, 3, 4, 1, 2, 3, 4, etc.—we can think of the unit as consisting of 1, 2, 3 and 4. If we are threading the first block of summer and winter, we can think of the first unit as 1, 3, 2, 3. I divide overshot drafts into units, too, rather arbitrarily. Look at the draft shown and see how the divisions, while arbitrary, seem to have a pattern about them. It is important to divide your draft into some relatively small, easily remembered units or parts. As you thread, separate just those heddles—on the appropriate shafts—from the mass of waiting heddles. Thread that unit, knot the threaded warp ends with a slip knot, and then count out the heddles you will need for the next unit of your draft. It is easy to check to see where you are in the threading process if you are interrupted—and who isn't—in the middle of threading. Better still, you can go back, very easily, and double check to be sure that everything is threaded correctly. I figure out, with each warp, on which shaft the last heddle I thread will be; if the last heddle isn't where I expected it, then I take a look, bundle by bundle, to see where the error is. Sometimes, the error is in my calculations, but that happens very rarely.

The next time that we can help ourselves approach error-free weaving is right after we have begun to weave. I always weave the first inch or so and then stop. It isn't easy to stop, sometimes, because the moment when the weaving has just begun is an exciting one for me, every time. I adjust the lighting to be sure that I can see very well and examine the full width of the newly-woven cloth. I look for threading errors, although if I have been faithful about dividing the warp into threading units and checking them, there won't be any. If there are threading errors, they are usually of two kinds: a single warp end that is carried by the wrong shaft or a place where a skip has been made in the draft. The single end-error is corrected by untying the warp group that contains it at the front of the loom and then taking it out of the reed and the wrong heddle. I like to use repair heddles, metal heddles that snap onto the heddle bars and can be inserted anywhere they are needed. I also have a loom that does not use metal heddles, so when there is a threading error on that loom I can't use the repair heddles. When that happens I make a thread heddle on the shaft that ought to be carrying the warp end, thread the end through it and the reed, darn the end into the web and retie.

When there is a major error in the draft—dividing the draft into units and then checking the units avoids such errors neatly—then it must be re-threaded. There is no way around it. If the draft is not an overshot which I have carefully balanced, I re-thread from the error to the nearest edge. Because I check up on myself every time, I have not had to re-thread this way for years.

I also look for threads that haven't lifted properly—I have a jack loom—because they have gotten crossed behind the reed. If I find any, I check to make sure that the difficulty actually was caused by crossed threads. I open a shed and sight down it from the side of my loom, then I change sheds and repeat the process. Crossed warp ends show up very well this way. I untie the warp group containing them at the front of the loom to release the errant warp ends, pull them out back through the reed, straighten them out, resley them, darn them back into the web and then retie the group.

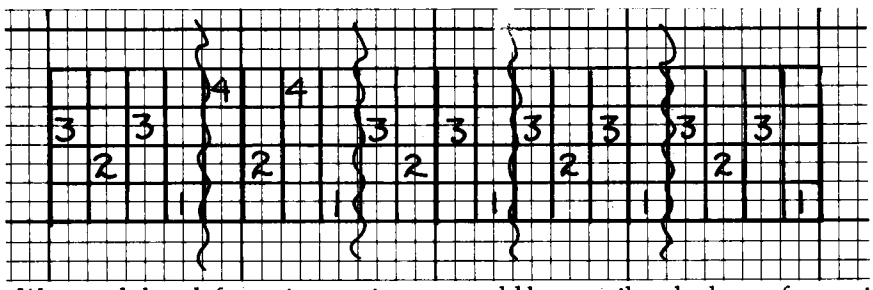
I look for sleying errors, too. At first glance a sleying error might not seem to be very important, but it will stay with you the full length of the warp, becoming more noticeable all the time. If your cloth is patterned, it narrows or widens the pattern where it falls for the length of the cloth. If your cloth has no pattern, it makes a streak in the warp direction. This streak shows up a lot if the warp is one color and the weft another. Sleying errors do not wash out; they just become permanent.

It helps to have a flashlight handy when looking for errors. If you hold it down below the web and shine it up through the woven cloth, your errors will become apparent very fast: backlighting is merciless!

There are two schools of thought about knots in warps. One school says to avoid them assiduously during the warping process by breaking the yarn while you are warping and starting again at one end or the other of your warping board. The other school says not to worry about them; instead remove them after the cloth is cut from the loom. I think

that both schools are right: both methods have their place. If the warp yarn is heavy, especially if it is a singles yarn, then I am very careful to avoid having knots. It is hard to darn in corrections—more about that in a minute—with heavy yarns and not have them show. If the warp yarn is fine, particularly if it is plied, I am inclined to let knots that are inconvenient to avoid—if they fall in the middle of a 12-yard-long warp, for example—just fall where they will and take care of them later.

The second school of thought says that it is a waste of time to try to avoid knots and even more wasteful to try to mend errors as you go. Again, there is a good reason to support this assertion, but there are circumstances when I don't follow this good advice. It is not a good idea to mend the cloth as you go if you are weaving rapidly and with good rhythm. We do our best weaving—our most even weaving—when we weave rhythmically, and a good rhythm encourages speed. But sometimes we weave cloth that changes its shape after it is taken from the loom, as waffle weave and some lace weaves do. In these cases it is a good idea to do the mending while you have the cloth under control, because it will be a lot harder to do later. Stopping to mend certainly does break the rhythm of weaving, but in our craft as in life in general, sometimes the rules need to be bent a little.



Warp ends break from time to time. When there are knots in the warp, sometimes they come undone when they are under tension. When a warp end breaks or a knot comes undone, we are faced with the space left by the missing warp yarn. We could leave this space until we have finished weaving the whole warp and then spend the rest of our lives darning in the missing warp end, but that wouldn't be very efficient, and the result would probably be the introduction of more errors! When more than one option is available, we ought to evaluate the result of using each of them and decide which one will give the best results and use our time most efficiently. I mend broken, or otherwise missing, warp ends as soon as I notice that something has happened. In most warps there is a sort of pattern that the raised ends make for each shed and I keep an eye out for any deviation in that pattern. I do not stop and study each shed because that would break the all-important rhythm of weaving, but I DO keep my eyes open. When I have to replace a warp end I measure off a piece of yarn, by eye, so that it is long enough to go from the fell—the place where the last pick is—to the back of the loom plus about a foot. I put a pin in the web just before the place where the warp end ought to be and anchor the yarn I will be inserting around it in a figure eight. I use at least 2" of the yarn in securing it because I will need it to complete the job in a little while. I thread the free end of the mending yarn through the reed and through the proper heddle and then hang it over the back of the loom and weight it. Nearly anything can be used for a weight so long as it is not too heavy. Some people tie on fishing weights, some use washers—and keep adding them until the weighting is just right. Some people using spring-type clothes pins, using as many of them as it takes to create the right tension on the mending end. I have found that hemostats (5" long mosquito forceps) sold by a mail-order house for use in soldering small electronics parts, are perfect for the job. (Brookstone Co., 127 Vose Farm Rd., Peterborough, NH 03458) I bought just three of them because they cost about $7 each, and that has been enough. If disaster strikes and I need more of them, I use clothespins as a backup. They lock when in use, as clothespins do not, and just clamp in place without the need of tying the knots that weights require. If they do not provide enough weight one at a time, then I use the clamp to fasten the added warp end to one of its neighbors somewhere below the warp beam so the tension will be perfect. They are very easy to use.

When I glance at the pattern of the lifted ends to be sure that none of them has broken, I also glance at the fell. If I see that a skip has occurred, I take the shuttle back through that shed and undo the error. The glance at the fell will also reveal incorrect sheds; sometimes we get mixed up in our treadle order. It helps a lot to arrange the treadles in an order that can be treadled by alternating feet and working one's way from the outer treadles in, or from the inner treadles out. It pays to make the weaving of the cloth as easy and pleasant as possible. An error that is undone the instant it occurs will not leave a flaw in the fabric.

When weaving is complete and the cloth is cut from the loom it is time to give it a thorough inspection. I hold it up in front of a window or in front of another strong light source. The light tables that photographers use would be more convenient, but my window works very well. If I have finished weaving at night, I usually put off the examination for flaws until the morning because I have found that I am better at "picky" work in the morning when I'm fresher.

There are all sorts of flaws, some of which we cause and some of which are beyond our control. Stains in yarns, unwanted thick or thin places, and irregularities in color blending prior to spinning are flaws we have not caused. If you find that yarn from a certain source has more than its share of these flaws, reconsider the value of the source. It would be a good idea to tell the manufacturer if his yarns are very flawed. Most manufacturers want to produce the best product they can and want satisfied customers. If a yarn has places in it where it has been stained, these places have to be cut at either end of the stain, removed and a new piece of yarn darned in. I use a blunt needle, called a tapestry needle, or a tiny latch hook. I always keep several sizes of tapestry needles on hand so that I will have just the one that fits the yarn I am using. The latch hook tool that machine knitters use is very handy, and faster, too, if the yarns aren't terribly fine. This tool may be threaded in the path that the mending

continued on p. 84

SPECIAL REPORT

FIBER FACTS for finishing fabrics

by Bette Hochberg

The first key to good weaving is knowledge of the characteristics and behavior of fibers. Spinning, weaving, dyeing and finishing all depend on an understanding of fibers. They are the raw materials and the foundation from which all textile processes grow.

Most of the fabrics which handweavers finish are made from natural fibers. They are composed of organic cells, just as we are. They have a mind of their own, and each is different. We cannot persuade, coax or threaten them to shrink less, be stronger, drape better, stretch more, or wrinkle less. We must understand just what we can and cannot ask them to do.

Confusion about finishing can be avoided if we know how each type of fiber reacts to heat, moisture, wrinkling, chemicals in soaps, detergents, bleaches, etc.

Heat sensitivity

Sensitivity to heat determines how a fiber responds to wet heat (as in boiling water), and to dry heat (as in the dryer or ironing). Silk, wool and all other protein fibers are moderately resistant to heat, but these fibers should not be boiled (at the 212° F. temperature of boiling water, the molecular arrangement of wool can be changed). When dyeing protein fibers or degumming silk, never permit the water to get hotter than simmering (180° F.), or the fiber will develop a harsher hand. Wool should always be ironed with steam rather than dry heat.

Cotton, linen and other cellulose fibers are quite heat resistant. They can be safely boiled in finishing, dyeing and bleaching.

Natural fibers prefer being dried in the fresh air. If you use an automatic dryer, do not use a high temperature setting for silk, wool or any animal fiber. Take out all natural fiber fabrics before they are thoroughly dry. Natural fibers normally contain from 8% to 18% moisture. Nature did not intend them to encounter the traumatic experience of a dryer, which sucks out all their moisture. It will make the fibers dry and brittle like fall leaves. If they remain too long in the dryer, they will need an hour or so to regain moisture from the air. Excessive dry heat can damage the molecular arrangement of all natural fibers.

Synthetic fibers are thermoplastic. The length, diameter and shape of each fiber is heated almost to the melting point in the manufacturing process. When the fiber or yarn cools, the size and shape is permanently set. All synthetic fibers are heat sensitive.

If washing, drying or ironing temperatures are set too high, they will be damaged. Soft wrinkles may be set into fabrics at moderate temperatures. As the temperature increases, synthetic fibers first soften and shrink, then become sticky, and finally melt. Some synthetic fibers will dissolve in boiling water.

Because synthetics absorb little or no water into their molecular structure, they will not respond to finishing methods which are possible to do at home or in a studio.

RECOMMENDED TEMPERATURES FOR FIBRES

FIBER	WATER TEMPERATURE	IRON SETTING
cotton	above 120°F.	high 425°F.
flax/linen	above 120°F.	high 450°F.
silk	100° to 110°F.	medium 300°F.
wool	100° to 110°F.	medium 300°F. (steam)
acetate	100° to 110°F.	low 250°F.
acrylic	100° to 110°F.	medium 300°F.
nylon	100° to 110°F.	low 250°F.
polyester	100° to 110°F.	low 250°F.
rayon	above 120° to 140°F.	medium-high 350°F.

Chemical reactions

Various fibers may feel and look quite different, but if they have a similar chemical composition, they will react in similar ways to chemicals in soaps, detergents, bleaches, cleaning solvents and dyes. Knowing whether the fiber is protein or cellulose, you can determine which substances are safe to use in finishing.

pH levels. The effect of any substance you use on fibers is largely due to the acidity or alkalinity of the substance. The pH level is a way of expressing just how acid or alkaline the solution. The pH level is graded on a scale of 0 to 14, in which 7 is the designation for pure water (neutral). Numbers less than 7 show increasing acidity. Numbers higher than 7 indicate increasing alkalinity.

Some mild soaps have a pH level close to 7 and thus are described as neutral. Ordinary household vinegar has a pH of about 3.1 and is therefore acid. Strong laundry detergents and bar soaps have a pH of 8.5 to 10 and are rated as strongly alkaline. The action of both acid and alkali is greater with any increase in the temperature of the solution.

Acidity. Wool is relatively resistant to both organic acids and cold dilute mineral acids. Industry often treats wool with mineral acids, such as hydrochloric or sulphuric acid (carbonization), to destroy vegetable matter mixed in with wool. These strong acids do tend to cause loss of luster, and make wool feel harsh. Silk is damaged by mineral acids, but is resistant to organic acids. Acetic acid is used to give temporary scroop to silk; tartaric acid produces permanent scrooping.

Cotton, linen and other cellulose fibers are harmed by both mineral and organic acids. Even mild organic acids such as vinegar and lemon juice can cause some harm. If spilled on cellulose fibers, they should be rinsed out with

cold water. Do not use a vinegar rinse to cut soap film when washing or finishing cotton, linen or other cellulose fibers. Even normal body heat can activate traces of acids which were not thoroughly rinsed out. Some dye recipes for cellulose fibers require neutralizing with dilute organic acid. It is better for the fiber if you use acetic rather than tartaric acid; if traces of acetic acid should remain in the fiber, they will vaporize in time.

REACTIONS TO ACIDS			
FIBER	COLD DILUTE ACIDS	HOT DILUTE ACIDS	CONCENTRATED ACIDS
cotton	resistant if removed	damaged, weakened	destroyed
flax/linen	resistant if removed	damaged, weakened	destroyed
wool	resistant	some damage	mineral damages
silk	resistant to organic	damaged by mineral	mineral destroys
rayon	resistant if removed	damaged, weakened	destroyed
acetate	resistant if removed	damaged, weakened	destroyed
nylon	mineral destroys	destroyed	destroyed
polyester	resistant	resistant	destroyed
acrylic	resistant	resistant	destroyed

Alkalinity. All protein fibers (silk, wool and other animal fibers) are sensitive to strong alkali in harsh soaps and detergents, strong concentrations of washing soda, etc. When they are used for the initial cleaning of wool or degumming of silk, they should be employed with considerable care. Strongly alkaline solutions can cause loss of luster, a harsh feel, and weakened fibers.

For normal finishing or washing of both silk and wool, use mild neutral pH soaps or detergents. Wool will full more quickly in soap than in detergent. However, if you have hard water, it is often more sensible to use detergent. Mild liquid detergents such as Ivory will not harm fibers.

If you use soap in hard water, the soap will combine with minerals in the water (such as iron salts, calcium and magnesium). This can leave a sticky scum or film on fibers, which dulls their luster. When washing or finishing protein fibers, this problem can be reduced by using enough soap and adding a tablespoon of vinegar per quart of water in the next-to-last rinse. The weak acid in the vinegar neutralizes any alkaline residue. The fiber, yarn or fabric is left with its natural luster and a good hand.

Cotton, linen, other plant fibers and rayon are unharmed by alkali in harsh soaps and strong laundry detergents. Strong solutions of caustic soda are used to mercerize cotton and linen.

REACTIONS TO ALKALI		
FIBER	WEAK SOLUTIONS	STRONG SOLUTIONS
cotton	resistant	resistant (mercerizes)
flax/linen	resistant	resistant (mercerizes)
wool	resistant to pH 8	destroyed (5% lye dissolves)
silk*	resistant to pH 10.5	destroyed (hot lye dissolves)
rayon	resistant	resistant (mercerizes)
acetate	resistant	weakened, stiffened
nylon	resistant	resistant
polyester	moderately resistant	damaged
acrylic	moderately resistant	destroyed

**Silk can withstand stronger alkali than wool. Bombyx Mori silk is less resistant than tussah silk.*

Bleaches. Chlorine bleaches do not harm cellulose fibers if used according to directions. Be sure the bleach is properly diluted. Rinse it out thoroughly.

Never use chlorine bleaches on protein fibers. Even a dilute solution will stiffen and yellow them. Strong chlorine will dissolve them. You can easily observe this. Pour some chlorine bleach into a small jar. Submerge a little tuft of fine wool, cashmere or silk and cover the jar. Return in an hour and you will find that the fiber has vanished.

Peroxide is sometimes used as a bleach for wool. If a coarse wool has yellowed, you may be able to bleach it only with peroxide. But use it with caution. It will damage fine wools and cause some harshness and brittleness in all wool. Using peroxide on wool has the same effect as using it on human hair.

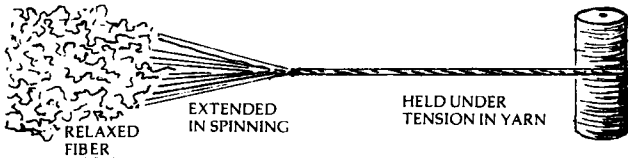
Protein fibers resist bleaching. No household bleach is really effective. If you want to try bleaching, then use a powdered oxygen bleach such as sodium perborate. Such bleaches are milder and safer for protein fibers and most synthetics.

Shrinkage

Shrinkage may be compared to a rubber band that is stretched out and then released. The rubber band does not shrink or become smaller than its original size, it simply returns to normal.

The same thing is true of natural fibers and yarns. They do not truly shrink. If you wash a single strand of any natural fiber, it will always return to the same size when dry. Shrinkage is caused by the way we spin, weave and finish yarn and fabric.

During spinning, fibers are attenuated, or stretched lengthwise, as they are drawn into the yarn and twisted. Crimped, stretchy fibers are extended more than straight, relatively rigid fibers. Fibers remain extended in the yarn, on the bobbin and during weaving. The first time that tension is released and the fibers are able to relax in a warm bath, they move and curve into the most comfortable and normal position possible. When the fibers relax, the yarn will become shorter and thicker. This yarn shrinkage is simply a return to a more normal position.




YARN HELD UNDER TENSION


RELAXED YARN


WARP UNDER TENSION ON LOOM


WARP RELAXED AFTER WEAVING AND FINISHING

If yarns are dipped in water or washed and allowed to dry in a relaxed state before being woven, they will cause less shrinkage in the fabric. If yarns are not washed, or if they are washed and dried under tension before weaving, further yarn shrinkage will occur when the fabric is washed.

During weaving, the yarns are held under tension. Warp yarns are under greater tension than weft yarns. When the loom tension is released, there will be some relaxation, or weaving "take-up", of both warp and weft yarns. When the fabric is cut from the loom and is thoroughly steamed or washed, then fibers, yarns and fabrics all relax and curve into a more normal position. If allowed to dry in this relaxed state, no further shrinkage will occur during subsequent washings (unless subjected to other processes such as fulling and mercerization).

If you truly understand that shrinkage is actually nothing more than relaxation after stretching, it will cease to be a problem. Experienced spinners and weavers quite often can accurately estimate shrinkage simply by examining yarn or fabric.

Be aware that yarns of dissimilar fibers will probably show different amounts of shrinkage. Yarns of stretchy crimped fibers will cause the areas in which they are woven to shrink more than areas woven with smooth, straight fibers. Different amounts of twist in yarn can affect shrinkage. Areas woven with high-twist yarns will shrink more than those done with low-twist yarns. I have done experiments on this using the same wool yarn, sett, weave and finishing. When twist in the yarn was reduced to a minimum, shrinkage was 5%. By increasing twist to a maximum, shrinkage increased to 66%.

Handweavers who first make a sample with an appropriate sett and then wash it, will never be surprised by serious shrinkage problems. They will be able to calculate the amount of fabric shrinkage in a finished piece. If you are unwilling to make a woven sample, at least test a yarn sample. Without stretching the yarn, carefully measure a 100" length. Wash it and lay it flat to dry. When dry, remeasure to calculate yarn shrinkage. (For example, if it now measures 90", it has 10% shrinkage, etc.) There will of course be some additional shrinkage due to weaving take-up.

If you try to finish fabric woven with synthetics, you will have only the small amount of shrinkage caused by normal weaving take-up. Since synthetics are heat set, fibers and yarns will not relax or shrink as long as temperatures recommended on the heat sensitivity chart are used. If these temperatures are exceeded, both shrinkage and fiber damage can occur.

When the Industrial Revolution mechanized the entire spinning, weaving and finishing process, problems with shrinkage increased. High speed industrial weaving makes it necessary to produce enormous lengths of yardage in one continuous piece. Thus the yarn must be held under tension from the time it is spun until it is woven. During the weaving process, the fabric usually is held under constant tension, passing from one cylinder roll to the next—through finishing stages and drying ovens—until it is wound on the bolt and sold to consumers or clothing manufacturers. These methods would normally produce very high shrinkage during the first laundering. To counteract this, industry uses compressive shrinkage control, or applies synthetic resin finishes to lock the fibers in place.

Sunlight resistance

Ultraviolet rays from the sun and from lighting (particularly fluorescent) cause oxidation, and degrade all fibers and fade all dyes. It is only a question of how much and how long. Synthetic, regenerated and natural fibers are all susceptible to progressive deterioration. The molecular structure is damaged, fibers lose strength and begin to yellow. In areas with high atmospheric humidity, degradation occurs more rapidly.

The presence of dyes and chemical finishes can accelerate damage. Cellulose fibers resist the sun quite well. Drapes of good quality natural linen will not show noticeable damage within a lifetime. However, if the linen contains dye or chemical finishes, damage may show in a few years. All protein fibers are very sensitive to sun damage. When finishing or laundering, never hang these fabrics in the sun to dry. In your home you can protect tapestries, wall hangings, rugs, drapes and upholstery from prolonged exposure to sunlight by spraying sun-filter coatings directly on window or door glass.

RESISTANCE TO SUNLIGHT

acrylic	good
polyester	↓
flax/linen	
cotton	↓
rayon	medium
acetate	↓
nylon	
wool	
silk	poor

Feltability

Feltability is a property present in wool, down or hair fibers which have microscopic scales covering the fiber surface. Combinations of moisture, alternating hot and cold temperatures, pressure and agitation cause the serrated scales to interlock the fibers.

Cellulose fibers, silk and some coarse hair fibers do not have the ability to felt. These fibers may mat, but they do not actually felt. Sometimes glues, sizings or finishes are added to these fibers to produce a cohesive fabric.

When felting is used to a limited degree on woven cloth, it is called fulling or milling. The ability to felt is considered a defect only if further felting occurs each time a fabric is washed. This is not a fiber fault, but merely the result of careless washing.

Different degrees of fulling are used on various fabrics. Fulling can improve drape, dimensional stability, warmth, durability and resistance to pilling, raveling and cold winter winds. However, if felting is not limited to light fulling, elasticity will be reduced. Wool's ability to stretch and snap back is one of the main reasons it is so highly valued for clothing. Some wool fiber can be stretched as much as 42% before it breaks, and it has 99% recovery.

When wool fabric is stretched, first the yarn crimp is extended, then the fiber crimp is pulled out, and finally the molecular crimp extends. Felting locks the fibers in place and eliminates stretch. Therefore, heavy fulling should be limited to fabrics used for home furnishings or outer wear.

Oils and finishes

Now, most yarns used by handweavers are mill-spun. They are made by industry to supply industry. They are produced for high-speed power looms. Only a very few of the mill-spun yarns offered to handweavers today are made specifically for handweaving.

When yarns are spun at power mills, the fibers are usually oiled to make them easier to control. Yarns intended for industrial knitting machines are treated with lubricants to make them perform more smoothly. And yarns for power looms often contain chemicals, oils and sizings.

Handweavers often use mill-end yarns. These are intercepted from the middle of the industrial cycle. They may have been destined for special finishing to correct yarn weakness in durability, flexibility, softness, colorfastness, etc. Handweavers have no way of knowing what has already been done to mill-end yarns, or what additional finishing was intended for it.

When you buy mill-spun yarn, first examine it. Smell the yarn to detect any musty, rancid or petroleum odor. If it does give off such an odor, it contains something which should eventually be washed out. When yarns containing oils, etc. are spun and wound under high tension, they appear flatter, smoother and harder than they will after washing. The first time such yarns are dipped in water or washed, they will shrink, the yarn color will lighten, and they probably will feel softer and more resilient. The yarn also may become fuzzier and thicker.

Always wash a small sample skein of your yarn before you warp your loom. Use the same methods you plan to use for finishing the fabric. This will eliminate many unwelcome surprises in your finished weaving. For instance, some wool yarns have been rendered machine washable by chemically dissolving the surface scales, or by coating the fiber with a synthetic resin. When wool is sealed in plastic, some of its most desirable properties are lost, as well as its ability to respond to normal fulling and finishing.

Synthetic functional finishes on natural fiber yarns can alter their chemical reactions and heat sensitivity. For instance, a 100% cotton with a durable-press finish may yellow in hot water, and if ironed at a high setting, the resin may melt and scorch. Most chemical finishes cause some damage to softness, strength and durability of natural fibers.

Summary

These are only a few of the properties of fibers which should be considered. Many others influence finishing methods, or are affected by finishing. Traditionally, weavers worked with one or two fibers all their lives, and both fibers and yarns were usually produced locally. They knew the properties which affected appearance and performance from traditional and life-long personal experience. There was no need to study them.

However, today's spinners and weavers work with a wide variety of fibers. Many spinners use industrially prepared fibers, and most weavers use mill-spun yarns. So the craft of handweaving, as it exists today, cannot help but be influenced by industrial processes. □

Edges, joinings, trims, embellishments, closures . . . and more!

continued from p. 44

punctuation mark at the tip of a hood, end of a sash, corners of a pillow, decorating a bridle, accenting the edge of a wall piece, a banner; or a tassel can be a complete, beautiful object by itself.

The Mexican and Guatemalan way of adding tiny cotton thread tassels in masses is charming and suggests some uses. A shaped belt, of the same cottolin as a dress, sports a row of miniature cottolin tassels clustered at the back. The slim, tapered ends at the belt front are completed with two of the small tassels. Chain stitches up onto the belt unify belt and trim.

CLOSURES

To compose a whole design, including the closure, substance and type must be considered, but also the function, as it must work efficiently, too. A grand challenge for a handweaver!

Closures are usually needed for wearing apparel, belts and handbags. Some household weavings might have need of closures other than a joining stitch—pillows, for example, with covers buttoned or laced on. The classic saddlebag closure of a cord chained through buttonholes adapts to handbags and garment closures or pillows. One of the most suitable and practical closures is woven wefts extended at the selvedge for ties. Any integral closure such as woven-in loops, slits, ties or buttons will withstand the constant moving, tugging and friction much longer than something sewn on. You have probably heard about the woman, muttering as she sewed a shirt button on for the fifth time—"They just don't sew buttons on like they used to."

Found closures often become a feature, with seashells, bone, horn, driftwood and other gleanings from Mother Nature adapted to useful purposes. Look, scrounge, discover, try out. The necessity of opening and closing a garment can be met in elaborate or simple ways.

Tying and lacing are direct and logical. Buttons and snaps, hooks and eyes are secure and satisfactory. The fun and the challenge comes from devising your own versions just right for your product. Give a weaver a length of cord to knot, knit or crochet, and ingenious closures result—frogs, cord and pick, coiled buttons. Slits woven in for lacing or buttonholes wear longer than cut and sewn buttonholes, especially in a heavy handwoven. One caution: be sure to set the slit in from the selvedge several warp ends. Too close, they will pull and distort the edge.

ADDITIONS

Your own devices and solutions for finishing and embellishing your weavings may become your signature. Small finishing touches—perhaps so subtle no one else notices—reflect the interests, taste and expertise of the weaver or embroiderer. Let your signatures all be appropriate and carefully handcrafted or selected. My own top favorites for closures or trims are the fascinating little clay spindle whorls from drop spindles used in Peru, Africa and Mexico. They take many forms—round, peaked, flattened, cone-shaped, in many sizes with incised designs. I treasure the ones with pelicans and monkeys. The spindle stick hole in the center makes them perfect for thong or cord endings, or for the top of a tassel. Appropriate for a weaver—wearing a bit of history and a tool fashioned with love and care.

Methods and ideas have filtered through my years of weaving, teaching workshops and writing books, along with studying textiles from other cultures, trying out ideas, and meeting with weavers and embroiderers. Each method tried has bred others. Compressing all into a few pages or hours is like trying to contain a soapy baby in a bath—arms and legs flail out in all directions. The subject is contained at the moment, but fringes and ends hang out untidily clamoring for more exposure! Working with all of you weavers, so receptive and eager, has been a great boon and I thank you for spurring me on. □

Rx: winding and threading errors

by Sallie T. Guy

NOW THAT WE live in a computer age, it seems even more humiliating to acknowledge the inevitability of human error. Yet computer technology is based on the process of trial and error, a point often overlooked as we contemplate the marvelous spewing out of information on every subject, even weaving calculations and drafts. It is time for us to accept the fact that we are fallible creatures whose increased proficiency as weavers may reduce our inclination to error but not eliminate it entirely.

On the castle of one of my looms, I have taped a reassuring statement: "He who never made a mistake never made a discovery." The source for this quote is forgotten, but the succinct reminder challenges me to search for ways to untangle (excuse the pun) the dilemmas in which I find myself.

An abundance of weaving texts outline the correct procedures for every step of the weaving process. The purpose of this series will be to describe remedial measures to take in case something goes wrong during one of these steps.

In recognition of the fact that most problems occur because of weaver error, it is absolutely essential, first of all, that we maintain our sense of humor. It may be lost momentarily, but is always recoverable. Weavers are a persistent lot, but an ability to laugh at ourselves leavens our dogged determination. There are then three logical steps to take in such situations: 1) assume there is a solution (the yarn cost $100); 2) assess the situation with lots of imagination (this may take a day or two); 3) choose the remedy that results in the least loss in terms of time, temper and the finished product.

What are some specific problems that can be solved successfully?

IMPROPER WARPING . . .

One of the most serious mistakes I have ever confronted was an improperly wound warp. Having just ordered a second warp beam for my Macomber, I decided to use it for a bedspread project in order to try the friction brake mechanism. I did not realize that the cords holding the rod for this new beam were wound around it in the wrong direction for rolling on. Unwrapping the cords just enough to tie on the 20/2 cotton warp set at 40 e.p.i., I then rewound cords plus warp in the same direction.

Left: *Selvedge pattern of table runner before and after correction.* **Below:** *Finished table runners, napkin and ring.*

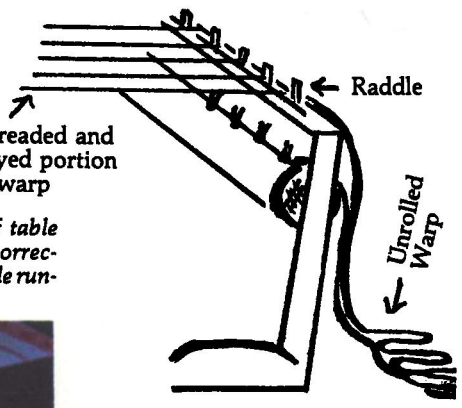


Figure 1. Side view at rear of loom.

Figure 2. Back view of loom.

That is, I turned the handle of the warp beam toward the front of the loom. A number of working hours later, with the loom completely dressed, I sat down to weave. As I stepped on the treadle, the tension released completely on the warp—to my horror, I realized the entire warp had been rolled on backwards—1600 ends of fine cotton threaded in a complex overshot draft!

THE SOLUTION . . .

Since I beam from back to front, I first slipped the raddle back into position on the back beam, distributing bouts of warp into the raddle sections in the approximate groupings originally used. Otherwise the warp would have narrowed inward when rerolled. With the entire warp stretched and tied to back and front beams, this was easy to do.

Realizing that the less a warp is handled while winding on, particularly individual ends, the more even the tension for weaving will be, I next unrolled the warp completely without disturbing any of it. It fell loosely on the floor behind the loom, with layers piling up as I unwound (see Fig. 1). At this point, I had to remind myself not to panic, since my 1600 ends, each six yards long, did indeed look like a tangled mess to the uninitiated (my skeptical family).

When the end of the warp appeared, I rerolled it in the proper direction, i.e. with the handle of the warp beam turned away from the front of the loom, reinserting the warping papers I had removed. After winding on about ½ yard, I went to the rear of the loom to tighten the warp on the beam. This was accomplished by grasping a portion of the warp (about a 6" width) about halfway in between the warp beam and the back beam and pulling firmly *upward* toward the ceiling. The entire warp was tightened on the beam in this fashion, with an effort made to pull on each section equally (see Fig. 2). By alternately winding and tightening in this manner, the entire warp was rerolled.

For those who beam from the front, and therefore do not use a raddle, the warp can be unrolled and pulled gently forward, to minimize abrasion, allowing it to fall in layers on the floor at the front of the loom rather than the rear. Then it can be rerolled as described above, except that every ½ yard the warp will be tightened on the warp beam by pulling from the front of the loom. The sleyed reed will maintain the correct warp width.

continued on p. 88

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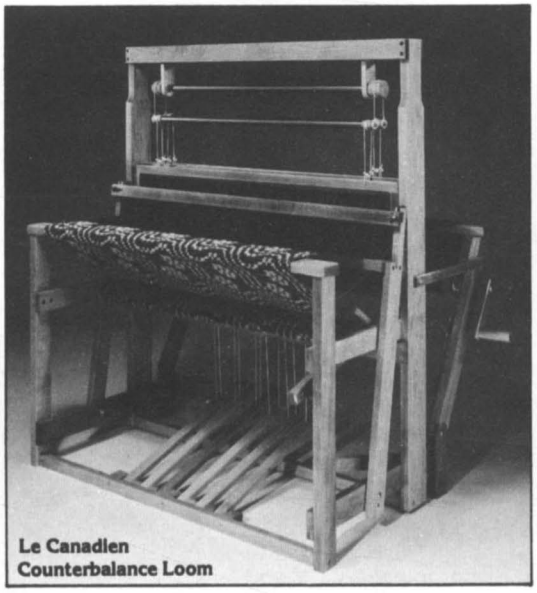

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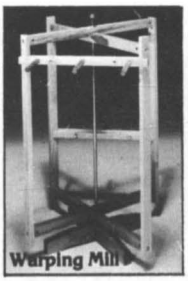
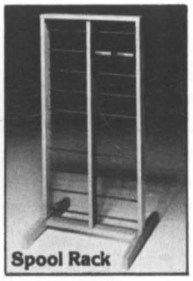
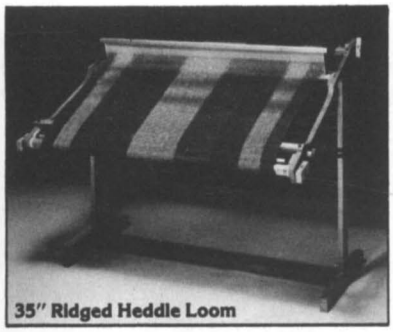


Warping Mill



Spool Rack



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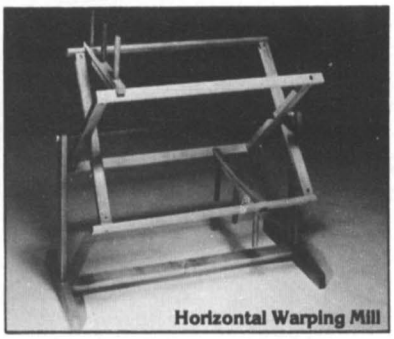
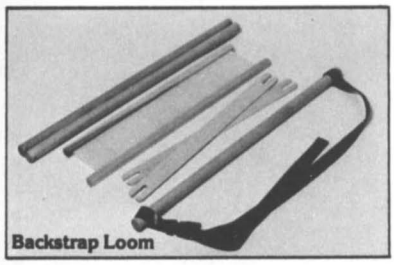
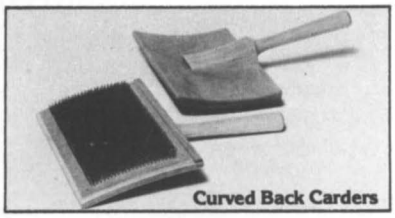


Horizontal Warping Mill



Backstrap Loom

Bench and Bench Bag



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Cracked pots, snaggled skeins and other dyeing dilemmas

by Anne Bliss

DYEING FIBERS, YARNS and fabrics in a home or studio situation often presents little problems, and even big ones sometimes. Perhaps we can easily figure out the solution, but more often we need to ask around and find out if other dyers have had the same trouble, or consult references to see what can be done about the situation. Inexperienced dyers seem to be especially insecure about trying techniques with which they are unfamiliar. What is often encountered is a lack of "troubleshooting" experience; couple this with insecurity, several would-be or for-real disasters, and a new dyer might decide this just isn't her sport!

My own philosophy of dyeing techniques and methods involves a whole lot of "make it work", "whatever works is fine", "try anything, but be careful", "read what the industrial dye literature has to say and apply their expertise", "ask everybody how to do it", "put everybody's tricks up your sleeve", etc. In other words, don't be scared and do feel free to experiment, and experiment, and experiment until you solve your problem(s) or find just the right techniques. After many years of experimental dyeing, production dyeing, attempts to match dyelots, testing of dyes for fastness and useability, etc., and with too many dyeing dilemmas to count, I've learned a few tricks and want to share some of them with you. These are some of the questions dyers often ask, and maybe it will be helpful for you to put some answers and solutions up your sleeve to pull out when needed.

Q. What can be done about pock-marked, pitted or cracked enamel pots?

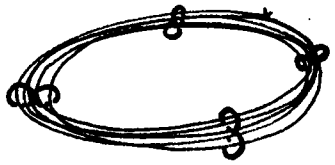
Replace them (at a big expense) with stainless steel pots; be sure to get a good grade of steel, and that it is stainless and not a carbon or other type of steel, as they may not be non-reactive to the dyes or mordants. Remember that water weighs 8 pounds per gallon, so a 10-gallon pot full of water will weigh 80 pounds; can you lift or otherwise manage that?

Or, sand the chipped area to get rid of sharp edges on the remaining enamel. Purchase some kitchen appliance paint and paint over the area; let it dry at least 24 hours before use. Use of a contrasting color of paint on the pot will help you tell how well it adheres, as the repair job may last forever or may peel right off, depending on the enamel. A good job of sanding will help the paint adhere better. This trick is worth a try, as paint is cheaper than pots.

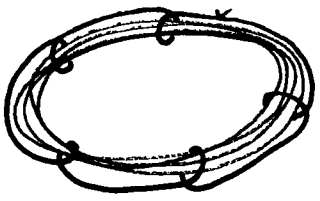
Q. My skeins always get snaggled and messy in the pot, and I have a hard time handling them; how can I keep them smooth and tangle-free?

Use smaller skeins (weight-wise). A two-pound skein can be hard to handle unless it has at least a 2-yard circumference. My preference is to use up to 3-4 oz. skeins of silk or plant fibers, and 8 oz. skeins of wool or other animals fibers.

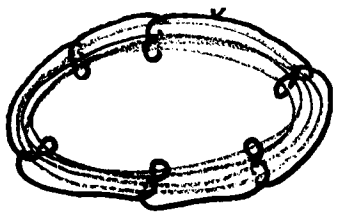
Tie skeins securely but not too tight (see diagram).



A. Tie the skein in 3-4 places with a secure (but not tight) piece of strong yarn or string. I like white cotton warp yarn. Also tie the ends of the yarn in the skein. The holding ties cross through the yarn in the skein, allowing movement in the skeined yarn but not much.



B. Tie a length of strong string to the ends of the yarn in the skein. Follow around the skein with your holding thread making several half-hitches, firm but not tight.



C. This is a combination of A and B—a single holding thread that crosses through the middle of the skein.

Don't crowd your pot. For minimums, a pound of wool seems to need 2½ gallons of water to cover it; 4 gallons is much better and is closest to the recommended weight ratio of 30 pounds of water to one pound of wool. If the skeins are too tightly packed in the pot, it's difficult to turn them, and you'll end up pulling threads loose, twisting skeins inside out, etc.

When you stir your dye or lift the skeins to oxidize, poke your stir stick through the center hole in the skein and lift carefully. Poking halfway through the skein or just picking at a few of the threads is bound to pull threads loose and tangle the skein with a result looking like a witch's hairdo!

Q. How can I get my synthetic dye powder to dissolve completely? It seems to stay in little globs here and there. (This applies also to the rather recently offered natural dye extracts, many of which are marketed as dry powders.)

Measure the dye powder into a small glass container while keeping track of your weight/amounts. Add a small amount of water (some dyes dissolve best in hot water; others like warm or cool, so experiment). Stir this to form a paste. Add additional water to make a liquid (be sure to keep track of your amounts so you'll know how strong this liquid dye base

is). This liquid dye base can then be measured into the total amount of water needed, and you shouldn't have any lumps left. CAUTION: Dye powders easily become airborne, so if you don't want more trouble, handle with care and/or wear a dust mask to protect yourself from inhaling the powder.

Q. My handspun yarns (spun from raw wool) always dye "splotchy" and aren't very colorfast. What am I doing wrong?

Have you scoured your yarn? If you don't get all the oils off, you will find that the oils resist the dye color, and the color may either crock (fall off) or fade quickly since it may not be bonded to the fiber at the molecular level. A good washing of your yarn will also remove any perspiration salts, dirt, dung, etc. that may either prevent the color from penetrating the fiber or that may adversely affect and change the intended color. (Commercial yarns should be scoured/washed also to remove residues from mill processes, spinning oil, etc.)

Perhaps your dye didn't "level", and the yarn is therefore not evenly colored. Leveling means a slowing down of the dye's bonding to the fiber which gives the dye a chance to bond evenly (or level). A level dye job has even distribution of color without splotches. To level a natural dye, add 1-2 tablespoons of table salt or Glauber's salt to a 4-gallon dyebath, and make sure it's dissolved before adding yarn to be dyed. Most synthetic dyes call for some measure of salt in their instructions; follow manufacturer's instructions.

Maybe you tied your skeins too tightly and thus tie-dyed your yarn. Ties on skeins should be secure but not so tight as to resist dyeing.

Your enamel pot may be leaching metallic compounds from a chipped area; repair it. Or, if you're using a pot that is made of a reactive metal (aluminum, iron, tin, copper) the metal may be leaching unevenly into the dye; you may need a new pot.

With natural dyes, a splotchy yarn may be the result of bad mordanting. Examine your mordanting technique—make certain mordants are dissolved before adding yarn, skeins are tied correctly, stirring is often and even, water in the pot is plentiful, and that rinsing is done very well before dyeing if planning to use yarns mordanted in several different metal salts in one dye bath.

Q. Why does my dyed yarn seem so stiff and rough?

If you're using natural dyes, you may be using too large a quantity of mordant. Consult a good book to check your amounts.

Some pre-metallized synthetic dyes have more metal salts added than others; the metal is a mordant and helps the color bond to the fiber. Your particular yarn might dye better with a different type or brand of dye; experiment to find what suits your needs.

Your water may have metal compounds—iron, magnesium, sulfur, etc.—and these may be the cause of the stiffness. Some dyers successfully overcome this by using a water softener or water purifying system.

If you boil your yarn or keep it too long in the mordant and/or dyebath, you may cause the surface scales to rise up and feel rough or harsh after drying. A bit of fabric softener in your final rinse might help. I've even found that a bit (1-2 tablespoons) of vinegar (the old-time hair rinse) in the final rinse helps restore pH balance and can soften at least your wool/animal fibers.

Q. My dyed color is "yukky". Help! OR How can I get a good dye on my previously splotchy yarn?

You can top-dye or over-dye your yarn. Remember: a) dark colors cover light ones; b) synthetic dyes can cover up (like painting over) natural dyes; c) natural dyes can alter synthetic colors and sometimes cover them; d) colors interact, i.e. red over yellow = orange, blue over yellow = green, etc.

You can post-mordant either naturally or synthetically-dyed materials, and this may "even" the color and make it all appear the same shade (though different from the original) by affecting the dye. Chrome, iron and tin seem to work best; follow standard mordanting procedures.

Q. After I've finished dyeing, I wash the yarn with a gentle soap and rinse it until the dye quits bleeding. Sometimes, though, the dye won't quit bleeding. Am I doing something wrong?

How much dyestuff are you using? Perhaps you're trying to overload the dyebath with so much coloring matter it can't all bond to the fibers. Thus it keeps washing off your yarn; sometimes it will even rub or "crock" off.

Keep rinsing the yarn/fabric after washing; then try one of these other tricks. You may find an end to the color bleed after six rinses.

Try adding a little table salt (1-2 tablespoons) to the rinse water and let it sit for 30 minutes. You may recall the "good old days" (of 15 or so years ago) when newly purchased cotton print fabrics had to be preshrunk in a tub of hot water; at our house we always added salt to the water to set the fugitive dye at the same time. What we were doing, more or less, was leveling the dye.

Some natural dyes, like Brazilwood, just aren't very fast to washing unless combined with another dye. The same holds true for some synthetic colors, as dyes are formulated for specific purposes and not all of them need to be washfast. (Remember: the main reason dye can wash off is because it wasn't bonded in the first place; the color may be "resting" on the fiber but hasn't really dyed the fiber. Examine your dyeing and mordanting.)

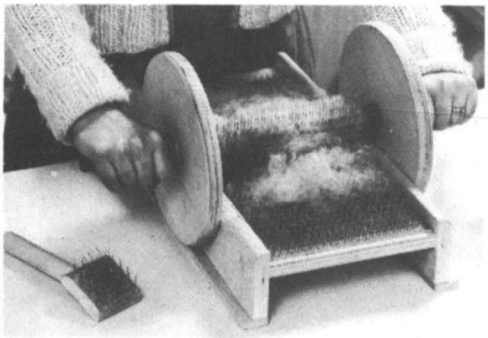
I'm becoming a real fan of Amway's concentrated soap LOC® for washing hand-dyed goods. I also use my own homemade soap, but most people aren't into making soap, and the LOC is a good substitute. It has a coconut oil base unlike most commercial soaps/detergents that have primarily petroleum bases (there are some animal-based soaps too). You might want to experiment with the soap you're using to wash your dyed goods; it may just be too harsh for your fibers and dyes, and it may be fostering the dye's bleeding.

Q. Why do my hand-dyed goods fade so badly?

If this is a general question, i.e. *all* your hand dyeing fades, then the problem may arise because: 1) the dye is no good (perhaps it has been wet, is sun-damaged, or is past the expiration date, etc.; or because it is too weak a solution; or it is not adhering/bonding to your fiber for some of the reasons discussed earlier; or the dyer is a) not following manufacturer's instructions; b) trying to

continued on p. 84

ever wish someone made spinning equipment that worked better?



someone does.

Louët

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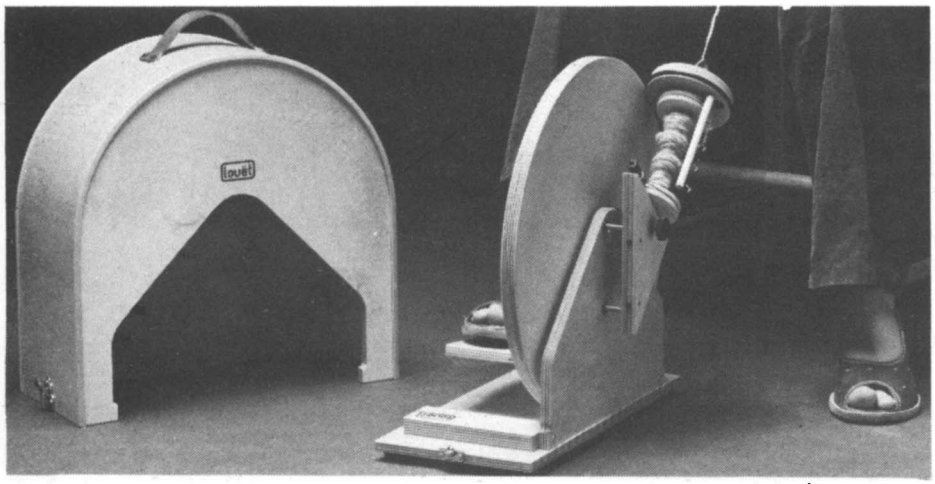
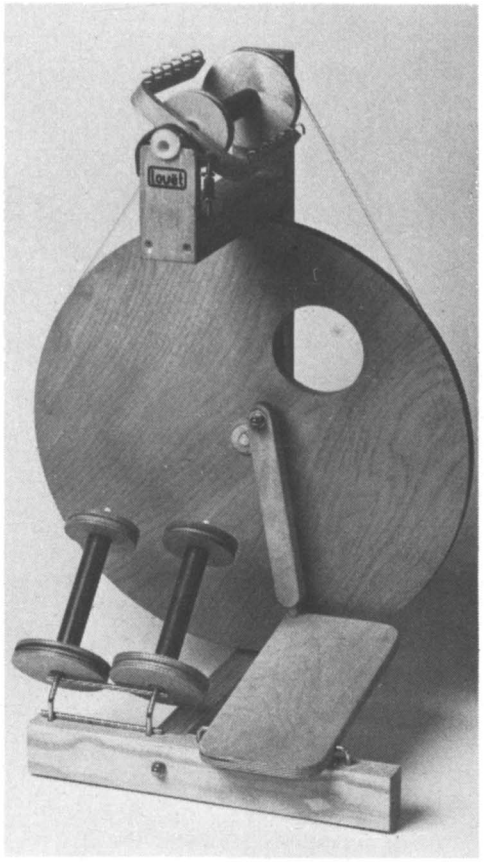


Compact enough to take with you just about anywhere, the "baby" Louet is nevertheless an excellent spinner.



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Prepared Fibers: A Sourcelist

by Brucie Adams

In an issue featuring finishing techniques, I find myself dealing with beginnings—well, sources anyway. Since there are many suppliers of prepared fibers, it seems there must also be many users of these. Many people prefer to use fibers prepared to some degree or another, either because of the time involved in picking, scouring, carding and possibly combing or dyeing a fleece, or because the raw, smelly thing simply is not in the least appealing. It is not necessary that a spinner deal with the raw product. There are many sources for prepared fibers.

This listing is limited to wool fibers, though several of the suppliers mentioned also sell silk, cotton and other animal fibers such as camel, alpaca, etc. Some of the sources listed below sell wholesale only, others retail only. In the last instance, contact the supplier directly; in the first, either write for the name and address of a dealer or talk your local retailer into carrying the product. As prices are constantly changing, consider that the prices quoted are as accurate as possible, but may be different by the time of publication.

Prepared wool fibers come as carded batts, roving, sliver and as combed tops. Carded wool can be greasy, but tops are always scoured prior to the combing process. Carded batts come in large flat rectangles, depending in size on the dimensions of the carder. Most spinners are familiar with the batts from a small hand carding machine. The commercial variety are the same, only much bigger. Roving has been compressed and elongated into a continuous form, generally about an inch in diameter, and is good for woolen spinning with many of the fibers lying crossways in the yarn. Carded sliver has most of the fibers lying parallel but contains the short fibers and noils removed in the combing process which yields tops. Tops are used for worsted spinning. Perfectly smooth yarn generally will not be spun from carded fibers; the noils and short fibers tend to make small lumps and bumps. It is often easier for a beginner to learn to spin using prepared fibers. There is often somewhat greater regularity than in hand carded wool, and there is not the frustration of "ruining" the wool which took so long to prepare for spinning. Roving and carded sliver are probably best for beginners, as tops are more difficult to draft since they contain only the longer fibers left after combing.

There is a "right" and a "wrong" end to tops. If the drafting is not smooth and easy, try turning the length of tops end to end and spin from the opposite direction. Tops are often spun "out of the fold". In various articles and books, Bette Hochberg explains this well.*

Happily, several sources are now offering prepared fibers by breed, and almost all offer a choice of fine, medium and coarse. Several companies have dyed wool fiber. These are nice for blending by recarding or even for ikat spinning as described in the last issue of Handwoven.

The suppliers were promised there would be no critical evaluation of their products—besides, all are good and what suits one person and purpose is not necessarily good for another. It seemed fairest to list suppliers alphabetically. Some were contacted through ads, and some answered a request in Handwoven.

Beka, 1648 Grand Ave., St. Paul, MN 55105.

Sell direct and through retail stores. Perendale (white), $11.80/lb; (colored), $12.40/lb. Merino half-bred cross (white), $13.60/lb.

Betty Renton, 107 Arana Dr., Martinez, CA 94553.

Wholesale only at this time. Samples $2, refundable with first order. "Cocoons" of hand-dyed colors. All are dyed to order. These come either plain or carded in whatever combination you want. A cocoon is a length of tops twisted into a cocoon-like shape. No suggested retail price provided.

Duraplax, Inc., P.O. Box 6241, Providence, RI 02940.

Sell direct and through retail stores. Samples $2. Worsted 56's as top, roving and braid. Six primary shades and 18 blended shades. Will sell as little as ½ lb. *Top:* (3 oz/5 yd) $3.25/½ lb.; ½ oz/5 yd) $3.75/½lb. *Roving:* (.2 oz/5 yd) $4.95/½ lb.; (.4 oz/5 yd) $4.60/½ lb.; (.6 oz/5 yd) $4.25/½lb. Custom-dyed 54's to 64/70's available. Lower prices on larger quantities.

Forte Fibers, P.O. Box 818, Palisade, CO 81526.

Sell direct and through retail stores. Samples $3. White wool top $8/lb (approx. 28-lb. ball). Dark gray top (natural color) $6.75/lb (approx. 10-lb. ball). Dyed and blended top (sand and stone) $13/lb (approx. 10-lb. ball). Add $.25/lb. if smaller quantities desired.

Great Plains Fleece, P.O. Box 34068, Omaha, NE 68134.

Sell direct. Samples $.50. *Tops:* fine (60's or finer) $9.40/lb.; medium (50's to 58's) $7.65/lb.; coarse (48's and lower) $6/lb. All white.

Harrisville Designs, Harrisville, NH 13450.

Carded batts (11 colors, solids) $5.40/½-lb. bag.

Scott's Woolen Mill, Hecla St. and Elmdale Rd., Uxbridge, MA 01569.

Sell direct and through retail stores. Samples $1.50. Spindrift, New Zealand wool $30/2.2-lb bag. Natural wool top $9.40/lb. Dyed wool top (scarlet, raspberry, squash, yellow, orange, tobacco, rust, gold, champagne, dark brown, black) $11.50/lb. Pencil roving (natural only) $11.50/lb.

Silver Crown Farms, RD 1, Box 363, Chester, NJ 07930.

Sell direct. Samples $2. Large selection of British breeds. Many forms of preparation including round roving, frosted round roving (dark outside, light inside for example), pencil roving, two-color sliver, batts and "drawn top". Jacobs (round roving, frosted, pencil, pencil flecked, top and sliver) $9.75/lb. Long wools (flag blend pencil) $8.50/lb; (luster blend drawn tops) $11/lb. Shetland (round roving, frosted, top and sliver) $9.75/lb. Welch (pencil and round roving). Rug and felting wools (sheep's color batts, sheep's colors round and frosted, dyed batts in 8 colors).

Handspinner's Handbook, Fibre Facts, and *Handspindles* are available from Bette Hochberg, 333 Wilkes Circle, Santa Cruz, CA 95060.

SPINNING WHEELS

Spindrifter, Rt. 1, Box 530, Chireno, TX 73937.

Sell direct. Wool from their own sheep. Corriedale top (white) $5.25/lb. Corriedale-Targhee cross top (dark) $5.25/lb. Blended gray top $5.25/lb.

Spin-It, Weave-It Studio, 2621 University Ave., San Diego, CA 92104.

Sell direct. Samples $1. New Zealand Perendale white sliver $8/lb, $53/10-lb. bag. Colored sliver $8/lb., $56/10-lb. bag.

Straw Into Gold, 3006 San Pablo, Berkeley, CA 94702.

Retail direct and through stores. Rainbow batts, no two alike but can specify red-orange, blue-violet, green-brown or rainbow at $6.80/lb. Card sliver, New Zealand Perendale no price given. Gray New Zealand sliver $7.40/lb. White Romney sliver $7.40/lb. New Zealand Romney combed top $6.95/lb. Domestic New Zealand blend combed top $6.95/lb. Quantity discount schedule available.

Wilde Yarns, 3705 Main St., Philadelphia, PA 19127.

Retail direct and through stores. Samples $1. Minimum ½ lb. Blend of English, New Zealand and Middle Eastern wools. Carded wool batts in 5 natural shades (white, yellow, fawn, gray and brown) $5/lb. Nine dyed colors (russet, blue spruce, ocean blue, midnight blue, autumn gold, bittersweet, red rock and flesh) $6/lb.

Wool Warehouse, 7 E. Main St., Winters, CA 95694.

Sell direct. Fine and medium domestic sliver (white, light gray, dark gray and black) $8.16/lb. Plan to have breed slivers such as Merino and Corriedale soon.

WoodsEdge Farm, P.O. Box 464, Kingston, NJ 08528.

Retail direct. Samples $1. ½-lb. minimum. Gray Karakul top $7.50/lb. Black Welsh Mountain top $12/lb. White Romney top $9/lb. Tan New Zealand wool top $8.50/lb. Domestic 56's top (white, light gray, dark gray and dark brown) $7/lb. Two color (white-tan) Shetland sliver $14/lb. WoodsEdge blend roving (white and dark brown) $6/lb. WoodsEdge gray Lincoln roving $9/lb. WoodsEdge nubbly white Merino roving $6/lb. Also washed vegetal dyed luster wool in 11 colors $1.90/oz.

Svend Larsen, P.O. Box 492, Big Arm, MT 59910.

Finally, a preview of a coming attraction. Svend Larsen, long associated with the University of Wyoming wool laboratory, is leaving his position there and will be setting up his own carding operation. This will not be functional until after the first of the year. He will have medium white carded wool and blended gray wool. □

Variety is the Spice of Life, or
TABBY TRICKS

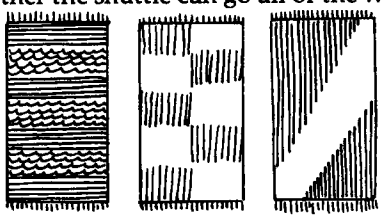
by Debbie Redding

This time I want to explore some of the variations of plain weave that are possible. No matter what kind of loom you are using, tabby (an old-fashioned name for plain weave) is available to you, and if that is the only weave structure your loom will do you could get bored. That's not necessary though, partly because HANDWOVEN is here with so many great projects, and partly because there are so many variations possible even staying within this most basic of all weaves.

First I'll talk about structural variations—balanced, weft faced and warp faced. They are all tabby but they don't necessarily look like it. Then we'll cover stripes, plaids and log cabin, all color effects. There are other possibilities as well, such as using yarns of different weights and/or textures within one piece; there are *always* more possibilities, no matter what the subject. So read through this and then think up more on your own, read more books, talk to other weavers. Then, when you think you've found most of the variations possible, apply them all to a different weave such as twill or summer-and-winter and see what happens.

A balanced fabric is one in which the number of weft shots per inch is the same as the number of warp threads per inch. If you cut a 1" square out of the center of the fabric it would be impossible to tell which threads were warp and which were weft because the count would be the same.

Navajo rugs, on the other hand, are weft faced plain weave. This means that the warp is completely covered by the weft, thus the surface of the fabric has a weft face to it. Any designing is done by changing wefts. Either the shuttle can go all of the way across the shed and the changes will come consecutively, forming horizontal stripes, or the weft can be changed part way across the shed with tapestry techniques and the design can go in any direction at any time.



The way to make a plain weave fabric weft faced instead of balanced is to set your warp further apart; the looser sett will provide less resistance to the weft and therefore the weft will pack in more closely, covering the warp. (You'll probably also beat the weft harder, but even so the warp must be more widely set for that to do any good.) Exactly how wide to set your warp depends on the thickness of both warp and weft yarns and how tight or spongy you want the final fabric to be. To weave a heavier-than-Navajo rug you would use a moderately heavy rug warp (for instance a 4/4 or 6/4 cotton, 800-1200 yards to the pound) set around 5 or 6 e.p.i. and a thick weft (maybe 400-600 yards per pound rug wool). It is possible to have a weft that is too thick to cover the warp, especially if it is a hard (firmly twisted) yarn. Experiment until you get the look and feel you want. At the other end of the spectrum, one of the most impressive fabrics I've ever seen was a weft faced fabric woven by Earline Myatt of Colorado Springs. She used a 16/1 linen (4800 yards per pound) as warp set around 18 e.p.i. or so and a singles wool weft (3200 yards per pound). The fabric, though weft faced, was light enough to be used as a dress fabric, and certainly beautiful enough to be. Normally the problem with using weft faced fabrics for clothing is that the drape of the fabric is almost entirely one directional. It will fold easily along the line of the weft, but not across the weft because it is too stiff. Clothing needs to be able to flex in all directions; rugs do not.

As it sounds, warp rep (face) is just the opposite of weft rep. The warp is set so closely together that the weft does not show at all. All of the design comes from warp stripes and weft thickness. Inkle bands are a good example of warp faced weaving. The most important consideration in planning a warp faced piece is that because the warp is so crowded it is sometimes difficult to get a shed. (Other times it is impossible.) The yarns want to stick together instead of passing by each other. Because of that crowding, the warp will be subject to far more abrasion than usual so it must be spun to be able to withstand that kind of abuse (longer fibers, worsted spun). At the same time, you want to choose a yarn with a fairly slick surface. Fuzziness will make it impossible. As the yarns try to pass each other in shed changing, all of the fuzzies will grab onto each other, refusing to let go for anything less than individual picking apart by you. Pearl cotton is a good choice for a first warp rep sample, or anything else strong and having a smooth finish.

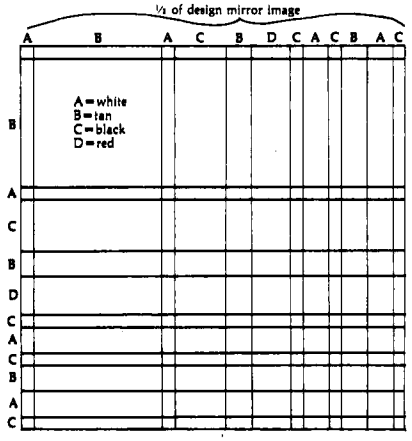
When designing warp stripes, have some areas where color A is on the odd harness(es) and color B on the even one(s), as well as areas where the two are next to each other. When weaving, try alternating thicker and thinner wefts. Those two design elements together yield intriguing results.

As for structural considerations, theoretically a warp sett of twice what you'd normally use for a yarn should give you a warp faced fabric. I have found that practice to leave some weft showing, however, and so now I multiply by three. Naturally the closer the warp is set the harder it is to get the shed open. Some people don't mind if some of the weft shows, so going so close isn't always necessary. Whatever you decide, you should know that the more harnesses you use, the easier time you'll have getting the shed open. (And the less likely you'll be to run out of heddles.)

Putting stripes into your weaving is very simple. If you want stripes running the length of the piece, stripe your warp. If you want stripes running across the piece, change your weft. While planning, remember the direction the piece will be used. A shawl with warp stripes will usually look more graceful than one with

many weft stripes. The warp stripes will run across the shoulders and down the arms, whereas weft stripes may tend to make a shawl look chopped up.

Plaids are formed by having stripes go both directions. Whole books are available on Scottish plaids, tartans, etc., and if you are after a particular effect look them up. Otherwise I have found the easiest way to design my own plaids is to go to my closet and pull out all of my plaid shirts and study the sequences of color. Some patterns are mirror images, some have only wide stripes, many have some very skinny stripes for accent. Some use three colors, others six. In most but not all the color sequence in the weft follows the same pattern as the color sequence in the warp. The biggest surprise is how the colors blend; often the finished piece is much more subdued than expected, so weave a sample before setting up the whole project.

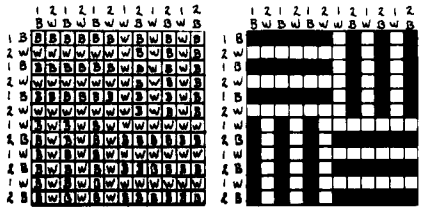


Log cabin is the name given to the simplest member of the family known as color and weave effects. The effect is optical illusion in that what you see is a color pattern rather than a weave structure. The fabric is still tabby, it just doesn't look like it.

To weave log cabin, thread your warp alternating black-white-black-white so that the odd threads are black, the even threads white. (Of course you can use other colors. Just remember that the greater the contrast the more pronounced the visual effect.) Then weave, alternating your wefts black-white-black-white. The result will be fine stripes, horizontal when your dark weft is under your dark warp, vertical when your dark weft is under light warp. To change the direction of the stripes throw two darks or two lights in sequence once; that will change the pattern from dark weft under dark warp to dark weft under light warp.

Alternating whether dark warp is on harness 1 or harness 2 will change the direction of stripes in the horizontal sections (blocks). Alternating whether dark weft is thrown under harness 1's warp or under harness 2's warp will determine the direction of the stripes in the vertical sections (blocks). The drafts below show you the colors you'll see, not the weave structure of the fabric. For more variations try threading and weaving two darks-two lights, etc., or three of each. If you've used four harnesses, try twill treadlings as well, still alternating the colors. You'll be amazed and pleased.

If you find that color and weave effects really turn you on, and if you have a four or more harness loom, consider a copy of Interweave Press's newest book, *A Twill of Your Choice* by Paul O'Connor, or Margaret Windenicht's *Color and Weave* (Van Nostrand Reinhold). Both are explorations of what is possible with twills and color effects and are lots of fun. Meanwhile, make the most of tabby —it really doesn't have to be such a plain weave. □



To do a color draft, first fill in the color of the warp raised for the chosen weft shot. In the first row above, that means fill B's and W's in below each box under a 1 for those warps which will be on the surface. Since the weft shot being thrown is black, fill in all the rest of the squares with B's because the black weft will cover the warp on harness 2, regardless of color. Then do the same thing for the next row/weft shot, this time first filling in the boxes beneath the 2's as that is the harness to be lifted, then filling the others in with W's since it will be a white weft shot.

PRICING FOR PROFIT
I: Keeping essential records

by Connie LaLena

OF ALL THE ASPECTS of weaving commercially, perhaps the single one which causes the most difficulty for people is the problem of pricing. Certainly, I get asked about pricing more than any other single thing when I talk to other weavers who are struggling to make a reasonable income at what they do. The mystery of pricing is not limited to those weavers who would weave for a living—it is a problem with which every guild that sponsors a sale wrestles with about this time of year. Holiday shows and sales abound among weavers in the autumn, and for every weaver in the show, it seems there is a different philosophy of pricing. Methods run from one extreme (simple desire to recoup the cost of materials only) to the other (desire to have the consumer pay dearly for all costs, including the inefficient working methods of the weaver). Whenever weavers show their work together, extremes such as these can cause great difficulty and unfair competition. While the easiest solution may be to choose very carefully those with whom one shows, it is not always possible when participating in a guild sale or other endeavor involving a large group. Any group endeavor will appear more professional if there is similarity in pricing for similar products, even though they have been made by different weavers. Some guilds have solved the problem very imaginatively by appointing a pricing committee to review all prices on articles submitted to the guild sale. These committees have absolute authority to change prices on submitted works to bring them more into line with prices of the majority of work in the show. Interestingly, the committees almost never lower prices. Raising prices, however, is common, for weavers seem consistently to undercharge for their work. But how *does* one arrive at a price for one's work?

Ideally, the weaver has done some very careful market research, and knows just who her potential customers are and exactly where the customer is likely to go to buy what she has to sell. Sales are built right into product design and production because they are an essential part of the product itself. Accurate and competitive pricing is an integral part of product development. It is no more mysterious or difficult than any other aspect of production.

An ideal way to deal with pricing is to have a studio labor charge. This is an hourly rate which you can use to calculate prices, and if you have a set studio rate, quoting prices even on custom work is little trouble. Most professionals work on an hourly rate (examples are lawyers, accountants, graphic artists, designers, some physicians and consultants of all kinds). In addition, most skilled workers in the trades also have an hourly rate. Woodworking shops, machine shops, auto mechanics, plumbers, masons and other similar trades all price their work according to an hourly shop charge.

It is not difficult to arrive at an hourly shop or studio charge, but in order to do so, meticulous records must be kept over a period of time. All methods of pricing must take into account studio overhead, production time, materials and non-productive studio time. Although there are many ways to approach these several aspects, it is essential that production weavers keep accurate time and cost records, for without them it is impossible to project production costs when pricing a new product. When accurate records have been kept over a period of time, then not only is it possible to profitably price new products, but it is easy to project costs on products still in the idea stage thus saving time, effort and expense in new product development.

The cost of raw materials for the project must be figured into the finished price for the article; therefore, very accurate records need to be kept of materials costs. All costs associated with the raw materials are considered to be part of the raw materials costs, including shipping, handling and import duty (where applicable). In a production situation it is seldom possible to order all the yarn needed for one project, then to consume that yarn for a single project. Usually several types of yarn are kept on hand and are used as needed for production orders. In this case, a good way to keep track of materials costs is to get in the habit of marking the cost of each unit of yarn (skein, cone, tube, etc.) kept in the studio. The best way to mark the cost of the yarn is to do it at the time the yarn shipment is being unpacked and stored in the studio. At that time, you will very likely have an invoice for the yarn showing the amount shipped, the price and the shipping charges, from which it is a simple matter to figure the unit cost of the yarn, as in the following example:

50 skeins at $3.10	$155.00
shipping	14.35
total costs	$169.35

Total costs of $169.35 ÷ 50 skeins = $3.39/skein.

The final figure of $3.39 per skein is then marked on each skein before they are put into storage. As they are used, it is a simple matter to total the cost of the skeins, since each individual yarn unit is priced, thus arriving at a total raw materials costs for the project. Incidentally, marking each unit of yarn in storage also facilitates inventory control, for when it is time to take inventory, all your cost figures are in front of you at the time you are actually counting the yarn.

The cost of studio overhead is an important factor in calculating total costs to be figured in an hourly studio charge for labor, so it is critical that good records be kept of every expense of the studio. Except for the cost of your raw materials (or the costs of goods that you buy ready-made and then mark up for resale), every other expense necessary to the conduct of your business is a part of your overhead. These expenses can include rent, utilities, telephone, postage, advertising, promotion costs, office supplies, equipment rentals, repairs and maintenance, auto expenses and mileage, contributions, travel, research, entertainment, insurance, property taxes, interest and many other expenses. Most of the equipment used in the studio (looms, spinning wheels, winders, swifts, etc.) is placed on a depreciation schedule and is expensed over a period of several years. Since paying taxes is inevitable, one good way of establishing a figure for your overhead expense is to follow the requirements for information needed to complete IRS Form 1040, Schedule C "Profit or Loss from Business or Profession". Completion of this tax form should give you an exact figure for your overhead costs for the calendar year.

One area which is often inadequately treated as an overhead expense is the matter of studio space rental, since a weaver's studio often shares space and expense with a dwelling. Under these circumstances, it is easy to overlook studio rental as a business expense, but for the purpose of pricing the product, studio rent should always be included as an overhead expense, and should be computed at the cost at which a comparable amount of space could be obtained in a commercial building.

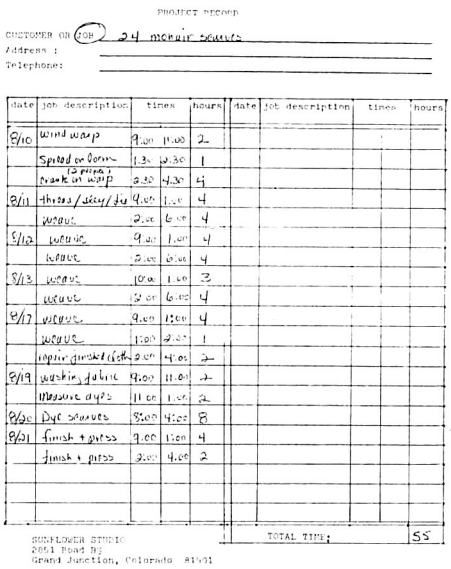
Although figures will vary widely from studio to studio, as an example, let's use the following overhead figures:

Advertising	$973.42
Bank charges	54.30
Mileage	624.53
Dues & publications	175.00
Employee expenses	64.30
Shipping	376.12
Insurance	425.33
Legal/professional	75.00
Office supplies	210.75
Postage	243.89
Repairs	190.34
Books & research	128.65
Taxes	115.81
Telephone	324.56
Travel & entertainment	850.25
Utilities	475.32
Misc. expenses	888.45
Depreciation	267.95
Rent	3600.00
TOTAL	$11,220.37

Weekly overhead of $215.78. ($11,220.37 ÷ 52 = $215.78)

Based on the above figures, it costs this studio $215.78 per week just to keep the doors open, whether there is any business or not. Obviously, this is a figure which cannot be overlooked when pricing goods produced in this studio!

Two kinds of time records should be kept: 1) a record of the time spent on each project or project series. This type of record is common among weavers, and is a necessary part of pricing, whether the product be a one-of-a-kind art object or a production run of shawls. 2) A weekly record of how all your time is spent at work. This type of record is especially important, since administrative time must also be figured into your pricing structure.



PROJECT RECORD

CUSTOMER OR JOB: 24 mohair scarves

Address :

Telephone:

date	job description	times	hours	date	job description	times	hours
9/10	wind warp	9:00 11:00	2				
	Spread on loom	1:30 2:30	1				
	thread warp	3:30 4:30	1				
9/11	threads / sley / tie	9:00 1:00	4				
	weave	2:00 6:00	4				
9/12	weave	9:00 1:00	4				
	weave	2:00 6:00	4				
9/13	weave	10:00 1:00	3				
	weave	2:00 6:00	4				
9/17	weave	9:00 1:00	4				
	weave	1:00 2:00	1				
	repair [illegible]	2:00 4:00	2				
9/19	washing fabric	9:00 11:00	2				
	measure dyes	11:00 1:00	2				
9/20	Dye scarves	8:00 4:00	8				
9/21	finish + press	9:00 1:00	4				
	finish + press	2:00 4:00	2				

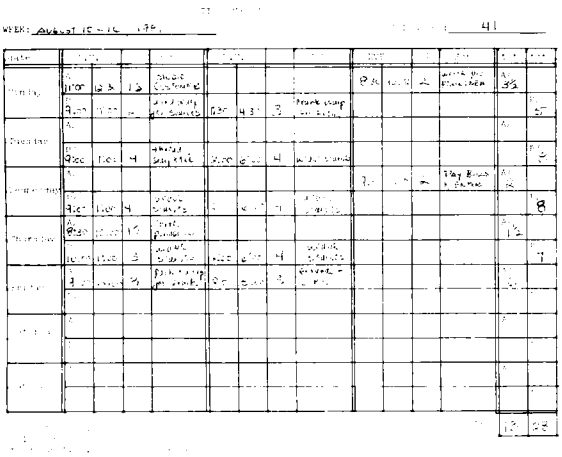
TOTAL TIME: 55

SUNFLOWER STUDIO
2051 Road N2
Grand Junction, Colorado 81501

Sample forms for each type of record are included in this article. Although these forms are simple ones which have served my studio well for many years, you may find that you have special needs requiring modification of some of the information or formatting of the forms.

The project record includes ample space for recording the smallest aspects of the project. Although in pricing you will be primarily concerned with the total number of hours spent on a project, keeping track of how those hours are spent will help you in other ways. If, for example, you are planning your work schedule it might be important for you to know that all of the dyeing for a 24-scarf warp can be done in five hours so that you can set aside that amount of time for it when it (or a similar dyeing project) needs to be done again. Keeping a breakdown of how project time is spent can also be useful in planning if you decide to subcontract any of the work. Finally, this type of breakdown can serve to monitor production efficiency. With accurate records of this type, it certainly is easy to spot a bottleneck in the work of the project. If an inordinate amount of time is being spent on any one aspect of projects, steps can be taken to improve the situation by increasing working efficiency or purchasing better equipment or finding another way around the bottleneck.

The time record is a useful tool for identifying and splitting professional time spent in several ways. For example, a production weaver certainly spends time weaving, and this time must be accounted for directly in the price of each item sold. But time is also spent "non-productively", that is, in administrative tasks. The form my studio uses for time records splits all tasks into two categories: production time and administrative time. Production time is, of course, time devoted to actually making and finishing a product: winding skeins or balls of yarn, dyeing, making warps, dressing the loom, winding shuttle bobbins, weaving, and all finishing required, which may include washing, pressing, sewing and knotting fringe. Time spent designing is best included under administrative time, because generally a whole production collection is designed at one time, and it would be very difficult to assign to each production unit a share of the design time. The exception might be if each warp or article were one-of-a-kind.



Administrative time includes all the time spent at your profession outside of the time spent in direct production: designing, ordering yarn, research, packing and shipping, correspondence, paying bills and keeping books, buying, building and maintaining equipment, cleaning and organizing the studio, going to the post office and UPS, running errands, advertising and promotion, public relations, sales, product evaluation, professional reading, attending workshops, and going to necessary conferences. Even though administrative time is not directly linked to the cost of a product, it is a necessary part of being in business—you must be paid for that non-productive time as well.

There is another reason for keeping track of what portion of your work time is actually spent in production and what portion is spent in non-production administrative tasks. You will probably discover that you spend more time than you thought on administrative tasks, and proportionately less time in actual production. Keeping track of time spent in administration (and allocating that time to the various tasks) can alert you to potential problems in your business operation which could arise if a disproportionate amount of time is spent in a particular task. It is simply another way of monitoring your overall business efficiency.

Although it may seem tedious to keep close records of raw materials costs, overhead expenses, and time, it is an essential first step toward establishing a pricing structure which will really work *for* your own particular situation. The next step—actually formulating the price structure by using costs and time as they pertain to your working situation—will be covered in Part II of this article in the next issue. □

GENERAL INSTRUCTIONS & YARN CHART

Remember the old adage "when all else fails, read the directions"? With weaving it's almost guaranteed! Do read the directions completely before starting any of the projects. Particularly note the size and type of yarn needed, the width of the loom and the size of the finished item. Look for the boxes which will give additional information about particular weaving problems. Check the index for similar items and read the information given for them too. The instructions in this issue assume that you know how to warp a loom and read a draft. Additional information can be found in *The New Key To Weaving* by Mary Black, *The Shuttlecraft Book of American Handweaving* by Mary M. Atwater and *The Weaver's Book* by Harriet Tidball (all from MacMillan).

Making substitutions

Though we've mentioned specific yarns and colors for most of the projects, feel free to substitute. This is where you become the designer. It's quite safe to substitute one yarn for another if the texture is similar and the yards per pound are about equal. Check the yarn chart opposite to see comparative sizes and textures. Don't overlook smaller yarns that may be doubled to equal larger ones. If the texture is not the same, a sample is in order to be sure that the hand is what you want. If the yarn that you choose has a different number of yards per pound, then the ends and picks per inch and yardage needed will have to be refigured.

Finishing

Finishing instructions have been given for each project based on the experience of the designer. Most involve washing in some manner. The water temperature, amount of agitation and drying method will determine the amount of shrinkage of all fibers and the amount of felting of wool. If another method than the one suggested is chosen, proceed cautiously as shrinkage and felting are irreversible.

Weaving with "Tabby"

Some weave structures such as overshot and summer-and-winter require two weft threads—a pattern thread and a tabby. A tabby is a binder that interlaces with the warp in plain weave. A tabby is used after each pattern pick. The tabby picks, which are designated tabby a and tabby b, are used alternately. An easy way to remember which tabby to use next is to note on which side the shuttle lays. If on the left, use tabby a, if on the right, use tabby b.

Calculating warp

NUMBER OF WARP ENDS

x number of ends per inch (sett)
number of inches wide the finished piece will be before washing + ½" for drawing in

=total number of warp ends needed

LENGTH OF WARP

finished length of piece before
\+ washing
loom waste (up to 1 yd. for a large floor loom, 12" or so for a table loom. Consult your loom instructions).
\+ takeup (as much as ⅛ of finished length for a stretchy wool warp, as little as 5% or 10% for cotton).

=total length of warp

YARDAGE NEEDED FOR WARP

x total number of warp ends
total length of warp *in yards*

=total yards of warp needed

Calculating Weft

For a balanced weave, buy the same number of yards of weft as you do for warp. This will be a generous amount, but better not to run out in the middle of a project. For a warp-face weave, buy about ¼ as much weft as warp. For a weft-face weave, buy at least 5 times as much weft as warp.

The symbols used in this issue indicate the kind of loom needed for each project:

RH Rigid Heddle

(2) 2-Harness

[4] 4-Harness

△ More than 4 harnesses (number indicated)

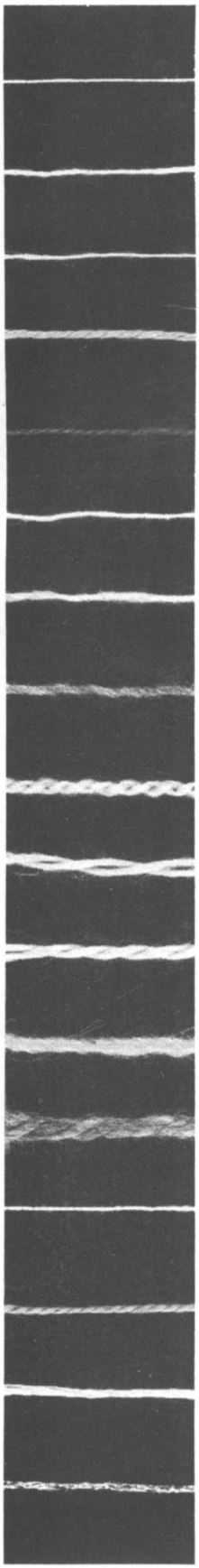
Threadings, Tie-Up & Treadlings

Threadings are written to be read from right to left, the easiest for right-handed people. Lefties read from left to right, but be sure that you start in the correct place if the draft is on two lines. The threadings are given for the minimum number of harnesses. For example, plain weave threadings are given for 2-harness looms. Weavers with 4 harnesses will want to thread 1, 2, 3, 4 etc.

Tie-ups are given for rising shed (jack) looms. If your loom is counterbalanced, you will need to transpose the tie-up. If our tie-up indicates to raise harnesses 1 & 2, you will lower harnesses 3 & 4, etc. If you fail to do this, pattern weave will appear face down.

Treadlings should be read from bottom up. Horizontal line indicates repeat.

Use this yarn chart to help you make calculations and creative substitutions in your weaving. Or try to match these yardages with your handspun yarn for truly unique interpretations. We've listed some sources, but consult the ads in this issue and your local weaving shop for other possibilities.



40/2's linen, 6000 yd/lb (12,060m/kg), Frederick J. Fawcett

20/2's linen, 3000 yd/lb (6030m/kg) Frederick J. Fawcett

20/2 linen, 6000 yd/lb (12,060m/kg) Frederick J. Fawcett

10/2's linen, 1350 yd/lb (2714m/kg) Frederick J. Fawcett

24/2's worsted wool, 5200 yd/lb (12,000m/kg), CUM

wool singles "Lundagarn", 3209 yd/lb (6500m/kg), Borgs of Lund

wool singles, 2000 yd/lb (4020m/kg) Harrisville Designs

Harris tweed singles, 1700 yd/lb (3417m/kg), Halcyon

2-ply worsted, 1650 yd/lb (3317m/kg), Novitex

2-ply worsted "Fresco", 714 yd/lb (1435m/kg), Elite Specialty Yarns

2-ply brushed mohair-wool "Beau Monde", 980 yd/lb (1970m/kg), Elite Specialty Yarns

wool rug warp, 640 yd/lb (1286m/kg)

3-ply Berber rug yarn, 576 yd/lb (1157m/kg), Wilde Yarns

16/2 cotton, 6336 yd/lb (12,800m/kg), Borgs of Lund

5/2 perle cotton, 2100 yd/lb (4221m/kg), Belding Lily, School Products and other sources

6-strand embroidery floss

metallic yarn, 3800 yd/lb (12,000m/kg), CUM

Index to Instructions

Instructions for other projects are found with their accompanying articles.

SHOPPER'S GUIDE

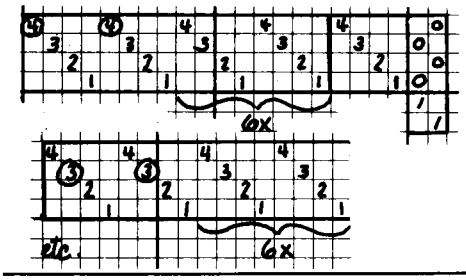
If you're unable to find the yarns and tools specified for the projects in HANDWOVEN through your usual supplier, you may want to write to the manufacturer or distributor to request ordering information or the name and address of the dealer nearest you. The distributors for supplies in this issue are:

Borgs of Lund, Glimakra Looms 'n Yarns, Inc. P.O. Box 16157, 19285 Detroit Road, Rocky River, OH 44116.
Belding Lily Company. P.O. Box 88, Shelby, NC 28150.
Frederick J. Fawcett, Inc. 129 South Street, Boston, MA 02111.
Harrisville Designs. Harrisville, NH 03450.
CUM, U.S.A. P.O. Box 408, Sonoma, CA 95476.
Elite Specialty Yarns, Inc. Hub Hosiery Building, Lowell, MA 01854.
Novitex, Inc. P.O. Box 440, Pawtucket, RI 02862.
School Products, Inc. 1201 Broadway, New York, NY 10001.
Wilde Yarns. 3705 Main St., Philadelphia, PA 19127.
Halcyon. 12 School St., Bath, ME 04530.

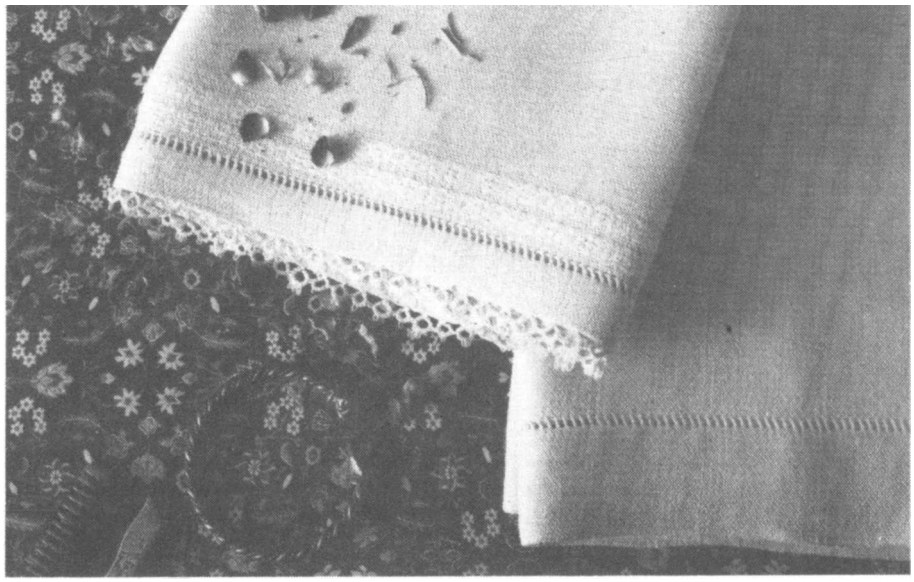
Tailored Pillowcase 4

page 58

WEAVE STRUCTURE: Plain weave.
FINISHED SIZE: 22" x 33" (*56cm x 84cm*); queen size.
EQUIPMENT: 4-shaft loom with 26" (*66cm*) weaving width; boat shuttle, stick shuttle, small blunt tapestry needle, sewing machine.
MATERIALS, warp and weft: Frederick Fawcett 40/2 linen at 6000 yd/lb (*12,060 m/kg*), two ½-lb tubes, color natural. A small amount (50-75 yd or 46-69m), 20/2 linen, color natural.
WARPING: 25½" (*65cm*) wide, 30 e.p.i. (*118/10cm*), 780 ends total of 40/2 linen; and 28 ends of 20/2 linen; 3 yd (*2.75m*) long which allows 1 yd (*1m*) for takeup, shrinkage and loom waste.
SLEY: sley 55 ends 40/2, *then a 40/2 and 20/2 threaded as one, then three 40/2, then a 40/2 and 20/2 as one, then 50 ends 40/2*, repeat between ** across, ending with 55 ends 40/2.
THREADING, TIE-UP AND TREADLING:

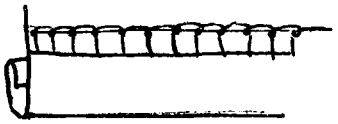


Proceed across, threading every 50th and 54th thread double. The doubled threads will fall on a different harness with each repeat.
WEAVE: Weave 4" (*10cm*), throw a pick of a smooth, heavier yarn or 4 to 5 strands of 20/2 linen in the same shed. This heavier yarn will later be pulled out. Then weave another 1" (*2.5cm*) or so, and hemstitch across the bottom of this 1", catching 4 threads in each group. Weave a total of 49 picks from the hemstitching, throw a pick of 20/2 linen, 3 picks of 40/2, and a pick of 20/2. Proceed in this way until you have woven a total of 76" (*193cm*). Hemstitch across top of fell.



Throw a pick of smooth, heavier yarn as at the beginning. Weave 4" (*10cm*).
FINISHING & CONSTRUCTION: Remove fabric from loom. It will feel like a piece of screen wire, but don't be alarmed! Make enclosed side seams: Machine-

stitch a ¼" (*.6cm*) seam with WRONG sides together, turn and press, stitch ½" (*1.25cm*) in, enclosing raw edges, and turn again. Now turn under ¼" (*.6cm*) on the bottom, and then fold up a hem until it meets the bottom of the open hemstitched threads:

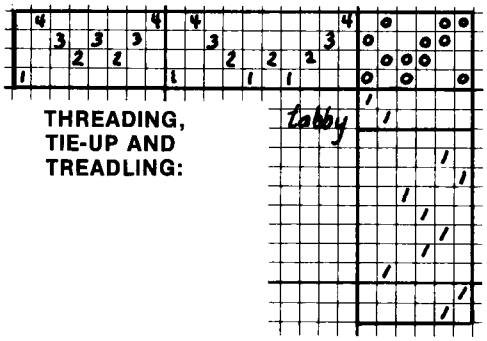


Hemstitch across, hemming loose edge in. The hemstitching is very easy to do while the fabric is still stiff and open. Run through the washer, hot regular cycle, several times, or scrub on a scrubboard with plenty of soap. Iron with a very hot iron while quite damp; repeated ironings will make the fabric more silky with time.

small amount (36 yd or 33m) of 20/2 linen, color natural.

WARPING: 25½" (*65cm*) wide, 30 e.p.i. (*118/10cm*), 780 ends total. 3 yd (*2.75m*) long, which allows 1 yd (*1m*) for takeup, shrinkage and loom waste.

SLEY: 3 ends per dent in a 10-dent reed, or the equivalent.



THREADING, TIE-UP AND TREADLING:

Lacy Linen Pillowcase [4]

page 58

WEAVE STRUCTURE: plain weave with fancy twill border.

FINISHED SIZE: 22" x 33" (*56cm x 84cm*); queen size.

EQUIPMENT: 4-shaft loom with 26" (*66cm*) weaving width. Boat shuttle, stick shuttle, small tapestry needle, sewing machine, optional tatting shuttle.

MATERIALS, warp and weft: Frederick Fawcett 40/2 linen at 6000 yd/lb (*12,060 m/kg*), two ½-lb tubes, color natural. A

WEAVE: 30 p.p.i. for a balanced plain weave. Weave 3" (*8cm*) with 40/2 linen, then hemstitch as described above under "Tailored Pillowcase". Weave ½" (*1.25 cm*), do one repeat of border pattern using 20/2 linen for pattern thread and 40/2 linen for tabby. Weave 10 picks 20/2 linen. Weave one more border repeat. Weave plain weave for a total of 68" (*173cm*); weave borders, work hemstitching, weave hem.

FINISHING & CONSTRUCTION: Construct case and finish fabric as for "Tailored Pillowcase". You may trim case

with tatting as follows:

TATTING: Using 40/2 linen, for a ring of 4 ds, 1 p, 3 ds, 1 p, 1 ds, 1 p, 1 ds, 1 p, 3 ds, 1 p, 4 ds. Tie knot at base of ring. Space ½". R 3 ds, join to last p of previous ring, 3 ds, 1 p, 3 ds, 1 p, 3 ds. Tie knot. Space ½". Repeat, joining first p of each ring to last p of previous ring. Soak finished edging in very hot, soapy water, blot and pin flat to ironing board til dry. Steam press and blind stitch to edge of case.

ALTERNATE SHELL CROCHET TRIM: Using 40/2 linen and 00 steel hook, work a chain the desired length (allow extra for takeup). Pattern is a multiple of 5 stitches. Row 1—single crochet. Ch 4. Turn. Row 2—dc the first st. *Skip 4 st, 1 dc and 1 ch 3 times followed by 1 dc all in the same st.* Repeat across. When the last 5 stitches are reached, skip 4 st, work 1 dc, 1 ch and 1 dc.

COMMENTS: See article on page 56 for notes on making both the tailored and the lacy pillowcases on a single warp. If you do both together, you will need a total of only three tubes of linen. Purchased edgings may be used in place of handmade ones; a very narrow, simple edging seems most effective on this case. Hem of lacy case is narrower than hem of tailored one, to offset the twill borders.

Tinsel Trimmed Scarf 4

page 51

WEAVE STRUCTURE: Balanced plain weave.

FINISHED SIZE: 9" x 80" (*23 x 203cm*) plus fringe.

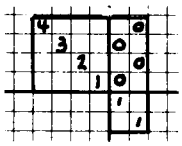
EQUIPMENT: 4-shaft loom with 10" (*25cm*) minimum weaving width. 1 shuttle, 6- or 18-dent (*24/10* or *70/10*) reed.

MATERIALS, Warp and weft: CUM 24/2 worsted at 5200 yd/lb (*12,000m/kg*); 980 yd (*896m*) of brown #3. 30 yd (*27m*) of CUM gold yarn and 20 yd (*18m*) of CUM silver yarn both at 3800 yd/lb (*7638m/kg*).

WARPING: 18 e.p.i. (*70/10cm*), 10" (*25 cm*) wide, 3 yd (*2.75m*) long which allows 28" (*71cm*) for take-up and loom waste. 180 warp ends are needed: 168 brown, 4 gold and 8 silver. *Note:* As wool is stretchier, weight gold and silver yarns off back with less tension.

SLEY: 3 ends per dent in a 6-dent reed or 1 end in an 18-dent reed. Sley 1" (*2.5cm*) brown then 4 silver, 5 brown, 4 gold, 5 brown, 4 silver. Finish sleying rest of brown. The gold and silver stripe appears on one side of the scarf only.

THREADING, TIE-UP AND TREADLING:

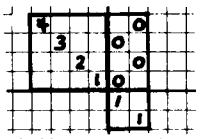


WEAVE: 18 p.p.i. Hemstitch end and weave 4" (*10cm*) then weave 4 picks gold, 5 brown, 4 silver, 5 brown and 4 gold. Weave rest of the scarf with brown and finish with hemstitching.
FINISHING: Remove from loom and hand wash in warm water with moderate agitation. Remove excess water by rolling up tightly in a towel. Steam press.

Gilded Forest Scarf [4]

page 51

WEAVE STRUCTURE: Balanced plain weave.
FINISHED SIZE: 9" x 80" (*23 x 203cm*) plus fringe.
EQUIPMENT: 4-shaft loom with 10" (*25 cm*) minimum weaving width. 1 shuttle, 6- or 18-dent (*24/10* or *70/10cm*) reed.
MATERIALS, Warp: CUM 24/2 worsted at 5200 yd/lb (*12,000m/kg*); 548 yd (*501m*) of Green #50. 28 yd (*26m*) of CUM gold yarn at 3800 yd/lb (*7638m/kg*). **Weft:** 440 yd (*402m*) of CUM Green #50.
WARPING: 18 e.p.i. (*70/10cm*), 10" (*25 cm*) wide, 3 yd (*2.75m*) long which allows 28" (*71cm*) for take-up and loom waste, 183 warp ends are needed: 176 green and 7 gold. *Note:* the gold yarn is not as stretchy as the wool. To avoid crimping up of this yarn in the fabric it should be weighted separately with less tension off the back of the loom.
SLEY: 3 ends per dent in a 6-dent reed, or 1 end in an 18-dent reed. Sley 22 green, 1 gold for entire width, ending with 22 green.
THREADING, TIE-UP AND TREADLING:



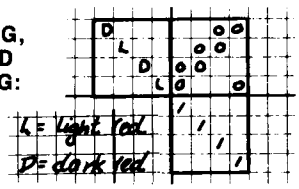
WEAVE: 18 p.p.i. Use a consistent, light beat. Weft is almost laid into shed. Hemstitch on the loom at the beginning and end of the weaving.
FINISHING: Wash in warm water with modest hand agitation. After washing roll up tightly in a towel and let stand for a minute or so. Steam press.

Red Wool Jacket

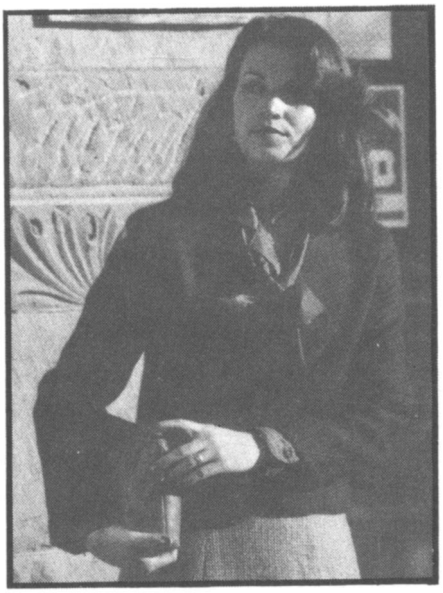
page 51

WEAVE STRUCTURE: Straight twill.
FINISHED SIZE: Woman's size 8.
EQUIPMENT: 4-shaft loom with 42" (*107 cm*) weaving width; 6- or 9-dent (*25/10* or *35/10cm*) reed, boat shuttle, sewing machine. (Optional: Incredible Rope Machine).
MATERIALS, warp: Borgs of Lund Lundagarn woolen singles at 3236 yd/lb (*6500m/kg*), two 3½-oz (*99g*) skeins of color 0474 (light red), five skeins of color 0472 (dark red). Butterick pattern #7669, thread, lining and interfacing as specified in pattern.
WARPING: Use one dark and one light red strand as one when measuring the warp. Measure 3 yd (*2.75m*) which allows ¾ yd (*.68m*) loom waste and takeup. This amount of yardage allows barely enough for a size 8 jacket; for cutting ease or larger sizes, allow additional warp length. 18 e.p.i. (*70/10cm*) for a total of 738 ends.
SLEY: 3 ends per dent in a 6-dent reed, or 2 per dent in a 9-dent reed. Multiple denting is important to prevent wear on the warp.

THREADING, TIE-UP AND TREADLING:



WEAVE: 18 p.p.i. for a balanced twill, using dark red weft throughout.
FINISHING: Hemstitch ends on loom, or secure with machine stitching. Repair errors. Machine wash on regular cycle in hot water with plenty of soap. Dry flat, steam press. If you want to emphasize the nappy surface that results from this rather vigorous finishing, brush with a wire clothes brush while fabric is still damp and before pressing. Fabric will finish to about 36" (*91cm*) wide.
CONSTRUCTION: Follow pattern, but adjust pattern layout to suit narrow yardage. In the case of this jacket, the front facings were pieced with one seam.



However, there was virtually no leftover fabric! Buttons and buttonholes were omitted. The fabric is sufficiently fulled that no edge ravelling occurred. *Optional trim:* Using three 8-yd (*7m*) strands of each shade of red, make a cabled cord using a Schacht Incredible Rope Machine or cable a cord by hand. Blind stitch cord around jacket edges.

COMMENTS: Using two very close shades of the same hue gives a little subtle depth to this very plain fabric, which otherwise depends on its surface nap for interest. Other design possibilities are to pick up on the currently popular Tyrolean look with contrasting trim, braid or embroidery. *An argument for handwoven fabric* (if you need one): Construction time on this lined jacket was 8 hours; warping, weaving and finishing time on the fabric was only 5 hours.

ERRORS *cont'd. from p. 61*

thread ought to take so that the latch captures the yarn and it may be pulled into the cloth, just where it ought to be. It's a wonderful tool for handweavers and ought to be part of every weaver's tool collection. The same process is followed if a place in the yarn is discovered that is coarser or finer than the others so that it shows. Sometimes, in a yarn blended of many colors, there will be a place where the blending was not uniform. If the unevenness of color is noticeable, then it can be mended like the stained yarn.

Sometimes inspection of the cloth will reveal a pick that is slack. A slack pick will be humped up in the cloth so that it can be felt by sensitive fingertips as the fabric is stroked very lightly. Your fingers are nearly as valuable as your eyes for finding flaws, particularly if the cloth is fine and very dark colored. A slack pick is mended by using a tapestry needle and carefully tightening up the pick a little at a time, by working from the center toward the selvedges. A tight pick is mended by cutting it at the selvedges, releasing it and working it toward the center—from both sides—until the proper tension is achieved. A new piece of weft yarn is darned in to fill in the place that is left vacant by this procedure.

Skips in the warp or weft direction are also mended using a tapestry needle or the knitter's latch hook. I break the end of the yarn I am going to use for this job and if it is plied, break the plies so that the yarn is tapered even more, so that it has a feathered end. A blunt cut end always seems to work its way to the surface and poke out. I darn the replacement thread under about four or five warps, or wefts, on either side of the unwanted skip and try to end with a feathered end by breaking it in place. (I hold the mended place very firmly and break the thread, sometimes it works; when it doesn't, I cut it.) I pull the skip up just a little and cut it away. Pulling the mended place on the bias both ways seems to "seat" the mend well.

Once in a while a piece of lint, a hair or a loose scrap of yarn is woven into the cloth. These things can be pulled out with the tip of the tapestry needle.

If the weft yarn is very, very twisted, sometimes it will kink up as the shuttle passes through the shed and leave a snarl in the cloth. These may be worked out with the tip of the tapestry needle by pulling the excess yarn to the selvedge and trimming off the excess.

In every case it is essential that the mending be done before the cloth is washed. The washing process blends the mended places so that the short lengths of yarn that were used to correct flaws seem to be part of the rest of the weft or warp.

We all make mistakes. When we all know how to diagnose them and fix them, then we will be on our way to producing beautiful and error-free cloth. □

HOME BREW *cont'd. from p. 69*

rush the color and removing the yarn too soon from the bath; c) not using enough dyestuff; or d) not mordanting properly.

2) Have you compared your dyed goods to similar commercial goods under the same lighting conditions? You may be judging your dyes too severely. The goal is to produce a pleasing and appropriate color and have it last as long as possible under the conditions suitable to the material dyed. You can be the judge of conditions, fibers, colors and dyes used. Some fibers (such as silk) deteriorate under bright sunlight, so you can't expect your dyed shades to hold up if the fiber doesn't.

3) I've found that to dye a fast but light color, it works better to make a weak dyebath and leave the fiber in a long time than to make a strong bath and leave the fibers in only a short while. There is some correlation between length of time in the bath and light fastness. So if you want a pale green, for instance, make a weak green bath and leave your goods in an hour instead of making a strong green bath with a two-minute dip of the fiber into it.

4) If the question is specific to one dye, then examine your techniques and your dyestuffs. It may be the result of many of the problems discussed earlier.

If you have questions and/or problems concerning dyeing, please feel free to write to Anne Bliss, Home Brew, c/o Handwoven.

Wrap Around Shawl (2) [4] [RH]

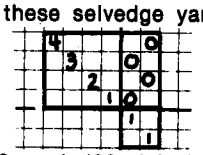
page 50

WEAVE STRUCTURE: Plain weave.
FINISHED SIZE: 102" x 21" (*260cm x 53cm*).
EQUIPMENT: 4-shaft loom with a minimum weaving width of 27" (*69cm*). A 2-shaft or rigid heddle could be used but care should be taken to check that warp threads are not sticking together. 10-dent (*40/10cm*) reed, boat shuttle, washing machine.
MATERIALS, warp and weft: Harrisville Designs singles at 2000 yd/lb (*4020m/kg*). Yarn is available in ½-lb (*227g*) cones. Length per cone is 1000 yd (*914 m*). The following is needed to make one scarf: 370 yd (*338m*) Aubergine, 200 yd (*183m*) Peacock, 40 yd (*37m*) Moss, 440 yd (*402m*) Magenta, 390 yd (*357m*) Rust, 160 yd (*146m*) Garnet, 135 yd (*123m*) Evergreen, 435 yd (*398m*) Pewter.

WARPING: 10 e.p.i. (*40/10cm*), 27" (*69 cm*) wide, 274 total warp ends, 4½ yd (*4m*) long which allows 18" (*46cm*) for take-up and 36" (*91cm*) for loom waste. Refer to chart for total warp ends needed of each color.

SLEY: 1 end per dent in a 10-dent reed. Double sley first 2 dents and last 2 dents. Do not double these selvedge yarns in heddles.

THREADING, TIE-UP AND TREADLING:



WEAVE: 8½ to 9 p.p.i. (*36 picks/10cm*). The variance in pick beat is only to show that if one strays from 9 p.p.i. it should be to a lesser number rather than a higher one. Weave ½" (*1cm*) heading and weave in the following order. When finished, weave a ½" (*1.25cm*) heading and cut off.

10" Evergreen	4 picks Peacock
4 picks Peacock	8½" Pewter
8" Evergreen	4 picks Aubergine
10" Pewter	3" Rust
4 picks Aubergine	2 picks Peacock
6" Rust	1" Rust
4 picks Peacock	2 picks Peacock
8" Pewter	2" Rust
4 picks Aubergine	4 picks Peacock
5" Pewter	9" Pewter
4" Rust	7" Aubergine
6½" Pewter	2 picks Peacock
3 picks Aubergine	1" Aubergine
5" Pewter	2 picks Peacock
3" Rust	3" Aubergine
6" Pewter	2 picks Peacock
4" Rust	9" Aubergine

FINISHING: Finish fabric according to the article on p. 51.

Aubergine	42									2		2													= 46
Peacock		17		7			1									2			3						= 40
Moss					4			2						2											= 8
Magenta			2			4		4										11		10		6		7		6	= 97
Rust									10		9		10		6		6				7						= 48
Garnet																							1		1	32	= 35

4" including selvedge; 3"; x11; approx. 6"; approx. 5"; 6"; x2"; 3" including selvedge; 274 total number of ends

Warp arrangement chart reads left to right as it would appear on the loom.

Harris Tweed Jacket (2) [4] [R H]

page 49

WEAVE STRUCTURE: Balanced plain weave.

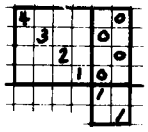
EQUIPMENT: 4-shaft loom with 32" (*81cm*) weaving width, 6-dent (*25/10cm*) reed, boat shuttles, sewing machine.

MATERIALS, warp: Halcyon Genuine Harris Tweed at 1700 yd/lb (*3417m/kg*), 1 lb (*170g*) color #1 Oatmeal, 1 lb (*170g*) color #3 Gray-brown. **Weft:** 1 lb color #3. McCall's pattern #7302, 24" (*61cm*) separating zipper, goathair interfacing and other notions as specified in pattern.

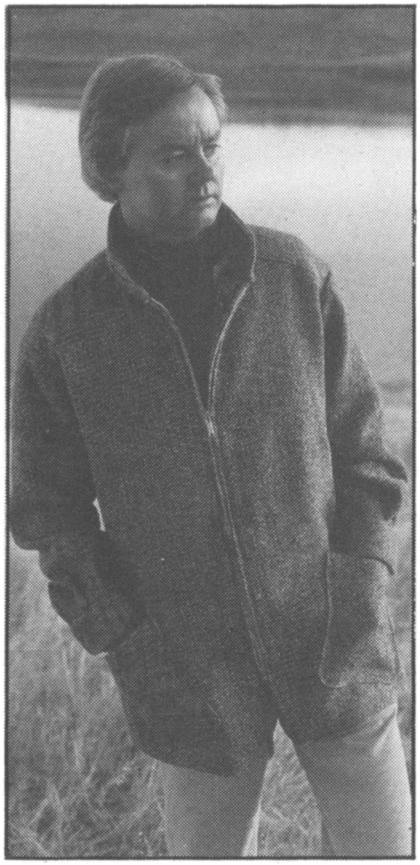
WARPING: 12 e.p.i. (*50/10cm*), 32" (*81 cm*) wide, for a total of 386 warp ends. 7 yd (*6.5m*) long. Measure warp using a dark and light strand as one to cut measuring time in half.

SLEY: 1 dark and 1 light in each dent. It would be risky to use a 12-dent reed for this fabric because of the wear and tear on the warp that will occur during beating.

THREADING, TIE-UP AND TREADLING:



WEAVE: Use dark yarn for weft throughout. Beat firmly for 12 p.p.i. The alternate dark/light warp and solid weft result in a tickweave pattern.



FINISHING: Secure ends by hemstitching on the loom or machine stay-stitching. Repair errors. Machine wash on regular cycle with plenty of soap and hot water. This yarn contains a lot of spinning oil, so check to see if a second rinse cycle is necessary. Dry flat or over a shower rod, moving frequently to avoid a crease. Because of the quantity of fabric, it was steam-pressed by a commercial dry cleaner. Finished width: 29" (*74cm*).

ASSEMBLY: Follow pattern, but change cutting layout to accommodate the narrow web. You will have about ½ to ⅔ yd. fabric left over. Because this is a fairly coarse fabric, raw edges should be hand-overcast or bound.

COMMENTS: Traditional Harris Tweed is set no less than 18 e.p.i. (*70/10cm*) for a twill weave. This would translate to 14-16 e.p.i. for plain weave, and you would want to set it this close if you were planning a more tailored garment. An important consideration, though, is to sley multiple ends in each dent to prevent wear on the warp. Don't, for instance, use a 14- or 15-dent reed.

This yarn makes a wonderfully trouble-free warp; no breakage or sticking occurred, and weaving proceeded at about 45 min./yd. Because of the considerable twist of the yarn, the weft did tend to develop little kinks. It's best to catch these as they occur rather than having to repair them after weaving.

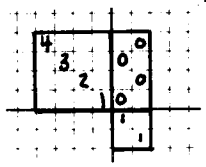
Rainbow Heather Shawl

page 52

2/4 R H

WEAVE STRUCTURE: Plain weave.
EQUIPMENT: 4-shaft loom with a minimum weaving width of 34" (*86cm*). 10-dent (*40/10cm*) reed, boat shuttle, washing machine.
MATERIALS: Harrisville singles wool at 2000 yd/lb (*4020m/kg*). Yarn is sold on ½-lb (*227g*) cones, 1000 yd/cone. One cone each of the following colors: Rust, Sandlewood, Apricot, Wheat, Cornsilk, Gold, Celedon, Spring Green, Seafoam, Emerald, Malachite, Wedgwood, Peacock, Azure, Cornflower, Skyblue, Lilac, Denim, Royal, Violet, Aster, Plum. Three cones Oatmeal. Using all these colors makes an expensive project. Some colors are used sparingly and you may wish to substitute these with another color (see sleying).
WARPING: 10 e.p.i. (*40/10cm*), 34" (*86 cm*) wide. Warp measures 112" (*284cm*) long, allowing 32" (*81cm*) for take-up and loom waste. 345 total warp ends: 18 Rust, 18 Sandlewood, 24 Apricot, 60 Oatmeal, 12 Wheat, 21 Cornsilk, 9 Gold, 12 Celedon, 6 Spring Green, 12 Seafoam, 9 Emerald, 15 Malachite, 6 Wedgwood, 9 Peacock, 12 Azure, 27 Cornflower, 6 Skyblue, 6 Denim, 27 Lilac, 6 Royal, 6 Violet, 15 Aster, 9 Plum.
SLEY: 1 end per dent in a 10-dent reed. Several reelings of warp were done until a pleasing pattern evolved. The color pattern begins with brown tones and ends with lavendar. This sequence is repeated three times. Sley all color sections randomly until a pleasing balance is achieved. Begin with browns, thread 3 Rust, 6 Sandlewood, 5 Apricot and 4 Oatmeal. Blend into gold by threading 4 Wheat, 3 Apricot, 3 Cornsilk, 4 Oatmeal and 3 Gold. Thread gray-green to blue: 4 Celedon, 4 Cornsilk, 2 Spring Green and 5 Oatmeal. Thread blues: 4 Seafoam, 3 Emerald, 4 Oatmeal, 5 Malachite, 2 Wedgwood, 3 Peacock, 4 Azure, 2 Cornflower and 2 Skyblue. Thread dark blues: 2 Denim, 7 Cornflower, 3 Lilac, 3 Oatmeal, 2 Royal and 2 Violet. Thread purples: 6 Lilac, 5 Aster and 3 Plum. Repeat two more times.

THREADING, TIE-UP AND TREADLING:



WEAVE: 10 p.p.i. for 80" (*203cm*) with Oatmeal.
FINISHING: Remove from loom and secure ends with overhand knots for fringe. Place in washing machine on an 8-minute cycle checking often until sufficiently fulled. Use low water level with regular laundry detergent and fabric softener. Water temperature should be warm. Rinse well and spin. Place shawl in dryer for 20 minutes on air dry. Do not use heat. Remove when still slightly damp; block by stretching both length and width with your hands. While still damp, brush with a nylon hair brush using short, uplifting strokes.

RX FOR WINDING AND THREADING ERRORS

continued from p. 66

The remedy succeeded so well that I encountered no problems with uneven tension or broken warp ends. On most looms, the warp is wound on by turning the beam away from the front of the loom; there are some brake mechanisms however which hold only if the beam is turned in the opposite direction (true of some table looms). It is possible, due to such variations, that other weavers will face this same situation and be able to correct it as I did.

INCORRECT THREADING OF A PORTION OF THE WARP ONLY . . .

For Christmas table runners, I had worked out a combination overshot draft of a star and a snowball which necessitated threading a half star motif on either side to balance and thus fit the fabric width. When I completed the first 2" of the snowball treadling, I realized I had split the draft incorrectly; this half unit created an incomplete snowball motif next to it. I knew I had to rethread the 25 ends on each side but wanted to achieve minimal loss in warp length and a restoration of tension to match the rest of the undisturbed warp.

THE SOLUTION . . .

First I wove a plain weave area of about 2" and inserted a ¼" metal rod into the next tabby shed (the rod was wider than the warp, extending beyond the selvages). Then I wove a few picks of plain weave to hold the rod in place. Carefully cutting the incorrect ends free where I began the first section of plain weave (see Fig. 3), I pulled these out one by one, freeing them completely. This step can be facilitated by pulling away some of the weft picks near the cut area, in effect "fringing" the cut ends. The freed warp ends can now be tied to the metal rod to match the tension of the rest of the warp. Since the cut ends are approximately 2" longer than the point at which the rod is inserted, there will be sufficient length to tie square knots without difficulty. The extra weft picks placed above the rod to hold it in position can be pushed upward if necessary for this step. This method can be used whenever any sizeable section needs to be corrected, even in the center of the warp. Naturally if there are threading errors throughout, the entire warp will need to be cut free and redone. On the other hand, if only a few ends are wrong, these can be cut free about 2" down from the fell to yield a "working" end, corrected and pinned down to the web as usual when adding individual repair threads.

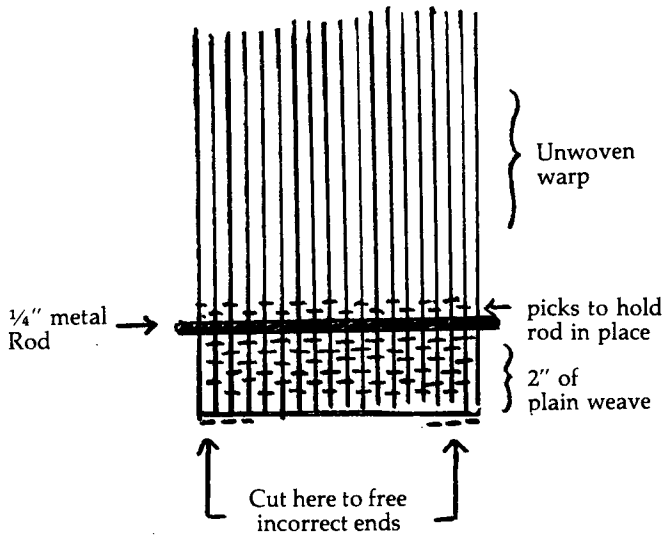


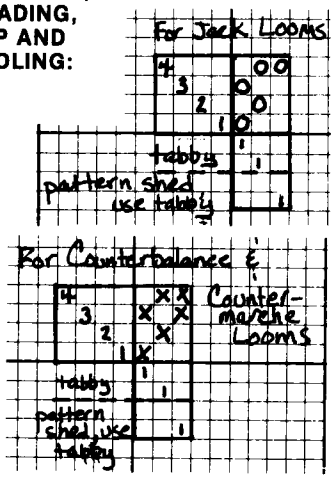
Figure 3.

These two examples illustrate how mistakes can be transformed into successes and prove that ingenuity is as essential a tool to the weaver as shuttle or sleying hook. (In the next issue, we will describe other problems and their remedies.) □

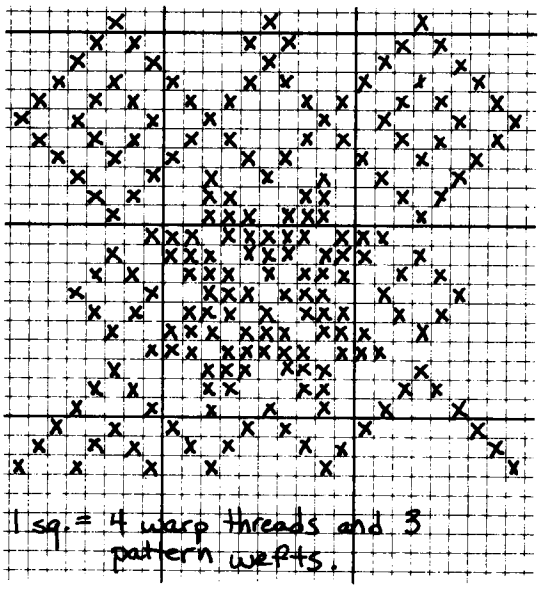
Karellian Red Pick Dress [4]

page 36

WEAVE STRUCTURE: Plain weave with pick-up border.
FINISHED SIZE: Woman's medium-large.
EQUIPMENT: 2- or 4-shaft loom with a minimum weaving width of 40" (*102cm*). 15-dent (*60/10cm*) reed, 2 boat shuttles, pick-up stick. Sewing machine.
MATERIALS, Warp and weft: 16/2 Borgs natural cotton at 6,336 yd/lb (*12,800m/kg*). Approximately 35 oz (*1,000g*) is needed. Six-strand embroidery floss. Two 2-oz (*57g*) tubes will make borders, belt and smocking.
WARPING: Warp 40" (*102cm*) wide at 30 e.p.i. (*120/10cm*) for a total of 1200 warp ends. Each warp end measures 6 yd (*5.5m*). This allows for enough loom waste, take-up and shrinkage to make a mid-calf length dress for a 5'5" woman.
SLEY: 2 ends per dent in a 15-dent reed.
THREADING, TIE-UP AND TREADLING:



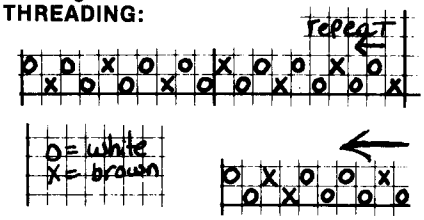
WEAVE: Beat to square. Weave 10" (*25cm*) and weave border (see illus.). Weave 62" (*158cm*) plain weave and weave another border. Finish weaving plain weave for remainder of warp.
FINISHING: Remove from loom and secure ends. Be sure to wash fabric to full and preshrink it.
ASSEMBLY: Cut dress using the Folkwear Pattern 103, Roumanian blouse back and front as guides. Length will be added and the whole width of the fabric should be used to allow enough width at the bottom of the dress. Sleeves and gussets should be cut as pattern instructs. Smocking and a crocheted edge at the neck form the neck shape. Folkwear 103 includes instructions for this.



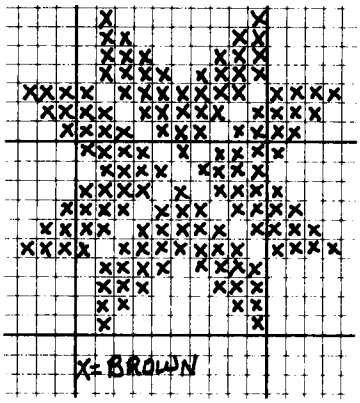
Inkle Belt

page 36

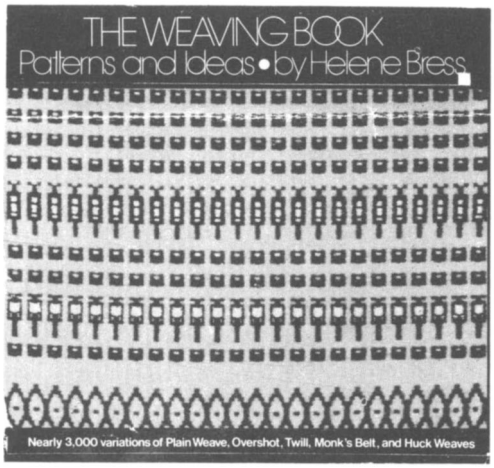
WEAVE STRUCTURE: Warp-faced plain weave.
FINISHED SIZE: 1½" x 60" (*4 x 152cm*) plus fringe.
EQUIPMENT: Inkle loom, pick-up stick, shuttle.
MATERIALS, warp and weft: 5/2 perle cotton, white, at 2100 yd/lb (*4221m/kg*); 125 yd (*114m*) are needed for warp and weft. 6-strand embroidery floss is used double (2 strands of 6-strand floss) as 1 thread. You will need 70 yd (*64m*) of brown or the color of your choice.
WARPING: Your warp should measure 7' (*2m*) which allows 8" (*20cm*) at either end of belt for fringe and 6" (*15cm*) for loom waste and take-up. Follow warping diagram for color order. There will be a total of 65 warp ends—44 white and 21 brown. (Remember that you are doubling the brown, so you will actually have 42 ends which will act as 21.) *Note:* Be cautious that the tension is kept even while winding on.
THREADING:



WEAVING: Use moderate tension. Use perle cotton for weft. Weave 7 rows plain weave then begin making white V-shape by depressing the center brown thread. Continue increasing white V-shape with each weft pick until all browns in center design area are depressed. Begin bringing up star shape according to diagram. Since the belt is warp-faced the star will be elongated. Star appears on white background. When star is finished, decrease V-shape to match other side. Repeat design 11 times and end with 7 rows of plain weave.



The Weaving Book



by Helene Bress

Have you ever tried the Echo variation on an Overshot Draft? On a Twill or Huck draft? How about Petit Point or Swivel? Have you been looking for clear, extended directions for Boundweave, Indian Saddle Blanket Weave, Undulating Twill? Did you know you can do Boundweave on Huck drafts as well as on Twill, Overshot, Monk's Belt and Plain Weave? Have you ever seen 15 variations of Honeycomb done on just one draft? Do you want to *understand* how to convert Twill, Overshot, Monk's Belt and Huck into their Multiple Harness forms? Do you like a book that has a wide scope and much depth?

Well, Helene Bress has taken five of the basic weaves and has more than run them through their paces. She has extracted the essence of each weave, shown it in its traditional form, and taken off from there. She starts with a theme—a few drafts, shows the as-drawn-in form, and then varieties galore! Her explanations are clear, are accompanied by a treadling order and other pertinent information. It's a big book, has over 500 pages, almost 3,000 photographs and so much more information that we can't begin to describe it in this teeny space.

Reader response to The Weaving Book has been immediate and overwhelming. I always knew that it was a great book, but since the author is my wife, I might be considered prejudiced. But here is what others have already written us, even though the book has only been out less than two weeks.

"The book is terrific. It was worth the waiting. This will be a classic and a must for the weaver's library. Already things I have only dreamed possible are begining to happen in my weaving." (BM)

"I just wanted to let you know that I think the book is just *Superb*." (PM)

"It probably will stand for years to come as one of the most useful and readable guides to weaving ever written by an American author." (GW)

"Your book arrived today. It filled me with a sense of awe. What an accomplishment." (BH)

"Your new book arrived this morning. I simply could not let the day pass without expressing my enthusiastic gratitude for the book you have written. It is truly monumental." (MH)

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BOOKS &tc.

A BIBLIOGRAPHY OF BOOKS ON FINISHES . . .

The Complete Encyclopedia of Needlework by Therese de Dillmont. Philadelphia, Running Press, 1972.

A very old book reprinted. It has all kinds of embroidery, knotting and tassels as well as lacemaking.

Finishes in the Ethnic Tradition by Suzanne Baizerman and Karen Searles. Dos Tejedoras, 3061 N. Snelling, St. Paul, MN, 1978.

Carefully observed techniques translated for today's craftsman.

One Hundred Embroidery Stitches. Coats and Clark, Inc., 1975.

Available at needlework and variety stores, this is a real bargain with clear illustrations and handy format.

Tassels by Doris Hoover and Nancy Welch. 3505 Evergreen Drive, Palo Alto, CA 94303, 1978.

More tassels here than you could shake a belly dancer at. Inspiration, how-to's.

Finishing Touches for the Handweaver by Virginia West. Charles T. Branford Co., 1968.

A classic presentation of basic finishing techniques applied with *panache.* Now available in paper.

Weaving is Creative by Jean Wilson. Van Nostrand Reinhold, 1972.

Clever ideas are buried like treasure throughout this popular book; also look for her new book exclusively on finishes later in 1982.

. . . AND FINISHING

Processing and Finishing Handwoven Textiles compiled by the Boston Weavers' Guild, 1980. 23 pages, softbound.

The guild's third monograph, this one is a collection of information, hints and recipes for finishing woolens and worsteds, novelty yarns, linen, cotton and silk. Some good advice, some to be taken with a grain of salt.

Woolens and Tweeds by Hariet Tidball. Shuttlecraft Monograph 4, 1961.

Based on her observations of traditional cloth manufacture in the British Isles, and on personal experimentation, Tidball offers, in her inimitable style, much worthwhile information (but be sure to remove your nylons before getting into the bathtub with your yardage).

Handloom Weaving Technology by Allen Fannin. Van Nostrand Reinhold, 1979. 335 pages, hardbound.

The last chapter in this authoritative text deals, in general terms, with dry and wet finishing of cloth. Fannin's *Handspinning, Art and Technique,* has just been released in paper, so we may hope that *Handloom Weaving Technology* will soon be equally accessible.

And to be released in the spring by Interweave Press, a monograph-length work on fabric finishing by Beverly Gordon. As yet untitled and unpriced (don't order yet), it will cover history, practice and results of much sampling by Gordon and her students. Watch for more on this.

The Weaving Book by Helene Bress. Charles Scribner's Sons, 1981. $50. 540 pages, hardbound, b/w and color.

Imagine meeting periodically with a group of enthusiastic, energetic, intelligent weavers to systematically share and explore a number of weave systems. Imagine everyone pulling out all the samples they'd worked on since you last met, and saying, "Look at this!" and "Yes, but what if . . .?" and "Why don't we try . . .". Imagine this ongoing, rich experience sandwiched between the covers of a great big, hefty book, and you have Helene Bress' *The Weaving Book.*

The book's premise is one that you often hear weavers express — that there's literally no *end* to the possibilities of weaving, that manipulating and experimenting with interlacements, texture, color and other weaving variables is limitless. But a book being a finite thing, Bress has chosen five different weaves—plain, twill, overshot, monk's belt (an overshot cousin) and huck—and brainstormed the possibilities with the help of a hardy and creative bunch of weaving friends. The result is 540 pages of good black and white photos of weaving samples, drafts, comments and suggestions. (There is also a section of color plates—nice, but the rest of the book is where the excitement is.) What happens if you weave point twill as crackle? How will it look? How can you give twill a shadow-weave look? Overshot as swivel? Huck as boundweave? Overshot as summer & winter? There are combinations and possibilities here the average weaver would never have time to get around to.

Each chapter takes a weave, discusses it briefly but very clearly so the reader has a good picture of how it works, and then takes off in some pretty unexpected and extended directions. And while these excursions are broadreaching, the author makes it very clear that they're just the tip of the iceberg.

The Weaving Book is a book to teach, and a book to stimulate. In her introduction, Bress says, "If you enjoy knowing the why's of things, they are explained. If patterns are your main concern, you may use this as a pattern book . . ." Even more, it's a book to open new doors.

Now, about the price. Fifty dollars is pretty stiff. If you're a very experienced weaver with a lot of years of varied exploration behind you, or if you require a complete recipe for everything you weave, you won't get your money's worth. But if you're a journeyman weaver looking for new ideas, new understanding, new inspiration, then compare the price to what you would spend going to a conference, or taking a course. Spend some time with it in your local or guild library, or your local weaving shop, and see if it's for you. If it is, it will be one of those books that spends a lot more time off your shelf than on it.

Treadled Togs: A Pattern Book of Loom-Fashioned Clothing by Kerry Evans. Published by the author, 2308 East Euclid Avenue, Milwaukee, WI 53207. $10.58 postpaid.

Weavers continue to be attracted to loom-shaped minimal-cut garments, and here's a collection of 24 designs of varying degrees of difficulty and originality. Ranging from the simplest pullover shirt to a pretty sophisticated two-piece suit, all are shown in b/w snapshots and clear layout diagrams with step-by-step construction notes. The 76-page book is plastic spiral bound.

by Linda Ligon

Weave Your Wardrobe by Ankaret Dean. 1054 Burnhamthorpe Rd., RR1, Oakville, Ontario L6J 4Z2. 34 pages, paperbound, $8.50.

by Louise Bradley

Participants in the Weaving Teacher's Workshop at Convergence 1978 remember Ankaret Dean as that energetic Canadian lady who shared with us a six-level weaving curriculum she had developed for her students at Sheridan Community College. With that same verve she has now written a booklet that instructs through a progression of ten garments. Although intended for a classroom or workshop situation, it could also be very useful to a guild clothing interest group or to an individual desiring the discipline of programmed growth.

The first "garment", a scarf, is within the capabilities of a beginning weaver. The last, an ikat-dyed kimono, is intended to stretch the design and technical skills of an advanced weaver. Between are projects (tops, dress, skirt, vest, jackets, coat) of increasing complexity that serve to introduce a variety of weave structures (tabby variations, rosepath, monk's belt, overshot, doubleweave) and finishing techniques (crochet, knit, finger woven bands). The weaver is encouraged to design on the loom and to add loom-controlled effects such as an embellished yoke or a special border. Each project is accompanied by a warp plan with cutting diagram and a sketch of the final garment as well as weaving and sewing instructions. It seems a nice balance between providing the security of prescribed projects and fostering creativity.

Cautions: You should know the book does not have a glamorous format if that is a high priority with you. Of more general concern is that a moderate degree of sewing, knitting and crochet skill is presumed and instruction in these areas is sketchy. That would be fine in a classroom where a teacher can fill the gaps, but it could be frustrating if you are working alone.

Despite these reservations, *Weave Your Wardrobe* is a welcome addition to the growing literature of handwoven clothing where it fills a heretofore empty niche.

Textiles of the Andes: Catalog of Amano Collection edited by Yukihiro Tsunoyama. Heian International, Inc., P.O. Box 2402, South San Francisco, CA 94080. 1980, 248 pages, $85.

by Kax Wilson

The next best thing to living close to the renowned Amano Museum in the Miraflores section of Lima is owning a copy of *Textiles of the Andes.* This handsome 16¾" x 12" volume contains 236 magnificent color plates of Chancay Valley textiles selected from his collection by Yoshitaro Amano, a Japanese businessman turned Peruvian textile scholar and collector.

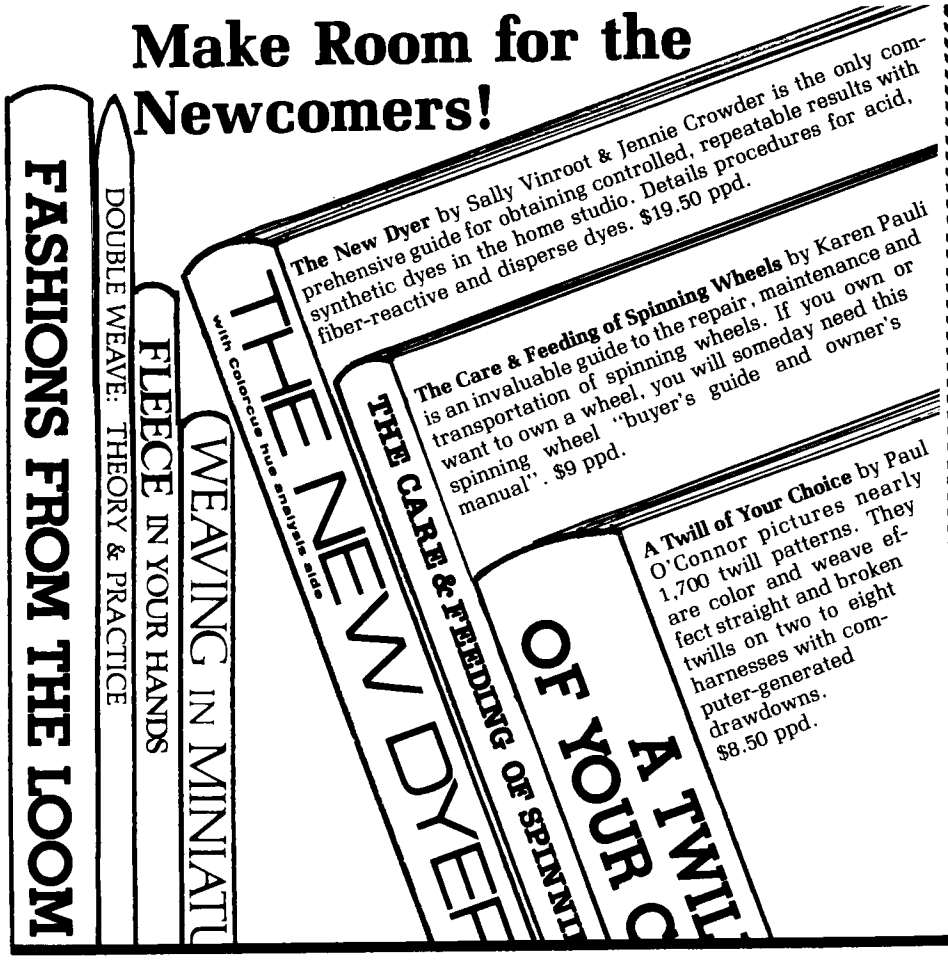
Expensive, yes, but the book costs only a fraction of the $500 price on the limited first edition and affords the "textilephile" many hours of pure pleasure. Color is clear and true. The scale of the photos is such that construction details can be readily discerned.

A ten-page introduction by the editor covers materials and methods of production, weaving and dyeing techniques, and the development of weaving and dyeing in Peru. This follows an interesting preface by Mr. Amano, who actually wants visitors to handle the textiles in his collection. (His private museum, incidentally, is a *must* for any textile person visiting Peru.) Weavers, especially, will like the back section of black and white drawings of motifs found in the color plates. There is also a comprehensive bibliography.

The color plates are sectioned by category including construction type, design method, use, and some delightful dolls. Unfortunately, although each plate is titled, the complete descriptions are placed all together near the end of the book. It is somewhat unhandy to turn the large pages back and forth. United States scholars might take issue with definiteness with which the motifs and textiles are interpreted, but this adds flavor to the work. For example, who can be sure that those dolls in Plate 230 are really under the influence of alcohol?

Textiles of the Andes is not only *coffee-table par excellence* but also an important resource for designers and craftspeople.

Make Room for the Newcomers!



The New Dyer by Sally Vinroot & Jennie Crowder is the only comprehensive guide for obtaining controlled, repeatable results with synthetic dyes in the home studio. Details procedures for acid, fiber-reactive and disperse dyes. $19.50 ppd.

The Care & Feeding of Spinning Wheels by Karen Pauli is an invaluable guide to the repair, maintenance and transportation of spinning wheels. If you own or want to own a wheel, you will someday need this spinning wheel "buyer's guide and owner's manual". $9 ppd.

A Twill of Your Choice by Paul O'Connor pictures nearly 1,700 twill patterns. They are color and weave effect straight and broken twills on two to eight harnesses with computer-generated drawdowns. $8.50 ppd.

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PRODUCT NEWS

The Old World traditional charms of our crafts can go a long way toward making the holidays more festive. The tools associated with spinning and weaving are natural extensions of the decor and spirit of the season. Consider these as you make your holiday plans . . .

The Camelot Spinning Wheel

Widely used in New Zealand, the Camelot Wheel is now being distributed in the U.S. through a dealer network by School Products Company. The Camelot is compact and treadles easily. A good-sized orifice gives the wheel versatility. The built-in Lazy Kate is designed to make plying easy.

The picture will be complete with the addition of a matching spinning chair with handcarving on the back. Both chair and wheel are built in New Zealand by furniture craftsmen.

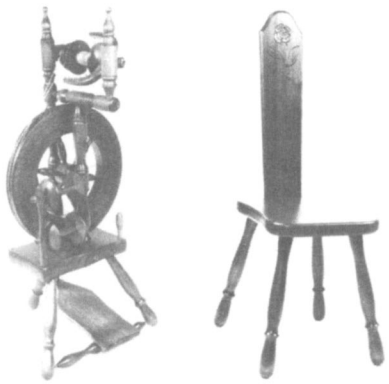
For more information, contact a local dealer. Dealers are invited to contact **School Products Co., Inc.**, 1201 Broadway, New York, NY 10001 for complete details.

Two For One

Dutch Canadian Spinning Wheel Co. now offers a tool for use by handspinners and weavers. The versatile Yarn Blocker/Warping Reel was inspired by Paula Simmons' design.

Used as a blocker, it allows the handspinner to dry a dozen or more 54" skeins at once, maintaining an even tension throughout. Used as a horizontal short-warp reel, it allows the weaver to wind a warp of up to about 10 yards long.

Dealer and product information is available through **Dutch Canadian Spinning Wheel Co. Ltd.**, Box 70-B, 142 Franktown Rd., Carleton Place, Ontario, Canada K7C 3P3.



Cards by the Fire

Imagine a winters' eve spent carding by the fire. The latest from Schacht Spindle Company can help to make it even more pleasant.

The curved-back carders are made of maple. The handle is glued and screwed to the back for added strength. A wooden lip on the face of the cards is designed to prevent card clothing from being pulled off. The cards are available through **Schacht Spindle Co.**, P.O. Box 2157, Boulder, CO 80306 and the company's dealers.

A Little Something

Beka has two new items for those looking for a little something extra. The small tapestry beater will look great adorning the tree during the holidays, then will be an asset to the weaver. A small 10" boat shuttle will be a welcome stocking stuffer. Request information from **Beka,** 1648 Grand Ave., St. Paul, MN 55105.

Dyeworks, Naturally

Dyeworks, of Minneapolis, has reworked traditional dye recipes using an exacting scientific approach—to make quantities and quality consistent. The Dyeworks' catalog of colors can be reproduced at will and in any quantity, according to owners Anne Hieronymus and Mary M. Cooney.

The inventory features silks and wools, both dyed and undyed. The staff's expertise in silk is also available. Request more information by writing **Dyeworks,** 312 South 3rd St., Minneapolis, MN 55415.

Canadian Fleece Source

Dutch Canadian Spinning Wheel Company is now offering 42's-44's count fleece, in bulk or prepackaged in two-pound bags. Request dealer and product information from **Dutch Canadian,** Box 70-B, 142 Franktown Rd., Carleton Place, Ontario, Canada K7C 3P3.

Luxury Preview

Silk City Fibers sent a preview of their new luxury yarns: Alpaca Angelica, Silk-Meche and Silk Baucle. Tempting enough to request price and color selection today! **Silk City Fibers**, 155 Oxford St., Patterson, NJ 07522.

We welcome your submissions of your most recent additions. If you have a **new** *product you would like considered for this column, send it to Product News, Interweave Press, 306 N. Washington, Loveland, CO 80537.*

CLASSIFIED ADS

TO PLACE A CLASSIFIED AD in the next issue, send your ad along with payment eight weeks prior to the month of publication. Only $.50 a word ($10 minimum) or $25 per column inch (camera-ready). **Payment must accompany your ad.** Send to **Interweave Press**, 306 N. Washington, Loveland, CO 80537.

NOTICES

INNOVATIONS IN FIBRE II. March 29-April 6, 1982. A national juried fiber exhibition open to all fiber related mediums. Awards and cash prizes. Entry deadline, Feb. 12, 1982. For detailed information and entry form send SASE to **Skyloom Fibers**, 1905 S. Pearl, Denver, CO 80210.

DRAWDOWNS BY COMPUTER. 6 for $10. Up to 8H / 10 treadles / 116 threads. No limitations on tie-up or treadling sequences. Can provide thread-by-thread or profile drafts. Also can produce b/w color studies of variations in warp and/or weft. Write for information and sample. Enclose SASE. **Salsbury Associates, Inc.**, 608 Madam Moore's Lane, New Bern, NC 28560.

WANTED: Good 8" table loom, Artcraft #240-4, with 8- and 12-dent reeds. **W. Walker**, 15 Wildy Drive, Roswell, NM.

A RAINBOW WEAVERS SAMPLE EXCHANGE is now being formed. Cost is $10/year. For further information please write **Chris Sisson**, R.R. 2, Red Deer, Alta, Canada T4N 5E2.

HAND QUILTING. Careful, appreciative work. Also custom make. **Janet Kovach**, 46 Spring St., Edison, NJ 08820.

NOTEPAPER, scribble pads, bookplates, gift enclosures featuring textile tools, spinning, weaving, dyeing, sheep. Wholesale/retail brochure, samples $.35. **Weaving and Wood**, Box 7-H, Bayport, MN 55003.

FIBERS

MOHAIR-RANGE & SHOW FLEECE from one of Texas' oldest established, prize-winning Angora goat flocks. Send $1, deductible from first order, for samples and brochure. **Kathryn Ross Chastant**, 10104 Idlewood Pl., River Ridge, LA 70123.

— WANTED —

Manufacturer who can supply us with a high quality spinning wheel we can add to our line. Must be an excellent spinner. Traditional Saxony design preferred. Parts to be shipped bulk. We will add our own brand, instruction booklet and pack. Parts to be finish sanded, ready for stain, etc. After initial shipment we will buy 15-20 units per order depending upon quality of the unit. A chance to increase your production, sales and profits. Our present suppliers know of this ad. **Box 8, Interweave Press,** 306 N. Washington, Loveland, CO 80537.

WILD AND WOOLEY FIBERS: "In the grease" wool, Rambouilet-Karakul cross, brown, black, gray, white. Also Finn-sheep wool, white. Clean, carded wool, white, colors. Black lambs for sale. Send $1 for samples and price list to 1376 S. Perry Park Rd., Sedalia, CO 80135. (303) 688-4387.

SHEEPSKIN PIECES from garment maker—finest quality cleaned skeins—random size pieces. Many uses. 1 lb., $4. 5 lbs., $16. 10 lbs., $28. Plus shipping, **Custom Handweaving by Nancy,** Dept. I, P.O. Box 477, Redondo Beach, CA 90277.

SILKS. Fine quality silk yarns and fibers for spinning, weaving, knitting, etc. Send $2 for samples. **The Silk Tree,** 26727 Ferguson Ave., Whonnock, B.C., Canada V0M 1S0.

SPINNERS CHOOSE the particular fleece you want from the swatches that we send you from our Colorado-grown Corriedale fleece. These fleece are wrapped to unroll just as they came off the sheep making sorting and selection easier. Top quality 4"-5" staple with grades 45's to 60's. Send $1 (redeemable with purchase) for swatches from 8 fleece currently in stock. $1.65/lb., full fleece lots only. **The Oak Shop**, Box 487, Berthoud, CO 80513.

SILK AND WOOL . . . naturally dyed. Large color selection for knitting and weaving. Samples: silk $6, wool $4. **Dyeworks**, HW3, 312 S. 3rd St., Minneapolis, MN 55415. (612) 333-7246.

FIRST GRADE NEW ZEALAND colored fleece wool selected by two spinners and weavers. Free clean well skirted easily combed long staples. Colors range from silver, dark grey, browns & black. In 6-lb. order lots. U.S. $4.50/lb. Directions for combing, spinning and knitting pattern included. Prices include all New Zealand documentation charges, insurance and latest increased postage rates to USA. Reduced prices on orders of 12 lbs. and over. American checks accepted. New Zealand white merino also available, price on inquiry. **Woolshed Wools,** Hinamoa Downs, R.D. 4, Balclutha, South Otago, New Zealand.

NEW FROM LA LANA. Beautiful carded, vegetal-dyed heather yarns and mohair/wool blends. Also wool and silk yarns in over 40 luscious colors. Natural shades of Romney, Karakul, Shetland, Merino, Mohair, Alpaca, silk. Thick, textured yarns, too. All handspun! Wholesale/retail/bulk discounts. $5 for full sample card. 2-oz. sample bag: carded blends for spinners, $3. **La Lana Wools,** P.O. Box 2461, Taos, NM 87571.

PROJECT YARNS of suitable substitutes shown in this issue 10% off. **The Unique,** 23½ E. Bijou, Colorado Springs, CO 80903.

WOOL, TOP QUALITY New Zealand fleece especially chosen for your handspinning requirements by a spinner and grower. Beautiful clean fleece, long staple, well skirted, in 6-lb. packs. White U.S. $3.60/lb. Price includes all documentation, insurance and postage. American bank cheques acceptable. **Len & Mary Bovey,** Bird Rd., 23 R.D., Stratford, New Zealand.

SILK, BEAUTIFUL ITALIAN BOMBYX MORI and Tussah in five types combed and carded rovings. Cocoons, mawata, thrown waste, printed materials, natural dyed mawata collection and small equipment made from PA cherry. Send $4.75 for generous samples, descriptive information and directions. Free price list. **Fallbrook House,** R.D. 2, Box 17, Troy, PA 16947.

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TRAM SILK. 30 gorgeous colors, 2-3 oz. skeins, sold by the skein, $1/oz. Sample sheets, $3. **Custom Handweaving by Nancy,** Dept. I, P.O. Box 477, Redondo Beach, CA 90277.

WOOL: Black, brown/black, grays, whites, lovely for spinning, weaving. $1.50/lb. for white, $2 for colored, by the fleece. **Georgia Wolterbeek,** Fairmount Farm, Rindge, NH 03461.

CHAMPION HANDSPINNING WOOLS. Black, brown, gray, Delaine Merino, Targhee, Corriedale, Finn Hampshire and Lincoln domestic wools. New Zealand wools, exotic fibers, best-selling handspinning books and spinning equipment. Dealer inquiries invited. **Great Plains Fleece**, Box 34068, Omaha, NE 68134.

SILK YARNS, SILK COLOURS. Weaving silks, 16 styles on cones. 14 styles of knitting silks in skeins, 45 unique natural dyed colors on silk for embroidery and tapestry. Samples $5. Lists only $1. "A Silk Worker's Notebook", handbound or hardbound, 140 pp., $50 ppd. in U.S. **C. Kolander,** 276 North Myrtle Creek, Myrtle Creek, OR 97457.

FINEST QUALITY RAW GREASY FLEECE from New Zealand. Exceedingly clean and well skirted. 5"-8" staple permits spinning directly from fleece. Sample cards $1. **Jan Tarr Wool Imports,** 32751 Navarro Ridge Rd., Albion, CA 95419.

MOHAIR LOOP, 11 colors. Send SASE for samples. **Custom Handweaving by Nancy**, Dept. I, P.O. Box 477, Redondo Beach, CA 90277.

COTTON CARPET WARP. Natural, 500-600 yd/lb., $2/lb. plus postage. **Spindrifter,** Rt. 1, Box 530, Chireno, TX 75937.

NEW ZEALAND WOOL. Long stapled, unique for ease of spinning. Natural white $3.50. Colored $4. Washed white $4. Natural carded white $5. Colored $5.50. All per lb. Postage included. Minimum order 6 lbs. Inquiries welcome. **Watson,** P.O. Box 12231, Wellington, New Zealand.

NEW ZEALAND FLEECEWOOL (Perendale or Romney) selected by experienced spinners. Well skirted, clean, range 48-56. In 10-lb. packs. White $3.25, colored $3.75/lb. postage included. **Woolgatherers Gallery,** 60 Walton St., Whangarei, New Zealand.

UNIQUELY BEAUTIFUL HAND-DYED, hand-spun wool yarns for the fiber artist in bulky or thin-spin. The southwestern sun, desert, skies, mountains all emerge in the 9 variegated shades. Send $5 for sample package. The **McKelvey-Dryden Studio,** 433 Camino Manzano, Santa Fe, NM 87501. You'll love them!

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DYES AND SUPPLIES. Batik, silkscreen, handpaint. Permanent cold-water dyes. Acid dyes for wool, PROsperse dyes for synthetics. Free Procion shade chart and information. Six-dye sampler with directions, $4.75. **PRO Chemical & Dye, Inc.**, Dept. I-S, Box 14, Somerset, MA 02726.

FREE 1981 price list and information for Procion fiber reactive dyes, tools, fabrics and books. **FabDec I**, 3553 Old Post Rd., San Angelo, TX 76901.

LABRADOR TEA. A limited edition monograph has 19 rich color samples of yarn dyed with Ledum groenlandicum. Includes dye properties and procedures and an engraving of the plant on handmade cedar bark paper. Letterpress printed, signed and numbered by the authors, this unusually beautiful work is enclosed in a silk-screened envelope with a brazilwood dyed bone button. Available from **The Tinctoria Press**, 705 Spruce St., Edmonds, WA 98020. $10.50 ppd. (WA residents add 5.4% tax)

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SUPPLIES

LOOMS. Dealer for Leclerc, Schacht and Tools of the Trade. Also Ashford and Pipy spinning wheels. Yarns, spinning fibers, equipment and books. Yarn samples $1.50 plus large SASE. Spinning fiber samples $.75 plus SASE. **The Fiber Studio**, Foster Hill Rd., Henniker, NH 03242. (603) 428-7830.

DOBBY, JACQUARD MECHANICAL LOOMS used but in good condition installed and serviced. Reasonable. Parts, other equipment available. Free estimates and demonstration. **Manfred Goldschmidt**, (212) 387-1337, 56 South 11th St., Brooklyn, NY.

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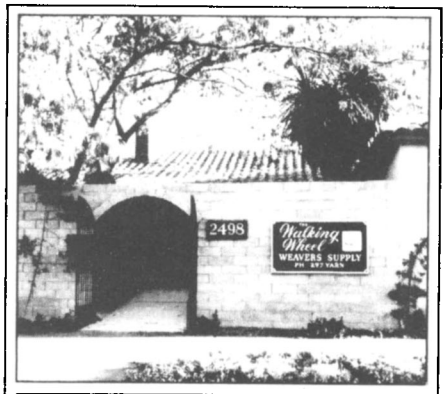

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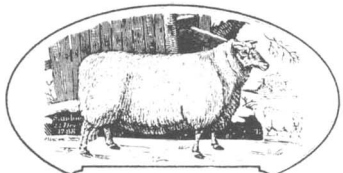

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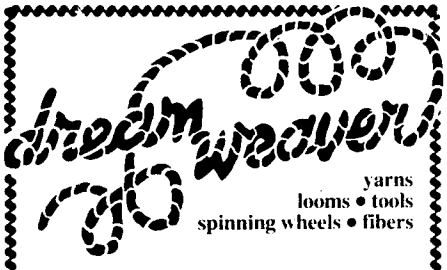

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People

It always cracks me up to go to weavers' conferences and meet, for the first time, people that I've had "telephone" acquaintance with. "Oh—I thought you would be tall—and sort of blonde," they invariably say. Something to do with my Okie accent. At the same time, I form strong visual images of people from phone or letter contact, and am really surprised at least 50% of the time.

Long-time HANDWOVEN readers have become familiar with the name Joe Coca, because 98% of our photographs bear his credit. Maybe that name calls up a mental image for you; maybe you'll be surprised by this profile written by editorial assistant Jane Patrick after her first "shoot" with Joe. For your viewing pleasure, we're including a snapshot taken during Joe's first photography session for the magazine, back in 1979—since the only self-portrait he had was of his feet only—in a dreadful pair of tennies.

* * * * * * *

Joe Coca doesn't do landscapes. Everyone else does them. He does photography, he says, because he can't draw—in spite of all his art training. But it's not what Joe *says* he does or doesn't do, it's what he *does* that matters.

Joe creates beautiful and believable mini-worlds with his camera. It's what he does best. Whether shooting a handwoven garment, an old schoolhouse, or a still life in his studio, Joe captures warmth and life which leaves us all convinced we're there.

I'd never met a professional photographer before, but my image was a nervous, flamboyant type. Joe showed up at the photography session in blue jeans and a flannel shirt with the sleeves rolled up. (In summer it would be "flaps" and a Micky Mouse tee-shirt). It wasn't quite what I had expected, but it was a welcome surprise. I felt instantly at ease.

Joe suggested a few changes in the set and began clicking away, occasionally changing lenses, lighting or the model's position. After a while he said, "That's it," and began packing his equipment. What about flash and fuss? I'd learned that with Joe there is none, only quiet excitement that is a pleasure to watch.

Joe grew up in southern Colorado; he attended Colorado State University where he studied TV and Radio Production. After graduation he worked for CSU putting slide films together.

Joe displays his natural affinity for animals on location at Greentree Ranch, where much of the first issue of HANDWOVEN *was photographed.*

A desire to broaden his scope took Joe to commercial art school in L.A. Majoring in photography, Joe found his medium. With two years of training behind him, he returned to Ft. Collins. He would do some photography for a new city magazine there.

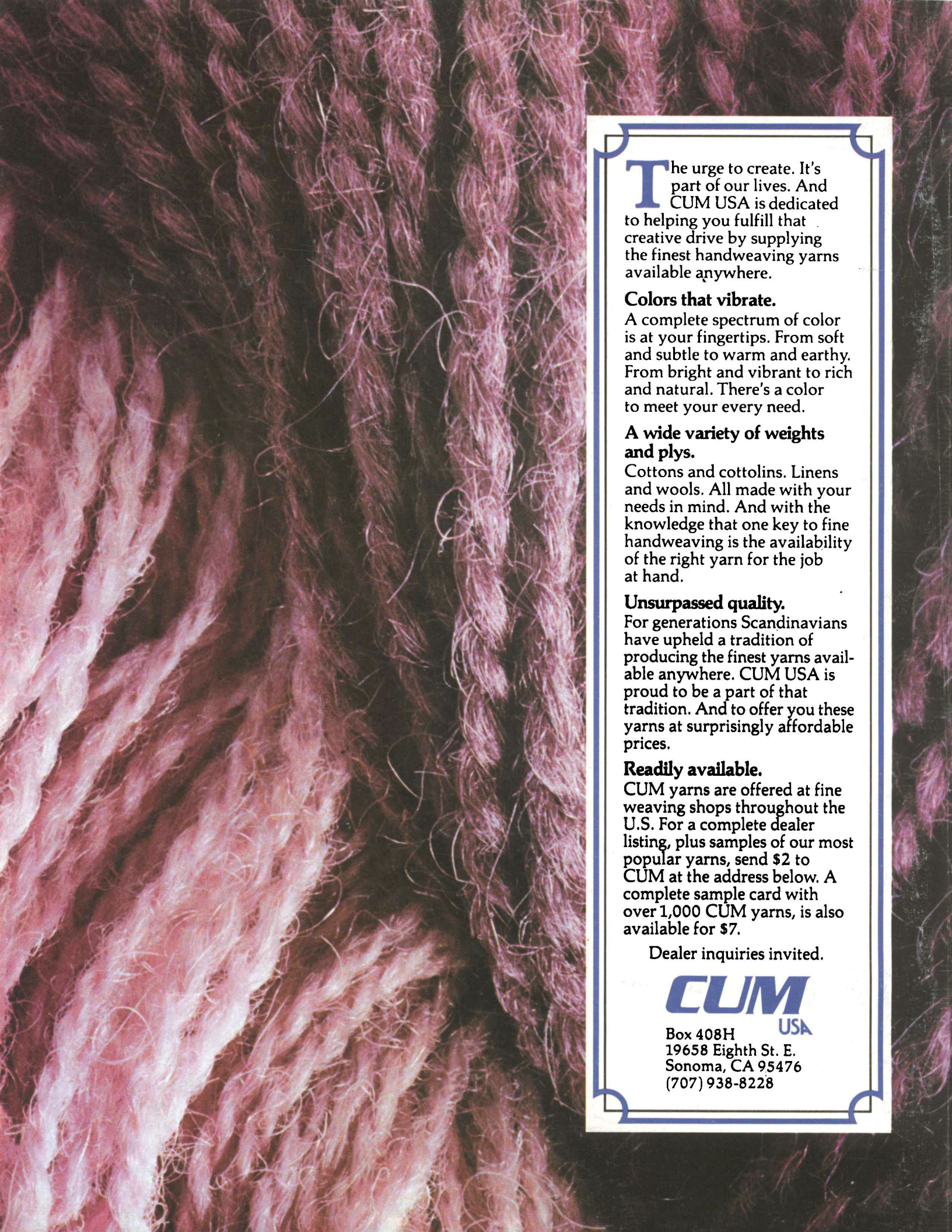
Joe first came to Interweave Press in 1978 with portfolio in hand for editor Linda Ligon's review. These were the days when Interweave operated out of Linda's basement. Linda didn't need a photographer then. But when she thought of HANDWOVEN, she thought of Joe.

Doing work for HANDWOVEN is just one facet of Joe's photography. He also does a lot of architectural shooting, which he finds limiting because "it's impossible to change the setting or alter the building to make it look right." Joe's true love is artistic photography, especially if it means building a set in his studio or "taking some pretty weird stuff and making sense out of it." Like a nude in a bathtub of orange Kool-aid. In his personal work he often uses models. "It's harder," he says, "since they're not professionals, but I like the uncertainty because you never know exactly what expressions you're going to get." He would like to do more art but laments that should he try to live from this in Ft. Collins, he'd most likely starve. His ideal would be "to live in Ft. Collins and work in New York and L.A."

For now, Joe enjoys shooting for HANDWOVEN and working in his studio. Perhaps he'll take a trip to sell his art. And maybe, when he's an old man, retire to the Bahamas.

* * * * * * *

IN THIS ISSUE: **Beth Johnson**, author of the Harris tweed article on p. 47, has been developing a production weaving studio in Brasstown, NC, for the past couple of years. There's talk, she reports, of establishing a production crafts industry in Rabun Gap, GA—home of *Foxfire*. **Eliza Leadbeater**, a U.S. citizen who has made northern England her home for a number of years, has been instrumental in setting up a textile museum in an old mill at Styalls—worth a visit if you're in that part of the world. **Karen Searle** and **Sue Baizerman** have just added another title to their list of publications as Dos Tejedoras publishers. It's a knitting pattern book of Latvian mittens, and judging from their advance publicity, it's rich in color, history, and patterns . . . their co-author in this issue, **Cherri Pancake**, is curator of textiles for the Museo Ixchel in Guatemala. Having looked at Virginia West's hemstitched placemats in black and white photos in her book, *Finishing Touches for the Handweaver*, what a surprise to see them in real life and glorious color. As Paul Simon says, "Mama don't take my Kodachrome"! And how inspired we all were here at Interweave by Virginia's imaginative color play . . . —*ed.*



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