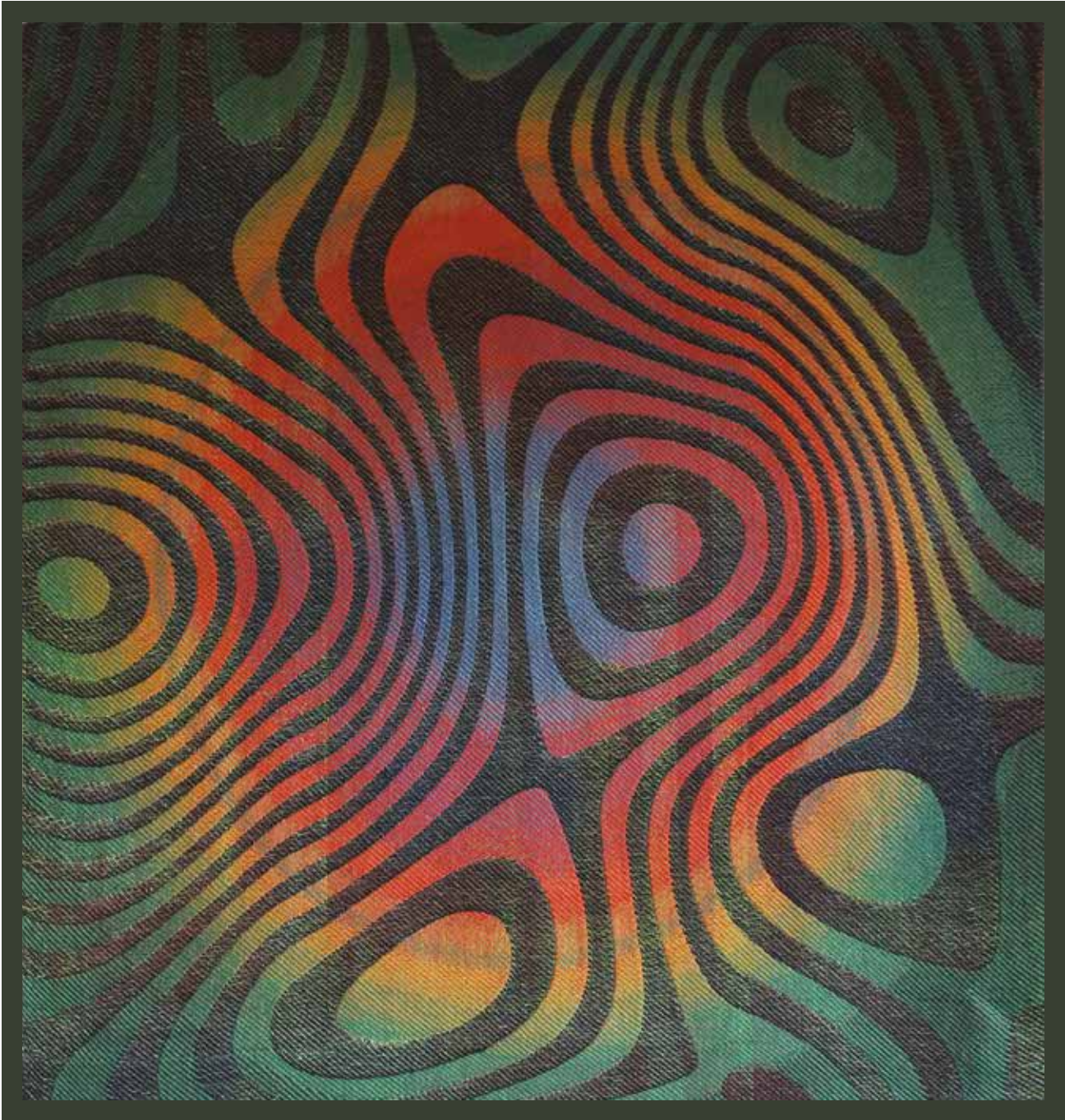


JOURNAL

Encouraging curiosity, exploration, innovation in weaving



Complex Weavers Awards 2023

• *plus:* Ondulé Textiles Study Group

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This is yet another late edition, but we're working hard to get back on track. Thank you for your patience.

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On the Cover



Each year, winners of the Complex Weavers Award dazzle and inspire us. The cover on this issue shows the fascinating *Aureola* by Agnes Hauptli. Read about this piece and other CW Award winners starting on page 30.

Ondulé Textiles Study Group

Liz Heine, Study Group Coordinator

Many of us were inspired to take up the ondulé reed after reading Norma Smayda's book, *Ondulé Textiles: Weaving Contours with a Fan Reed*. Her book includes gorgeous pictures of fan reed weavings and describes using this special reed on various looms. (For the book review, see *Complex Weavers Journal* Issue 118, October 2018.)

Our group started in 2018 via email. The beginnings were modest, but we are now a study group of 12 members. As you will read in the articles that follow, weaving with a fan reed is a slow process. Because of the time required to weave each ondulé piece, and because the effects of ondulé weaving are often not visible in small swatches, we decided that the group would share pictures rather than physical woven samples.



The book that inspired a new study group in 2018

With the help of one of our more technical members, we use a free collaborative area to post pictures and write-ups of our projects. In 2020 we also started holding group video calls every other month. These have been a great addition to the study group, allowing us to discuss, ask each other questions and brainstorm ideas.

For the first two years of our group, we wove following project themes that changed every six months. We're now headed off in very different directions as we explore the capabilities and unique features of weaving with the fan reed, as you'll see in the pages that follow. Enjoy the stories of our journey.

If you have a fan reed and an interest in exploring with this study group, you are welcome to join us. Please send an email to the study group coordinator: lizh@lizmadethis.com

Editor's Note

The Fan Reed: a Very Basic Introduction to a Special Tool

The fan reed is a specialized bit of equipment that a weaver can use to create undulations in the warp (the French word *ondulé* means *wavy*). This special reed takes the place of a regular reed in the beater of a loom and performs the reed's usual functions of spacing the warp and pressing each weft pick into its place. It is, however, very different from our regular reeds.

The structure of the fan reed is responsible for the lovely effects a weaver can get from it. Sections of dents are arranged in 'fans', wide at one extremity and dense at the other; and these fans alternate their orientation along the width of the reed. (In other words, a fan section with its wide end at the top is followed by a fan with the wide end at the bottom, and so

on.) When the warp at rest passes through the center of the reed (midway between top and bottom), the warps will be spaced evenly all across the reed.

As weaving progresses, the weaver raises or lowers the reed to change the at-rest position of the warp; and the raising/lowering of the reed changes the warp spacing. Warp ends passing through the wider part of a fan section will be spaced apart, and ends passing through the narrow end of a fan section will move closer together.

You can think of the fan reed as a device that creates a sort of cram-and-space effect, but without special

sleying; and it does it in a way that can be varied by the weaver during the course of weaving, for as long or short a time as the weaver wishes.

—RM



One of many styles of fan reed

Photo by Liz Heine

Weaving Wire in Ondulé Forms

Darilyn Bennett

Ondulé Textiles Study Group

I found my niche in a world of weaving possibilities when I paired wire with a fan reed. I had been weaving with wire for over five years, trying different weave structures, when I became intrigued by Susie Liles' ondulé towel on the front cover of *Handwoven* magazine (issue 144, March/April 2009). While perusing the Internet I had previously stumbled across the RailReed and ordered one from Kadi Pajupuu in Estonia. After just a few projects it was apparent that the RailReed was not quite what I expected for use with thinner yarns and wire. The fan reed, however, seemed to offer amazing potential. After Susie came to the Salem (Oregon) Fiberarts Guild to demonstrate using the ondulé reed, I contacted WoolGatherers about purchasing an ondulé reed. Once I saw Norma Smayda's book, *Ondulé Textiles: Weaving Contours with a Fan Reed*, I was sure I wanted to weave with wire on a fan reed, despite the fact that I had been warned there was a chance that wire use could impact the reed's integrity.

In 2019, feeling like I was not skilled enough to be called a 'complex weaver,' I nevertheless took a membership in Complex Weavers so I could join Norma's new Ondulé Textiles Study Group. The Zoom group has evolved and some members have changed, but the innovation and creativity within this small group continues to amaze me. Everyone who has attempted to use the ondulé reed has creatively altered their loom to meet the demands of a reed moving vertically rather than horizontally. Exploring this new tool has stretched everyone's imagination of 'what could be'. Each supportive Zoom session gives rise to new ideas and inspiration. I think this group has just begun to touch the surface of endless possibilities with their creativity.

In 2020, I made the decision to weave exclusively with wire. Wire reveals the apparent opposites and contradictions of the medium: rigid but springy, strong yet moldable. The combination of wire and a fan reed gives an additional dimension of texture to each creation as wire reflects and diffuses light.

The ondulé effects created by the fan reed are achieved by incrementally changing the reed position at predetermined intervals while weaving, to produce a spreading and condensing of warp threads, forming hour-glass undulations. It is almost impossible to tell whether you have skipped an interval when weaving, so attention to detail is a necessity. My preference for using 24-gauge wire in both warp and weft accentuates this unforgiving condition. If you make a mistake, the wire may be permanently creased, as wire retains a memory once used.



Figure 1. Detail of final project, Zoom weaving class, 2020
Photo by Brian McLernen

Once I started my fan reed journey, I was lucky to find a person who has exceptional attention to detail to modify my loom, given my specs. We worked together for many months to make the necessary changes on my four-shaft Herald loom before the reed was ordered. The same friend has continued to support me by designing and modifying tools, as well as framing my finished artwork. Most of what I have woven with wire and a fan reed combines weft-faced weaves with 24-gauge wire; however, recently I've added an eight-shaft table loom to use with smaller gauge wire. Any sculpting has been done off loom.

The slow, tedious progress and challenges of wire use with a fan reed create a constant chain of 'what ifs'. Pushing the weaving limits is an ongoing challenge requiring adjustments and problem solving. So, why struggle with so many issues? The rewards are magical, with endless possibilities for pushing boundaries with iridescence and sculpting. I have mainly used wire in both warp and weft, but there is much to explore with wire and yarns, especially novelty yarns.



Figure 2. *Mars — There Could Be Life*, the first piece in Darilyn's woven series, *The Planets*. Framed dimensions: 12.25x12x2 inches (31x30.7x5 cm)

Photo by Steven Addams

In 2020, at the beginning of the pandemic, I took two Zoom classes along with over 130 other weavers, called 'Weaving a Story,' taught by Anastasia Azure. I chose to use my ondulé reed and a space-dyed cotton warp in the first class. Anastasia led us through many creative assignments, which gave me the confidence to produce a second project utilizing wire with my fan reed. With so many creative weavers in the class and a supportive Zoom study group, I began to approach how I planned and created my weaving in a new way. A detail of my final project for the second class is shown in *Figure 1*. It is two layers of 24-gauge copper wire with a weft-faced ondulé background and a screen-like foreground.

Figure 3. *Mars*, oblique view

Photo by Steven Addams



Once the class was completed, my Zoom study group of five women, from England, Wales, Sweden, Chicago and Oregon, continued. We joined together, looking for expressions of artistry and seeking to create original work. For the last five years, we have shared ideas and nurtured our creative voices, providing a sounding board, encouraging critique, and supporting each other not just as artists, but also as women and human beings. We are all very different in our weaving journeys, but are steadfast in our belief in the importance of community, now with a global perspective.

After many samples and experimentation with my ondulé reed, I began a series called *The Planets* which expanded my ability to do 3D woven art. *Mars* was the first, created with a weft-faced twill on my four-shaft loom with off-loom sculpting (Figures 2 and 3).

The next piece in the series, *Soleil*, added the variable of multiple colors requiring different considerations. Wire comes in limited colors, and dye lots differ. More colors meant more shuttles of springy wire to corral. Color placement within the reed became another element which could delineate and intensify the drama within the piece. Other notable decisions included the slope and length of the contour, and the size or gauge of the wire. Each decision had a cumulative effect on the final outcome. Once off the loom, the piece was carefully manipulated into a convex circle.

Cascade (Figure 4) explored more color, texture, shape, and movement. Light is alternately reflected and absorbed by the wire, resulting in shimmering, iridescent movement. The colors and shapes appear to change with shifts in the angle at which the weaving



Figure 4. *Cascade*. This piece was displayed in *Complexity 2022*. 11.3x12.5x2 inches (29x32x5 cm)
Photo by Steven Addams



Figure 5. *Star Trees*, created as a tribute to five giant Sequoia trees in Salem, Oregon. This piece was exhibited in *Complexity 2024*

Dimensions including base: 8x9 inches (20x23 cm)

Photo by Brian McLernen

is viewed. This piece was exhibited in *Complexity 2022*.

Star Trees, a tribute to five giant Sequoia trees planted in a circle to form a star when looking skyward from the middle, was again a weft-faced piece with sculpting manipulations performed off-loom. *Star Trees*, which was accepted into *Complexity 2024*, was particularly difficult as it required two sizes of ondulé structures to become the inner and outer parts of the trees forming a Star (Figures 5 and 6).

I have created many wire and ondulé samples which will someday be the basis for further exploration. My list of future 'what ifs' keeps growing as I continue to push the limits of using a fan reed with wire. My adventure continues with no end in sight. I now look at all art through the prism of future possibilities with wire.

Resource

Smayda, Norma, with Gretchen White.
Ondulé Textiles: Weaving Contours with a Fan Reed. Atglen, Pennsylvania: Schiffer Publishing, Ltd., 2017.



Figure 6. *Star Trees*, side view

Photo by Brian McLernen



Ondulé Weaving With a 3D-Printed Fan Reed

Susan Ortiz

Ondulé Textiles Study Group

When I first saw an example of Ondulé weaving, I was fascinated with the possibility of being able to capture motion in my weavings; but I didn't quite understand how I could make it happen. Then I found Norma Smayda's book, *Ondulé Textiles: Weaving Contours with a Fan Reed* (see Resources). As I read, I was intrigued by the fan reed and the creative weavings presented, as well as the different methodologies various weavers had used to adapt their looms for this kind of weaving.

After investigating the cost and limitations of a single fan reed and how best to modify one of my looms, it became apparent that weaving this way would involve a significant investment of time and money. It would also require that I dedicate one of my looms to this modality. Then came the big question: Was I willing to make the investment, not knowing whether I would actually enjoy this type of weaving? Since it was not a widely-used technique, I wasn't able to find resources that could help me make an informed decision.

I decided to try the techniques as economically and creatively as I could. The loom was the easy part: I would use my LeClerc Dorothy table loom. The challenge was how to make the fan reed. I tried to disassemble an old steel reed and reconfigure the steel tines into the fan configuration; but this was not successful. Back to the drawing board!

My 'Aha' moment came when my son purchased a 3D printer. I pulled out Norma's book and began to explain to my son (an engineer with absolutely no understanding of weaving) what I wanted to do. With the aid of the technical drawings in the book, he and I began to design a 3D-printed fan reed and the parts needed to convert Dorothy into an ondulé loom. This would test my theory that I could obtain the same results with a 3D-printed reed that I could with a stainless-steel fan reed.

Over two years, we made several prototypes, each allowing us to better understand the limitations of the 3D printer as well as the design and structure of the reed components. The most significant limitation was the 3D printer's build area, which allowed a finished printed size of just eight inches. For the first prototype, two identical sections were printed with two full fans, two half fans and two straight-reed sections, each designed with a density of 15 dents per inch. We also designed a few more pieces: individual fans, printed loom parts that would allow the reed to hang freely, and a levering tool to move the reed up and down.



Figure 1. First project with 3D-printed reed

Pieces in hand, I began to weave and was surprised that the set-up and fan reed actually worked as I had hoped (*Figure 1*). I was hooked!

Then I moved away, which meant I no longer had access to my son's mathematical and design skills or his 3D printer. This exploration was too good to abandon, though, so...I decided that I could do this, even with my own limited mathematical skills. I bought a 3D printer, downloaded design software (a kind that didn't require a degree in engineering to use) and got to work.

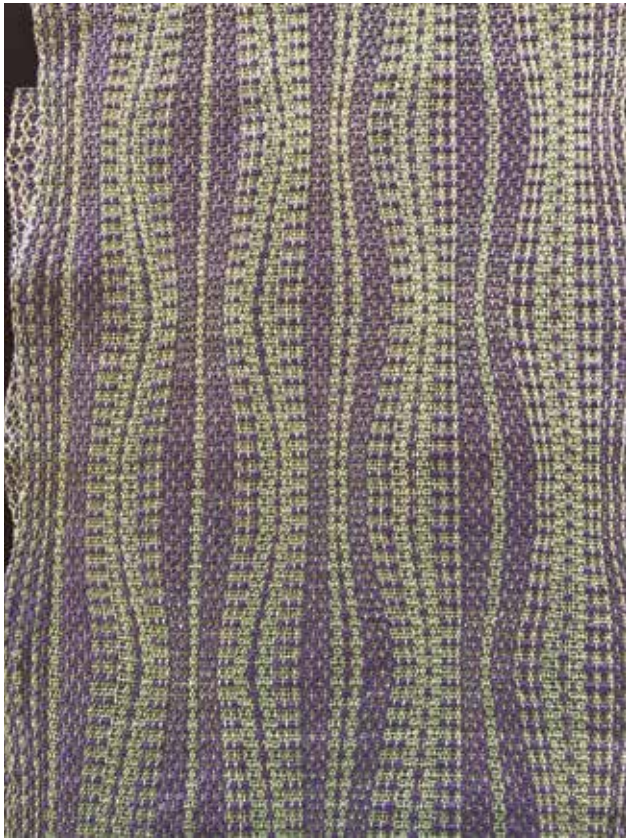


Figure 2. Combined twill



Figure 3. Cotton huck lace sampler



Each new warp led to new experiments, both in the reed and in the weaving (*Figures 2, 3 and 4*).

It is important to note that the 3D-printed reed is much lighter in weight than a standard stainless-steel reed. As a result of this, and because I was often using heavier yarns, I added a metal bar to the reed to give it more weight.

As I continued sampling, I began to think about different fan configurations that would change the placement of the woven oval and hourglass designs. By printing individual full-fan, half-fan and straight sections, along with specially designed top, bottom and side bars to hold them in place, I was able to create different design

Figure 4. Twill scarf woven using a 3D-printed standard-configuration fan reed



Figure 5.
Hand-dyed
cotton ikat in
plain weave

configurations to show off the patterns in my weaving.

Since starting this exploration, I learned that I enjoy and continue to enjoy creating beautiful ondulé textiles. In addition to Dorothy, I've adapted my Schacht eight-shaft Wolf Pup to use the fan reed and have achieved similar successful samples.

I now spend time exploring how different weave structures interact with ondulé warp displacements. I am also exploring how hand-dyed and ikat yarns can be used with the ondulé reed (*Figures 5 and 6*). I am finding it fun to continue the experimentation and compare both the feel and the look of textiles created with my 3D-printed fan reeds as compared to straight-dented reeds.

The greatest benefit of my



Figure 6. Hand-dyed Tencel huck
and plain weave scarf

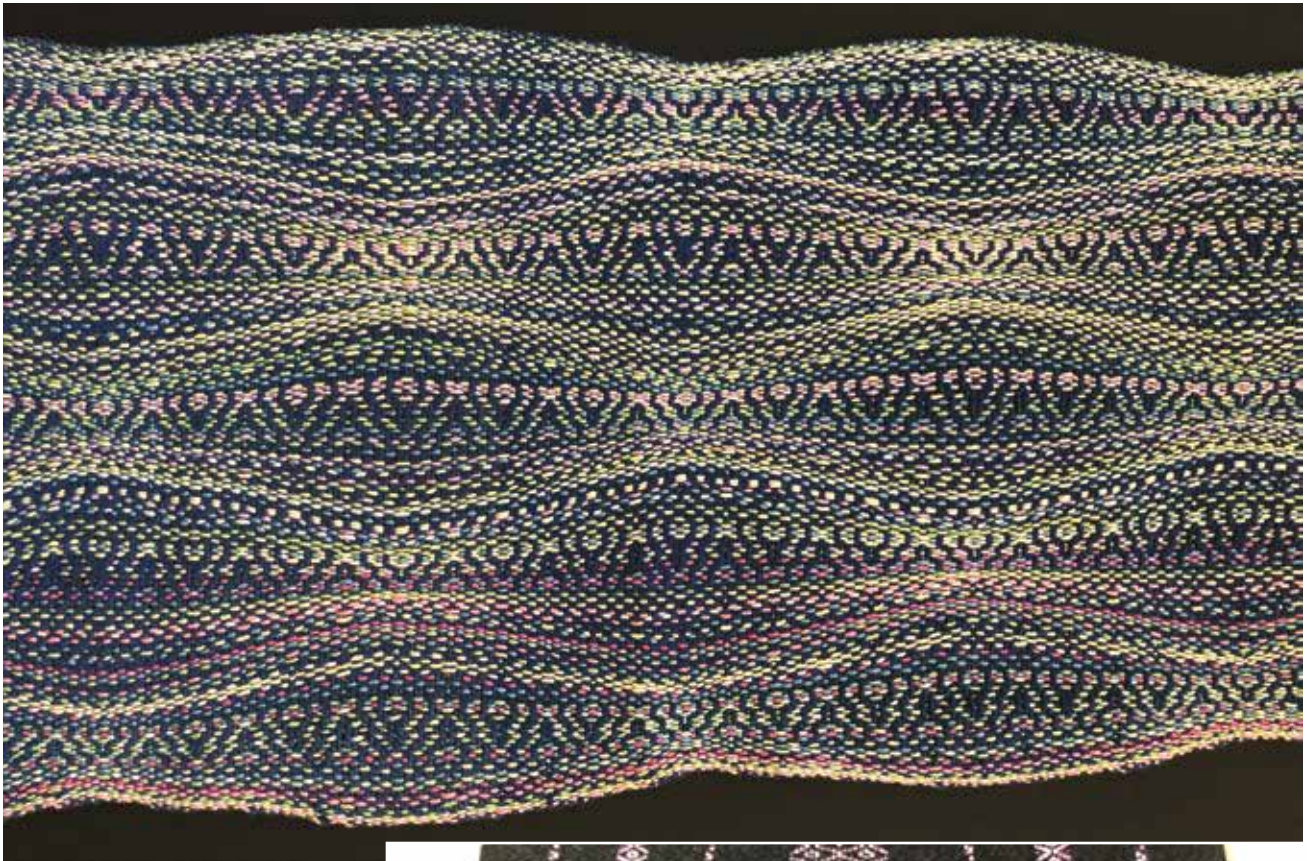


Figure 7. Cotton Ms and Os

exploration has been the discovery that I can make beautiful woven textiles at very little cost (*Figures 7 and 8*). The 3D printer was the largest expense, and its cost was less than one manufactured stainless-steel fan reed.

Is there a manufactured stainless-steel fan reed in my future? Probably not. I love the flexibility of being able to design and print fans, and of course, tweaking the design of the reed to make it more efficient and better.

Resource

Smayda, Norma, with Gretchen White. *Ondulé Textiles: Weaving Contours with a Fan Reed*. Atglen, Pennsylvania: Schiffer Publishing, Ltd., 2017

Figure 8. Finished scarf, black Tencel with hand-dyed lace-weight Tencel



Ondulé Explorations

Anu Bhatia

Ondulé Textiles Study Group

Weaving ondulé fabrics on a handloom requires the use of a special reed that has fanned-out dents with pre-determined specifications, rather than a standard reed with straight vertical dents. The number of fans in a reed depends on the number of dents per inch and length of the reed. At the midline of the reed, looking across it from end to end, the warp is evenly spaced, just as it could be in a standard reed. When the reed is positioned so the warp rests at this midline, the reed is said to be in its 'neutral' position. As the reed moves up or down vertically, warp ends move closer together or farther apart, depending on where they pass through a fan and the position of the reed. The undulation of warp threads and subsequent sett change results in textiles with wavy patterns.

My journey through the ondulé explorations can be divided into two distinct parts: in the first phase, I used a full fan reed; in the next, I wove with 'mixed' equipment, using segments of fan and plain reeds together, allowing me to combine ondulé and straight fabrics in the same woven piece.

Ondulé Phase I

My introduction to ondulé weaving came through Norma Smayda. I was so fascinated with Norma's weaving that almost immediately I ordered a 16-inch 12-dent full fan reed and her book, *Ondulé Textiles: Weaving Contours with a Fan Reed* (see Resources). I got two wooden blocks custom-made for the castle of my eight-shaft Schacht Mighty Wolf loom to facilitate vertical movement of the reed. With the ondulé reed set up in place and a little research, I excitedly ventured into this technique of warp undulation to create wavy fabrics. My goals here were:

- to master maximum utilization of vertical reed positioning to create warp movement;
- to explore undulation in relation to different weave structures;
- to explore undulation in relation to different weights of yarns; and
- to explore fabric design and drafts in relation to color and textures, and the placement of those design elements in relation to the fans of the reed.

Project 1: Block Twill

For the first ondulé project, I designed a wool-silk blend scarf in twill blocks set at 24 ends per inch and threaded two ends per dent of the fan reed. Setting up the warp



Figure 1a. Project 1 on the loom, weaver's view. Note the wooden add-ons to carry the Texsolv hanging cords

in the fan reed and preparing to weave seemed daunting at first (Figure 1a). The warp was beamed carefully through the fan reed.

Weaving required periodic vertical movement of the reed hanging on Texsolv cords from the castle. The cord holes were color-coded to designate '0' as the neutral position, where the warp lays flat and evenly spaced in the reed in relation to the heddle eyes (Figure 1b). Positions +1, +2, +3, and +4 were two-hole increments above 0. Similarly, -1, -2, -3, and -4 were positions below 0. As the reed was raised up, the warp moved down in the fans of the reed and



Figure 1b. Color codes on the Texsolv hanging cord help in reed positioning

vice versa. This movement of warp changed the sett (warp density) in individual fans and created waves in the woven structure.

I changed the reed position every ninth pick to match the treadling sequence of the draft. A detailed record of reed positions was kept throughout weaving of the scarf. The piece turned out beautifully with subtle wavy selvages and twill patterning along the length of the scarf (*Figure 2*).



Figure 2. First project: block twill scarf

Projects 2 and 3: Huck Lace

Gaining confidence from the success of my first fan reed project, I designed the next fan reed project and wove two huck lace scarves: one in an off-white wool-silk blend (18/2 Zephyr from Jaggerspun) and another in solid and variegated yarns (8/2 Tencel from Webs) (*Figures 3, 4, and 5*).



Figure 3. Huck lace ondulé scarf in wool-silk blend



Figure 4. Tencel huck lace ondulé on the loom



Figure 5. Finished Tencel huck lace ondulé scarf

Project 4: Deflected Double Weave

As I wanted to explore different weave structures with the fan reed, I chose deflected double weave for the next ondulé scarf. Laceweight black and variegated yarns in 50-50 merino-silk (Juniper Moon Farm's Findley Solid and Findley Dappled) were perfect for this weave structure, which created a scarf with a tortoise-shell-like pattern along its length (Figure 6).

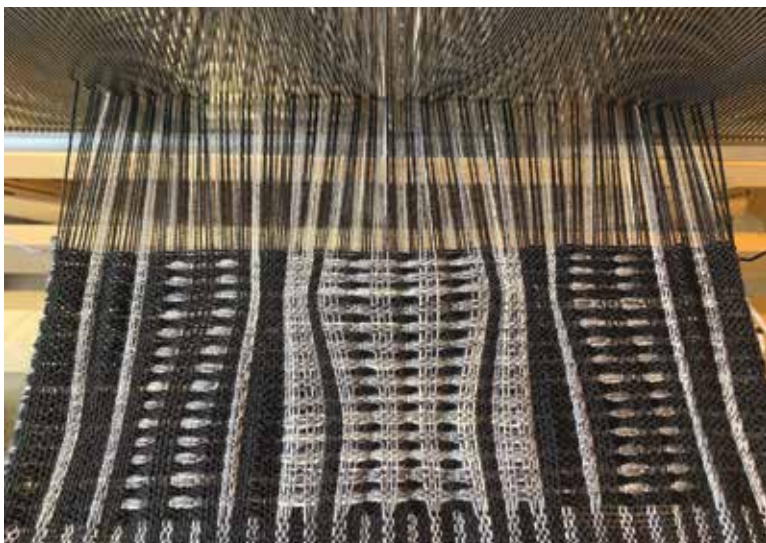


Figure 6. Project 4 (deflected double weave) on the loom

Project 5: Sakiori Rag Weaving

Next, I decided to weave a Japanese sakiori silk scarf from the remnants of a greenish grey printed silk fabric that I had purchased from a kimono maker in Kyoto more than a decade ago. Diligently, I cut and joined half-inch strips of silk remnants for the weft. For the warp and tabby weft, I used 8/2 Tencel from Webs in solid and variegated shades of green. I threaded this



Figure 7. Project 5, Sakiori

warp from the middle of a fan on the left to the edge of a fan on the right, using three full fans in the reed. In weaving, I used nine vertical positions in the reed, throwing three silk picks (one silk pick followed by two Tencel tabby picks) at each position, and the result was quite impressive! Only the selvedge on the right aligned with edge of the fanned dents resulted in a wavy edge; the other selvedge was straight. Sections of crammed and open warp resulted in warp-faced Tencel stripes alternating with weft-faced sections showing silk fabric (Figure 7).



Figure 8. Entering a new phase in my ondulé explorations. Note the sections of plain and fan reed held together in the wooden frame. These sections can be moved around for different projects

Ondulé Phase II

For my ondulé explorations up to this point, I used a full fan reed purchased from The Woolgatherers (woolgatherers.com). Through the Complex Weavers Ondulé Textiles Study Group, I connected and collaborated with a reed maker (Creative Technocrats) in India who custom-made six-inch sections of plain and fan reed at 12 dpi. For my next two scarves, I used combinations of these sections mounted in a wooden frame hung as before from the castle of the loom (Figure 8).

Project 6: Plain-Fan-Fan Huck

Using the huck lace draft and yarns from Project 3, but using a combination of six-inch sections of a plain reed and two fans (Plain-Fan-Fan), I created my next scarf in Tencel (Figure 9). Combining these plain- and fan-reed sections, I was able to create a fabric with both wavy and straight columns and selvages. As the reed segments didn't connect seamlessly in the frame, gaps in weaving were evident on the loom. A little fudging with an awl and wet finishing erased these gaps completely.



Figure 9. Plain-Fan-Fan huck lace

Project 7: Plain-Fan-Plain Twill

For the next scarf, I used the same draft and yarns as Project 1 for another block twill scarf in black, off-white, and variegated grey. The combination of two plain reed and one fan reed sections (Plain-Fan-Plain) created two waves in the middle of the scarf with straight (not undulating) selvages (Figures 10 and 11).



Figure 10. Plain-Fan-Plain twill on the loom. Note the arrangement of the plain and fan sections

Ondulé Weaving Variables

The ondulé setup seemed daunting at first, but as I eased into the rhythmic pace of raising and lowering the reed and throwing picks, the whole process became quite enjoyable. Detailed recordkeeping of the positioning of the reed was required. With these projects, I was able to understand the technical, visual and aesthetic aspects of ondulé weaving. It was a good introduction.

As with any weaving, choices of yarn, sett, color, and weave structures are important factors to consider for ondulé weaving. Some special variables are:

- The width in terms of the number of fans used determines the number of waves in an ondulé textile.
- Placement of the warp in the fan reed in relation to the pattern repeat can make or break the success of the final weaving. Warp ends in the middle of a fan stay straight, whereas ends in the first and/or last dents of the fan will show the most movement.
- The frequency of reed position changes has an effect on the curves in the final fabric, and the number of vertical positions in the reed determines the width and curve of the waves produced.
- The angle at which the reed hits the fell line affects the ondulé curve. Advancing the warp every two inches or so helps keep the angle consistent.
- The density of warp threads in the reed (the sett) is an important factor in the success of an ondulé



Figure 11. Plain-Fan-Plain twill

project. The warp may get abraded and break if the sett is too dense; but if the sett is too open, warp undulation and waves may get lost in wet finishing.

In the projects I wove, I used a fan reed to add undulation to the warp. Similar wavy effects can be achieved by using rail reeds or open-top reeds. In addition to warp effects, a wavy beater stick produces waves in the weft.

Whichever style you choose, fan reeds are wonderful tools that make interesting textiles and can take your conventional weaving to the next level.

Resource

Smayda, Norma and White, Gretchen. *Ondulé Textiles: Weaving Contours with a Fan Reed*. Atglen, Pennsylvania: Schiffer Publishing, Ltd., 2017.

Suppliers

Creative Technocrats, Ahmedabad, India.
AVL Looms: avllooms.com



Color and the Fan Reed: an Exciting Combination

Regina Wegemund

Ondulé Textiles Study Group

When my first fan reed arrived, I was actively exploring color effects with Marian Stubenitsky's book, *Weaving with Echo and Iris* (see Resources). A warp for echo weave with eight shafts was already on the loom, so of course I immediately put in my new fan reed (density 50/10, or 12.7 dpi). Curious, I began to weave and after a short time asked myself: *What is happening here?* With the ups and downs of the fan reed, I could see bright spots reminiscent of sunspots appearing and disappearing in the fabric. They were created in the places where the threads were pressed together by the narrowest points of the fans in the reed (Figure 1).

This presented a puzzle. Because I had put the fan



Figure 1. Surprising bright spots appeared in the first warp woven with the fan reed

reed into a warp planned for another project, I had to redistribute the existing number of threads in the dents: three threads per dent, except at the center of the fans, where the spacing was two threads per dent, repeated

three times. And indeed, in the woven fabric it looks as if the sunspots are arranged as a group of four with a stripe in the middle. The warp was 16/2 cotton in blue, yellow, light green and dark green; and the weft was 16/2 blue cotton.

I verified my initial assumptions by setting up a small test warp that corresponded to the first warp (Figure 2). The test warp clearly showed the interplay of sett, treadling and fan reed.

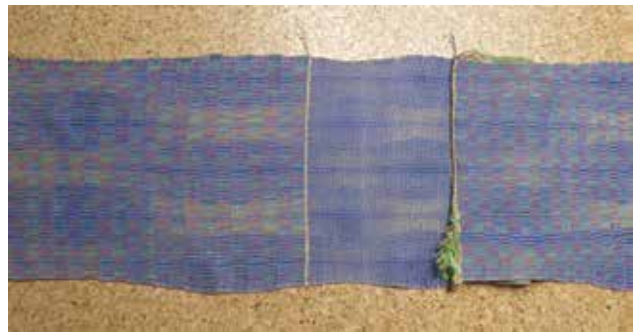


Figure 2. The next warp, designed to test the relationships of sett, treadling and the fan reed deflections

There were three distinct samples on this test warp:

- In the first sample (at the left of Figure 2), I treadled 1 through 4 five times, then changed the position of the fan reed and treadled 5 through 8. (For tie-up and treadling, see Figure 3b.)
- In the second sample (central in Figure 2), treadles 1 through 8 were woven three times and then the position of the fan reed was changed. In both the first and second samples, the stripe in the center of the fans (with only two threads per dent) is clearly visible. While in the first sample the treadling causes a clear block formation, the second sample appears more homogeneous.
- In a third sample, the two threads per dent in each fan were moved from the fan's center to its outer edge. As a result, the stripes at the center of the fan shapes disappeared, but they reappeared even more pronounced on the edge, outlining the fan undulations.

I used the sett and denting of the third sample to weave a scarf. The dark stripes on the outer edges of the fans clearly accentuate the shapes created by the fan (Figures 3a and 3b).



Figure 3a. A shift in warp density at the edges of each fan creates dark lines outlining the fan reed undulations

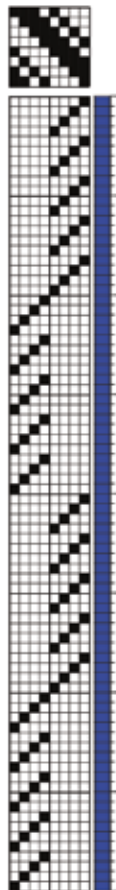


Figure 3b. Treadling for the scarf shown in Figure 3a above:

Treadles 1 through 4 are used in sequence five times, then the position of the fan reed is changed.

Treadles 5 through 8 are then used in sequence five times, then the position of the fan reed is changed again.

Repeat as needed to create the desired pattern

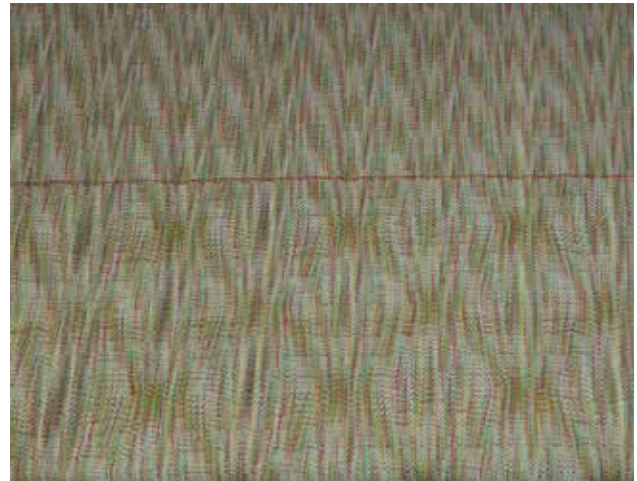


Figure 4a. The results of two ways of handling the fan reed on a moiré fabric. Above the line, the fan reed was maintained in the neutral position. Below the line, the reed was repositioned regularly

The next design for my fan reed experiment was a moiré fabric developed according to Stubenitsky (*Echo and Iris*, page 22). The warp in 16/2 cotton consisted of two color groups: one group of three shades of green, and the second color group in red, orange, and yellow. The warp was set at three ends per dent. Weft was 16/2 white cotton. (See Figure 4a.)

In this structure, the use of the fan reed has significantly changed the appearance of the fabric. In the cloth shown in the upper part of Figure 4a, the fan reed stayed in its neutral position all the time. In the lower part of that same photo, the reed was repositioned according to the information in Figure 4b. The rounded, undulating shapes are clear to see in the fabric, but the reed also influenced the way the colors appear. Because the tie-up allows the threads a certain freedom of movement, compressing them in the narrow parts of the fans means that colors that showed clearly in the neutral position are now pressed into the background.

In the treadling draft (Figure 4b) the colors do not represent the weft yarns, but rather the position of the fan reed. My Glimåkra has six pegs for positioning the beater. Yellow or pink in the diagram are the top hole and the lowest hole on the loom, respectively, which means the reed meets the fell at its upper or lower extreme (i.e., the narrowest/widest position of the fans).

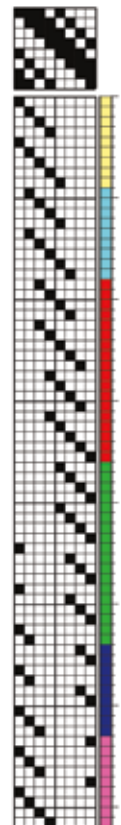


Figure 4b. Treadling for the moiré fabric. Colors represent reed position, not weft yarns

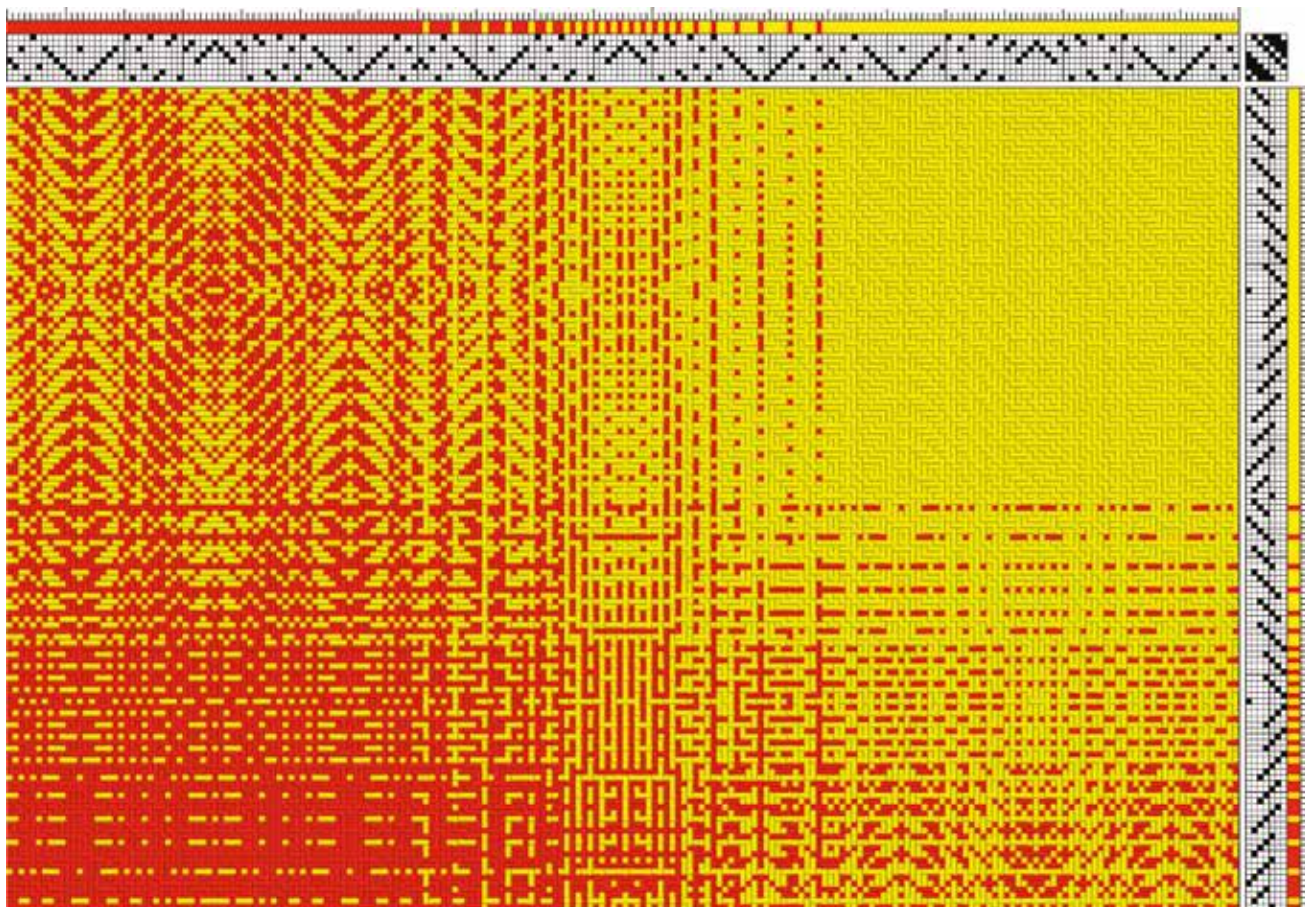


Figure 5a. Draft showing the color blending system used for the final fabric in this series

A WIF is available on the Complex Weavers website

Color and the Fan Reed

The final fabric in this series was again to be a pair of samples experimenting with color, to compare the results of weaving with the reed in neutral position to those of weaving with the normal up-and-down repositioning of the fan reed.

The rotation of colors in the 16/2 cotton warp emulated the color wheel: yellow — red — blue — green — yellow — green — blue — red — yellow. The same color rotation was used in the weft.

The warp was sleyed into my new, second fan reed (density 85/10, or 21.59 dpi) with two threads per dent. In all, seventeen fans were used, and the fans served as the base for the color gradation: fan 1 = color 1, fan 2 = mixture of colors 1 and 2, fan 3 = color 2, fan 4 = mixture of colors 2 and 3, and so forth.

The colors were blended according to a strict gradation system, which was also adhered to in the weft (16/2 cotton, doubled). (See the draft in *Figure 5a*.)

The up-and-down positioning of the reed is hard to display in a draft, but *Figure 5b* shows the displacement of the fan reed alongside the treadling. It starts with hole 3 (red), then it goes up, then down, and the respective color repeat ends with hole 4 (green).

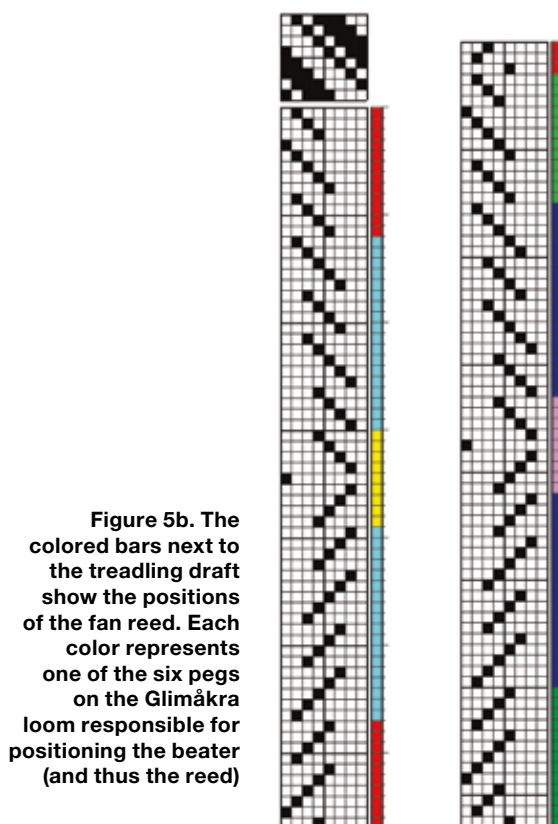


Figure 5b. The colored bars next to the treadling draft show the positions of the fan reed. Each color represents one of the six pegs on the Glimåkra loom responsible for positioning the beater (and thus the reed)



Figure 5c. Color experiment with the fan reed. The piece on the left was woven with the fan reed in its neutral position throughout. For the piece on the right, the reed was repositioned in the manner shown in Figure 5b

This fabric was intended to make two curtains (Figure 5c). The first curtain was woven with the reed in the neutral position, the second curtain with the ups and downs of the fan reed. I did not manage to maintain the same weft density in both fabrics. The 70 wefts of a color repeat in the first fabric measured 5.5 cm (almost 2 inches), but in the second fabric the 70-pick repeat measured 7.5 cm (3 inches). This results in different lengths of the color repeats between the two fabrics.

The effect of the fan reed is visible in the fabric. The undulations (warp spacing and compression) caused by the reed are clearly recognizable in the fabric on the right. The pattern appears softer, as do the colored areas where the same warp and weft colors meet. But this may be due to the fact that I used different weft yarns for part of the weaving due to insufficient stock, especially with the blue color.

I find it very exciting to weave with the fan reed, as the fabrics can change a lot depending on how the reed is handled. This makes the fan reed an independent design tool with a clear effect. What I very much regret, however, is the fact that, to the knowledge of our group,

no computer program can simulate the movements of the fan reed. So, I design and develop a project with the tools I have on my PC (e.g., the Moiré chain) and virtually try out different treadlings and weft colors — but when I set the warp in the fan reed, then sit down and start to weave, it still means: *Let's see what happens now!*

Additional weaving tips:

- To keep track of the position of the fan reed as you weave, setting pins of different colors on the fabric is helpful. White, red and blue are the most important pins, because they let you know whether the reed needs to move up or down. You can see at a glance where you are.
- If you have knots in any of the warp ends, this can become a great problem if the fan reed is in the narrowest place at the time when the knots reach the reed. Plan ahead.

Resource

Stubenitsky, Marian. *Weaving with Echo and Iris*.

Uden, Netherlands: Drukwerk Der Kinderen, 2014. 

My Fan Reed Journey

Liz Heine

Ondulé Textiles Study Group



Figure 1. My first fan reed, a surprise 'find' in a used-equipment listing

I became interested in the fan reed after seeing pieces in a gallery show by Amy Putansu and an article in *Väv Magazine*. I purchased Norma's book and was intrigued by the modified reeds that various weavers had created. Inspired, I started taking apart an old reed to make my own, while keeping an eye on used-equipment listings,

just in case. Surprisingly, a fan reed popped up and I was successful in the online auction bid (*Figure 1*).

An Ashford table loom with the swinging beater made its way into my studio, and I used that for my first tests on a stripy warp (*Figure 2*). I liked the weaving and liked the effect but found I had trouble regulating the



Figure 2. First tests of the fan reed on an Ashford table loom (samples with cream background): interesting, but difficult to control



Figure 3. Using the fan reed on a Barbara V countermark loom. Note the suspended reed and colored guide marks at each side of the reed

fell line when I advanced the warp. I also found it hard to get a clean shed at the top section of the fan reed as the reed kept the warp pressed down.

I next tried the reed on a large Barbara V loom set up as countermarch. This loom had a swinging beater, but I modified it so the fan reed would swing free (not in the beater bar), and the reed would reposition by bouncing on thick rubber bands (*Figure 3*). I attached cardstock with colored bands on the sides of the reed and used these colors as a guide to position the reed where I wanted it to be when it hit the fell.

This method with the rubber bands worked really well for me. It allowed me to position the fan reed at a neutral position so I could easily open the shed and throw the shuttle, then place the reed exactly where I wanted it before I beat.



Figure 4. Fan reed modifications on a Wolf Pup loom: added struts hold the reed suspended on elastic bands

After trying the countermarch loom, I went back to using the reed on a jack loom and modified my Wolf Pup (*Figure 4*), attaching struts that would hold the rubber-banded reed. I had a few yards of striped warp left over from another project and sleyed the fan reed on this. It worked well; I sampled some weft, picked a color that worked, and wove off table runners (*Figure 5*).

My next project was the fourth for the fan reed, but the first time I wound a warp specifically with the fan in mind. I made a striped warp with sections of color that fit in individual fans with the hope of achieving iridescence. Inspired by others in our study group, I wove a scarf — my first long length on the fan reed (*Figure 6*).

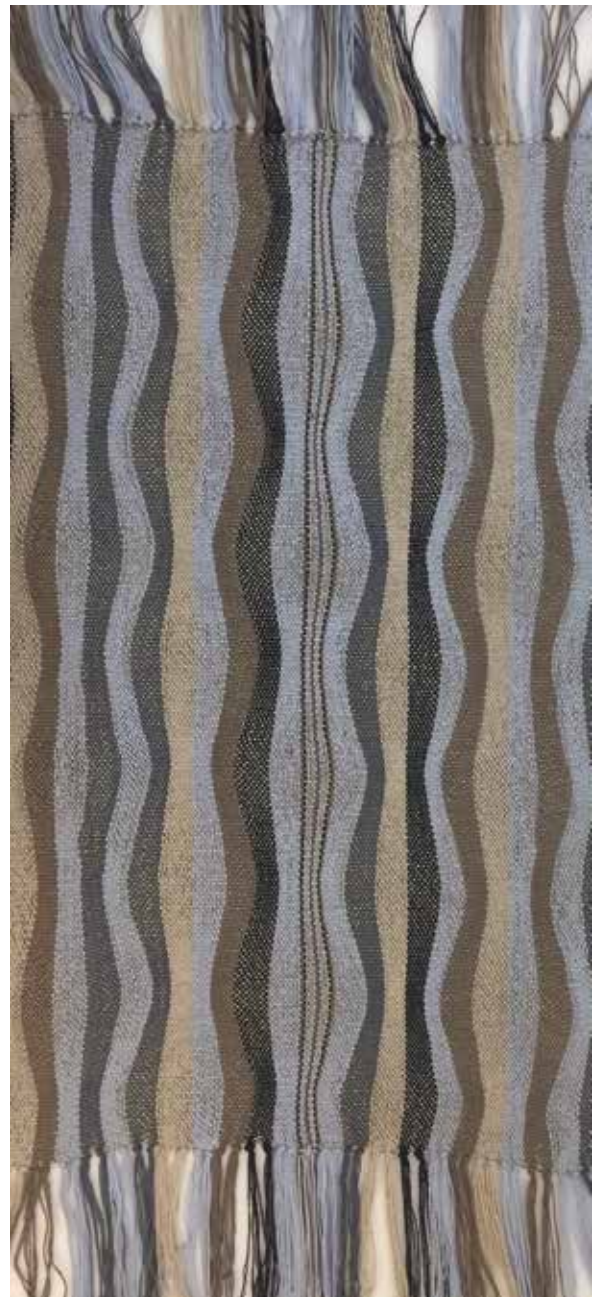


Figure 5. Table runner, woven with fan reed on modified Wolf Pup loom

(By the way, I made a Youtube video showing how I wove this on the Wolf Pup. It demonstrates my system in action. Search on *welikeyarn* or *fan reed pink scarf*.)

The next project was an attempt with texture. I dyed different weights and textures of yarns, then wound and beamed a warp. Very bad math! I found I had missed out half of the warp ends! The miscalculation was based on thinking there were close to 12 dents per fan; but in reality it is 24 dents per fan, and 12.5 epi across the center of the reed. To fix it, I unwound the warp off the front of the loom (it hadn't yet been threaded) and added sections of warp using the yarn that I had planned to use as weft. When threading, I placed the darker warp down one side of each of the fans. In the

end, I liked the effect (*Figure 7*). While the difference in texture of the warp didn't make a big difference, the two colors make the table runners look dimensional, a nice optical illusion.



Figure 6. A long scarf, the first project with a warp wound specifically for the fan reed

Up to this point, I had mostly been attempting to get smooth curves with the fan using four to six picks (approximately) for each ¼-inch section of the fan reed (the distance between shifts in the reed's vertical position). For the warp remaining after my accidental optical illusion, I tried using different numbers of picks for each section of the reed, and also moving from the top to the bottom of the reed without using the middle positions (*Figure 8*).



Figure 8. Experiments varying the number of picks between each adjustment of reed position (*left*) and shifting reed position from top to bottom without using the middle positions of the reed (*right*)



Figure 7. A simple miscalculation led to an attractive optical illusion

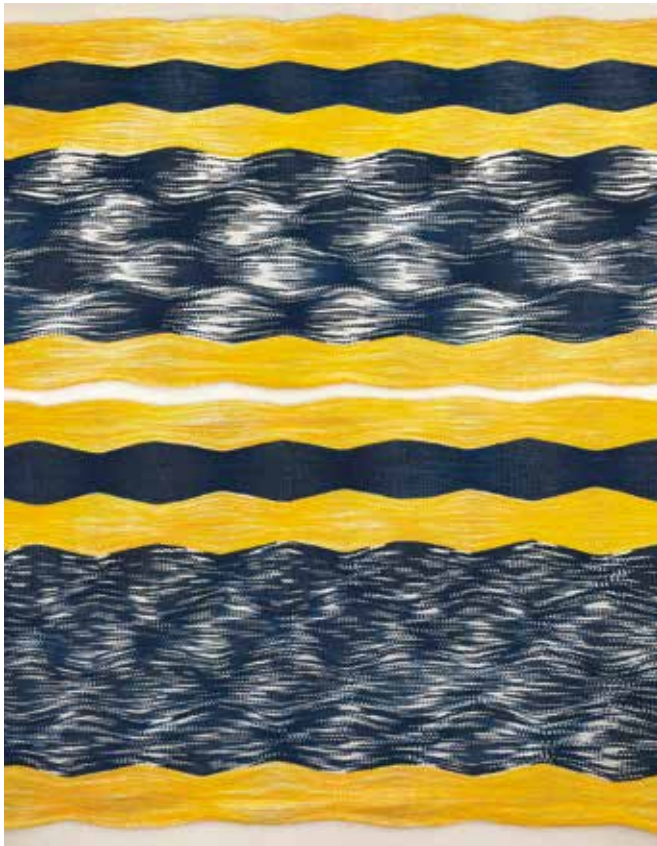


Figure 9. Ikat and the fan reed. The lower runner was woven first on this front-to-back warp; the upper one was woven last and shows the intended result, where the warp was deliberately spaced to emphasize the ikat patterning

My next project (*Figure 9*) was working with an ikat warp that I made during a Virtual MAFA class with Mary Zicafoose. I tied off the warp at different intervals, assuming that I'd turn this into a series of table runners about 36 inches long. I then dyed the ikat section, and dyed several other warp sections with solid colors. I didn't follow the class instructions exactly (Mary recommended we warp back-to-front), because I wanted to place my color stripes in particular sections of the fan reed and wasn't sure I'd get the count right if I beamed first. This caused the first-woven ikat sections to be more jittery than the later-woven sections. The table runners were interesting, but they didn't match.

I decided to try huck for my next ondulé project. I designed a warp to hit the edges of the fan and warped up a blue-and-white project. While weaving, I changed the position on the reed after each five picks of the huck and aimed for smooth curves (*Figure 10a*). I also used this as a sample warp for a guild presentation and demo of fan reed use.

I swapped to the regular reed, wove some towels with that stripy warp (*Figure 10b*), then put the fan reed back on for a table runner in which I replaced a staining blue warp with yellow stripes (*Figure 10c*).



Figure 10a. Huck woven on a blue-and-white warp. Reed position was changed after each five picks, striving for smooth curves



Figure 10b. The same blue-and-white warp in huck, woven with a regular reed instead of the fan reed



**Figure 10c.
Blue-and-white warp
with added yellow**



Figure 11a. Stripes of cotton and wool



Figure 11b. Stripes of cotton and wool, dyed in indigo

I knew I had to clear off my Pup for a workshop instead of tying on for more experiments; and I knew there was some more of the grey and blue warp somewhere on that back beam. The grey and blue warp came into view as the white cotton runner reached its end. I pulled the knots to the front and wove a runner.

As I was getting close to the end of the grey and blue, I was surprised to see yet *another* bit of warp, this one a wool and cotton stripe that had been used in a dye workshop with Catharine Ellis — and it was another warp perfect for the fan reed. I wove this off and dyed it with indigo (*Figures 11a and 11b*).

My fan reed is now off the loom and I'm eyeing a project with the RailReed.

Resource

Smayda, Norma, with Gretchen White. *Ondulé Textiles: Weaving Contours with a Fan Reed*. Atglen, Pennsylvania: Schiffer Publishing, Ltd., 2017.

Online Resources

Amy Putansu. Visit www.putansutextiles.com

Mary Zicafoose. Visit maryzicafoose.com

Catharine Ellis. Visit www.ellistextiles.com

RailReed, an adjustable reed invented by Kadi Pajupuu. Visit railreed.ee/railreed-shop



Ondulé Textiles: A Fascinating, Wandering Path

Norma Smayda

Ondulé Textiles Study Group

My interest in the fan reed was accidental and serendipitous. In the March/April 2009 issue of *Handwoven*, on the cover and in an article on weaving with a fan reed, Suzie Liles compared two kitchen towels, one in a plain striped warp and the other with a lovely undulating striped warp. After reading the article I decided it would take more time than it was worth for me to create those stunning undulations.

Nevertheless, soon after that, at Convergence 2010, I took a class with Sara von Tresckow on fan reeds — and was spellbound by her amazing work. Within a half hour of that lecture I was in the Vendors Hall talking with Lars Malmberg at the Glimåkra booth, and immediately ordered my first of three fan reeds. That first reed, 20 inches wide, 12.5 dpi (dents per inch), came directly from Sweden and arrived at my studio in six weeks.

While I waited for the reed to arrive, I planned my first ondulé project, wound the warp, and prepared my loom. I followed Sara's and the Glimåkra instructions carefully, knowing it would be a slow weaving process. Preparing my loom involved removing the beater, then hanging the reed from the overhead castle with Texsolv, which I'd marked to indicate the various heights of the reed in centimeter increments.

Within the first few inches of weaving I realized that instead of the Texsolv cords, I could use my Glimåkra loom's pegged overhead beater to greatly simplify the process. The pegs can raise or lower the beater in centimeter increments — just like the Texsolv, but with less fiddling. The beater could now hold the reed parallel to the fell of the cloth. This was a great discovery.

I was soon off and running — or should I say off and treadling — and began to explore all manner of weave techniques to see how much I could do with this new reed. I worked up enough material to present a seminar at Complex Weavers Seminars in 2014.

In the wake of the seminar, I was encouraged to publish my material, and I talked with Schiffer Publishers about writing a book. The ultimate result was *Ondulé Textiles: Weaving Contours with a Fan Reed*, published in 2017. While working on the book, I realized I needed more than one fan reed and approached the Woolgatherers for assistance. Hans von Tresckow helped me design two more reeds, which he ordered from a reed maker in Germany. These two reeds have areas of fans plus areas of straight wires, and are referred to as hybrid reeds.

I had experimented with different fibers and many weave structures for lectures and for the book. Now I wanted to share my enthusiasm with other fan reed weavers, even though I knew there were not many of us.

So began the Complex Weavers Ondulé Textiles Study Group. Because the weaving process is so slow, we decided that weaving samples to share would not be a reasonable option. Even setting requirements as to weave structure, fibers, and so on was not realistic, and the current self-paced format evolved. Anyone, beginners included, with an interest in fan reed weaving is welcome to join. We meet the first Monday of every other month on Zoom. Liz Heine now coordinates the meetings and manages the *groups.io* website where we store our photographs.

I have met the most amazing weavers in this group: Darilyn weaves with wire in both warp and weft! Susan worked diligently to construct her fan reeds using 3D printing! And everyone brings questions and solutions, contributing to a very worthwhile dialog.

I continue to be excited every time I look at another warp in my fan reed, and see how beautifully the yarns and reed work together. The fan reed is an extraordinary piece of equipment, and what it can do to a warp is magical (*Figure 1*).



Figure 1. Seven-shaft summer and winter, cotton warp, on loom in a hybrid fan reed.

This weaving became *In and Out of Sync*, one of the pieces in the *Garden Tulip* series

(For more information, see *Ondulé Textiles*, pp 124–126)

The next few pages describe some of my projects from the past decade of ondulé weaving.



Figure 2a. Scarf: *Try to Remember*.
Seven-shaft Bronson lace and plain weave,
silk and bamboo, 2020.
79 x 10–11 inches (200 x 25–28 cm)

As inspiration for a silk and bamboo scarf (Figure 2), I used the warp stripe sequence of a Japanese ondulé shawl woven by Kobo Oriza. I designed a seven-shaft Bronson lace weave using my three-color warp stripe sequence. The lace pattern was derived from the first eleven notes of the song *Try to Remember* from the musical, *The Fantasticks*. The musical score was turned into a seven-shaft unit threading. Because the selvages were located at the edge (common wire) of fans, gently undulating selvages resulted. This scarf was first shown at The Weavers' Guild of Boston Scarf Anniversary Exhibit in 2021, and subsequently at The New England Weavers Seminar 2023, where it was awarded both First and Popular Choice Awards.

After *Ondulé Textiles* was published, I took my explorations a step further. I wanted to exhibit my work, and that is my focus now: designing wall art in fiber for exhibitions.

I wove a triptych to honor Ruth Bader Ginsberg in a three-shaft lace weave suggestive of her lace collars. It was designed during the last part of her life and finished just after she died. When exhibited, the triptych is hung in the shape of a judicial robe (Figure 3).



Figure 2b. *Try to Remember*, detail



Figure 3. *Collars of Dissent*. Three-shaft lace weave, cotton and wool-silk, 2021.

This ondulé triptych evokes the lace collars for which Ruth Bader Ginsburg was well known. Ginsburg was inspiring for her many accomplishments, from quietly overcoming gender discrimination to becoming the second woman Supreme Court Justice. Known for her succinct and thoughtful Opinions and Dissents in the Court, she wore her signature lace collars over her black judicial robe. A special lace collar was worn when giving a Dissenting Opinion. Her collars emphasized feminine energy and encoded meaning into her dress

45 x 24.5 inches (114 x 62 cm)

By warping with colors of earth and sky, then rotating a weaving 90 degrees, I can create an undulating landscape. *The Green Heron's Sanctuary* (not shown) was one of the first woven landscapes I exhibited. It was inspired by the painting, *Green Heron*, by Yukon artist Richard Shorty.

This particular warp was used to create several works, including *Pelicans at Cheyenne Bottoms* (detail, Figure 4) and *Enduring Spruce* (Figure 5). In both of those pieces, I collaborated with Laurie Carlson Steger, who has a fine design sense and is a master of the needle arts. Laurie embellished both of those works.



Figure 4. *Pelicans at Cheyenne Bottoms*, detail. Five-shaft straight twill, assorted wools and linens, embroidery.

Collaborative artwork by Norma Smayda and Laurie Carlson Steger, 2021.

In the painting that inspired this piece, Richard Shorty depicts a green heron with a bright salmon in his beak. In this piece, we envision the feeding grounds of the white pelicans at Cheyenne Bottoms Refuge in Kansas. This piece was exhibited at Convergence 2024



Figure 5. Enduring Spruce. Five-shaft broken twill, assorted wools and linens. Collaborative piece by Norma Smayda and Laurie Carlson Steger, 2021.
Minimal stitching on the ondulé landscape creates the effect of a grove of spruce surviving in the encroaching marsh
42 x 29 inches (107 x 74 cm)

Laurie weaves on a TC-2 Jacquard loom. In addition to combining embellishments with woven works, we also collaborate by designing and creating our separate weavings to combine into single finished pieces. One such work, *Gone With the Wind* (Figure 6), uses Laurie's Jacquard weaving as the ground for a collage, with my ondulé weaving added. Together we taught this collaborative approach at both Complex Weavers Seminars and Convergence in July 2024.

I am thrilled by the wide vistas that these special reeds have opened up in my own weaving, and excited about the new ideas that we share in the ondulé study group, inspiring and encouraging each other in our exploration of fan reeds.

Resources

- Liles, Suzie. 'Tired of straight stripes? Meet the ondulé reed!' *Handwoven*, March/April 2009, pp. 30-32.
- Smayda, Norma, with Gretchen White. *Ondulé Textiles: Weaving Contours with a Fan Reed*. Atglen, Pennsylvania: Schiffer Publishing, Ltd., 2017.
- Complex Weavers Book Review, 'Ondulé Textiles: Weaving Contours with a Fan Reed.' *Complex Weavers Journal*, Issue 118, October 2018, page 4.

Online resources:

- Richard Shorty, artist. A Google search will reveal his painting of the green heron, along with other works. For the artist's background and contact information, visit: richardshortyart.com
- Kobo Oriza, a Japanese textile company producing high-quality goods on century-old looms. Visit the company website: oriza.jp
 For a description of the company in English, visit kirikomade.com/blogs/news/kobo-oriza

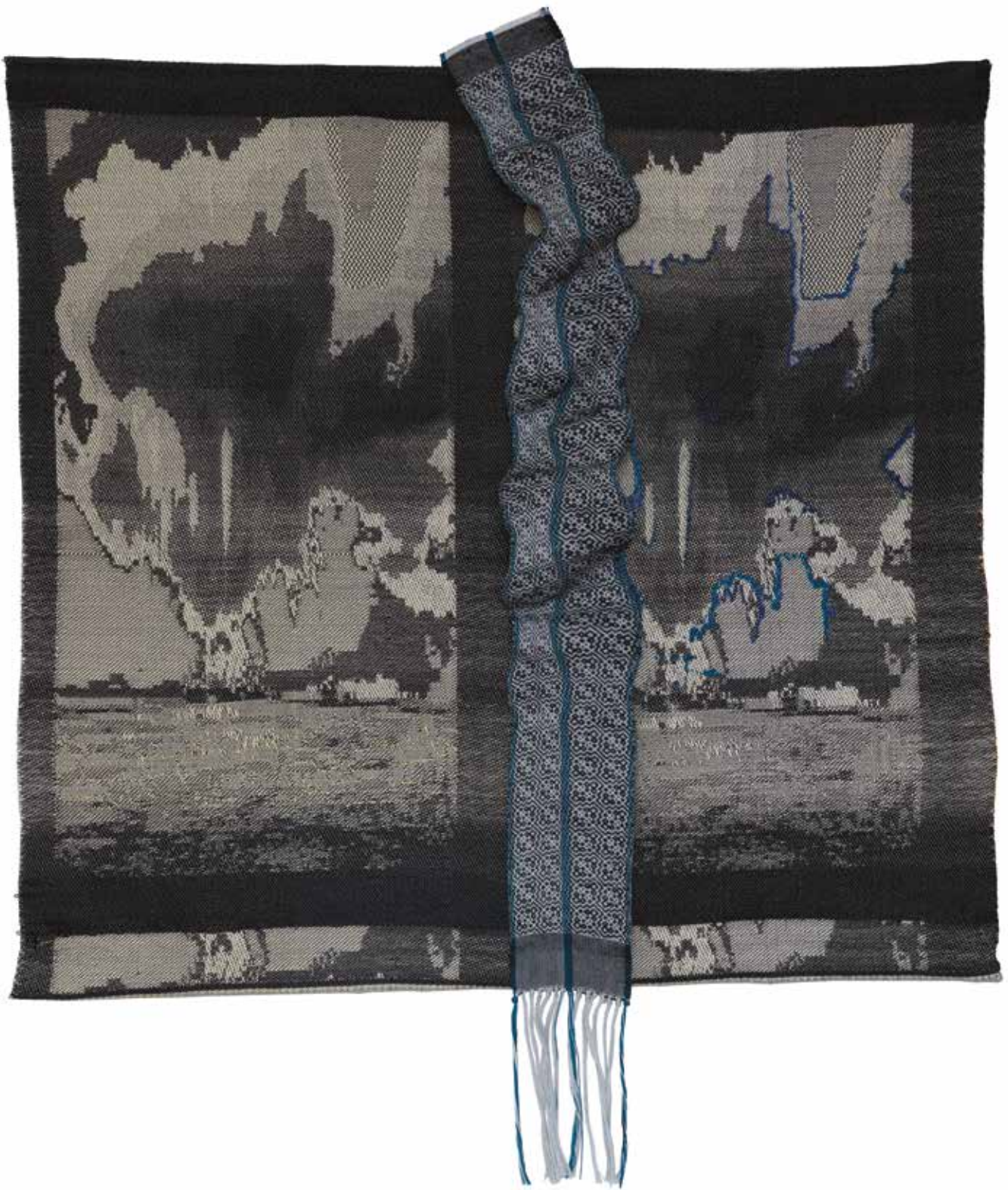


Figure 6. *Gone With the Wind*. Collaborative piece by Norma Smayda and Laurie Carlson Steger, 2024. This work was exhibited in Wichita, Kansas, an appropriate venue for tornado-themed artwork, and won the First Place Award in HGA's 2024 Convergence exhibit, 'Wind, Wagons and Wheat.'

The storm in the background was woven by Laurie Carlson Steger on her TC-2 digital Jacquard loom. The ondulé 'curtain' waving at the window was woven by Norma Smayda and features the Bertha Gray Hayes overshot pattern, *Gone With the Wind*

Linen, cotton. 28 x 33 inches (71 x 84 cm)



Complex Weavers Awards 2023

Ginger Kaldenbach, CW Awards Coordinator

The Complex Weavers Award is an encouragement for weavers to push the boundaries of weaving. The Award is bestowed on pieces that have been on display in a show, exhibition or conference. It honors weavers who have been judged to excel in complex interlacements. There is no requirement that the pieces must be woven on a designated number of shafts or on a multi-shaft loom, but work which is selected for the Award must go 'beyond plain weave.'

The fourteen Award winners in 2023 have shared information about their winning pieces. Some wrote extensive descriptions of their works; others supplied images and technical information which we could share

in these pages. Images of the 2023 winning pieces also appear in a special gallery on the CW website. We appreciate the generosity of these weavers in providing information and inspiration for us all.

The Award itself includes a certificate, a one-year membership in Complex Weavers, and a cherished ribbon featuring a rosette with the CW logo woven by Lillian Whipple in the center. The beautiful streamers for the 2023 ribbons were woven by Peg MacMorris.

If you would like to offer a CW Award for your show or exhibit, send an email to the Awards Coordinator at complexweaversawards@gmail.com or look for details on the Complex Weavers website.

Complex Weavers Award Ribbon for 2023

Woven by Margaret (Peg) MacMorris – Fort Collins, Colorado, USA

The 2023 ribbons were definitely a post-pandemic product, reflecting the era of supply-chain slowdowns, and re-engagement in projects with deadlines.

After my initial sense of panic over whether I could weave ribbons with perfect edges, I realized that my new loom had enough shafts to devote four shafts to tubular selvages. With a new sense of confidence, I started exploring designs. I looked at Award ribbons from the past and found that several manifested a style typical of the maker. So, my design challenge settled into the bigger question of finding what *my* style was/is. Some of my favorite weavings emphasize curves, and I started designing with that in mind. I originally wanted to depict a double-helical spiral, since in my earlier work life I researched the molecular biology of nucleic acids; but those designs were not successful. In the end, I picked five designs, showed them to two weaver friends, and all three of us chose the same design.

Before starting this process, I had asked Susan DuBois of Treenway Silks if she could donate silk for the ribbons. I recall that she assumed I would use 60/2 silk. I had never woven



Photo by Ginger Kaldenbach

with such fine silk before but figured that I *should*. Due to the pandemic-caused delays, we spent the summer waiting for the ship carrying the silk to arrive from China. My sampling was therefore done on 'leftover' colors Treenway provided, as they couldn't dye the actual ribbon colors until the silk arrived. I was delighted when I was finally able to weave the design in the colors I'd originally planned.

The ribbons use a modified version of a lift plan design for 16 shafts from Doramay Keasbey's *Pattern Techniques for Handweavers*, Figure 213. I had used it previously in an all-over pattern for a shawl. It worked for the three stripes of yellow and gave a sense of twist without the full helical spiral. The stripes are on a white background of 2/2 twill.

The 60/2 silk in the white part of the warp was set at 72 epi, with the stripes of yellow (Treenway #201, Golden Aspen) sett just slightly more densely.

The 60/2 silk weft was #7 Bachelor's Button blue.

In retrospect, I think the design would have worked equally well woven in slightly thicker threads — such as 30/2 silk (equivalent to the weight of 20/2 cotton).

WALL HANGING: *MINIATURE FRIENDSHIP QUILT***MIDWEST WEAVERS ASSOCIATION: *CONFLUENCE OF THREADS***

I based my design on a twill draft from Malin Selander's book, *Weave a Weave*, page 28. I wanted to practice minimizing a draft to make it small. I used the center nine squares and then I made them miniature.

In all, I made five miniature quilt pieces in cotton, sett at 24 epi. Each piece measures 5.5x5.5 inches (14x14 cm).

Because this is a friendship quilt, I wanted to share it with people that I love. I kept one piece, and gifted the others to my mom, my daughter, and two friends.



Photo by Scott L Alperin

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- February issue — Deadline November 30
- June issue — Deadline April 15
- October issue — Deadline August 15

SCARF: BLUE LAGOON**ASSOCIATION OF NORTHWEST WEAVING GUILDS: FIBER CONNECTIONS**

I have been weaving for more than 40 years, and for at least 20 of those, have been exploring multi-shaft designs. I joined Complex Weavers in about 2002, when I got my first computer-aided loom. As a CW member, I enjoy Study Groups as well as the *CW Journal*. I attended my first *Seminars* in 2010.

In this scarf and other pieces, I give a big nod to Sandra Rude. I took Sandra's seminar 'Fun with Interleaved Threadings' at CW Seminars in Saint Charles in 2016. I still don't totally understand the process, as it seems to work sometimes, but not at others. Knowing what will *not* work does help.

Her seminar inspired me to try this technique. More recently I have been learning to interleave two painted warps, but not yet in a non-parallel fashion. I have developed a technique for winding two warps onto the loom, which seems to work well. Maybe someday a device will result from my efforts.

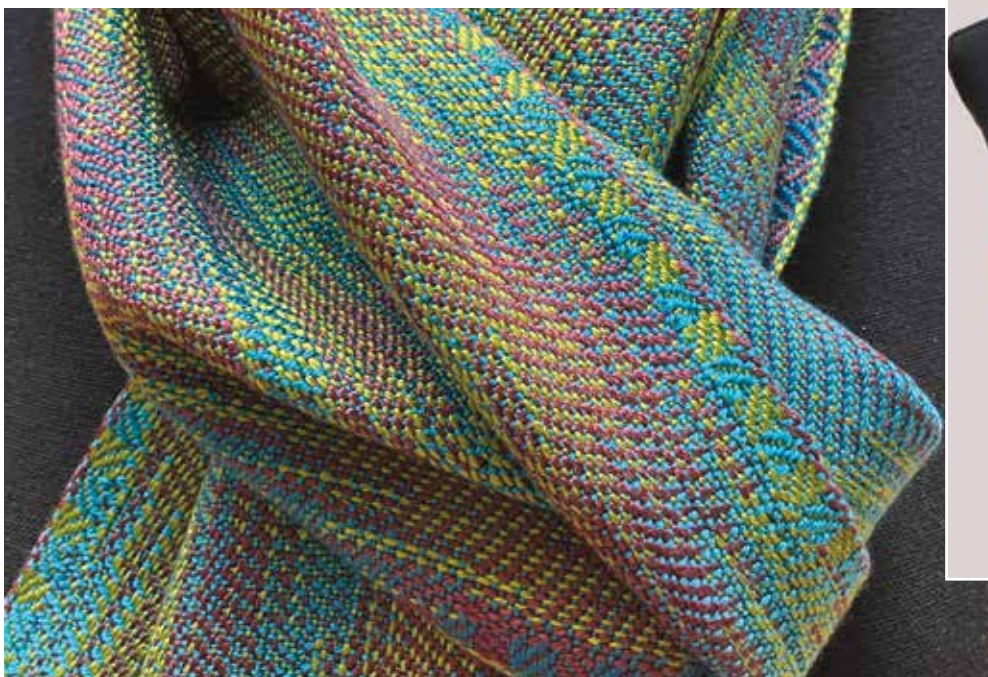
For this scarf, I interleaved two warps of hand-painted 8/2 Tencel, alternating threads from warp A and warp B.

The weaving draft is original, using a non-parallel interleaved threading, set at 36 epi. The treadling is an 'echo', woven with 8/2 Tencel for weft. The scarf was woven on a 32-shaft Louet Megado with a digital interface. The base design is on 20 shafts, with an additional four shafts used for the border, and four more for the tubular double weave selvedge.

Beaded hems finish the scarf, as fringes would have been less effective with so many colors.



Photos by Mimi Anderson



SCARF: *QUAKING ASPEN***COLORADO: *FACE OF FIBER***

This scarf was an exploration similar to the scarf, *Blue Lagoon*, described on the previous page. This scarf used two hand-painted warps of 10/2 Tencel, with a hand-dyed weft of 2/17 silk. The original design is a non-parallel interleaved threading, alternating an end from warp A with an end from warp B and set at 36 epi. The scarf was woven on a 32-shaft Louet Megado with a digital interface. The base design is on 20 shafts, with an additional four shafts used for the border, and four more for the tubular double weave selvedge.



Photos by Mimi Anderson

SCARVES: *EMERGING I, II, III***MARY MEIGS ATWATER GUILD: BIENNIAL CONFERENCE**

While I was weaving another project, the 'Heart-Throb Scarf' by Kim Marie Bunke (*Twill Thrills, The Best of Weaver's*, XRX Books 2004, page 54), I sent some pictures to friends. One said that the pattern looked like angel wings. That got me thinking ... one of my favorite activities as I weave! I had been thinking about monarch butterflies and their plight. I love the swallowtail butterflies that visit my yard, and I do get some monarchs. They are my favorites when I see them in the garden.

With 'Heart-Throb' as inspiration, I designed an advancing twill for the scarf, *Emerging II*. After discussion with friends and family, I decided that I wanted to create a triptych about the emergence of the butterfly from the chrysalis. *Emerging I* is an expression of the moment when the butterfly's wings are just emerging; in *Emerging II*, the wings are fully extended; and in *Emerging III*, the butterfly has taken flight.

The warp is hand-painted 20/2 Rayon, set at 40 epi. The weft is hand-painted 10/2 rayon.

***Emerging I*, detail*****Emerging II*, detail*****Emerging III*, detail**

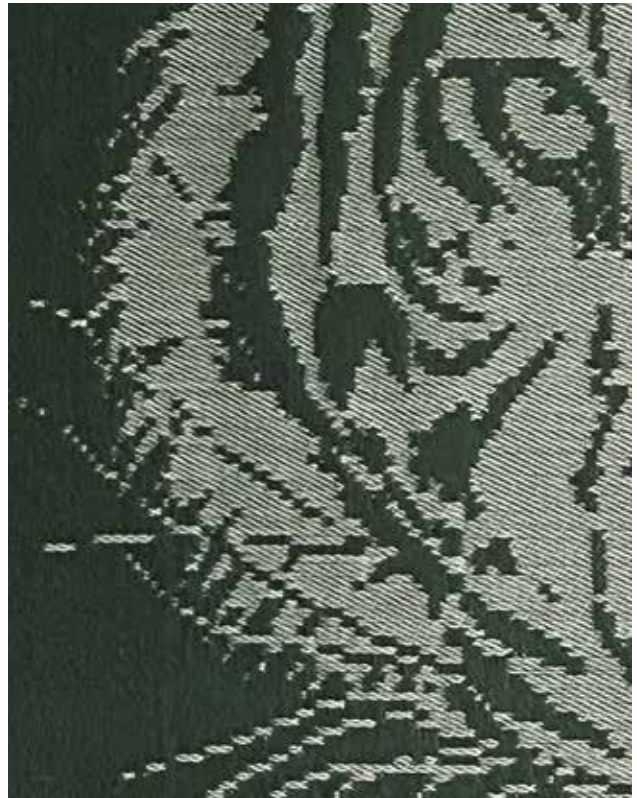
WALL ART: TYGER**WEAVING GUILDS OF OREGON TRAVELING SHOW**

The piece is an eight-shaft satin damask. I drew the drawloom image of Tyger using a photograph as a reference.

I am lucky to work at Eugene Textile Center. ETC had an Oxaback loom with single unit drawloom for sale that no one was using. I had never woven on a drawloom before, but I understood the concept. So, I thought, how hard can it be? I didn't fully understand what I was getting myself into.

I warped the loom with 16/2 natural cotton. After testing a few different materials for the weft, I finally selected a beautiful, dark green 5/2 mercerized cotton.

To obtain a balanced weave, I had to change blocks after every five picks rather than at eight. This created a little bit of difficulty in keeping track of where I was in my treadling. But this gave the cloth a much more raised, textural feeling than traditional damask, where the warp and the weft are the same or similar yarn.



Photos by Marilyn Robert



JACKET: FIRE AND EARTH**MID-ATLANTIC FIBER ASSOCIATION: SPOTLIGHT ON FASHION 2023**

My initial inspiration to weave for a garment came from watching Daryl Lancaster's WOW presentation during MAFA 2021. Then when the CW book *Eight Shafts: Beyond the Beginning* came out, that was it! I started designing. It had been a long time since I had done any sewing, so I picked Daryl's 200 jacket as the 'canvas' for my woven fabric because of the clean design.

I started experimenting in Tempoweave and Fiberworks and digging around in my stash to see what I could come up with. Weaving a draft that I designed myself for a big sewing project turned into a really exciting stretch goal. The process wasn't without its 'duhh' moments. I realized after I had finished the yardage that I could have simplified the tie-up and treadling, but I'm just calling that a lesson learned!

Color was really important, and my stash offered some fabulous hand-painted warps to experiment with. I pulled out several 10.5-yard hand-painted warps from Blazing Shuttles, and some knitting yarns (stash-busting) and started playing with color. Of course, many hours were spent in Fiberworks exploring draft ideas. I had 12 shafts to play with and wanted to stretch myself. I went back and forth between drafts and color choices. Yarn was draped all over the house! Finally, I settled on two warps: one, 10/2 mercerized cotton in fiery reds and oranges, and the second, 8/2 Tencel in cooler tones of teal and muted orange. I also decided to use some gorgeous silk/linen laceweight from Ellyn Cooper in pink/red shaded solids. The colors all hung together, and I knew the textural differences were going to be interesting.

Once the piece was warped, I sampled many weft choices and finally picked a beautiful, mid-value, greyish purple 8/2 Tencel from Webs. It let the warp colors sing, and at the same time, helped tie them together.

The draft is a combination of plain weave, basket weave and twill. Threading switches between units of point twill and straight-draw. Narrow bands of plain weave separate the basket weave and twill sections and work as a background for textural changes. The silk/linen was highlighted in a broad stripe of broken twill. I debated opening the sett a bit for this yarn, but decided to leave it the same as the other yarns, which was a good choice, as the slightly denser yarn makes a subtle textural contrast. Sett was 33 epi throughout, and my beat was moderate for a warp-dominant fabric. The fabric was 30 inches wide in the reed and 27 inches after wet finishing. Fabric was washed in a front load machine, then partially dried in the dryer and air-dried to finish.



Because of my decades-long sewing break, I set up a one-on-one class with Daryl for guidance in the construction process, which was a smart decision as she helped me make the best of the yardage. I also benefited from her introducing me to professional-level finishing techniques.

Photos by Claudia Olson

SCARF: A PEACEFUL NEIGHBORHOOD**ATQ ANNUAL CONFERENCE (CONGRÈS ANNUEL DE L'ASSOCIATION DES TISSERANDES DU QUÉBEC)**

After discovering new variations with deflected double weave in a one-year study with my local study group, I returned to my old design method based on Finnweave. At that time, I wrote an article published in the September 2000 issue of *Complex Weavers Journal*: 'Using Finnweave to Design Deflected Double Weave' (pages 5–7). It discusses designing with a profile draft, which is quicker, as only one mouse click is needed to insert a four-thread unit (like in my scarf) instead of eight clicks. The steps the article gives to get the full draft from the profile draft have changed only slightly in the present version of Fiberworks.

I used a similar design in a 2003 scarf with a point threading and a treadling draft that placed the houses and streets in squares. This time, I chose a straight profile draft and added more kinds of trees in various groupings. I like this method for images, but they are clearer on one face of the cloth than on the other. To avoid losing too much detail on the back, I used more plain-color surfaces and fewer narrow lines. The diagonal streets have the advantage of being equally clear on both faces.

Designing shapes on diagonal lines is fun,



Photos by Lucie Gingras



especially when completing symmetrical images along them. The streets seem to continue beyond the selvages. The distance between my parallel lines is determined by the number of shafts. The diagonal lines form a kind of fixed grid that can't be interrupted, but the spacing of horizontal bands of motifs can be varied by cycling them horizontally. My warp colors were chosen to be good for Christmas cards and flowers as well, and because I had many greens and pinks of this fine silk that could be used for the weft.

The warp is 30/2 silk set at 40 epi, my weft is 20/2 silk alternating with 30/2 silk. Green alternates with pink in both warp and weft. This scarf was woven on my 32-shaft Megado loom.

A WIF file can be found in the CW Awards Gallery on the Complex Weavers website.

SHAWL: *VIBRATIONS*
VERMONT WEAVER'S GUILD

The design for this shawl is based on an advancing point twill that I modified.

I enjoy playing with, manipulating and modifying structures. My original designs often include curves, as curves seem less defined and rigid than other design elements can be. I like the sense of flow and flexibility curves give to a design.

This piece was woven on a 16-shaft dobby loom. The warp is bamboo and Tencel, set at 24 epi. The weft is a fine variegated merino wool, woven at 24 ppi.



Photos by Trudy Otis

WALL ART: AUREOLA**NEW ZEALAND CREATIVE FIBRE NATIONAL EXHIBIT**

The initial idea for this piece came from a thumb print which I manipulated in Photoshop PS and placed on a spherical-colored background.

The weave structure is a variation of a weft-backed nine-shaft satin weave using five weft colors.

The colored circles are achieved by using five

shuttles for the weft, with each color woven in a different combination of weft-backed nine-end satin weave.

I wove on a TC-2 Digital Jacquard loom.

The silk/linen yarn is hand-dyed, and the warp was set at 45 epi.

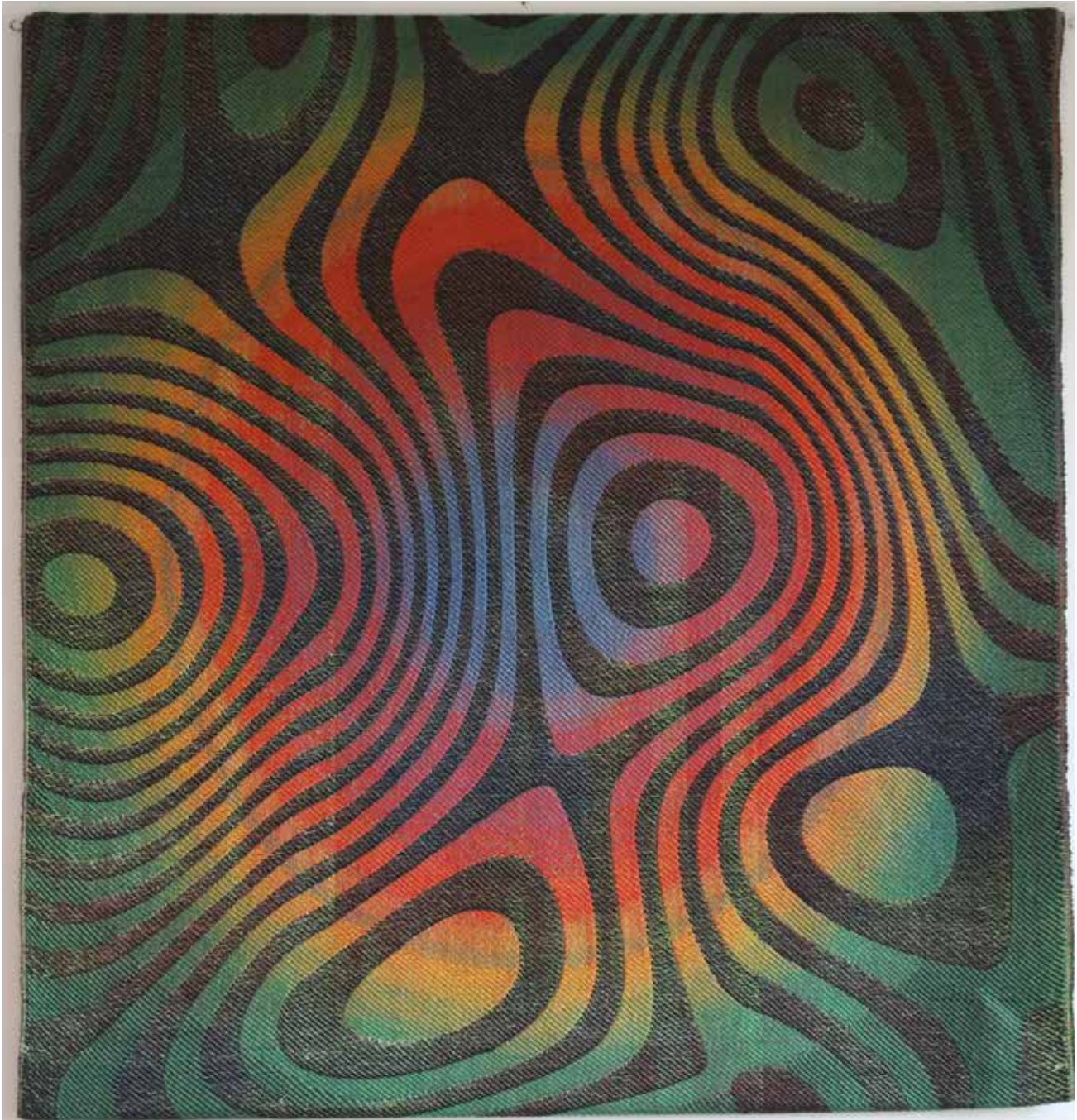


Photo by Agnes Hauptli

WALL HANGING: TRIANGULATIONS**CONTEMPORARY WEAVERS OF TEXAS: NOTHING BUT BLUE SKIES**

Triangulations is an original design woven for the Cross Country Weavers 2022 exchange, which featured an Anni Albers theme.

I took a portion of one of Anni Albers's pieces based on triangles and made a profile draft. The resulting draft was then mirrored and flipped, making sure the line of triangles connects as in the original Anni Albers work. One full repeat was 1688 ends!

The 25-block profile is woven in summer & winter with the same size and color of yarn used for both the tabby and pattern.

Both warp and weft were 16/2 Egyptian cotton, set at 28 epi. The warp was two shades of green, and the weft color for both pattern and tabby was wine.

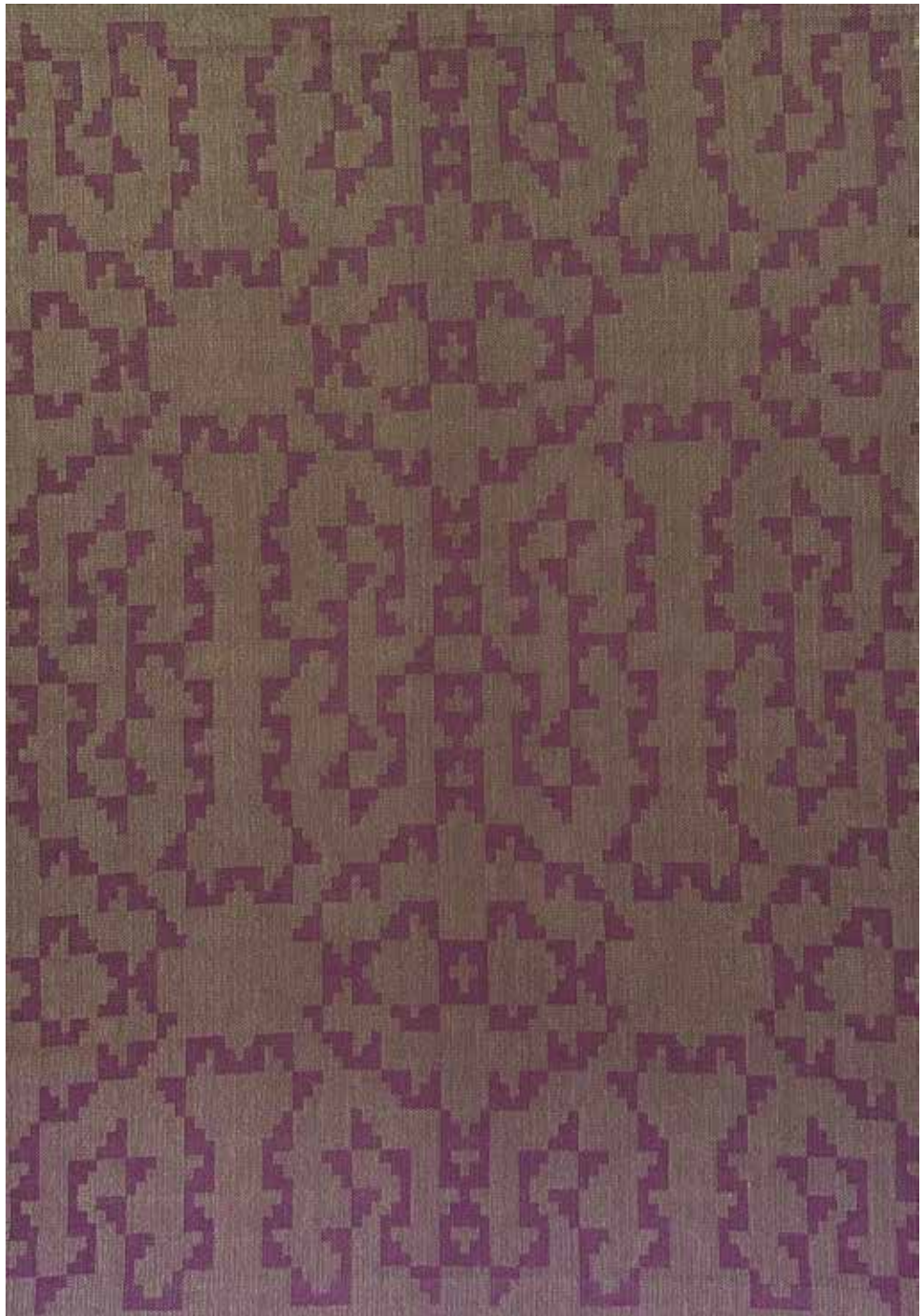


Photo by Tracy Kaestner

SCARF: CHOIR SCARF**INTERMOUNTAIN WEAVERS CONFERENCE: CELEBRATION OF FIBER**

I have been weaving a series of scarves for a local *capella* choir that sings for hospice and end-of-life patients. I wanted designs that were visually interesting, but not large or distracting.

My inspiration for this scarf came from my sister's (Ginny Wallace) 16-shaft divisional draft, which is posted as #63195 on *handweaving.net*. I chose a portion of the draft for a long repeat and reversed it at the center point. I used the unaltered draft for a border and reversed at the other end.

The scarf was woven on 16 shafts, with a point threading in 8/2 Tencel set at 24 epi.

Photos by Ellen Klomps

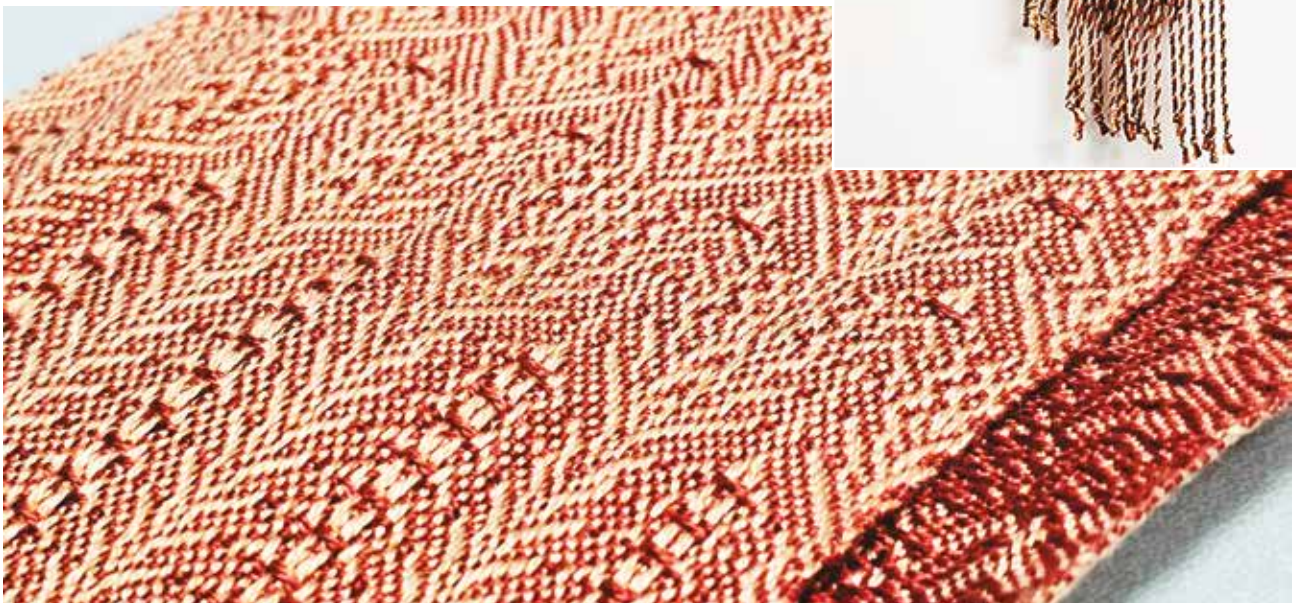
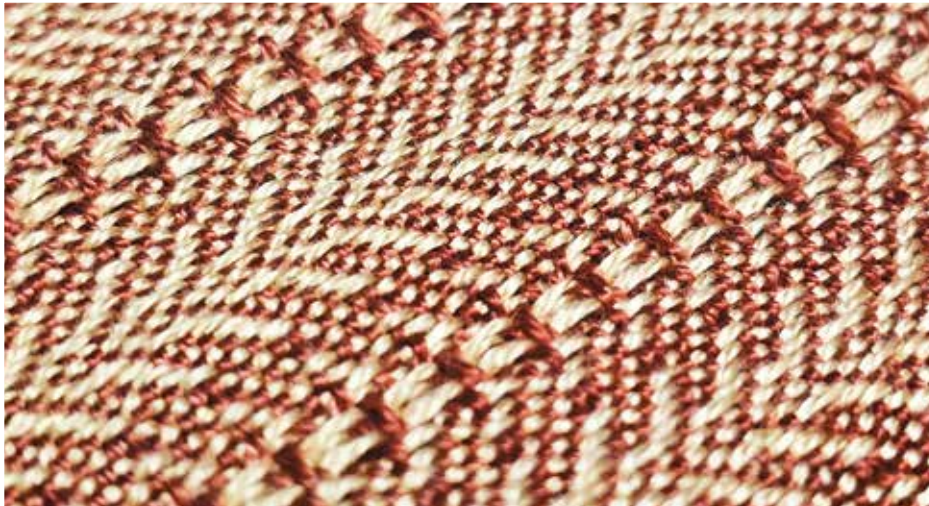


TABLE RUNNER AND PLACEMATS: *REPEAT THE BEAT***HANDWEAVERS' GUILD OF CONNECTICUT: HANDWEAVING – ANCIENT ART, MODERN ARTISANS**

Janet Phillips' book inspired me to create my own Rep weave design.

I wove six placemats, each measuring 15.5x12.5 inches (39.4x31.8 cm), and one table runner measuring 15.5x98.5 inches (39.4x250.2 cm). All were woven in black and beige cotton, set at 48 epi.

Photos by Julia Ludlow-Ortner



WALL HANGING: *CLOUDS OF AUGUST* – 1945**CHATTAHOOCHEE HANDWEAVERS GUILD: TRANSFORMATION**

Clouds of August – 1945 originated from a call for art by the Weavers' Guild of Boston to create a work representing an event that was historically, personally or socially significant, from the past 100 years. This work was to be on exhibition at the Fuller Museum of Craft as a way to celebrate the 100th anniversary of the formation of the Boston Guild.

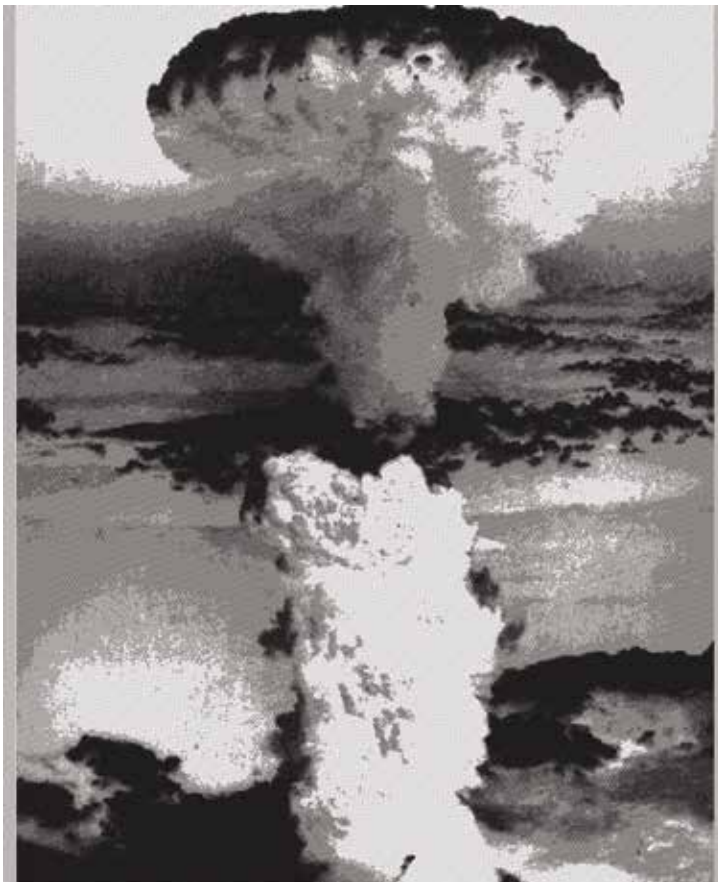
For several years, I had researched World War II and the role of women in wars for the U.S.S. Massachusetts Battleship Museum. The development of the atomic bomb and its use to end WWII were a global concern.

The draft for this piece was developed using Photoshop to separate tones in the photograph and define pattern structures in preparation for weaving on a TC2 digital Jacquard loom.

The eight modules required 1760 ends for a 29 inch (73.6 cm) weaving width.



Photos by Meghan Lebow



The 20/2 mercerized cotton warp in ivory is set at 60 epi.

The wefts in the center panel are woven at 50 wefts per inch, using 7/1 linen multi-coloured 'confetti' and 7/1 linen in indigo Prussian; and the surface texture inlay is 16/2 white linen.

The weft in the side panels is 7/1 linen, doubled, at 40 wefts per inch.

**Defining zones of pattern structure
in Photoshop**

SCARF: BRIDGING THE PENINSULAS**MICHIGAN LEAGUE OF HANDWEAVERS: BIENNIAL CONFERENCE**

The Mackinac Bridge joins two peninsulas. Working from photos of the bridge, I drew a sketch which I adapted to a drawdown for my 24-shaft Compu dobby loom.

The image was mirrored. Between the sections of mirrored images, seersucker stripes would represent water and waves.

The bridge areas of the scarf are woven in 20/2 mercerized cotton, set at 40 epi and woven in a turned tied weave (navy pattern threads on shafts 3 to 24 and blue tie-down threads on shafts 1 and 2).

The seersucker stripes are woven in 20/2 mercerized cotton, silver thread, and a fine blue/white bouclé.

The weft throughout is 20/2 mercerized cotton in blue.

The main pattern warp had taut tension and the seersucker warp was slack. To maintain their different tension, the seersucker sections were weighted separately using pill bottles and pennies.

The fringe of the scarf is beaded with blue, white, and clear seed beads.



Photos by Julie Legere



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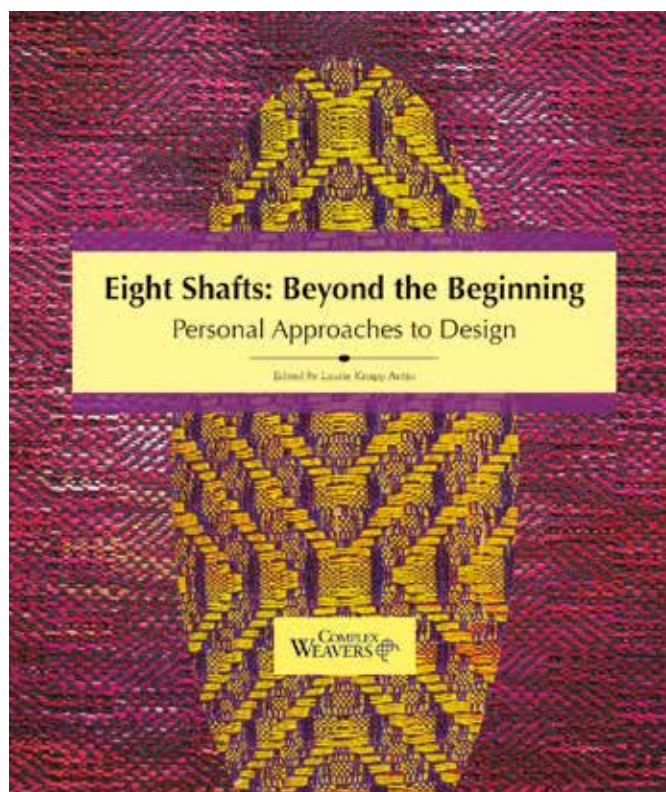
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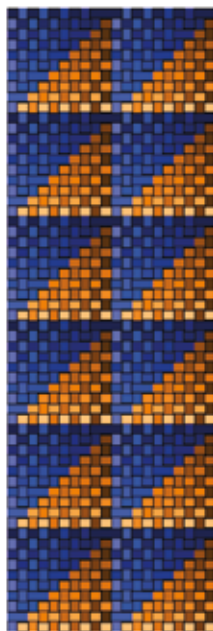
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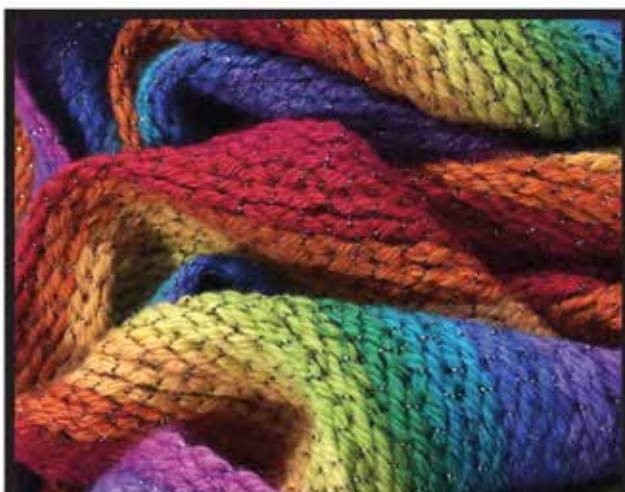
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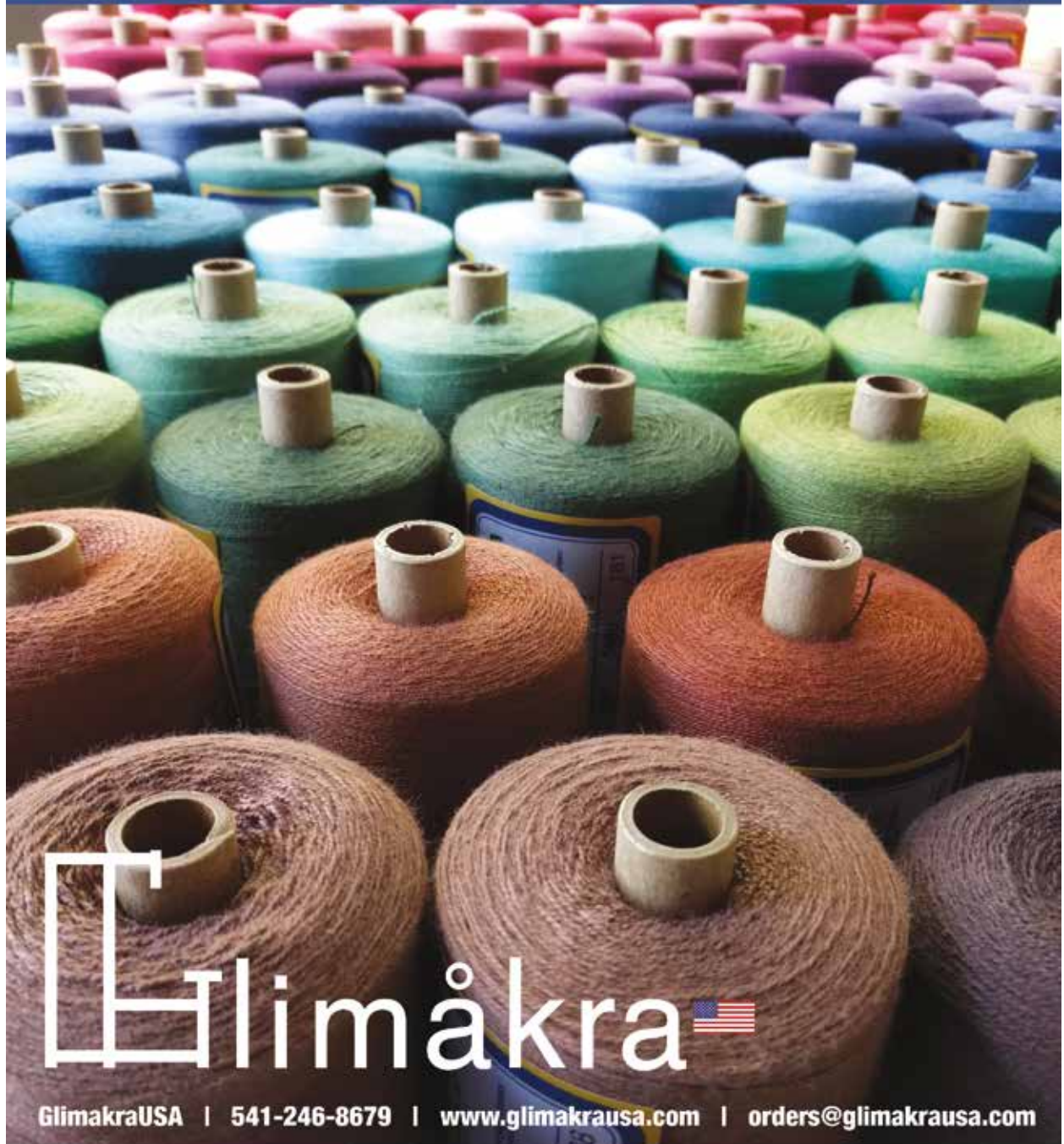


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