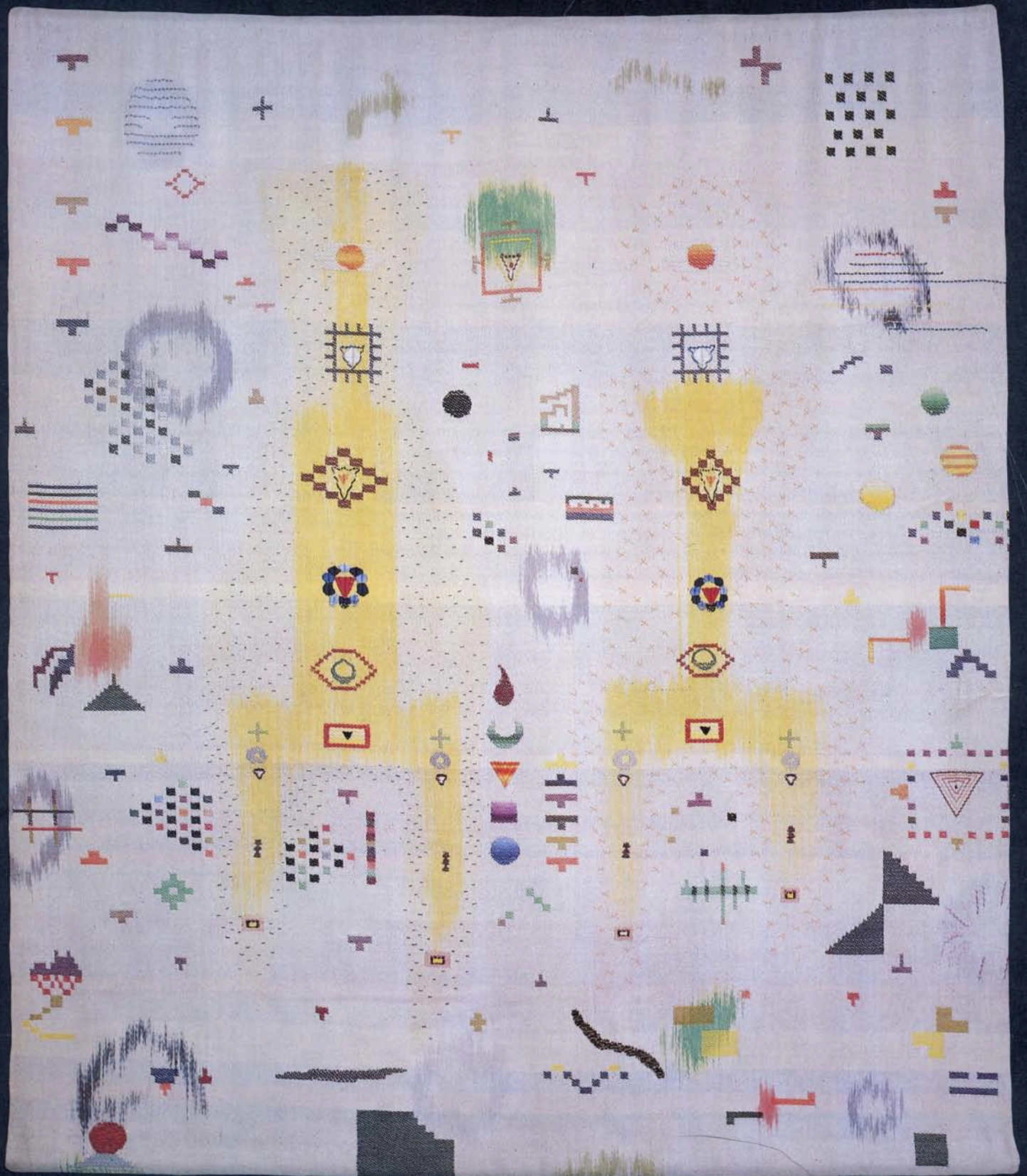


Painting and Brocading on the Loom

Colorful dyes and floss transform a simple cloth

by *Bhakti Ziek*



When I arrived in Guatemala in 1970, it was like coming home. I remember walking down dirt paths in Indian villages, stopping at house after house, each with a woman or two weaving in the front yard. The way we take driving a car for granted, they take weaving. Young girls weave their first cloth to dress dolls, and they continue weaving for the rest of their lives for themselves and their families.

The Guatemalan peasants are simple, hardworking people. They take great pride in their cultural heritage, villages, and families, and they wear ornate, colorful costumes that identify their village. It became a game for me to try to identify the origins of the Indians selling their wares in the marketplaces. The variety of costumes was not just in color or design but also in weaving techniques. Cloth from two villages might appear the same, yet the production processes are very different.

I learned backstrap weaving from teachers in several villages and traveled to many places to observe them at work. While I don't use a backstrap loom for my work today, the brocading techniques I learned in Guatemala have become an identifying element of my weaving. I have transposed their traditions into my own imagery. Each time I sit at my loom I reaffirm my connection to those generous Indian women.

I paint my warps and weave a simple cloth with complex weft brocading. It's time-consuming, but worth it. The hours I put into a piece is like polishing a stone. I'm no longer bothered when people ask, "Why don't you just paint on canvas?" or "Why don't you embroider? It would go faster." It might, and it might be simpler, but I'm not concerned with speed or ease; I enjoy these

processes, and my images are integral to the woven cloth.

I never have a clear final image in my mind. I weave the way I travel. I know the general direction in which I'm going, but not the specifics. This leaves me open and sensitive to the materials' needs, to color and form, to my moods and instincts. I need this spontaneity to balance out the order inherent in weaving. My work unfolds in the process of becoming, and if my knees get bruised from holding up harnesses or I get restless sitting in one spot, still I do it. It's an exciting adventure.

I find great potential in these methods and hope you'll be inspired to use them. But, please, don't read this and agonize over following the rules. Whatever you do will be fine. Don't be afraid to experiment.

Painting the warp

I've tried ikat to color my warps, and also a wax-resist method. I have endless patience with the time-consuming brocading techniques, but I don't have the patience to tie threads for ikat. So, since 1979, when I was a student at the University of Kansas, I've been painting my warps to create specific images or washy atmospheric space.

Preparing the warp—I have a 56-in.-wide, 16-harness Macomber floor loom and a 20-in.-wide, 4-harness Kessenich table loom. Each creates different parameters within which I can work. I begin with white mercerized cotton thread, 10/2 or 5/2, sett at a density to give me a warp-faced cloth—about 50 epi if I'm working with a 10/2 thread. I dress my loom, usually using the full width, from front to back with at least 10 yd. of warp so I can do several pieces in a row. When I use the Macomber loom, shown in the photos on page 44, I thread the warp in a 16-straight draw, using all the harnesses.

I tension the warp onto a bar or lease stick temporarily attached to the loom's front apron. Then I put lease sticks into the two tabby sheds and tie their ends together. In front of my loom, I set up sawhorses or a large table and place a plywood board on top. I put newspaper and plastic on the floor, on top of the plywood, and over the front of the loom. Painting can be a messy process, so I use lots of plastic. Then I cut the bar free from the apron and pull the warp forward onto the table, and free from the loom. I release enough warp for the length of the piece, and then some. Since the dye tends to run, I leave enough extra thread so the dye won't creep into the reed. (My rusty reed is evidence that this hasn't always worked.)

I tightly clamp the end of the warp to the table with a squeeze clamp or C-clamp at each side. If the warp has tangled or is in clumps, I release the reed from the beater and comb the warp, once it's dry, with the reed. (A wet warp will cause the reed to stick and rust.) I comb the warp while painting if the threads have moved out of

place or bunched together, or if I need to straighten out the lines of the images.

To create striped patterns in a plain weave, I use lease sticks to distinguish two sheds. I paint one layer. When it's dry, I paint the other, in the same area, with a different color. More often I paint threads as if they were a flat surface, working the dye around and into all the threads.

My most common painting method—I probably break all the rules of warp painting, but what I do works. Approach painting with a free attitude and expect surprises at the start (even that it works!). For me, the painting is the sketch of the piece—its skeleton. At the loom, the work fills out and makes all its final connections.

Although I like cookbooks that give exact measurements, I must confess that I use a-pinch-of-this-a-pinch-of-that dye recipe. Dye manufacturers do give specifics, but I guess at my proportions.

To hot tap water I add as many grains of Procion-H powder as I think will make the color I want (the H series was actually developed for cold water). I pour in a few tablespoons of washing soda, which causes the chemical to react with the fiber, plus a few tablespoons of salt, and mix some more. Salt brightens the colors. I add more hot water and mix until everything is dissolved. I test the color on some warp ends, then make adjustments. The dye looks much darker when wet. From experience, I can tell if the color is right. I tend to go lighter rather than darker, as areas can be darkened later; it's harder to lighten them (you can use bleach, but I never have).

I paint with sponge brushes. Blobs of dye will often drip, and some colors bleed more than others. These things you learn to expect and work with. I paint from the interior to the edge of a shape and watch the dye move. If it moves fast, I don't go out to the edge with my brush, knowing it will reach there anyway. Sometimes I incorporate blobs into my painting; sometimes I shrug my shoulders. I can hide them later with the brocading.

I don't paint the whole warp at once. Sometimes I put down one color, sometimes different colors in different areas (without their touching). Then I let the warp dry. I've read that a warp should dry for at least 24 hr. and that a plastic covering will slow down the process. I've used a covering, but the plastic on the table also inhibits drying, so if I just leave the warp exposed, it dries slowly enough to react with the fiber. If it's taking too long, I tie string to the temporary bar and hang the warp so air circulates around it. I usually work on a warp a week or more before I feel ready to wash and rinse it.

Alternative painting methods—To paint a specific image, I thicken my dye with a mixture of Keltex (sodium alginate) and chemical water (see recipe, page 45). The



Ziek paints her warps and uses Guatemalan brocading techniques to create unique imagery. The top surface (facing page) is a satin weave; the reverse (above) is weft-faced sateen ("Chakras," 1985; 67 in. by 57 in.).



Before painting, Ziek pulls the warp forward and clamps it to a table in front of her loom. She sketches her images onto the warp with Procion-H dyes and a sponge brush (above). The warp must dry for 24 hr. before each section can be washed and rinsed in buckets of progressively hotter fresh water (left). Photos by Mark Goodwin.



color stays where I place it and doesn't creep. If I want the colors to run together, I wet the whole warp first and then splash, pour, or paint on the dye. I sometimes add washing soda to the water used to wet the threads; then I am sure that the dye will be permanent.

On smaller pieces, where I want great control of the image, or in small sections of a large piece, I usually paint with fabric pigments rather than Procion dyes. They come thickened, and to lighten a color, you dilute it with a colorless medium so it never becomes too runny. I apply these pigments with flat Japanese paintbrushes of varying widths. They help get the pigment to cover all sides of a thread. Pigments don't become part of the fabric like the Procion dyes do, but instead sit on the surface. So, if you don't coat all sides of the thread and it twists in weaving, the uncolored areas will be exposed. You can get good colors with them, but pigments have a subtle coating, so they're slightly dull.

The pigments also need to be heat-set, or they will wash out; ironing the cloth with a hot, dry iron will make them permanent. In some pieces I use both dyes and pigments because of their different effects. For these pieces, I iron the areas with pigment first, and then I wash the warp. I have had problems when I've waited until

the cloth was finished before ironing and washing it; the threads with pigment were stiff and difficult to beat, and the dust from the washing soda made me sneeze. But if I need to add a painted image once I have started weaving, I paint it on with fabric pigment, let it dry, continue to weave, and then iron that area when the weaving is off the loom.

Washing the warp—When the painting is done and the warp dry, I remove the lease sticks and untie the warp from the temporary bar. I remove the table from in front of the loom, but keep the paper and plastic on the floor. I even add more newspaper.

I fill four plastic buckets with water, using cold water in the first bucket and progressively hotter water in the others. This way, loose dye is removed before it gets a chance to react with the hottest water. Then I divide my warp into three or four sections. Keeping the bucket with the coldest water near the loom, I wash the front ends of the first section of warp threads. I'm very thorough, sometimes taking each section through a series of eight or more rinsings. I always start with fresh water, rotating the buckets throughout the process until the water runs clear. The water in the last bucket is as hot as my hands can stand. It's hard work carrying these

buckets back and forth from loom to bathtub, but a clean warp makes weaving easier, and I don't have to worry about dye running in the finished piece. When the water runs clean, and the entire warp has been washed, I let the threads hang onto the plastic-covered floor to dry. I'm sometimes so anxious to get my room cleaned up that I use a fan to speed the drying.

Brocading

Once my warp is painted, washed, and dried, I roll it back onto the back beam and tension it. Now I'm really ready to weave.

Until recently, I wove plain cloth with supplementary weft brocading, which means extra wefts are added to create the cloth's surface design. The weft thread that runs selvage to selvage is structurally necessary; supplementary weft threads work in small areas or across the warp, but aren't integral to the cloth's structure. The brocading looks like, and is often confused with, embroidery, but it's done as the cloth is woven.

I'll describe some of the stitches I use and how I apply them to the satin/sateen fabric construction I've come to prefer. You can add brocading to any weave structure, so you won't have to change your threading to try these techniques. Since brocading is time-consuming, I suggest you begin with just a few motifs. They can be effective, fun, and not so frustrating that you'll never want to try brocading again.

I mostly use embroidery floss for my brocade cloth. I don't wind butterflies (bobbins), which always seem to tangle for me, but instead I use the whole skein or cut off long pieces and let them hang until they're incorporated into the weft. Sometimes I have hundreds of these extra threads working at once. Sections like these will weave slower than 4 shots/hr.—about ¼ in./hr. In "Sugar Blues," it reached the point of insanity. I'm not sure how I keep track of what each thread is doing—it seems to be a subliminal, kinetic knowledge in my fingers.

You can brocade on an open or a closed shed. On a closed shed you'll see the brocading on both the front and back of the cloth; on an open shed you'll see it on the face only. I prefer the open shed: I like that there's a difference between the front and back of the fabric, and I feel more secure with the thread anchored in the shed. Often I use both methods in one piece. My main concern is the appearance on the front, and since I back my work with fabric, no one sees the reverse side anyway.

With either a closed or an open shed, the brocaded motifs are begun the same way. You must anchor the brocade weft so it won't pull out as you work. After throwing your regular weft, with the shed open, run one end of the supplementary thread into the open shed for 1 in. or more to anchor it, close to where you want to start brocading. Bring this end out to the back of the weaving, leaving a tail. Bring the rest of the thread to the top of the weaving at the spot you want the image to begin. If the motif is to develop to the right, anchor the thread to the left; if the line is to move to the left, anchor it to the right. The direction of anchoring doesn't matter if the motif is basically symmetrical, as in the rectangular shapes in "D.C. Space" (page 46).

Straight wrapping—I create all my brocade lines by wrapping the brocade weft around a set number of threads each shot (see drawing on page 46). This creates a vertical line called a straight wrap. If the brocade line is to move on an angle, the brocade weft should move over the same number of threads each time. For example, if I want a line that is 4 threads thick and moves to the right 2 threads at a time, I throw my main weft and then anchor my brocading thread at the left. I bring the bulk of the thread to the surface at the place I want the line to start, take the supplementary weft over the 4 threads to the right of the surfacing point, and bring it

Recipe for thickened dye

Mix the thickener with chemical water, as indicated below. Dissolve the dye in hot water. Then add it to the thickener mixture. (I guess at proportions, but dye manufacturers provide them.) You can store this mixture for months. Warning: Procion dyes are dangerous, so work with rubber gloves in a well-ventilated room away from food.

Before you can paint with the thickened dyes, you must fix them by adding washing soda, which causes the chemical to react with the fiber. The mixture will be good for only about 4 hr. then, so if you want to use the same color over a period of time, make a dye-and-thickener mixture in one bowl, and use small amounts as you need it.

Dilute the washing soda with hot water separately to ensure that it is dissolved. Add about 1 tbsp. washing soda to every cup of thickened dye mixture.

Chemical water

Chemical water lasts forever and doesn't need refrigeration, so you can mix it up and store it for future use. It can be used for thickened dye or in place of water to mix regular dyebaths.

To 1 qt. of water, add:

1 capful of Sequesteran (water softener that ties up minerals and irons so they won't react with the dye); you can also use Calgon.

1-2 cups of urea (to make dye dry more slowly, penetrate better, and yield a uniform color).

1 capful of Synthrapol (wetting agent that also helps dye penetrate and makes color more uniform); you can also use a mild detergent.

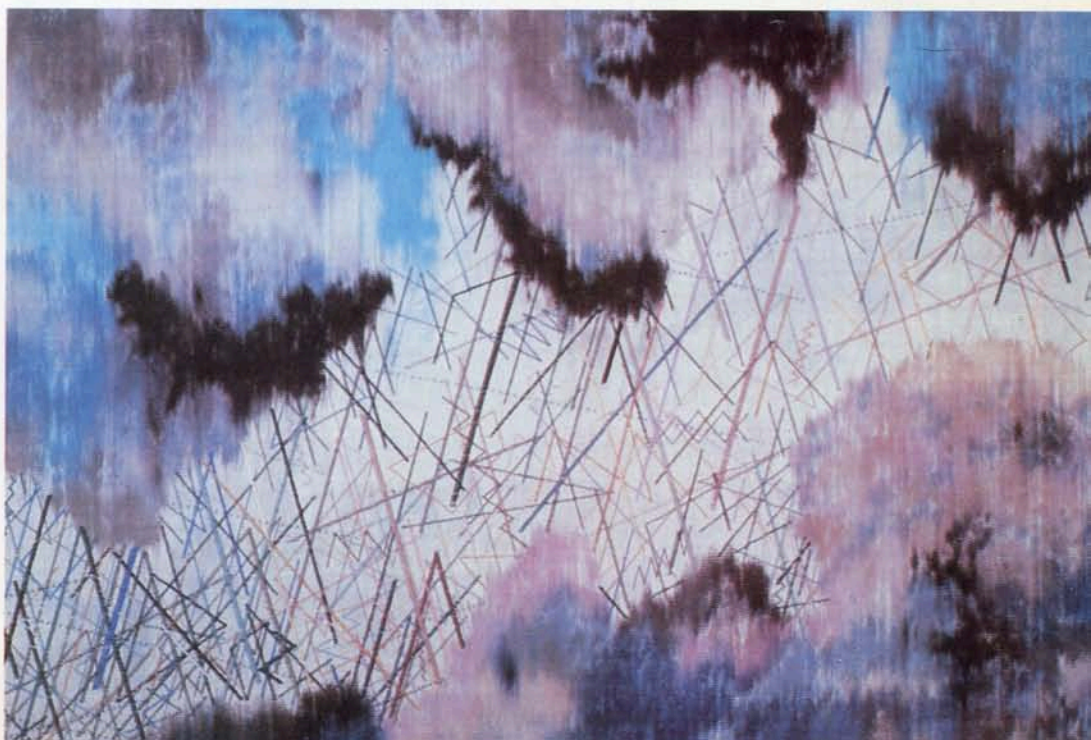
Thickener

Each dye supplier has its own thickener. The basic ingredient, sodium alginate, is kelp.

To 1 qt. of chemical water, add 2-3 tbsp. of thickener. To prevent lumping, put it in a dry container. Add a few drops of rubbing alcohol—just enough to make a paste. Then add the chemical water and stir well. Let it sit 1 hr. or more before using it, or it will be grainy. Store it in a cold, dry place (refrigerator is fine). It will last several months before getting moldy.



To paint a specific image in a small area, such as in this detail of "Hanuman Eating the Sun" (above), Ziek applies fabric pigments. To create the illusion of depth in "Sugar Blues" (right), she applied several layers of Procion-H dyes (1980, 45½ in. by 54½ in.).



back into the shed to surface between the 2nd and 3rd threads. Then I change my shed, throw my main weft, and repeat the steps. I repeat this process until I want the line to end. After bringing the weft over and around the 4 threads, I don't bring it back to the surface, but continue carrying it through the shed several inches and out to the back of the cloth. Then I cut it off so a tail hangs out the back.

Figure-eight wrapping—You can use this brocade technique to build shapes or create lines too wide for a single wrap (I don't like to have floats longer than ¼ in.). For example, in one piece I created diamond shapes with figure-eight wrapping and X's with small wrapped lines that intersect. To figure-eight wrap, you literally make a figure eight around the warp threads, with either a closed or an open shed.

Begin by anchoring the thread in the shed and surfacing where you want the

center of the motif. Bring the brocade weft over the warp threads to the right, then back through the shed (or behind the warp, if the shed is closed) to resurface at the center. Then float the thread over and around the warp to the left of the mid-point and back through the shed (or behind the warp), to the same center point, as shown in the drawing below. If you want the motif to move, instead of returning the thread to the center, return it to whatever side of the center you want it to go to. If the shape is growing bilaterally, keep the central axis and increase the number of warps being wrapped each shot, but don't let the floats get too big. They'll snag, and the work will look sloppy.

Soumak wrapping—This wrapping, used by rug weavers in Anatolia and Afghanistan, creates more of a raised line than the other brocade wraps and is good for filling in areas. Begin by anchoring the thread. Then

bring it over some warp threads and around 1 or 2, then over more warps and around 1 or 2, and so on, until you have covered the area you want. On the next shot, return, filling in with floats and wraps. The wraps are alternated in consecutive rows, as shown in the drawing below.

Tied-down skips—One of the most useful brocading methods involves skips and tie-downs, rather than wrapping. The supplementary weft skips across the surface of the weaving and is held in place by warp threads called tie-downs. I use it to create large geometric and curved amorphic shapes.

For example, when weaving tabby threaded on 16 harnesses, I lift 1 or 2 harnesses of the 8 that make up the first shed and use these threads as tie-downs. Then I lift 1 or 2 harnesses from the other 8 to tie down the second shot. I can create twill lines within the brocade by choosing adjacent harnesses tie-downs, or I can choose tie-downs at random. If the brocading weft is thin, the tie-downs are visible, in which case a planned order is neater. If the weft is thick, it hides the tie-downs.

After throwing your main weft, anchor the supplementary weft thread, and close the shed. If this shed had all odd harnesses lifted, now lift only 1 or 2 of them (depending on the size of the float you want between the tie-down threads). These lifted harnesses will be your tie-down threads. Pass the weft brocade through this new open shed to the place you want it to stop, and let it hang on the surface. Now throw the main weft through the shed created by all the even harnesses. Close that shed and raise only 1 or 2 even harnesses to act as tie-downs, and pass the brocade weft through this shed. Repeat this procedure until the shape is finished.

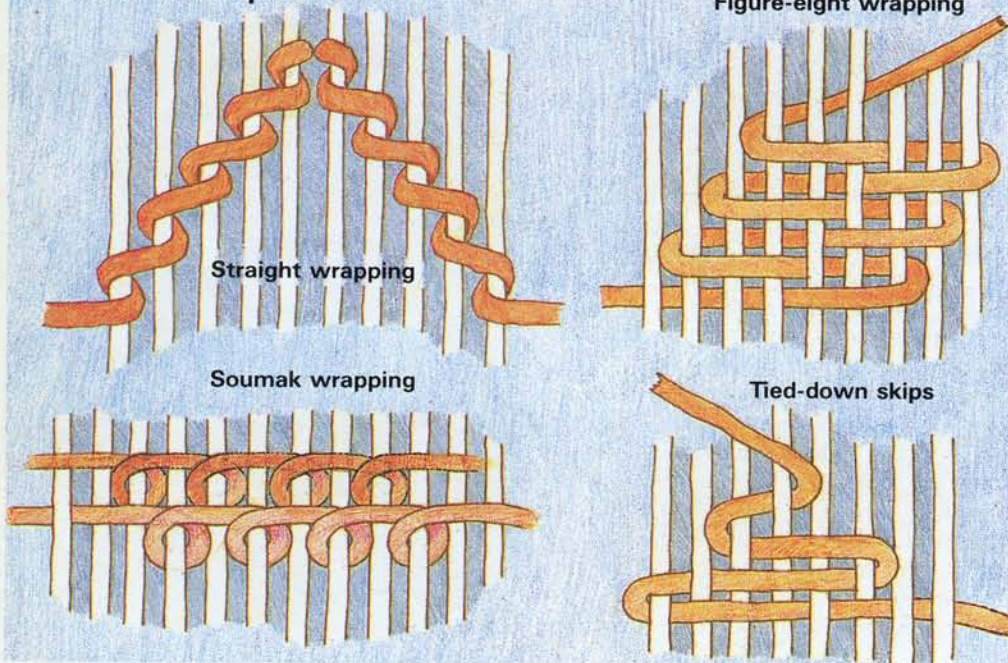
If you want vertical lines to appear in the motif, lift the same odd harness(es) each time for the odd shed, and the same even harness(es) each time for the even shed. If you want twill lines in the motif, move the tie-downs each time to the threads to the right (or left) of the last ones lifted to create a diagonal sequence (see drawing at left). You can get a brick pattern by staggering tie-downs in consecutive rows.

Satin weave/sateen pickup

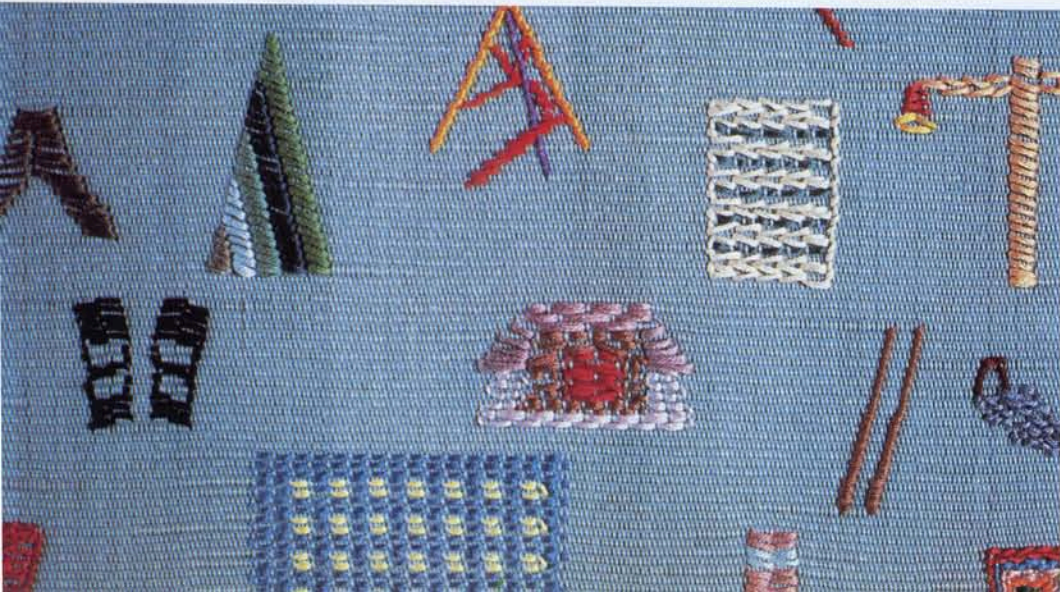
I used to joke about having so many harnesses and weaving only plain cloth, so I began to reevaluate my woven structure. Obviously I wasn't using the loom's capacity to assist with my designs. After some exploration, I settled on an 8-thread satin weave, on which I pick sateen designs integral to the cloth's structure. I also add brocaded forms with supplementary weft.

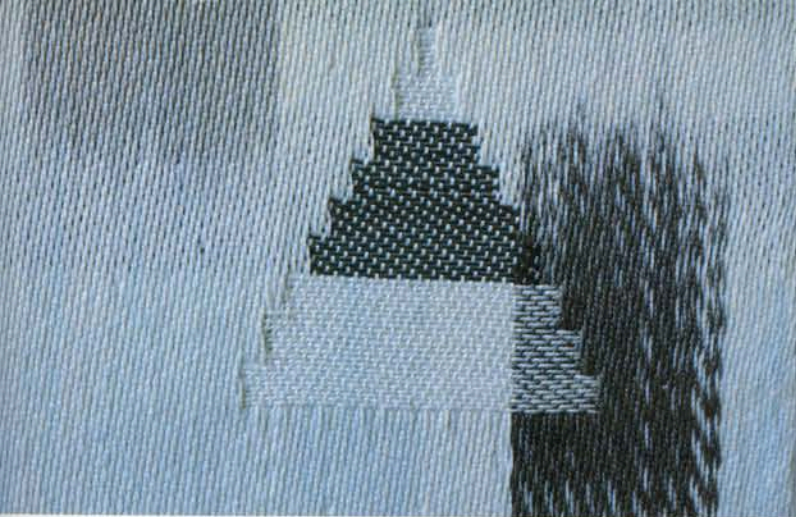
A satin weave is a warp-faced structure; sateen is weft-faced. I like the strong contrast between them; and with the straight threading I still have the option to do plain weave, or other patterns. I must admit that after all this searching, I still love the

Brocade techniques

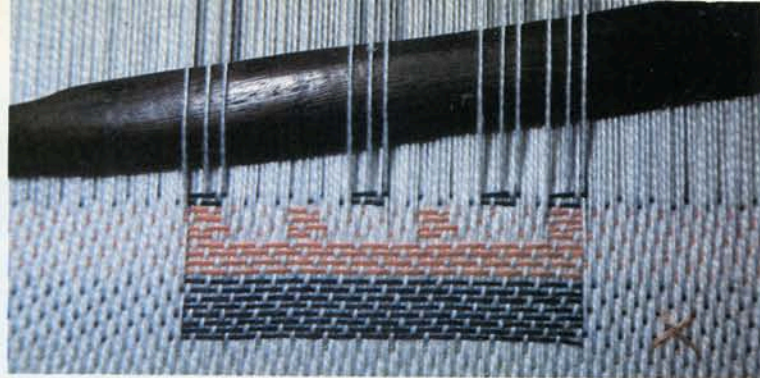


Ziek uses four brocade techniques. In this detail of "D.C. Space" (below), the triangle at top left is five straight-wrapped lines of different colors. The brown shape to the left of it and the black shapes below it are figure-eight wrapped. The rectangle at upper right is soumak-wrapped, and the T-shaped motif to its right is straight-wrapped at the stem and soumak-wrapped across. Ziek made the large blue rectangle with tied-down skips.





Ziek's satin/sateen weave construction, in conjunction with her painting and brocading techniques, quiets those who ask why she doesn't "just embroider"—her images are integral to the cloth. In the detail above of "Black and White—2," the background is a warp-faced satin; the triangle is a weft-faced sateen. Ziek makes a sateen motif by passing the shot through a shed created by pick-up-sticks (top right). For the round motif from "Chakras" (bottom right), Ziek drew a circle on the warp and filled in the image area with tied-down skip brocades.



strength and simplicity of plain weave—it's an honest weave. Yet, in a manner consistent with my personality, I've chosen a new structure that adds to my work's complexity rather than simplifying it.

I've developed my own technique for working a satin weave. From what I've read, most people weave satin so the warp floats, which create the satin surface, are on the fabric's underside, and the long weft floats, which create the sateen reverse of the fabric, are on the top. This way the weaver has to lift only 1 harness per shot, rather than 7. But I need to see the face of my cloth to make decisions, and I need to brocade on the top surface. So, because I choose a warp-faced satin as my predominant surface, I must lift lots of heavy harnesses.

I use an 8-thread satin weave and tie the peddles for both satin and sateen. I label my peddles 1, 1A, 2, 2A, and so on, so that the numbers treadle the satin weave and the numbered A's treadle the sateen. With this configuration, I build shapes in blocks of 8 shots. Both the satin and sateen use the same weft thread, which goes from selva to selva through the different constructions. The front of the cloth looks drastically different from the back, which is one of the things I love about it.

To create sateen motifs, I use small pick-up-sticks across the warp. I treadle peddle 1A and place the pick-up-sticks where I want to create sateen forms. Next I lower 1A and treadle 1 for the satin background weave. Then I "throw" my weft. I use a boat shuttle with a cotton weft of the same weight yarn as my warp. I can't really throw the shuttle, although it will run from edge to edge; I pass it through the shed until it comes to the first pick-up-stick. I bring the shuttle up and through the shed marked by the pick-up-stick. Then I insert it back into the open satin shed until I reach the next pick-up-stick. Again I bring it up and through this pick-up-stick shed, and then

back through the open shed. I do this across the web, or warp, until the shuttle has reached the other side. Then I remove the pick-up-sticks and beat the cloth. What I see developing are weft-faced figures on a warp-faced background.

After weaving the first row, I repeat the process for the next 7 shots (working 2A/2, 3A/3, etc.) until I am back to the 1A/1 combination. Then I decide if I am going to continue or change the pick-up areas. If you want to work out designs on graph paper, think of each square as 8 shots. I sometimes change a pattern after 4 shots, but usually work in the full 8-shot block.

When I'm brocading as well as picking sateen images, I throw the main weft first, through whatever satin/sateen combination I'm working on. Then I work with the supplementary brocade wefts. I use the same brocading methods described above, but work with a closed instead of an open shed. If I want brocaded shapes with crisp, straight edges, I let the supplementary wefts hang to the back of the cloth instead of on the top in between shots. I bring them up to the surface, across, and back down again each time. I thus get clean vertical lines, and the main weft acts as an anchor. With free forms, I let the brocade weft hang and turn on the front of the cloth.

To make tied-down-skip-brocaded figures, I treadle 1A as the tie-downs for a shot on 1, use 2A as the tie-downs for a shot on 2, etc. When weaving "Chakras," I drew outlines of circles onto the warp and then filled them in, using this method. (In many of my other pieces, I have let the shapes grow as they wished.)

* * *

My weaving process is the essence of my work. I have a dialogue with the weaving that begins with painting and continues at the loom. I want aesthetically pleasing pieces, but more important is what I learn

as I weave—the way it affects my days, my consciousness. My images transform traditional techniques into something personal, something applicable to my culture and time. I don't weave literal stories; instead, I try to evoke a feeling, an energy, a mood.

An astrologer once told me that my horoscope indicates that I am an artist—and, more specifically, a weaver. Weaving has been my lifeline. It has taken me to Mexico, Guatemala, Kansas, India, and back to New York City. It has freed me from many obligations and chores I previously accommodated myself to. It has made me increasingly selfish and happy. It seems to be the path I have always sought, and through luck or some kind of monkey guidance, I am on it. □

Bhakti Ziek is an artist in Brooklyn, NY. Photos pages 43, 45, 46, and 47 by author.

Resources

Cotton yarn

UKI The Kolmes Co., Inc., 541 W. 37th St., New York, NY 10018.

White, natural, or 114 colors available; can order directly or through retail stores.

School Products Co., Inc., 1201 Bdwy., New York, NY 10001; (212) 679-3516. Mail order available.

Dyes, pigments, and chemicals

These suppliers send good information with their products and will help if you have problems. Starter kits available.

Pro Chemical & Dye Inc., Box 14, Somerset, MA 02726; (617) 676-3838. Mail order; free catalog.

Color Craft, Box 936, Avon, CT 06001; (203) 282-0020 or (800) 243-2712. Mail order; free catalog.

Aljo Manufacturing Co., 81 Franklin St., New York, NY 10013; (212) 226-2878. Mail order; free catalog.

Cerulean Blue, Ltd., Box 21168, Seattle, WA 98111.

Catalog, \$3.25, but worth the money.

Threads

M A G A Z I N E

- 4 **Letters:** *Dye caution; knit selvages; shirt collars; knitting needles*
- 8 **Questions:** *Sewing and knitting machines; Colcha embroidery; stringing beads*
- 12 **Tips:** *Cordmaker; back-and-forth knitting; neat knots; needle threading*
- 16 **Notes:** *Navajo rugs; sisal hammocks; colonial clothing; quilt festival; tapestry*
- 80 **Calendar**
- 84 **Books:** *Four knitting books; weaving clothing; Mexican costumes*
- 98 **Heirlooms:** *Hey, sailor, let me shorten your sleeve*



Young designers define fashion. Eva Goodman displays her sportswear: rainbow-striped jersey pants shaped with spiral tubing. See page 28.

- | | |
|--|--|
| <p>Editor
<i>John Kelsey</i></p> <p>Art Director
<i>Glee Barre</i></p> <p>Associate Editors
<i>Deborah Cannarella</i>
<i>Betsy Levine</i></p> <p>Assistant Editor
<i>Mary Galpin</i></p> <p>Copy/Production Editor
<i>Geraldine Von Maluski</i></p> <p>Assistant Art Director
<i>Paola Lazzaro</i></p> <p>Editorial Secretary
<i>Nancy Garbrecht</i></p> <p>Contributing Editors
<i>Linda Dyett</i>
<i>Robbie Fanning</i>
<i>Susan Guagliumi</i>
<i>Joanne Mattera</i></p> | <p>28 Not Necessarily Seventh Ave. by Linda Dyett
<i>How four fashion upstarts tailor their visions to the times</i></p> <p>35 Exploring a Knitted Pattern by Margaret Bruzelius
<i>Bohus Stickning sweater generates diverse designs knit with simple stitches</i></p> <p>40 Methods for Multicolored Knitting by Maggie Righetti
<i>How to manage many strands</i></p> <p>42 Painting and Brocading on the Loom by Bhakti Ziek
<i>Colorful dyes and floss transform a simple cloth</i></p> <p>48 Crewel Gardens by Anne S. Cunningham
<i>Joanna Reed stitches seasonal wildflowers in wool</i></p> <p>52 Techniques of Haute Couture by Elizabeth A. Rhodes
<i>Designer Charles Kleibacker teaches fundamentals, from fabric to finish</i></p> <p>58 Dyes from the Herb Garden by Helen King
<i>Preserving the savory colors of the summer's crop</i></p> <p>61 Antique Spinning Wheels by Deborah Lerme Goodman
<i>How to tell the fixable from those beyond repair</i></p> <p>64 Tatting by Betty Suter
<i>Poor man's lace that is really elegant finery</i></p> <p>71 Machine-Knit Popcorns by Susan Guagliumi
<i>Three ways to pop the bobbles for fisherman knits and fancy work</i></p> <p>74 The Hammock by Penelope Drooker
<i>Twining, looping, sprang—each makes a comfortable swinging fabric</i></p> <p>100 Liberty Quilts</p> |
|--|--|

The Taunton Press: Paul Roman, publisher; Janice A. Roman, associate publisher; Tom Luxeder, business manager; Carol Marotti, personnel manager; Lois Beck, office-services coordinator; Jean Oddo, executive secretary; Mary Ann Colbert, secretary; Roy Sanderson, maintenance. **Accounting:** Irene Arfaras, manager; Mary Ames, Elaine Yamin. **Art:** Roger Barnes, design director; Vickie Joy Stansberry, art assistant. **Books:** Leslie Carola, publisher; Heather Brine Lambert, associate art director; Scott Landis, Christine Timmons, associate editors; Nancy Stabile, copy/production editor; Marty Higham, secretary. **Fulfillment:** Carole E. Ando, subscription manager; Terry Thomas, assistant manager; Laura Lesando, customer-service coordinator; Gloria Carson, Dorothy Dreher, Donna Gustaitis, Peggy LeBlanc, Denise Pascal, Heather Riccardi, Nancy Schoch; Ben Warner, mail-services clerk. Robert Bruschi,

distribution supervisor; David Blasko, Mary Ann Costagliola, Linnea Ingram, John Kerstein, Aaron Nathenson, Marchelle Sperling, Nicholas Tamburri. **Manufacturing:** Kathleen Davis, director; Gary Mancini, manager; Barbara Bahr, David DeFeo, coordinators; Deborah Cooper, Dinah George, Margot Knorr, production assistants; Claudia Blake Applegate, system operator. **Marketing:** Dale Brown, director; Rosemarie Dowd, trade-sales coordinator. **Promotion:** Jon Miller, manager; Molly Turmelle, assistant manager; Anne Feinstein, associate art director; Claudia Allen, circulation assistant. **Video:** Rick Mastelli, producer/director; Don Goff, Jr., production assistant.

Advertising and Sales: Andrea Ondak, national accounts manager; Carole Weckesser, senior ad-sales coordinator. Tel. (203) 426-8171.

Threads magazine (ISSN 0882-7370) is published bimonthly, October, December, February, April, June, and August, by The Taunton Press, Inc., 63 South Main Street, Newtown, CT 06470. Tel. (203) 426-8171. Second-class postage is paid at Newtown, CT 06470, and additional mailing offices. Copyright 1986 by The Taunton Press, Inc. No reproduction without permission of The Taunton Press, Inc. **Threads magazine**® is a registered trademark of The Taunton Press, Inc. **Subscription rates:** U.S. and possessions, \$18 for one year, \$34 for two years; Canada and other countries, \$21 for one year, \$40 for two years (in U.S. dollars, please). Single copy, \$3.50. Single copy outside U.S. and possessions, \$4. Send to Subscription Dept., The Taunton Press, Inc., P.O. Box 355, Newtown, CT 06470. Address all correspondence to the appropriate department (Subscription, Editorial, or Advertising), The Taunton Press, Inc., P.O. Box 355, Newtown, CT 06470. U.S. newsstand distribution by Eastern News Distributors, Inc., 1130 Cleveland Road, Sandusky, OH 44870.