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On the cover: Sivia Harding's sweet scrap mittens are an ode to a dear friend. Ilisha's Mittens (page 52), knitted in handspun oddments, are shown with a Connie's Mjolinor from Greensleeves Spindles and knitting needles from Lantern Moon.

Photo by Matt Graves

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"Memory" is a term spinners use to describe crimpy locks of wool, stretchy skeins, and sweaters that hold their shape. Memories and musings can also attach to our tools, our movements, our many yards of handspun. When applied to fiber, "memory" always means buoyancy and elasticity; when applied to our very human remembrances, "memory" can be a mixed bag. How can a squishy skein spun during a difficult time feel so heavy?

I chose the Memory theme for this Winter issue because I'm fascinated by the connection and disconnection between these two meanings of such a common term. For me, memory—either in terms of crimps per inch or years of experience—connects us to resilience. Like trees that bend so they do not break, we can learn and heal and grow through our handwork . . . and create some fabulous slouch-proof woolen socks in the meantime.

In this issue, author and shearer **Stephany Wilkes** introduces us to fine-wool shepherd Lani Estill. Stephany describes the landscape and agricultural heritage that frame Lani's California flock, and **Devin Helmen** uses Rambouillet tops from Lani's Lana to create a cozy shawl.

Amy Tyler explains why the term "muscle memory" doesn't even begin to explain the deep knowledge stored in our bodies, offering tips for improving our movement skills. **Meagan Condon** and **Kim McKenna** offer multiple methods for adding loft to low-crimp fibers, and **Kim Caulfield** heads to England to explore Roman textile finds buried for two millennia.

Best wishes for perfectly filled bobbins,

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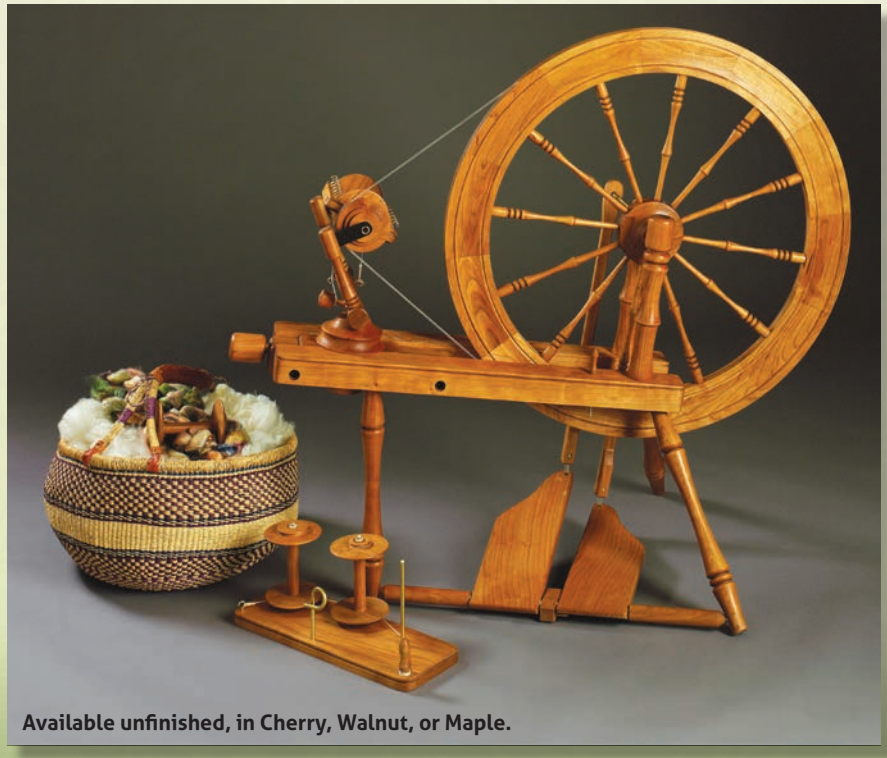

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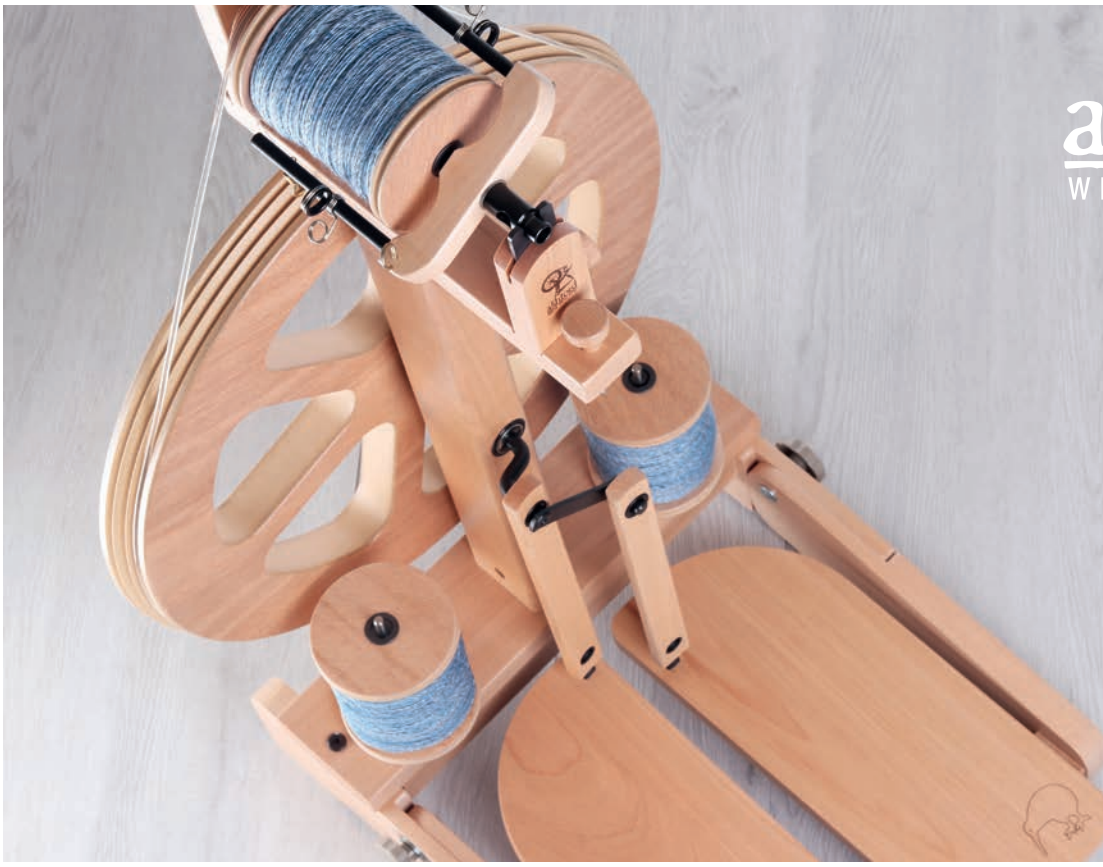

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Photos by Elysa Darling

Solitude Wool

Breed-Specific Yarn and Fiber

FOUNDING PARTNERS: Gretchen Frederick and Sue Bundy
PARTNERS: Kathy Reed, Kim Pierce, and Debbie Deutsch
OTHER SOLITUDE WOOLIES: Moira Ramsey and Cindy Potter

How did Solitude Wool get started?

Sue and Gretchen were both raising sheep whose wool is not as commercially appreciated as that from finewool breeds. Sue raises Karakul, and Gretchen raises Romney. They met through the Loudoun Valley Sheep Producers in Virginia. Shepherds in their area raising non-finewool sheep were having difficulty selling their raw wool, especially the shepherds who were not fiber folks. Gretchen was already selling her handspun yarn at Virginia and Washington, DC, farmers markets at that time.

Sue and Gretchen discovered they were both thinking the same thing: so much interesting local wool was going to waste, and they wanted to do something with it. They made the bold decision to start buying local fleeces and using small US mills to create breed-specific yarn. This was rather unheard of at the time, and so in 2006, Solitude Wool was born.

What is your favorite part of the process?

Each of us have different preferences in the spectrum of tasks. Sue, Gretchen, and Kathy lovingly raise fiber animals. While Kim respects their work, she'd rather apply labels to finished skeins than muck out a barn. Sue and Kathy have the pleasure of going to local farms, and after the fiber returns from the mill on cones, Moira and Cindy expertly wrangle the yarn into skeins. Debbie usually handles online orders and shipping. And these are just a few of the hats we wear!

How is your fiber produced today?

Solitude Wool's yarn and fiber is gently processed, and every step along the way happens in the United States, if not even more locally in our own fibershed, the Chesapeake Fibershed, which covers the area of the Chesapeake Bay Watershed. We are a small, women- and veteran-owned/women-run business that works with other small businesses to bring wool gently off the backs of sheep to transform it into beautiful yarn and fiber. We believe our products authentically represent the sheep breeds they come from, all the while respecting the environment, the people, and the sheep. We are official providers for the Livestock Conservancy's "Shave 'Em to Save 'Em" campaign and a producer member of the Chesapeake Fibershed.

Solitude Wool is a small, women-run business that works with other small businesses to bring wool gently off the backs of sheep to transform it into beautiful yarn and fiber. Our products authentically represent the sheep breeds they come from, while respecting the environment, the people, and the sheep.

What are your plans for the future?

We hope and plan to continue to share information, fiber, and yarn from different sheep breeds through sustainable practices to safeguard genetic diversity in sheep and their marvelous wool! We are currently redesigning our website, revising product photography, and working on more product reviews and videos to help people select and use breed-specific wool yarns and fibers that might be new to them. Visit solitudewool.com for more information.

We love the makers in our community! Is there a dyer, toolmaker, fiber producer, or mill we should feature? Tell us about your favorite makers—large and small—at **spinoff@longthreadmedia.com**.

The Solitude "Woolies" with some Romney friends

Holiday Gift Guide

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Give your oddments new life.

Photos by Matt Graves unless otherwise noted

Bits and Pieces:
Using Special Scraps in New Blends

ALANNA WILCOX

As a spinner, I see each of my handspun skeins as distinct, infused with memories. They are tangible diary entries, marking times, places, and spaces of creation and living. When I reflect on a particular yarn and the time we spent together, the memories that are linked to it might range from the technical to the emotional. Where I purchased the fiber and how I prepared it for spinning might be entangled with where I was in my life, both physically and mentally, while spinning the fiber.

The time taken to see a fiber through to fabric can often be a lengthy process, and in general, I spend one to two years per project from start to finish. So when I have scraps that are left behind—even wispy bits—it can be bittersweet to throw those memories away. Instead, I like to salvage them and give them new life. Sometimes, I will use the scrappy bits in my SAORI weaving practice, which is a lovely way to meditate on the origins of the yarns and the stories they bring to a new piece. But

Alanna uses an Inox mohair brush to rough up the surface of some yarns, making them easier to incorporate into blends.

Photo by Alanna Wilcox

From top: inclusions cut into short pieces, abraded, and carded before spinning; inclusions incorporated into one singles before plying; inclusion added as an additional ply for a short length; and inclusion plied and secured with a singles during plying

The yarn scraps could be scuffed up a bit to make them fuzzier, giving them some tooth to grip other fibers in the blend.

other times, I will take the scraps and incorporate them into a batt, creating a lovely tweed effect.

NEW PREPS, OLD YARNS

Depending upon the type of fibers your handspun scraps contain, you could experiment with different ways of incorporating them into a new spin. Lengths of yarn that are very short and slippery, silk for example, might not be the best inclusions to use in a low-twist yarn, as they might wiggle their way out of the yarn when handled. I find that using wool that has lots of crimp and springiness is preferable as a fiber base. These wools act a bit like Velcro, keeping the additions more securely in place.

Alternatively, the yarn scraps could be scuffed up a bit to make them fuzzier, giving them some tooth to grip other fibers in the blend. It depends on what kind of yarn you're interested in creating. The more you card, flick, or rough up the scraps, the less likely they will retain their "original" look. This could certainly be an interesting design element to pursue.

If there is a fiber that is on the delicate side, I might try to lay the yarn scrap on the larger drum of my carder while it's rotating instead of feeding it in through the infeed tray, or I'll simply hold it alongside either the singles or a ply, depending on the design element I'm going for. If I do put an inclusion in through the infeed tray, I will often sandwich it between two thin layers of wool to help it bind to the already carded fibers and not fall out of the tines of the carder when swept inward.

When prepping fiber, I make sure the inclusions go in on the final pass of carding. If you card handspun yarns with multiple passes, they may get lost in the core or central part of your franken-yarn. If the scraps are long enough, however, you can choose to include them during the plying phase so that they can be wrapped on the outer edge of the yarns instead of being hidden and trapped by the outer fiber like a core

yarn. These can often make for a fun novelty yarn to experiment with.

For plying, you can take the yarn scraps and tuck them between two or more plies (almost like holding the scrap yarn as an adjacent third ply) so that they're sandwiched nicely between the two singles.

THERE ARE NO CREATIVITY POLICE!

If you want to combine certain scraps from one project with another, then, by all means, experiment. Worst-case scenario, the "failed" yarn can become an immediate memory and, in turn, become a scrap inclusion for your next attempt!

Alanna Wilcox is a Master Spinner and color specialist who helps spinners, dyers, and fiber-art enthusiasts achieve their creative goals through her expert instruction via books and online workshops. She is an artist and an educator who can help you overcome creative challenges, learn new skills, and feel empowered to boldly go on your own creative adventures. You can see all of her offerings on her website at alannawilcox.com.

Alanna's beautiful, scrappy yarn experiments that include long and short inclusions and various blending methods

Handspun Flock Jacket

LISA POHL DAVIS

Pattern Eldfell Pullover by Bridget Pupillo.
Fiber Mill-processed carded roving from coated fleeces from assorted sheep breeds.
Wheel Ashford Traditional with jumbo flyer.
Ratio 4.5:1.
Drafting method Short-backward draw.
Singles direction Z-twist.
Wraps per inch Finished 2-ply yarn was 12 wpi with 6 ply twists per inch.
Total yardage About 2,600 yd.
Yarn classification/weight Light worsted.
Needles Size 10 (6 mm).
Gauge That's a long story.
Finished size From a 2XL sweater to a size M felted jacket.

From handspun pullover sweater to zippered jacket

Photos by Lisa Pohl Davis

I was raised by a family that had recently emerged from the Great Depression and World War II. One of our favorite family mottos was "Use it up, wear it out, make it do, or do without." I learned it early, as it was a matter of daily life. This is a cherished heritage that invites creativity and resourcefulness.

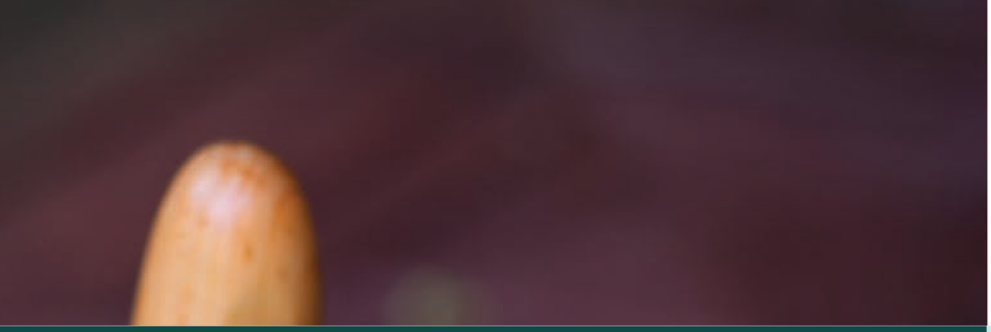
So when I accidentally knitted a handspun yoke sweater three sizes too big, I was inspired by my family's resourcefulness and decided that the sweater just wasn't quite "done" yet—maybe if I felted it, I could shrink it to a usable size. I had knitted this sweater for myself, as a precious keepsake of my small spinner's flock of sheep. All of the yarn in the sweater was my own handspun, created while tending my flock of wethers. It was the yarn that I had spun while learning to be a spinner, using wool from the sheep that taught me to be a shepherd.

HOW IT STARTED

In the fall of 2015, I was gifted with an Ashford Traditional spinning wheel for my birthday. By the next spring, my hobby-farmer husband and I brought our first sheep home—a Tunis lamb named Oliver. We immediately found three new lamb friends for Oliver, and by the end of the next year, we added another three wethers of different breeds to the flock. The flock of seven wether lambs consisted of Tunis, Leicester Longwool, Romney/Border Leicester, California Variegated Mutant (CVM), Finnsheep, Wensleydale/Bluefaced Leicester, and Teeswater/Bluefaced Leicester. I'm happy to say that they enjoy quite a pampered life with us in exchange for wool.

Soon, I had enough wool to have it processed into roving by a fiber mill, and I began spinning in earnest. The miles of yarn started to add up, as I spent hours practicing and perfecting a balanced two-ply, woolen-spun yarn. As the years passed and my stash of flock yarn grew, I began to consider how to use it. When I saw Bridget Pupillo's Eldfell Pullover pattern, I fell in love. I could visualize my flock's natural colors in the yoke.

Despite my best attempts at gauge and selecting the proper needle size and pattern size, the finished sweater was three sizes too big. After two or three cycles of



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washing and drying, it fit me perfectly, except for a tight but not impossible neck opening. It was thick like outerwear and super warm—definitely not an indoor sweater. I wasn't using it nearly as much as it deserved, and I loved it too much not to use it more often.

NEXT STEPS

I planned a way to "use it up, wear it out, make it do, or do without." I would turn it into a zippered jacket! I would steek the center (cut the knitted fabric vertically from hem to neck edge), sew in a zipper, and then maybe add pockets; it sounded simple enough.

Then I decided to line it with thin, woven fabric to make it easier to slip on and off. Having no dressmaking patterns for a lining to fit this particular sweater, I created my own. Before making any cuts to the sweater, I took measurements, created a pattern using kraft paper, and sewed a mock lining from an old sheet. Satisfied that the lining was accurate, I sewed the real lining. Then it was time to work up the nerve to pick up a pair of scissors and steek the sweater!

I first applied a strip of fusible lightweight knit interfacing to the underside of the center front and marked the center cut line. For good measure, I sewed a straight stitch on either side of the cut line and then started cutting. It was very scary! But it was also very anticlimactic. There was no raveling because it was so heavily felted and interfaced.

With the sweater now open, I slipped in the lining that I had sewn and, to my amazement, it fit perfectly. Before I could attach the lining, though, I had to turn my attention to the collar that I was envisioning for the jacket, which turned out to be the most challenging part of this endeavor.

After considering several ways to give the jacket a collar, I decided to upcycle a flat 6-by-24-inch lockspun, knitted cowl that I had made previously while learning to spin "coreless core spun" yarn. I folded it in half longwise and sewed it together along the edge, making it 3 inches by 24 inches. This gave twice the fullness and a nice rounded, finished edge facing outward that didn't obscure the yoke. Next, I used bias tape to finish the collar edge and attach it to the sweater. To finish the job, I sewed a zipper up the front, securing all the layers.

The flock's handspun natural shades (*from left*): Leicester Longwool, Tunis, CVM, Wensleydale, Romney, and Finnsheep

Lisa gets a few kisses from her first sheep, Oliver, a Tunis, while wearing the sweater before it was felted.

As I finished the final stitches in January 2022, we lost our first sheep, making this handspun keepsake even more precious. My heart sings every time I put it on. I'm glad I didn't give up when things didn't turn out right at the beginning. I intend to "use it up" and maybe even pass it on for the next generation to wear out. ●

When she's not handspinning, knitting, weaving, or tending sheep, **Lisa Pohl Davis** enjoys competitively growing giant pumpkins and working in the field with her husband and his team of draft horses. There's never a dull moment at their Michigan hobby farm, Davis Dirt Farms.

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WINTER WONDERS

❶ Keep your spinning consistent with this versatile wraps-per-inch tool from **The Fiber Sprite**. It includes markings for twist angle and yarn diameter, plus various-sized holes to use as a diz. Available in four fun animal shapes; the alpaca is shown here. **thefibersprite.etsy.com**

❷ To add a natural touch to any garment, **Katrinkles** serves up these engraved chicken buttons made from bamboo and available in six sizes. **katrinkles.com**

❸ Need a decorative way to keep your place on your current project? This bracelet abacus from **Hide and Sheep** can help. Choose from a variety of colors and interesting focal beads to match any outfit or project bag. **hideandsheep.etsy.com**

❹ For a super squishy winter spin, try this Targhee top from **Deep Dyed Yarns**. Shown in the Driftwood colorway, these hand-dyed 4-ounce braids are perfect for a cozy accessory. **deepdyedyarns.com**

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Jess stitches the circuitous path between her Latvian great-grandmother, a Russian spinning instructor, and her own handwork.

Photo by Matt Graves

In Spite of the Titanic

JESS HUPP

Elsa Sturite was supposed to be on the Titanic. But she wasn't, so I went to Colorado. You see, Elsa was my great-grandmother. She emigrated from Latvia in search of a better life and found it in Brooklyn, New York, in the early twentieth century with my great-grandfather Carl. (He was an immigrant who sweet-talked his way into the United States, but that's a whole different story.) She brought her knitting, tatting, and sewing skills along with some tools, and she and Carl married and started their family.

While Carl worked with extended family at an iron mill (and made the kitchen cabinet hardware for their first home), Elsa flourished as a seamstress in the New York City garment industry. The phrase

"dab hand with a needle," I swear, was coined after seeing her skills in action. Fast-forward a couple of generations and you find my mother, Sarah, who learned handwork from her grandmother, Elsa, instructing me (Jess) in the art of knitting, crocheting, quilting, alterations, and just about anything else you can do in the realm of needlework.

Elsa, with her third-class ticket, didn't get on the Titanic, so the gene pool lived on. And I am here to tell about it. "But what has that got to do with Colorado?" you ask?

A THREAD COMES FULL CIRCLE

Boulder, Colorado, was the site of the 2021 *Spin Off* Autumn Retreat (SOAR). As an early birthday present to myself, I snagged one of the coveted tickets and left family and pets behind to spend a week with my "fiber tribe," spinning, knitting, and learning. It was breathtaking—not only because of the views and gorgeousness of the Colorado Chautauqua environs, but also thanks to the joy of being with a group of people who all spoke the language of fiber. Conversations abounded with deep dives into fiber types, tools, mishaps, discoveries, projects, and color theory. You name it—we talked about it.

The best part of my SOAR experience was getting to be part of a two-day intensive class with Galina Khmeleva, the famed Orenburg lace instructor and designer. I had already been spinning with a Russian spindle for a bit but was stymied by the process of plying. The intensive course with Galina did the trick. I spun. I plied. I set the twist. I had real yarn.

At this point, I had never made anything with my handspun yarn. Ever. I just had a bunch of pretty skeins sitting in boxes. My dream, however, was to use my experience with Galina to lead me back to Elsa's roots in Latvia. I wanted to spin for Latvian handcoverings that I could knit using Elsa's knitting pins.

Back at home, I set to spinning for a project with the good advice from SOAR and Galina fresh in my mind. Soon, I had multiple spindles full of Russian-spindle spun singles. I followed my notes from class, wound the singles with a strand of silk thread on my plying spindle, and I was off plying.

I had already been spinning with a Russian spindle for a bit but was stymied by the process of plying. The intensive course with Galina did the trick. I spun. I plied. I set the twist. I had real yarn.

When it came time to steam the yarn, which is often referred to as "setting the twist," I didn't have a pot of soup simmering on my stove all day (the traditional Orenburg way to steam the yarn), so I dampened a handkerchief, wrapped it around my balls of plied yarn, and left it all on the dashboard of my car while I was at work. Et voilà! Leaving work, I checked the bundle: the handkerchief was bone dry, the yarn was fluffy, and I was ready to knit!

Carl and Elsa on their wedding day, May 30, 1916, in Boston

Courtesy of Jess Hupp

Photo by Jess Hupp

Jess (*left*) and Galina at SOAR 2021

Elsa's size 0000 needles are most assuredly called "pins" because they are so long and so thin; referring to them as knitting needles seems inadequate.

I had two colors of yarn—one mill-spun, one handspun. I scoured my fiber library and found a colorwork pattern based on Latvian weaving patterns and added my own spin.[1] I planned my Latvian braid insertion.[2] And finally, I picked up my great-grandmother's knitting pins.

For general reference, Elsa's size 0000 needles are most assuredly called "pins" because they are so long and so thin; referring to them as knitting needles seems inadequate. Somehow these pins and their cylindrical wood case had survived the years (and a sea crossing), and I was finally going to work a project that these antique tools were made to complete.

This began a chapter of the story that involved a lot of frogging, tinking, drinking, and colorful adjectives before I had completed even one of these mitts. I can neither confirm nor deny that one or more of great-grandma's steel pins may (or may not) have bent slightly in the pursuit, cat fur may (or may not) have been knitted into the colorwork, and my knuckles may (or may not) have permanent dents from gripping tiny needles for hours.

In the end, I had mitts that incorporated my handspun, a Latvian braid or two, and a modified ethnic weaving pattern. And with that, a circle of life was complete: a Nashville girl visits Colorado to learn from a Russian woman so she can make fingerless mitts to show her New York–born mother what she made with her Latvian great-grandmother's knitting pins, which wouldn't have been available if Elsa had been on the Titanic.

Notes

1. Based on Joyce Williams, *Latvian Dreams: Knitting from Weaving Charts* (Pittsville, WI: Schoolhouse Press, 2000), chart 166.
2. Learn several variations of Latvian braid at pieceworkmagazine.com/what-is-latvian-braid.

Jess Hupp is a fiber fanatic from Nashville, Tennessee. She is especially grateful that Elsa's traveling partner fell ill (but not seriously ill), making them both miss their crossing on the Titanic. Though currently working in mortgages, Jess dreams of finding a way of supporting herself through her love of needlecraft.

Photo by Jess Hupp

Elsa's knitting pins and wooden case traveled with her from Latvia to the United States.

Lani's Rambouillet sheep gathered in corrals near Mount Limbo, south of Empire, Nevada

Lani's Lana

Sheep, Landscape, and Western Wool

STEPHANY WILKES

In the high-desert, sagebrush steppe of far northeastern California, where a pollinator strip on the Bare Ranch coincides roughly with the Nevada state line, Lani Estill creates and stewards family, flock, and community. Her home base is Warner Mountain Weavers, a shop and learning center in the town of Cedarville, the rough midpoint in the Surprise Valley between the Warner Mountains and Hays Canyon Range. Anyone who calls this the "middle of nowhere" or says "there's nothing here" simply hasn't learned to see it yet.

Since her start in the early 2000s, Lani wanted to offer handspinners and fiber artists a superfine, homegrown wool from northern California/northwest Nevada with all-American processing. The farthest her fiber travels is the eastern United States. Since then, Lani's Lana Fine Rambouillet Wool has evolved from a flock of finewool sheep to roving, yarn, fabric, and bulk sales to garment designers and fashion brands, as well as natural-dye foraging and gardening, robust class offerings and retreats, and a 60-page Carbon Farm Plan (CFP) developed with the help of climate scientists and conservation specialists.

Today, Lani's sheep graze 90,000 acres, always on the move, never overgrazing, tended by shepherds. The acreage is a combination of private and leased land, including public lands managed by the Bureau of

Photos courtesy of Lani Estill unless otherwise noted

Land Management (BLM) and the US Forest Service (USFS), the Modoc and Shasta-Trinity National Forests among them.

This attention to and prioritization of local and regenerative practices has earned Lani's products both Fibershed and Climate Beneficial fiber certifications. A fibershed is defined as a roughly 150-mile surrounding region from which all fibers, dyes, and labor are sourced. The Climate Beneficial Verification program recognizes that natural fibers "can be grown and raised in ways that maximize the drawdown of carbon from the atmosphere to help restore ecosystem health and stabilize our climate." Fibershed (a nonprofit organization) verifies and monitors those practices on the land.

Lani herself is energetic, creative, and resourceful, an exemplar of appreciating what you've got, using what thrives nearby, and leaving things better than you found them. She is a critical holder and sharer of cultural and agricultural memory, preserving while passing things on.

In the American West, grazing animals generally move to higher ground in summer, when the grasses and hills at lower elevations dry out and turn brown. Up in the mountains, the days are cooler, and there is abundant grass, snowmelt, and water. The sheep return to the lower-elevation for the winter season. Seasonal memory is tied to the even longer memory of landscape.

RAMBOUILLET, RAFTER SEVEN, AND RANGE

Lani's business name—Lani's Lana Fine Rambouillet Wool—recognizes the sheep that started it all. Rambouillet are a finewool breed that thrives on the open range. They are large with a strong flocking instinct, long-lived, tough, and hardy. They can withstand heat, cold, and drought, producing lambs and uniform fleeces (with a nice amount of lanolin) under harsh conditions.

In the American West, grazing animals (both wild and domesticated) generally move to higher ground in

Lani Estill, a certified wool classer, skirts her Rambouillet fleeces during spring shearing at the Bare Ranch.

The "rinse cycle" of Lani's Lana naturally dyed roving and black and white twist yarn, mordanted in potassium aluminum sulfate (alum) and dyed with coreopsis. The vintage washing machine is part of the outdoor dye space in the large garden at Warner Mountain Weavers in Cedarville, California.

Lani's Lana naturally dyed roving and black and white twist yarn, mordanted in alum and dyed with coreopsis

summer, when the grasses and hills at lower elevations dry out and turn brown. Up in the mountains, the days are cooler, and there is abundant grass, snowmelt, and water. The sheep return to the lower-elevation, high-desert basin for the winter season. And it's the same cycle every year—seasonal memory tied to the even longer memory of landscape.

Lani remembers taking her children (especially Anna and Cole, her two middle ones) to Rafter Seven ram sales about 20 years ago. The Rafter Seven name is synonymous with top finewool sheep genetics of Merino and Merino/Rambouillet and is owned and managed by the University of Nevada, Reno. "I would go to buy Rambouillet bucks, and other people were paying big bucks for fancy Merinos," Lani says.

Fiber Preparation Matters

It's not just the Rambouillet breed that makes Lani's Lana roving so fine: the fiber preparation from raw fleece to combed top carries equal weight. Lani's path to producing high-quality prepared fibers from her finewool fleeces took a lot of experimentation and frustrating trial and error to get right.

While Lani produces and sells combed preparations, her tops are often referred to as roving. "Roving" is often a catchall term for fiber prepared for spinning. It can refer to either top (as in combed top, a worsted prep) or sliver (pronounced *sly-ver*, a woolen prep). Top is the finest of the fine, the smoothest and most beautifully organized. "It has all the noil and short fibers removed and is combed so carefully," Lani says. "Everything is straight."

Melissa Harris, a spinner, spinning instructor, and judge at the Black Sheep Gathering fleece competition, remembers the earliest days of Lani working to create her roving. "It wasn't pretty," Melissa says. "The mill said, 'We can use a picker on it!' and the fiber was torn about as these pointy blades went back and forth, making a *horrible* sound."

Lani recalls, "I had some fiber processed without combing and it was not as satisfying. Even though the fiber was fine, before it was combed, it had noils, and it felt like that bad, scratchy yarn everyone has bad childhood memories of. Once we saw it combed, we stopped

all that—no more drumcarding, no picking. An enormous bag of nepps came with the first shipment of combed fiber; it was amazing to see how much came out. When you use a combed-top preparation, it wears a lot nicer and you don't have all that pilling."

Lani's undyed, natural-colored roving is available in black, gray, and white. The finest is the white at about 21 microns. The grays (light and medium, named Dust and Storm, respectively) are blends of white and black that have historically varied in the proportion of each, but Lani is moving toward a consistent 50/50 blend.

What's It Like to Spin?

"As for the hand, it's all lovely," Melissa says. "The white is the finest and there's more juice to the black, more crimp; it has more scrunchiness and a little more body." She prefers to spin it worsted and fine. "It's made to spin fine; it's beautiful for that. Since there's so much prep work done in the combed top, it really shines when you spin worsted, but there is no reason not to spin over the fold or with a woolen technique."

Natural Color, Foraged and Planted

In addition to undyed, natural colors, Lani also offers roving dyed with a wide variety of foraged and cultivated plants. Lani sources coreopsis, black-eyed Susan, and madder from the garden at Warner Mountain Weavers. Woad, an invasive weed that grows in wetter farming areas and along roadsides, makes an indigo-like blue.

Wild-plant foraging mimics the patterns of the sheep. "June is the time to forage wolf moss lichen and wild sunflower on the summer high ground," Lani says. "Wolf moss is up in the Warner Mountains at higher elevations on trees and makes a wonderful lime green to pale yellow. We're careful not to harvest too much of that; it's more scarce. Wild sunflower is an annual that requires a wetter climate. We use copper to turn that olive green. The rabbitbrush and sagebrush grow where the sheep are in the winter months, and both are abundant."

CONTINUITY IN COMMUNITY AND CHILDREN

Expert natural dyer and weaver Bonnie Chase opened Warner Mountain Weavers in 2000, and Wool Gathering events have since been held every year except for one COVID year. "I like to pass knowledge on to other people," Bonnie says. "That's what I'm all about." Natural dyers, spinners, knitters, crocheters, and visitors gather regularly at the shop for classes and potlucks or to hang out. A few years ago, Bonnie was ready to retire, and the store wasn't open much, aside from Bonnie's dye operations and classes. "Lani came along and partnered up and brought new life and excitement into the shop," Bonnie says. "I enjoy seeing where she's taking it."

That goes for Lani's Lana, too. "All of my kids love the sheep," Lani says. "I'm passing it on to my kids, Anna and Cole especially." Anna Odendaal has her own sheep operation, as does Lani's son, Cole Estill. A few loads of his sheep are currently in the San Francisco Bay Area doing grazing for wildfire mitigation.

The deep memories of breed genetics, grazing patterns, how to move through this rough country, and spinning and natural-dyeing skills live on in Lani's family and the community-knowledge hub of Warner Mountain Weavers and the Surprise Valley.

Stephany Wilkes is a writer, knitter, sheep shearer, and novice spinner in northern California. She is the author of *Raw Material: Working Wool in the West*.

Devin used two colors of Rambouillet top from Lani's Lana to create a lofty and bouncy shawl. Shown with a Miss Marple's Teacup by Greensleeves Spindles

Photos by Matt Graves

A Handspun *Weldon's* Shetland Shawl

DESIGN BY CAROLYN WYBORNY, HANDSPUN PROJECT BY DEVIN HELMEN

The Rambouillet top I received from Lani's Lana was delightfully soft, and I had two colors: a beautiful light gray and a medium gray. I knew from the start that they would be a joy to spin. For knitting with this fiber and especially for a shawl, I wanted a light and airy yarn that would wrap around the neck and shoulders and showcase the wool's best features—its softness and loft. The combed top already draped beautifully, and I wanted to preserve this feature, which would help the finished shawl curl around the shoulders and show off the lace pattern.

With an aligned preparation such as top, I usually prefer to spin using a short draw, smoothing the yarn as I spin and encouraging drape and shine. I chose this drafting technique to spin the yarn for the *Weldon's* Shetland Shawl by Carolyn Wyborny, adding less twist than I normally do to ensure the singles would be open and airy, and drafting with a very light touch only.

Learn more about this US-produced Rambouillet and Lani Estill, the visionary farmer behind Lani's Lana, on page 26.

SPINNING NOTES

I aimed for a fingering-weight two-ply knitting yarn, and I knew it would bloom slightly upon wet-finishing. I spun the yarn using the medium-low speed on my HansenCrafts miniSpinner fitted with the lace flyer, thoroughly enjoying every second of the spinning. The top was soft and beautifully prepared. The wool had some natural variations in colors that combined into something I can best describe as "complex solids," by which I mean there is a depth to the finished yarn that appears a uniform color but has myriad tiny variations.

I plied my singles on the same flyer with the same twist setting. Then the plied yarn was ready for wet-finishing, and I gave it a soak in hot water and dish soap, with a rinse in cold water. I hung the skeins unweighted, and once they were dry, I eagerly cast on.

The knitting went quickly once I got used to the lace patterns; to showcase the two natural wool colors, I knitted the garter-stitch portion of the body of the shawl and the lace edging in light gray and the myrtle lace section in medium gray. After knitting, I finished the shawl with a soak in warm water and blocked it to the finished dimensions. Once it was dry, I was pleased to have a very light and airy shawl showcasing the softness and color of the Rambouillet top.

Carolyn Wyborny's *Weldon's* Shetland Shawl to Knit originally appeared in *PieceWork*, Winter 2019.

MATERIALS

Fiber Lani's Lana, Bare Ranch Rambouillet roving; MC: Dust (light gray), 4 oz (113 g); CC: Storm (medium gray), 2 oz (57 g).
Yarn 2-ply; 300 yd MC, 120 yd CC; 1,600–1,700 ypp; 14 wpi; fingering-weight.
Needles Size 7 (4.5 mm), circ 32" or larger to accommodate the large number of sts. Adjust needle size if necessary to obtain the correct gauge.
Notions Markers (m); tapestry needle.
Gauge 16 sts and 42 rows = 4" in garter stitch, blocked; 8-row edging rep is 1¼" × 3½" wide; gauge is not critical for this project.
Finished size 52" wide × 19" at center.

Visit **spinoffmagazine.com/spin-off-abbreviations** for terms you don't know.

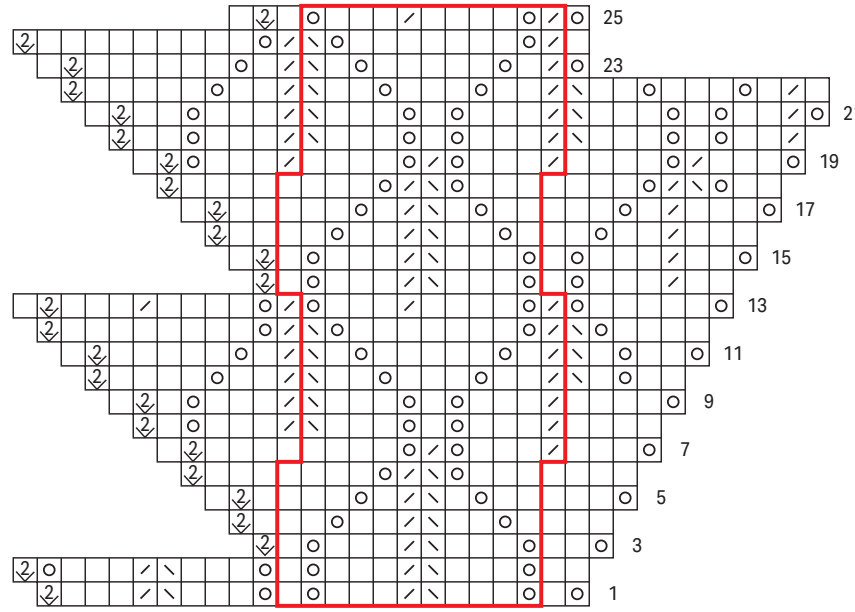
STITCH GUIDE

Icelandic Bind-Off: K1, *transfer st from right needle to left needle, insert right needle pwise into first st on left needle, then kwise into front loop of 2nd st, pulling 2nd st through first st but leaving both sts on left

Key

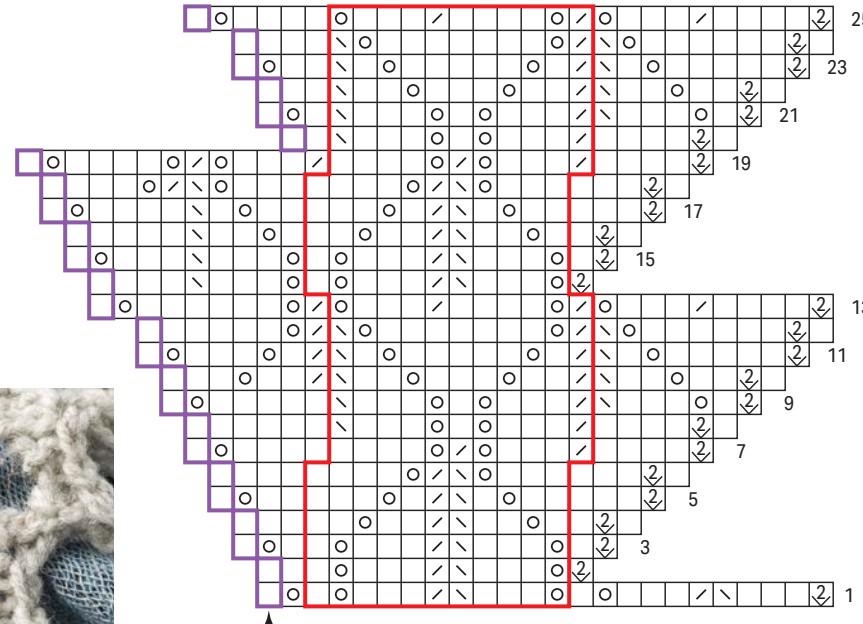
- k on RS; p on WS
- p on RS; k on WS
- sl 1 pwise wyf on RS
- yo
- k1f&b on RS; p1f&b on WS
- k2tog on RS; p2tog on WS
- ssk on RS; ssp on WS
- k2tog on WS
- k3tog
- sl 1, k2tog, psso
- k2tog (last st of edging tog with 1 shawl st)
- bind off 1 st
- st rem on right needle after last BO st
- center st
- pattern repeat

Myrtle Leaf Left Chart



11-st rep

Myrtle Leaf Right Chart

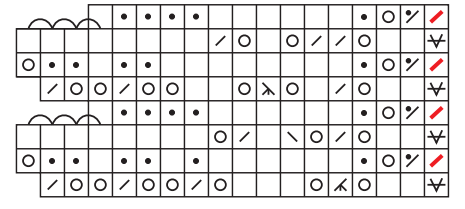


11-st rep

center st

A close look shows that Devin's spinning allowed the natural crimp of the fiber to create a full, lofty yarn, but a strong ply twist will add durability and longevity.

Point Lace Chart



15–18 sts

Rambouillet combed tops in natural colors spun into two-ply knitting yarns

Two different lace patterns are set off by the natural colors of the fiber.

needle. Wrap yarn around right needle and knit 2nd st, then drop both sts from left needle; rep from * until all sts have been BO.

When pulling the second stitch through the first on the left-hand needle, the two stitches cross to create an X, showing that you have the stitches lined up correctly.

SHAWL

Garter Triangle

Make a slipknot and put on the needle.

Next row Yo, knit the st already on the needle—2 sts.

Cont making a yo at each edge, knitting the rest of the sts per row until there are 121 sts on your needle. Break yarn. Put these sts on a spare cable needle or some waste yarn; they will not be used again until the BO.

Border

Always going from front to back, pick up but do not knit the edging stitches. Start where the yarn is attached and pick up 60 loops from one side, pm, pick up 1 st in the first (center) loop, pm, then pick up 60 more loops on the other side. You can use the last yarnovers at each edge, if needed. Slide the sts to the opposite end of the needle. Join CC and knit these normally so as to cross the loops—121 sts.

Set-up row 1 K1f&b, knit to 1 st before m, k1f&b, sl m, k1, sl m, k1f&b, knit until 2 sts from the end, k1f&b, k1—4 sts inc'd.

Set-up row 2 K1f&b, knit to 2 sts before the end, k1f&b, k1—2 sts inc'd.

Rep these two rows 1 more time, then work Set-up row 2 one more time—135 sts.

Work Row 1 of the Myrtle Leaf Right Chart (it includes the center st, which is outlined), then work Row 1 of the Myrtle Leaf Left Chart to complete the 1st row. On the WS, Row 2 will beg with Row 2 of the Myrtle Leaf Left Chart, then the Myrtle Leaf Right Chart. Cont working the border by using both Myrtle Leaf Charts through Row 25—209 sts. Break CC.

Edging

Join MC. CO 15 sts using the cable or knitted method. You will be working perpendicular to the shawl edge to cast off.

Set-up row K6, p8, k2tog including 1 st from the body of the shawl.

Beg Point Lace Chart with Row 1. Rep Rows 1–8 of the Point Lace Chart until all the border sts are used up. Do not turn work or break yarn.

Bind Off Continue with MC. With the 15 sts on the right-hand needle, pick up and knit 1 st in each edge st across the border section, then put the 121 sts from the garter triangle from the waste yarn onto the left needle and knit these sts, then pick up and knit 1 st in each edge st of the border section on the other side, then pick up and knit as many of the 15 sts from the edging CO as you can. These pick-ups are to even up the top edge, and it's not critical if each side is not exactly the same number of picked-up sts. Using the Icelandic method, bind off all sts across the top.

FINISHING

Weave in ends. Wet-block gently into a triangle shape, pulling out the loops on the edging and easing the garter section into a wide triangle shape.

Devin Helmen has been immersed in fiber since learning to spin at age eight. They spin, knit, and weave in beautiful Minnesota. Devin enjoys writing and teaching about fiber arts and has a passion for spindles and everyday textiles. They blog, intermittently, at afewgreenfigs.blogspot.com.

Ranabhai began to spin his camel fiber using a small stick and rock he picked up from the ground.

Photos courtesy of Avani Varia

India's Vanishing Traditions

Spinning Camel with Nomadic Rabaris

AVANI VARIA

I'm glad to share one of the stories from my ongoing research into handspinning in India, where I met Mãldhari men who make handspun yarn from fiber of their own livestock (camels and goats) in the wilderness of the Kutch region in Gujarat. In the summer of 2015, I went to the Kutch region that is popular for its diverse textile and nontextile handicrafts. The purpose of my visit was to meet traditional handloom weavers and document their knowledge about handspun yarn.

While I was speaking with the weavers, they received a message that a Rabari family was grazing their camels near Ukheda village in Nakhatrana Taluka, which was about 70 kilometers from where I

was. Before that day, I had heard of handspun camel hair yarn but had never met an artisan myself.

The Rabaris are an indigenous tribal nomadic community of camel, goat, and sheep herders who live throughout northwest India. Mãldharis are a tribal herdsmen community in Gujarat, originally nomads, some of whom are of the Rabari caste. The meaning of *mãldhari* is keeper of the animal stock. *Mãl* literally means goods or wealth. Animal-rearing communities in Gujarat refer to their animals as mãl, be they cows, buffaloes, sheep, goats, camels, or other animals. The Rabaris were fully nomadic in the past, but most are now seminomads, moving from their villages according to the seasons and availability of food for their animals.

IN SEARCH OF SPINNERS

I made the decision to drive to the location with local weaver Dinesh Vankar, who would help me communicate in the local dialect. Our car dropped us at a point where we would meet someone who would guide us the rest of the way. With an Indian cowboy personality and a happy, welcoming smile, Ranabhai greeted us on the road where our car dropped us off. From there, he walked us a few kilometers into the wilderness, where we met other male family members who were with their camels.

રાણા મમુ રબારી (Rana Mamu Rabari), whom I know as Ranabhai, with his son Shankar and his uncle had been grazing their 70 camels in the Rata-Talavadi area for the past few days. I felt privileged to meet three generations of men in one place and to see their lifestyle and traditional practices, including the making of handspun yarn and ropes from the hair of the animals they breed and raise. This practice was very much an integral part of their traditional lifestyle.

We sat in the middle of the wilderness and introduced ourselves to one another. The conversation started, and for a few hours, they spoke about the

Grazing camels

Uncle spins as the group chats over chai made with camel's milk.

Avani tries spinning camel hair with Ranabhai's spindle.

In the spirit of sharing, Avani pulls out a takli to demonstrate.

The magic I witnessed in the middle of wilderness: he picked up a stone and a small wooden stick from the ground; using them with camel hair, he started making yarn.

lifestyle changes they had witnessed for nomadic Mãldharis. I discussed my initiative, *Chalo Charkho Ramiye*, that seeks to revive handspinning in India. I fondly showed them my metal takli (Indian spindle) and demonstrated handspinning with cotton fiber.

Upon seeing the takli, Ranabhai said, "Oh, this is *chakardi*. We also have a tool similar to this at home that's made of wood, but it is big in size. We use it for making yarn from animal hair and also ply the yarn while we are in the jungle grazing our animals."

Since his spindle was not with him, I asked, "How will I see you spinning when your tool is not with you?" He looked at me and smiled, then opened a handmade bag created with yarn he had spun from camel and goat hair. He took out some camel hair that was hand-cleaned, carded, and prepared to spin while he was on the move grazing the camels.

To my surprise, he picked up a stone from the ground where we were sitting and a small stick and the *vidhi* (વિહી is the local name for prepared camel hair sliver) and started spinning yarn.

Dexterous at making handspun yarn, he continued the conversation with us, while happily showing his spinning skills. Ranabhai said that the men of the family make yarn while they are grazing livestock in the jungle, whereas women of the family make handspun yarn on a charkha (*Bardoli Charka*) at home. He said that these days, they can buy things for daily use from shops nearby, so this skill is dwindling. In the past, the craft of making handspun

Three generations (*from left*): Ranabhai, his son Shankar, and his uncle

The men of the family make yarn while they are grazing livestock in the jungle, whereas women of the family make handspun yarn on a charkha at home. The craft of making handspun yarn was a core part of their lifestyle.

yarn was a core part of their lifestyle. According to Ranabhai, they made plied yarns for daily use, such as rope to fetch water from the well; rope for the *khaat* (an Indian light bedstead, also called a *charpoy*); bags of different sizes and shapes for carrying goods; camel decor, such as camel belts; and more. The local weavers would use handspun yarn for making floor rugs and blankets. But in the past few years, the demand for handspun yarn has decreased significantly.

Ranabhai said that the younger generations are not taught—or don't like to learn—handspinning because it has become irrelevant in today's lifestyle. However, in recent years, there has been a little interest generated for handspun yarn by nonprofit organizations working for the revival of handicrafts and by international tourists who buy handspun yarn and products. Within this changing scenario, the nomadic communities continue to alter their lifestyle, skills, and crafts.

THE FUTURE OF HANDICRAFT

The functional products made with handspun yarn for and by the nomadic communities are nowadays becoming high-end collector's items, expensive garments and accessories, or home decor products. The changing purpose of this age-old skill of handspinning and the handcrafted yarn itself is a challenge to define. What compensation are the makers getting for their time and

Chalo Charkho Ramiye: *A Contemporary Charkha Movement*

This initiative is about the revival of handspinning in India through a holistic approach. The Indian spinning wheel, or charkha, is generally associated with India's independence movement and Mahatma Gandhi, but for me, it all started with a passion to revive an indigenous craft that is fast becoming almost extinct in my country.

In 2013, we began meeting once a month and soon started weekly programs in addition to demonstrations and spinning classes. I also initiated Yarn Makers Guild India. My focus is on hands-on spinning experience and developing educational materials. I felt it was much needed to have a publication on handspinning from an Indian perspective, so I authored a book on the subject.

My experience as both an artist and advocate demonstrates that to revitalize arts and culture, we need to live it. This can be done by giving exposure and experience to local youth and children, as they are the future with the capacity to either pursue or turn away from their heritage.

Learn more at avnivaria.com.

Learn to spin a box charkha. *Chalo Charkho Ramiye: A Contemporary Charkha Movement*. Navajivan Trust, 2020. Available in Gujarati, Hindi, and English.

Read a review of Avani's handspinning book at LT.Media/Avani.

A final goodbye

Villages were self-sufficient, with skilled people producing food, clothing, and shelter from local resources; there was a clarity in local economics. Heritage arts are becoming a mode of skilled labor that results in products that move outside of the local economy.

effort in actively contributing to the continuation of this dwindling heritage skill in India?

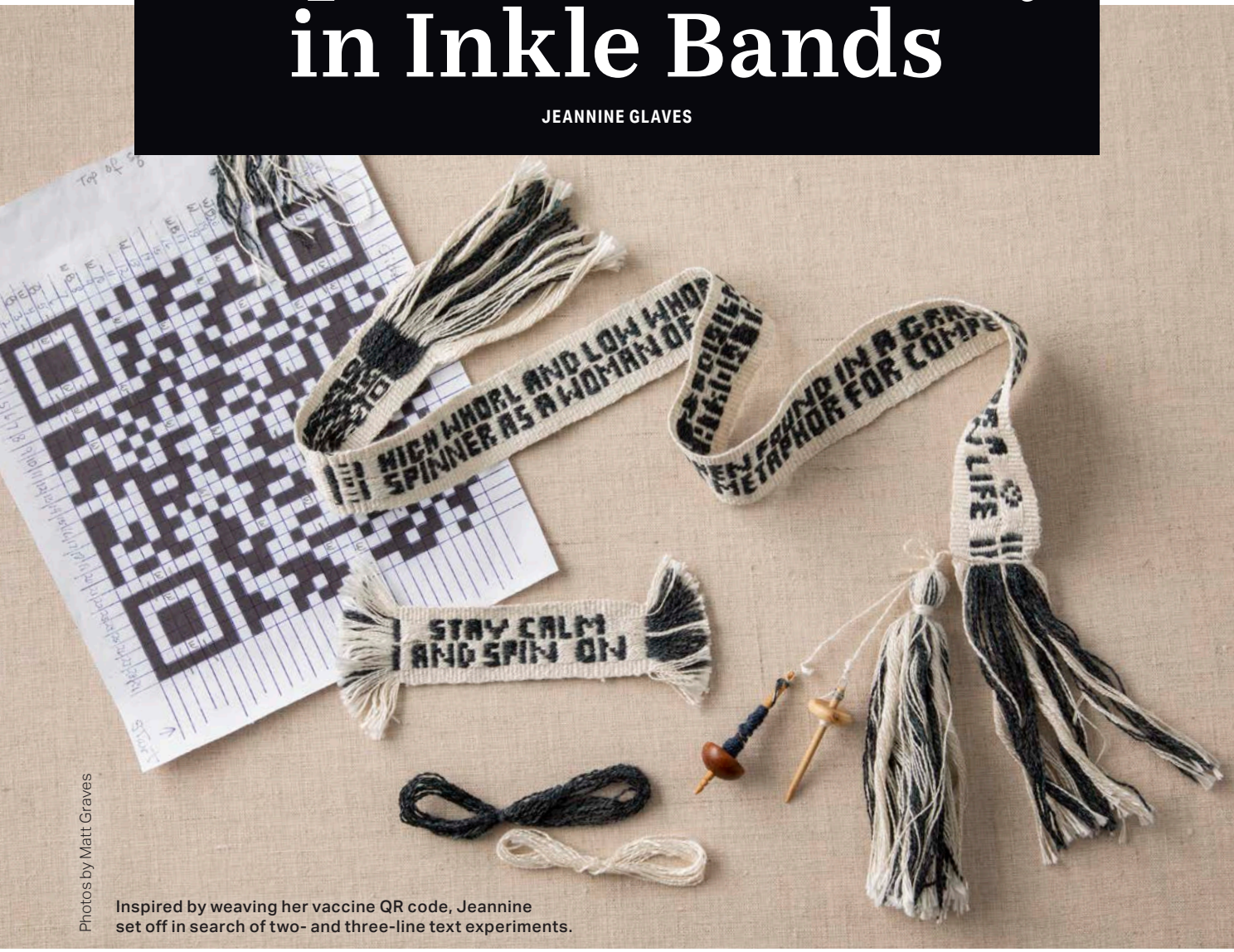
I value the traditional practices of village life that were sustainable and environmentally friendly. The villages were self-sufficient, with skilled people producing food, clothing, and shelter from local resources; there was a clarity in local economics. With modern developments and changing lifestyles in India, heritage arts are becoming a mode of skilled labor that results in commercial products that move outside of the local economy. In doing so, these handmade objects, originally created as the functional objects of daily life, take on new meanings and purposes. Change is inevitable, but my heart says let us keep the age-old handmade practices relevant to contemporary lifestyle in a way that preserves the diversity and visual identity of art and craft. I advocate for 70 percent consumption of domestic handmade products.

For me, this day spent sitting on a blanket, spinning, and drinking chai, while the camels grazed nearby, was an eye-opener that added a new dimension to my research and initiative. I am now exploring handspinning communities in other parts of India and their use of local natural-fiber resources. After such an amazing day with three generations of Rabari men and their Gujarati hospitality, it was hard to say goodbye.

Born in a traditional potter's family in the Gujarat state in India, **Avani Varia**'s personal and professional life is dedicated to heritage arts. She believes in living a sustainable lifestyle that can become a modern economy that enables the revival of traditional hand skills. Her projects and initiatives are a combination of research, documentation, design, education, and tourism. Learn more at avnivaria.com and Instagram @charkhaindia.

A Spinner's Journey in Inkle Bands

JEANNINE GLAVES



Photos by Matt Graves

Inspired by weaving her vaccine QR code, Jeannine set off in search of two- and three-line text experiments.

About 30 years ago, I started to explore inkle weaving with the goal of giving respect to a weaving technique that was considered, at that time, to be unchallenging. I started inkle weaving by experimenting with color play and simple threadings. My work progressed as I tried different techniques: combining thread sizes; trying various edge finishings; and adding texture with beads, tassels, feathers, or anything else that caught my fancy. I soon discovered that inkle was my weaving love.

Some threadings allowed for pick-up techniques, which make use of pattern threads and background threads, and a second set of heddles expanded my design options further. Inkle bands constantly challenge me to improve my spinning and to try something different while building on past projects. Over the years, I have become more successful with the yarns I design and spin for projects I have in mind.

OH, MY WORD!

Handwoven magazine had an article on letter pick-up (Ann Brophy, "Letters from an Inkle Loom," May/June 1999, pp. 38–41) that started me on yet another aspect of inkle weaving: creating text. Using only my handspun, I started weaving name tags, then short sayings with humor or an uplifting message. The bands have become longer and longer over time, up to 21

yards or more. During the COVID-19 shutdown, they became a way to journal my experience.

One of the first lessons the bands taught me was the importance of color. Our typical reading material is presented with a light background and dark letters. This seems to work best with the bands. Color value is also important. It doesn't matter how different the background and pattern colors look. If their values (on the gray scale) are close, the band will be hard to read because the words will fade into the background. To check color values before weaving, look at your yarns through an 8-by-10-inch red plastic sheet. Other easy ways to check gray scale are to create a black-and-white image on a copy machine or use a camera (such as the one on your phone) to take a picture with a black-and-white filter.

The next thing the bands taught me about was my preferred fiber choice. After raising 500 silkworms one year and spending a lot of time at my spinning wheel, I now turn to silk as my fiber of choice. A smooth, compact yarn of 100% bombyx or tussah silk makes a great background. I sometimes also use a light-colored blend of silk with another luxury fiber. Consistent, smooth blends of dark-colored wool and silk or other luxury fibers are good choices for the letters. The wool lets the yarn bloom a bit for nice solid letters, and the silk adds the luster that I like.

Twist was yet another lesson. A soft-spun yarn tends to blur letter lines. I spin worsted and go for a hard twist of 45 degrees or more. My fingers tell me when the twist is what I want. The resulting singles have soft corkscrews when the tension is relaxed. If sampling a new blend, I suggest spinning a tight ply that will show letters clearly when woven.

While homebound during COVID-19, I looked for something new to try with the bands. I thought it

From top: "My body is a temple: ancient, crumbling, cursed, and haunted," and "As a spinner with my spindle, I choose to take up a slow art and put the noise of the machine age in the past. What I do is healing and will take me back to nature and peace." Jeannine's handspun yarns sit in front.

A high-twist silk in a light color creates the perfect base for a dark silk/wool blend that will bloom and fill in for readability.

would be fun to weave my vaccination QR code. The code pattern needed 29 pairs of warp threads. A pattern pair consists of a light background and a dark, heavier pattern thread. Since the QR code would be square, it would take only 29 pattern wefts to weave the code, leaving a lot of warp on the loom, so I decided to add some lines of text.

The wide band challenged me to design two lines of letters that would, together, require 30 pattern pairs of warp. I needed to transition from 29 pattern pairs of warp for the code to 30 pattern pairs for two lines of text. To make the band easier to read, I also wanted to separate the two text lines with four background warp threads. The extra border threads would allow me to shift pattern threads while maintaining tension integrity. Aquilina Castro, a weaver from Peru, taught me how she repairs a broken warp thread (see Resources). Using this technique, I was able to weave the code, then move background and pattern warp threads to weave two lines of text.

The QR-code band inspired my next challenge: a warp with three lines of text. No warp threads would have to change during the weaving, but the pattern draft would need careful attention so that all three lines would start and stop at the same place. The saying could be longer but not so long that it couldn't be read easily and not so wide that my loom and hands could not hold and manipulate individual threads. After the planning and setup, I found it was great fun to weave.

Sometimes you will never know the value of a moment until it becomes a memory. It doesn't matter if I use my bands in other projects or not. They have already become a touchstone to memories reminding me of a time, a place, or people.

Resources

Glaves, Jeannine. "But What Are You Going to Do with All Those Bands?" *Spin Off* (website), August 18, 2021. spinoffmagazine.com/but-what-are-you-going-to-do-with-all-those-bands.

Jeannine Glaves has been spinning and weaving for a long, long time and has received numerous awards and recognitions. She feels handspun, handwoven bands are the natural way for her to journal. Creating and teaching is her way of paying rent for her time on earth.

The textile fragment on the cover of Elizabeth Wayland Barber's famous book inspired Berna to get spinning.

Photos by Matt Graves unless otherwise noted

Iron Age Inspiration

A Hallstatt Salt Mine Shawl

BERNA LOWENSTEIN

Like many spinners and fellow fiber lovers, I fell in love with the fabric shown on the cover of *Prehistoric Textiles* by Elizabeth Wayland Barber. This important book has been a touchstone for those interested in prehistoric textiles since it was published in 1991. The memorable textile shown on the cover was discovered in Austria, preserved in the Hallstatt salt mine for 3,000 years.

The more I learned about this ancient fragment of woven cloth, the more interesting it became to me. The scrap of wool fabric had been found wrapped around an axe handle, so it had already been recycled when it was finally lost in the mine 3,000 years ago. The fabric was probably woven on a warp-weighted loom in olive green and chocolate brown—a Celtic plaid. Was it originally made to be a blanket, a shawl, a cape, or maybe a kilt? Despite all of these unanswered questions, I was drawn to it. My own DNA testing shows that my ancestors would have lived in that area of the world during that time. Could one of my ancestors have made or worn a fabric like this? It felt like an ancient memory.

LOOKING BACK, MOVING FORWARD

I wanted to wear this fabric myself. I knew I was not going to re-create the fabric for a museum, which freed me to reinterpret the fabric for my own use. I decided that a simple rectangular shawl would show off the herringbone plaid to best effect and would be a garment that I would wear often.

Researchers indicate that the original fragment was all wool, but I wanted to create cloth that was soft enough to wear next to my skin. I chose several modern fiber blends to spin for warp, including a Merino/silk/yak sliver from Greenwood Fiberworks and a Polwarth/silk sliver from Three Waters Farm. I also carded batts of brown Merino wool from Clemes & Clemes Good Clean Fiber with natural brown yak down from Greenwood Fiberworks and natural brown peduncle tasar silk sliver from Treenway Silks. The silk added strength to the fine, smooth yarns I spun, which was important for their use as warp on a floor loom.

My first challenge was color. The original chocolate brown could have been from natural black sheep. I opened up the locks of the brown Merino on my Clemes & Clemes Lock Pop and blended them with yak down and peduncle silk using cotton cards. Instead of making rolags, I lifted the carded fiber off the handcard and used it like a miniature batt.

High-twist two-ply yarns designed for weaving (*from top*): organic Polwarth/silk top in the Boreal Forest colorway from Three Waters Farm used in the warp and Polwarth/silk in olive green from Greenwood Fiberworks used as weft

Berna wove a generous sample to check sett, beat, and pattern using assorted yarns sampled for this project.

The green color of the Hallstatt textile would likely have required two different dyebaths. White wool could have been dyed yellow with weld and then boiled in an iron pot, which would have turned it olive green. With this method—then and now—the iron in the pot "saddens" the color, shifting bright yellows to khaki greens. That extra effort required to make green would have meant that the original fabric was very special. For my own work, I knew I was not going to dye my yarns; I decided long ago to do only the parts of craft I enjoy and to buy the rest from other artisans.

The organic Polwarth/silk top from Three Waters Farm was a green colorway called Boreal Forest. It combined both warm and cool green tones, which gave a mottled, slightly faded look to the warp yarns. For the weft, I used an olive-green Polwarth/silk sliver from Greenwood Fiberworks.

My second challenge was spinning a fine two-ply yarn that could be used for both warp and weft on my eight-shaft floor loom. I spin to weave a lot, but I tend to let the fiber draft itself to the size it wants; these all spun easily into fine singles. I was actually surprised that the Merino-based slivers and the Polwarth-based slivers spun up to the same thickness despite palpable differences in fiber character.

I spun all singles with Z-twist using a supported backward draw. I used my SpinOlution Bullfrog with the drive band on the center whorl (ratio of 8:1) and the regular hook orifice. Since switching to the Bullfrog as my main spinning wheel, I've had to change my style of spinning. On my traditional spinning wheel, I would treadle heel to toe with one foot and twist my body toward my left side to do a long draw. After a couple of

I spun all singles with Z-twist using a supported backward draw.

To save the "good" yarn, I wove a sample with 2-inch stripes of a variety of yarns I'd spun, since I wasn't sure which yarns I'd use in the actual shawl. This allowed me to make a large sample while not using much of any one yarn.

hours, my ankle and my side hurt. In comparison, the Bullfrog forces me to use two feet and just rock them side to side, which is very easy on my ankles.

Because I cannot spin off to the side of my body when using the hook orifice without the yarn falling out of the hook, I must draft straight from the hook toward my navel. I use a continuous, supported backward draw. I've discovered that, for my body, this is very ergonomic and comfortable to do. I can spin for hours with no pain. And since I'm spinning a smooth, fine worsted yarn, it's the perfect technique.

I used a strong S-twist to create two-ply yarns with a resulting thickness similar to 5/2 pearl cotton (24 wraps per inch) and a 50-degree ply angle. Ideally, I would have woven the yarn directly after plying because the yarn has no stretch or bounce to it off the bobbin, which makes it perfect for warping. However, because the yarns all had different fiber contents, I wanted to wash them to allow for preshrinking and slight fulling for extra strength. Washing also puffed them up and made them a bit bouncy, which is perfect for knitting but not ideal for warping. However, I was concerned that I would get seersucker fabric if I waited to wash the fabric until after it was off the loom, so I was glad that I prewashed all the yarns.

TO THE LOOM

My next challenge was weaving, and I kept to the weavers' mantra, "Sample, sample, sample." While I hate to waste my precious handspun yarn on a woven sample, it's better to find out before starting the project that something will not work. To save the "good" yarn, I wove a sample with 2-inch stripes of a variety of yarns I'd spun, since I wasn't sure which yarns I'd use in the

Photo by Berna Lowenstein

The first few inches of weaving

Photo by Gregory Fitzgibbons

Berna weaving the shawl

Berna wove a weft-faced basketweave at the beginning and end of the shawl to mimic the woven band that often serves as a header on a warp-weighted loom.

actual shawl. This allowed me to make a large sample while not using much of any one yarn. I actually liked the mishmash of yarns in the sample weaving, and I plan on making another shawl using all of these yarns.

I threaded the sample on my eight-shaft Gilmore floor loom with various 2/2 twills. I used an 8-dent reed and threaded 16 ends per inch in a point twill to create a zigzag pattern. The sample was 13 inches wide in the reed and 1½ yards long. I was able to weave the sample for a length of 19 inches. Using a temple (stretcher) to keep the fabric a consistent 13-inch width during weaving kept the selvedges from abrading, so I had no broken warp threads. I beat very lightly and loosely to keep a 45-degree angle on the twill line, and using a large plastic 45-degree triangle allowed me to keep checking the twill angle. Once the fabric was cut off the loom, I washed it and dried it flat before using a steam iron with a damp press cloth. The sample shrinkage was 13.5% in width and 20% in length.

Finally, it was time to dress the loom for the full-size shawl. I wove weft-faced basketweave at the beginning and end of the shawl to mimic the woven band starting border that would occur on fabric from a warp-weighted loom. The shawl warp was 26 inches wide and 4 yards long, which was way more warp than I needed since I only wove the shawl 96 inches long. The thrums of my precious handspun warp will not go to waste, however, and I plan to tie them together for use as weft in another project: Japanese-inspired *zanshiori*, cloth woven from leftover threads.

To finish my shawl, I twisted the fringe in groups of four warp ends. After washing and pressing, the

For the full-size shawl, I wove weft-faced basketweave at the beginning and end of the shawl to mimic the woven band starting border that would occur on fabric from a warp-weighted loom.

final fabric was 22½ inches wide by 80½ inches long. Shrinkage was 13.5% in the width and 15.5% in the length. The shawl is soft and snuggly, and I love it.

INTERPRETING THE PAST

Our Iron Age ancestors were skilled artisans, despite what we may be led to believe. The Hallstatt salt mine finds show the site to have been the center of thriving businesses and community life. The people were fashionably dressed and had a variety of businesses that traded goods in Europe, Africa, and Asia. Every artifact that is uncovered tells us a bit more about the lives these people led, deepening the connections that bind us.

Resources

Barber, Elizabeth Wayland. *Prehistoric Textiles: The Development of Cloth in the Neolithic and Bronze Ages, with Special Reference to the Aegean.* Princeton, NJ: Princeton University Press, 1991.

Berna Lowenstein learned to knit at age five in school in England and has been addicted to anything that can be done with yarn ever since. She taught herself to spin and weave at age 30, and when Berna attended her first spinning and weaving guild meeting, she knew she had found her people.

Berna wearing the finished shawl

Photo by Gregory Fitzgibbons

Gather your scraps! This pair of mittens was knitted with one solid MC (Merino/silk/yak) and a different CC for each stripe or block row.

Photos by Matt Graves unless otherwise noted

Ilisha's Mittens

SIVIA HARDING

I created these scrappy mittens for a dear friend with cold hands. Sometimes—especially during these difficult years—the best solace we can offer as knitters is cozy warmth. Our scrap yarns and precious leftovers are often quite personal, each offering memories of previous projects. Pulling scraps into one project creates a one-of-a-kind textile for those special people in our lives.

These mittens can be knitted with any configuration of colors. Work them up in only two solid colors or in a combo of solids and handspun gradients, or change the MC and CC with every pattern repeat. The DK or light worsted-weight yarn can be substituted with two strands of any fingering-weight yarn held together as needed. Here's an opportunity to use up all the little bits of leftover yarn in your stash!

MATERIALS

Yarn 60 yd MC and 50 yd total CC per mitten in your choice of colors (see Notes); DK or light worsted weight (or two fingering-weight yarns held together).
Needles Size 6 (4 mm) (see Notes). Adjust needle size if necessary to obtain the correct gauge.
Notions Markers (m); tapestry needle; smooth waste yarn to hold thumb stitches.
Gauge 22 sts and 35 rnds = 4" in Colorwork Rib pattern.
Finished Size 7¼" circumference, 10½" height.

Visit **spinoffmagazine.com/spin-off-abbreviations** for terms you don't know.

Notes

- These mittens are worked in the round from cuff to tip.
- Use the needles that you prefer for working a small circumference in the round: double-pointed, two circulars, or one long circular for Magic Loop.
- Join a new yarn in one of two ways as follows: When joining at the beginning of the round and immediately slipping the next stitch, attach new yarn to the previous yarn with an overhand knot, then continue. Otherwise, make a slipknot with the new yarn, tighten around needle, remove from needle, insert needle into first stitch of round, and pull slipknot through as a stitch.
- Slipped stitches create a float on the wrong side of the piece. Keep an easy tension to avoid puckering the fabric.
- I used the same MC throughout each mitten, but feel free to change MC as well as CC yarns as you like! Any number of yarn colors can be used for color

Sivia used a stash of beautiful cashmere scraps to create Ilisha's warm mittens. The cashmere was plied from raveled sweaters that were re-plied and overdyed in vibrant, cheerful colors.

Photo courtesy of Sivia Harding

Sivia's delightful blend of 2×2 rib, stripes, and spots creates the perfect framework to blend various yarns and colors.

pops and stripes. Don't worry if you don't have the same colors for the thumb as for the mitten hand. It will only add to the charm of the scrappy mitten!

MITTENS

With MC and using a stretchy method (such as the German Twisted method), CO 40 sts. Place marker (pm) and join in the rnd.

Work in k2, p2 rib for 1".

Colorwork Ribbing

Work Rnds 1–12 of Colorwork Rib chart 2 times, then work Rnds 1–3 once more.

Thumb Gusset

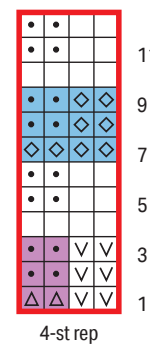
Left mitten only:

Next rnd (Rnd 4 of Colorwork Rib chart) Work 1 st, pm for Gusset chart, work Gusset chart over 0 sts (inc'd to 2 sts), pm for Gusset chart, work in patt to end of rnd—42 sts; 2 sts between m.

Right mitten only:

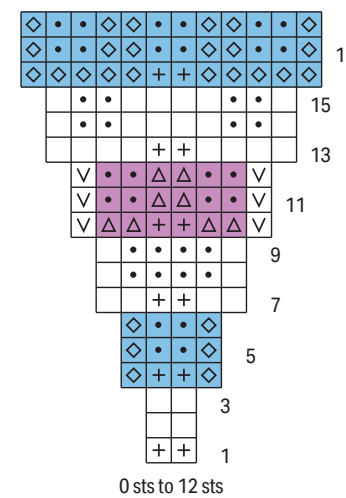
Next rnd (Rnd 4 of Colorwork Rib chart) Work 21 sts, pm for Gusset chart, work Gusset chart over 0 sts (inc'd to 2 sts), pm for Gusset chart, work in patt to end of rnd—42 sts; 2 sts between m.

Colorwork Rib



4-st rep

Gusset



0 sts to 12 sts

Key

- knit with MC
- knit with CC1
- knit with CC2
- purl with MC
- purl with CC1
- purl with CC2
- sl 1 pwise wyb
- with MC and using the backward-loop method, CO 1 st
- with CC1 and using the backward-loop method, CO 1 st
- with CC2 and using the backward-loop method, CO 1 st
- pattern repeat

Both mittens:
Cont in patt through Rnd 18 of Gusset chart (Rnd 9 of Colorwork Rib chart)—52 sts; 12 sts between m.

Hand

Work Colorwork Rib chart over all sts until piece measures 6¼" from CO, or slightly above crook of thumb.

Left mitten only:

Next rnd Place 14 sts onto waste yarn holder for thumb (removing m), using the backward-loop method, CO 2 sts, work in patt to end of rnd—40 sts rem.

Right mitten only:

Next rnd Work in patt to 1 st before m, place next 14 sts onto waste yarn holder for thumb (removing m), using the backward-loop method, CO 2 sts, work in patt to end of rnd—40 sts rem.

Both mittens:

Make a note of next chart rnd to be worked.

Next rnd Work 20 sts, pm, work to end of rnd.

Work even in patt until piece measures 9¼" from CO, or to top of pinky finger, ending with Rnd 3, 6, 9, or 12 of chart.

Shape Tip

Dec rnd *Ssk, work in patt to 2 sts before m, k2tog; rep from * once more—4 sts dec'd.

Next rnd *K1, work in patt to 1 st before m, k1; rep from * once more.

Rep last 2 rnds 4 more times, then work dec rnd once more—16 sts rem; 8 sts between m.

Turn mitten WS out. BO all sts using three-needle BO.

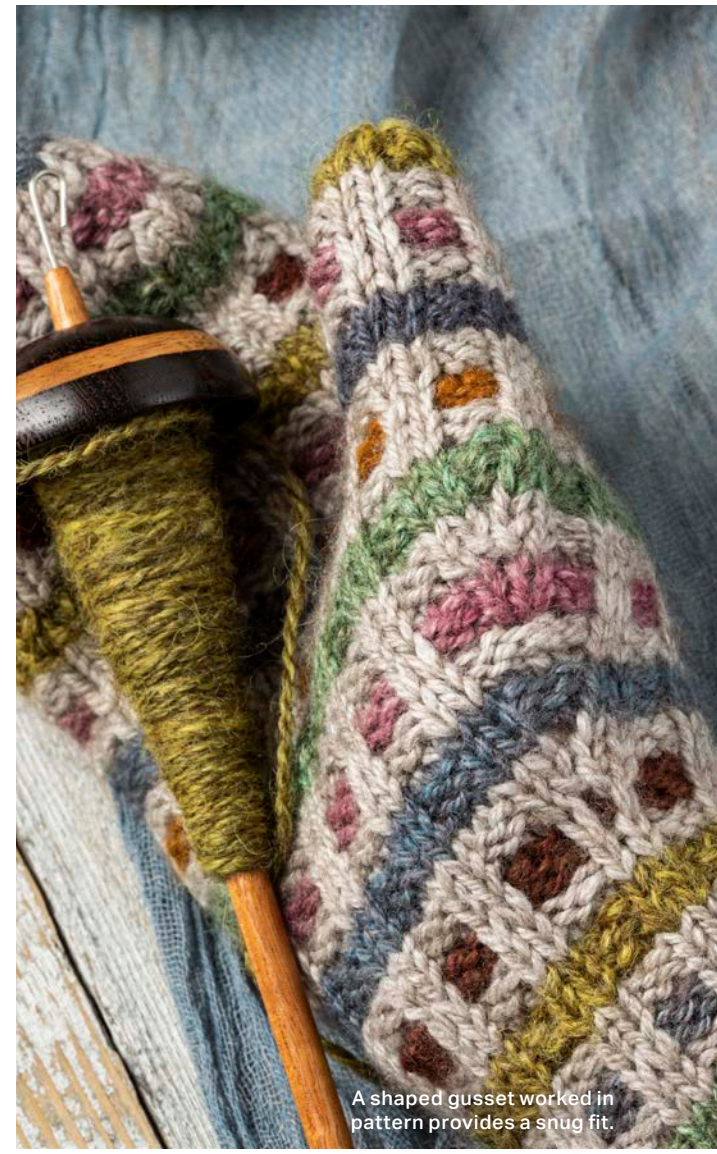
Thumb

Turn mitten RS out. Return 14 thumb sts to needles. Beg with chart rnd noted after placing thumb sts on holder, work 14 sts in patt, then pick up and knit 2 sts along CO edge—16 sts total. Pm and join in the rnd.

Cont in patt until piece measures 1¾", or ½" less than desired finished length, ending with Rnd 3, 6, 9, or 12 of chart.

Dec rnd With MC, [k2tog] 8 times—8 sts rem.

Dec rnd [K2tog] 4 times—4 sts rem.



A shaped gusset worked in pattern provides a snug fit.

Break yarn, leaving an 8" tail. Thread tail onto tapestry needle and draw through rem sts. Pull tight to gather sts and fasten off on WS.

FINISHING

Weave in ends. Use tails to close any gaps, such as at base of thumb.

Soak mittens in lukewarm water with a few drops of wool wash for 20 minutes. Lift carefully and roll in a thick towel to remove most of the moisture. Pat out and lay flat to dry.

Sivia Harding has been producing beautiful knitting patterns since about 2002. She loves to play with shape, color, and texture and is known for her work with beads. She has been widely published in books and collections, including Jared Flood's Wool People series; Clara Parkes's books *The Knitter's Book of Wool, The Knitter's Book of Yarn,* and *The Knitter's Book of Socks*; and on Ravelry as Sivia Harding Knit Design.

Blending for Bounce

Alpaca Mitts that Fit

MEAGAN CONDON

After exploring a range of options, Meagan and her partner settled on a 40/60 blend of Cormo to alpaca for a set of fingerless gloves.

Photos by Matt Graves

No one likes saggy socks. My partner's favorite socks and gloves are made with alpaca fiber, but there's one problem he complains about. Over time, they all lose their shape and sag. The problem is that alpaca fiber doesn't have much memory. "Memory" is how spinners often describe a fiber's ability to return to its original size and shape after it has been stretched. Alpaca has lovely drape and is a wonderfully warm fiber, but it doesn't have the crimp and memory of fine and medium wools. How can we create yarns that make use of alpaca's warmth and silkiness for socks or gloves, which need to hug the shape of a hand or foot?

I use a surprisingly simple solution: alpaca blends. When blending two different fibers, they each bring unique qualities to the finished yarn or textile. For fingerless gloves, I want the warmth and feel of the alpaca, but I need the yarn to be able to hold its shape and have some stretch. After some stash diving, I found the perfect candidate: Cormo. This Merino cousin is known for its fine, elastic wool. My stash Cormo was very close in micron count and staple length to the alpaca I planned to use.

I'm going to let you in on the secrets to my most effective blends: choose fibers with roughly the same micron count and staple length and thoroughly combine them into a homogeneous preparation. When you blend fibers that have different staple lengths, the finished yarn can have a tendency to abrade, shed, or pill. This is because the shorter fibers can be difficult to secure within the yarn structure. When using blends that are not thoroughly mixed, handspinners often find it difficult to achieve consistency and balanced twist because of the different fiber characteristics involved.

This isn't to say you can't blend dissimilar fibers. We do it all the time. One way to deal with this challenge is by spinning high-twist yarns. This works particularly well for weaving yarns. Another approach is to enjoy the textured and lively result of a lightly blended prep, such as a batt containing finewool, mohair, and silk noil.

Another example of common blends that break the "rules" are silk blends. Bombyx is typically finer and longer than the accompanying wool in a spinning blend. Yes, a silk blend will likely abrade more easily than a blend with more similar fibers. Like everything in the fiber world, what you choose depends on the end use, the qualities you're looking for, and what compromises you are willing to live with. Making something to wear for the season may involve different choices than making something to pass down as an heirloom.

The secret to my most effective blends: choose fibers with roughly the same micron count and staple length and thoroughly combine them into a homogeneous preparation.

AN ALPACA CHALLENGE

Fingerless gloves are such a fun and useful project for handspun, but we put them on and pull them off over and over, subjecting them to quite a lot of stretching and abrasion. To create alpaca hand coverings that keep their shape, I decided to add some crimpy finewool for added resilience. However, the more wool added to the blend, the less the alpaca's features would shine through in my finished yarn. To determine what percentage was best for my purposes and how I wanted to blend, I began by making test blends and swatches for comparison.

Swatching is always important, but it is worth saying again in regard to blending different fibers. *Swatch and sample!* It can be difficult to know exactly how two fibers will behave together until you test them. Before you start, it can also be helpful to list the qualities each fiber could potentially bring to the blend so you have an idea of what to look for when you sample.

I tested blends of 10/90, 25/75, 40/60, and 50/50 Cormo to alpaca to see what my partner would like best. I also included a 100% Cormo and a 100% alpaca swatch for comparison. For a 1-ounce (28-gram) sample batt of the 10/90 blend, I weighed out 3 grams of Cormo and 25 grams of alpaca. Measuring precisely and recording your process is especially important to later match a particular blend you liked.

Time to blend! My favorite way to achieve a homogeneous blend is to use a drumcarder. Handcards work, but the number of passes it takes can be taxing to my body. Combs can make a beautiful, worsted blend, but only if the fibers are the same staple length—if one fiber is longer than the other in the blend, the longer fibers will be drawn off the comb first, and instead of a blend, you'll end up with a sliver that has longer fibers at one end and shorter fibers at the other.

When I am planning to drumcard fleece, I always scour and open the locks before putting them onto the drumcarder. It not only helps the fiber blend more easily but also puts less stress on my tools. My favorite tool for opening scoured locks is the Clemes & Clemes Lock Pop, but any flicker brush will work.

Remember, you're blending for the qualities, not for the color, and you want these two fibers to behave as one.

Also, when blending fibers on a drumcarder, remember that many carders have more than one drum ratio. The ratio represents how many times the big drum goes around for every time the small drum goes around. On a carder with a 4:1 ratio, the large drum turns four times for every time the small drum goes around. A higher ratio is usually going to blend better, so keep that in mind when you begin sampling.

To create smooth blended batts, start off with a fiber sandwich. When I say fiber sandwich, think delicate, cucumber sandwich, not a 6-inch high hoagie with all the trimmings. Less is more for this type of blending. I create a thin layer of alpaca, then a thin layer of Cormo, followed by another layer of alpaca. Alpaca, my dominant fiber, is going to be the bread of my sandwich, since there will be more of it to blend. The sandwich should be as wide as the drumcarder bed and as long as one staple of fiber. Slowly allow the drumcarder to draw the sandwich into the carder and pass it on to the large drum. Only 4,000 more sandwiches to go! Once all your fiber is on the large drum, you have completed the first pass.

Remove the batt and run it back through the carder by layering the fiber thinly on the intake tray. It will take several passes through the carder for the two fibers to become fully incorporated. Patience pays dividends. I know that after one or two passes, the batt has lovely streaks of each fiber, but don't stop! Remember, you're blending for the qualities, not for the color, and you want these two fibers to behave as one. You'll need to judge for yourself how many passes to make. In my case, I stopped after five passes. The Cormo and alpaca were both very fine, and the carding process began to create nepps after the fifth pass. In some cases, it may take up to eight or nine passes, depending on the fiber and the particular drumcarder. Record the number of passes along with your fiber content to help you reproduce a particular yarn.

Cormo and Alpaca Samples

Note: Two different alpaca fibers were used, one lighter than the other.

1. **100% alpaca**
2. **10/90 Cormo/alpaca**
3. **25/75 Cormo/alpaca**
4. **40/60 Cormo/alpaca**
5. **50/50 Cormo/alpaca**
6. **100% Cormo**

My partner chose the 40/60 blend because he could practically stretch the swatch to twice its width and watch it return to its original shape—that brought him joy.

Sampling

Once I had all my sample batts, I spun them woolen with a supported long draw and made a two-ply yarn for each sample. If you look at the skein of the 100% alpaca next to the 100% Cormo, the Cormo skein looks much shorter than the alpaca skein, even though they were wrapped on the same niddy-noddy. This is because the Cormo is so much more elastic than the alpaca that the yardage is significantly impacted.

I created knitted swatches in the same stitch pattern I would use in my finished project, the Knitted Spiral Fingerless Gloves, which can be found in my Ravelry shop. This motif has a lot of stretch to it, too, and pairing that with a nice, bouncy yarn was exactly what my partner and I wanted for maximum stretchiness in his new gloves.

All of the blends were much more elastic than the 100% alpaca yarn, even the 10/90 Cormo/alpaca blend. The 10/90 blend was my favorite, as it still had loads of the lovely fuzziness of the alpaca. However, my partner chose the 40/60 blend because he could practically stretch the swatch to twice its width and watch it return to its original shape—that brought him joy. The cool thing about creating your own fiber blends is that there isn't a right or wrong choice. I could easily have made a matching pair of fingerless gloves for myself with the 10/90 blend and both would have been wonderful to wear. As it was, I could fit both my hands in one of his new gloves without it losing its shape. That's exactly what he was looking for.

Remember how I said you can match a blend if you record your percentages and the number of passes through the carder? Can you tell from the photo (page 56) that I ran out of yarn three quarters of the way through the second glove and had to blend up an extra batt? I couldn't tell without looking for the woven-in ends. A good blend is a thing of magic.

Meagan's white Cormo and brown alpaca control samples have significantly different elasticities after wet-finishing. Both were skeined on the same niddy-noddy, but you can see that the Cormo's elasticity has resulted in a shorter overall length.

Meagan Condon is a librarian and fiber artist with extensive experience as both. Her areas of focus are microscopy of fiber, breed studies, plant fibers, natural dyes, the digital community, and the science behind textiles. You can follow her at luthvarian.com.

Targhee explorations. *Top row from left:* unwashed locks, washed locks, locks with flicked tips before washing. *Bottom row:* Madeline's chain-plied Targhee and a cable-knit swatch

Photos by Matt Graves unless otherwise noted

Targhee
A Resilient Western Wool

MADELINE KELLER-KING

When I think of the plains of central and eastern Montana, two very different pictures come to mind: the golden, rolling fields of cultivated wheat, and their wild counterpart, the more rugged landscape of the Great Northern Plains. While much of this prairie landscape is grassy, it's also scrubbier, craggier, drier, and windier than the mountainous western part of the state where I live today. When I was growing up in Helena (central Montana), there were windy autumn and winter days when I was certain

that I'd never get warm again after being outside in that wind.

Eastern Montana and the Great Plains can be a harsh environment, and this landscape was one of the things considered in the early twentieth century by the folks at the US Department of Agriculture (USDA) Sheep Experiment Station in Idaho as they developed what would later be named the Targhee sheep breed. (To learn more about the USDA station in Dubois, Idaho, and the sheep breeds developed there, see *Spin Off*, Winter 2018.)

The Targhee, named after the Targhee National Forest where the USDA flock grazed during the summers, was developed for Western landscapes, and the breed continues to flourish there today. Kami Noyes of Ranching Tradition Fiber is a fifth-generation Montana rancher. While the wool business hasn't always been a focus for her family, Kami herself is an avid handspinner. "I got my first wheel a couple of years after bringing sheep back to the ranch. It's been downhill ever since!"

Her enthusiasm has carried her through and inspired others in her home state. She now serves as a member on the board for the recently organized nonprofit Montana Fibershed, runs her ranch, and hosts the annual Copper K Fiber Festival. Over the years and through the generations, flocks of sheep have come and gone from the family ranch. Most recently, Kami introduced sheep again by bringing home some bum lambs (bottle lambs) around 20 years ago when her kids were young. Some of the sheep she chose as her flock grew were Targhee. "They were made for our Montana climate," she says. "I like the sheep, most are great mothers, and they're a good dual-purpose breed. And I love their wool."

The Targhee, named after the Targhee National Forest where the USDA flock grazed during the summers, was developed for Western landscapes, and the breed continues to flourish there today.

Targhee Takeaways

1. Targhee is a "comeback" breed. This refers to a breed that is established with a three-quarter finewool/one-quarter longwool cross. Many successful crosses, such as Corriedale and Columbia, were created between finewool and longwool sheep. A comeback is a similar cross that "comes back" to the finewool side (Rambouillet, in this case), resulting in a higher percentage of finewool genetics and, thus, a finer fleece.

2. Consistency is important. The US Targhee Sheep Association identifies the ideal fineness for the breed as 24.94 to 22.05 microns. Interestingly, unlike other breed organizations, the association also sets a standard for deviation: "Fleeces should not vary more than 2.88 microns (2 spinning counts) from side to britch, with 27.84 (56's) the coarsest acceptable britch."

3. These are big fleeces. Mature Targhee ewes average 10 to 12 pounds of raw wool each year. After scouring, the clean fleeces should weigh 5 to 6 pounds.

Kami's Targhee sheep

Courtesy of Kami Noyes

And what's not to love? Large resilient animals with resilient wool, Targhee sheep are easy to imagine on the plains along with cattle, and they are sturdy enough to handle the widely variable weather and forage of the landscape. They produce a dense fleece with high crimp and good elasticity.

A SPINNER'S FAVORITE

Categorized in *The Fleece and Fiber Sourcebook* under "other sheep breeds," Targhee wool is somewhere between medium wool and finewool, with a micron count that overlaps both the coarser finewools and the finer medium wools. The breed was developed to meet commercial demands, so most fleeces are white, although I have heard of the occasional colored Targhee. And the wool! The stuff is soft, having an almost cottony feel when clean and carded, and it has a matte finish.

This unique fleece brings with it the possibilities of endless comfy garments and accessories. Upon finishing the yarns for this article, I immediately wanted to just wrap myself in them—and I may have; who among us hasn't snuggled some yarn? Targhee has an unusual balance of crimp and elasticity with delicious warmth and softness—an inspiring combination.

When we look at the structure of this wool, however, we can see where some of the challenges of working with it emerge. While it is absolutely brimming with

Madeline used very clean locks to create rolags. She used fine handcards at 120 teeth per inch and laid only a few locks on the cloth, perpendicular to the carding direction. And she took her time.

beautiful crimp, the way it shows in the locks is a bit different from what we may be used to when working with finewools. For example, if we pull a lock of Merino, the crimp will typically be uniform within it, each individual fiber mirroring those next to it. Targhee wool tends to have a robust but often less organized crimp pattern within the staple, which can create more of a potential for nepps to develop during the carding stage. This, like so many things, varies within a single fleece as well as among the fleeces of individual sheep or flocks.

When I see the beautiful crimp in a finewool fleece, I often find myself a bit intimidated as I gear up for scouring. With the high water temperatures required to remove the wool grease, there's always the chance of damaging the wool. The potential of felting looms in the back of my mind. Kami says that she finds the grease levels on Targhee fleece to be "similar to a Rambouillet, so it can take many hot washes [to scour the fleece]."

Kami raises "quite a few sheep," as she puts it, and her flock is uncoated, as is typical for a ranch setting. As she says on her website, every fleece has some amount of vegetable matter (VM) and second cuts, but she does her best to keep it at a minimum. As far as uncoated fleece goes, this wool is fairly clean, but there is some debris picked up from the Montana prairie. When I checked in with Kami for recommendations on working with Targhee fleece, she replied, "For the best results with my wool, flick the tips prewash, and comb after to make the best top." Flicking the tips allows the locks to drop particulate matter faster during washing, and combing the locks removes any VM that might remain, resulting in clean, springy tops for handspinning.

A SET OF SAMPLES

For the purposes of this article, I both did and didn't follow Kami's excellent advice to see how different preparations would impact my yarns. I washed up two samples of fleece—one I flicked before washing, and the other I didn't. I washed both in mesh bags to maintain the lock structure and help prevent felting, and I was certain that, with the help of my trusty kettle, I could keep the water temperature quite hot. I used

When we look at the structure of this wool, however, we can see where some of the challenges of working with it emerge. While it is absolutely brimming with beautiful crimp, Targhee wool tends to have a robust but often less organized crimp pattern.

three stages: a hot-water soak; a hot, soapy wash; and a hot-water rinse.

While I'm happy with the wash results for both sets of locks, you can see the difference in VM and the structure at the tips of the locks (see page 62). Also of interest: look at the difference in length between the washed and unwashed locks! Taking out the wool grease allowed the fibers to recoil, illustrating how much elasticity is in this wool.

Kami's suggestion to flick the lock tips before washing did make a notable difference in the amount of VM removed during washing. The VM in the locks that I didn't flick could be reduced during combing, but I wouldn't be too keen to card them. Handcarding finewools mixes VM within the preparation, just creating a more even distribution throughout. However, the locks washed following Kami's advice were clean enough that I decided to handcard rolags to create a woolen preparation.

Per recommendations in *The Fleece and Fiber Sourcebook,* I used cards with a fine carding cloth

Dyed combed-top samples created with the same singles plied in different ways. Two-ply samples on the left (*from top*) show garter stitch, stockinette stitch, and a hank of handspun. Chain-plied samples on the right (*from top*) are 2×2 rib, stockinette, and a hank of handspun.

(120 teeth per inch) and took my time. With the locks already partially opened by flicking, I found that it didn't take much carding, just two passes. Even while being careful, I did notice a tendency for this wool to create nepps. My tips for carding to avoid them aren't anything particularly new. Be sure not to overload your cards. I found I had better luck opening the locks quickly with fewer passes when the locks were placed onto the cards sideways. Go gently and patiently. This is not a fiber I would choose to load onto an electric drumcarder. Handcarding may be slower, but then again, we are spinning our own wool from fleece. We can hardly say our pastime is for those in a hurry.

To add a contrasting preparation, I used some of Kami's mill-prepared combed top along with my hand-processed rolags to expand my samples to show both woolen and worsted preparations. From the combed top, I spun singles using a short-forward draft and made a two-ply and a chain-plied three-ply from the same singles. After finishing, both samples bloomed quite a bit. I spun for my go-to weight for singles, which usually gives me a sportweight two-ply. However, this fiber is so bouncy and elastic that my finished yarns were a DK-weight two-ply and a heavy worsted three-ply.

Then I set to spinning my rolags into a semiworsted yarn. I quickly found that a short-backward draft was more helpful than my typical short-forward draft. With the elasticity of the fiber in mind, I went with a chain-plied three-ply for this one as well, imagining that the nature of the fiber coupled with a round, bounce-encouraging three-ply yarn would make for a lovely fabric.

The Results

I wasn't disappointed. After knitting my samples, even the two-ply swatches are elastic and beautifully soft. The three-ply worked up to be even more so, and I can see myself happily knitting warm winter caps with this lofty yarn and its lovely stitch definition. I worked my two-ply yarn on size 5 (3.75 mm) needles and the three-ply yarns on size 8 (5.0 mm). My handwashed, carded three-ply (undyed) found its way into a cabled swatch, where the elasticity lends itself to being forgiving of the pull of the twisted-cable structure.

I had better luck opening the locks quickly with fewer passes when the locks were placed onto the cards sideways. Go gently and patiently. Handcarding may be slower, but then again, we are spinning our own wool from fleece.

My favorite sample of them all? The garter-stitch swatch. I feel that the characteristics of the wool and the stretch and recoil of knitted fabric that I love so much come together beautifully here. This is where I most clearly see the potential for the wool from this hardy, resilient sheep to help us create textiles that will literally bounce back for us—again and again.

It certainly is enough to keep me inspired. Kami, too. When I asked her what kept her going in this labor-intensive line of work, Kami replied cheerfully, "Other fiber artists inspire me, and just . . . ranching. There is always something Mother Nature gives us to be inspired by." Her answer immediately took me back to a childhood spent outside exploring, and memories of sunshine over a seemingly endless prairie, and Montana's big skies. How true.

Resources

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Madeline Keller-King is a natural dyer and fiber artist living in the woods of northwest Montana with her spouse and pets. When she's not in the wool, she spends as much time outside as possible. You can find her work and adorable canine companions on social media as @woolywitchofthewest.

Illustrations by Katie Eberts

Spinner and physiologist Amy Tyler helps us understand how we learn and retain our spinning skills.

Movement Science & Spinning Skills

Learning Good Habits, Unlearning Bad Habits

AMY TYLER

When I was in high school in the early 1970s, I took a typing class. I learned how to type on a typewriter. Because of the letter-spacing constraints of typewriters, I was taught to type two spaces after a period before starting the next sentence. I dutifully followed this rule for over 30 years. But a few years back, I was persuaded to switch this well-ingrained habit to one space after a period, not two. It has something to do with computer fonts, which seemed like a reasonable explanation to

me, so I decided to make the change. It wasn't easy. At first, my typing was slow and awkward. But I persisted. It took a few months of conscientious effort to change an old habit for a new one. Now, one space is second nature: an effortless, relearned habit.

What does this have to do with spinning? Well, spinning is a skill—a movement skill—just like playing an instrument, performing ballet, playing basketball, or typewriting. All such skills involve learning. In the realm of movement science, motor learning involves (1) permanent skill acquisition, (2) time and practice, and (3) physical changes to the central nervous system (various regions in the brain and spinal cord).

1. PERMANENT SKILL ACQUISITION

There is no way to directly measure learning in the nervous system. Scientists infer learning by measuring movement behaviors over time. In spinning, you might measure the consistency of the thickness of your singles or how much twist you are inserting into your yarn.

The extent to which you have learned a new movement skill can be inferred by how well you have *retained* that skill. In other words, do you remember the skill from day to day, month to month, year to year? If you go for a year without spinning, can you pick it up again? As another example, if you have truly learned to make a specific novelty yarn, you should be able to repeat that ability later.

Another aspect of permanent skill acquisition is whether you can *transfer* what you learned to novel situations. If you learned to spin on a spinning wheel, can you transfer that knowledge to spinning with a spindle? Or can you transfer what you know about spinning sheep's wool to spinning other fiber types?

2. TIME & PRACTICE

The great dance artist Martha Graham famously said, "It takes 10 years, usually, to make a dancer. It takes 10 years of handling the instrument, handling the material with which you are dealing, for you to know it completely."

Likewise, Daniel Levitin, a neuroscientist and musician, wrote, "Ten thousand hours of practice is required to achieve the level of mastery associated with being a world-class expert—in anything. In study after study, of composers, basketball players, fiction writers, ice skaters, concert pianists, chess players, master criminals, and what have you, this number comes up again and again. Ten thousand hours is the equivalent to roughly three hours per day, or twenty hours per week, of practice over ten years. Of course, this doesn't address why some people don't seem to get anywhere when they practice, and why some people get more out of their practice sessions than others. But no one has yet found a case in which true world-class expertise was accomplished in less time."

As charming as the term "muscle memory" may be, it does not accurately depict the physiology of learning.

Learning Longdraw

Getting comfortable with woolen spinning can take time as we learn to feel the twist entering the fiber. Responding to slubs and thin spots or changes in twist and gauge can become effortless with practice, but most spinners find that it takes some time.

Amy Tyler shares her favorite ways to settle into longdraw—including choosing fibers and making wheel adjustments—in her popular video *Spinning Woolen Yarn.* Spend some time with Amy and learn some solid longdraw habits!

Find the video on our website at **LT.Media/Woolen**.

Although simple repetition will yield positive improved performance in the short run, mixing up movement tasks yields stronger learning and memory in the long run.

I am certainly not suggesting that it takes ten-thousand hours to become a good spinner. An exceptionally talented spinner, perhaps, yes. I am also not suggesting that everyone should aspire to be an exceptionally talented spinner. What I am saying is that you can't become a good spinner instantly. You might be able to get the basics in one lesson, but to develop skill requires time. There is no way around it.

To develop skill takes time *practicing*. According to motor learning expert Richard A. Schmidt, practice means "repeated attempts to produce motor behaviors that are beyond . . . present capacities."

He mentions "repeated attempts," but practice is not simply repetition; more importantly, those attempts need to be "beyond present capacities." Going beyond your current capacity can be challenging. It takes effort, determination, and mindfulness: paying attention to the relationship between your actions (spinning technique) and the result (the yarn you are spinning).

The good thing is that mindful practice does improve performance, and it does lead to learning. The amount of practice is related to the amount of learning; the more you practice, the more you learn.

Here's another quote from Martha Graham that I think nicely explains the challenges, joys, and value of practice: "I believe that we learn by practice. Whether it means to learn to dance by practicing dancing or to learn to live by practicing living, the principles are the same. In each, it is the performance of a dedicated precise set of acts, physical or intellectual, from which comes shape of achievement, a sense of one's being, a satisfaction of spirit. One becomes, in some area, an athlete of God. Practice means to perform, over and over again in the face of all obstacles, some act of vision, of faith, of desire. Practice is a means of inviting the perfection desired."

3. PHYSICAL CHANGES TO THE CENTRAL NERVOUS SYSTEM

Learning and memory occur in the nervous system. When you are first learning a new movement skill, it can require a lot of attention. That attention is largely a process within the cerebral cortex of the brain. Fortunately, the more you practice, the more automatic that movement becomes by strengthening neural pathways and circuitry throughout the entire central nervous system, including the spinal cord, and reducing the need for cerebral attention. Thus, a habit is born.

It is certainly true that muscles are required to make skillful, coordinated movements. However, muscles are effectors that generate force; the nervous system is the driver of those effectors. Muscles do not have the capacity for memory. As charming as the term "muscle memory" may be, it does not accurately depict the physiology of learning.

LEARNING GOOD HABITS, UNLEARNING BAD HABITS (LEARNING IS HARD WORK)

What is the most effective way to practice so that your learning is solid and reasonably permanent (forms good habits)? There is ample scientific

evidence that practice sessions that lead to the most accurate and stable learning include:

1. Variation in movement tasks
2. Effortful processing
3. Problem solving

Variation in movement tasks is the opposite of simple repetition. Although simple repetition will yield improved performance in the short run, mixing up movement tasks yields stronger learning and memory in the long run. When I was learning to spin, I would work on one project of a specific type of yarn (say, thin, tightly twisted yarn), then I would purposely spin a very different type of yarn for the next project (say, thick, loosely twisted yarn).

I would also mix up my projects with different fibers and different drafting techniques. It may well have taken me longer to be good at spinning, but by mixing things up, I did develop the ability to adjust my spinning so that I am able to spin a variety of yarns and get the yarn that I want.

Learning movement skills is hard. It requires effort, not only in the doing of the task but in processing—or evaluating—the results of the task. As we pay attention to our sensory systems (vision, touch, proprioception) to help guide our practice, we lay down the neural circuitry that is the physical and physiological foundation of learning and memory.

In addition to sensory feedback during the act of spinning, it is helpful to do some postpractice processing. For example, evaluating knitted or woven samples from the yarn you've just made can help you decide whether you're satisfied with your yarn or whether you need to make some change to get what you want.

Practice that encourages problem solving is more effective in yielding a stronger memory than practice that is repetitive. An example of problem solving in spinning might be to try to spin yarns that match commercially prepared yarns. This is not only a challenging exercise, but it comes in quite handy if you want to combine commercial yarns and your handspun yarns in one project.

To learn new movements requires that you have the will to do so. You have to be willing to invest in the effort. You need to be willing to be awful at first.

THERE MUST BE A WILL TO FIND A WAY

To learn new movements, or to unlearn bad movement habits, first of all requires that you have the will to do so. I was willing to reduce my typing to one space instead of two. I was willing to work through my difficulties.

Fixing bad movement habits is similar to relearning a motor skill after an injury, such as a stroke or repair of a ruptured Achilles tendon. You just have to be willing to invest in the effort. You need to be willing to be awful at first.

I have very strong memories of the first dance classes I took. It was such a challenge. I worked very hard, I was exhausted, and I was learning something that would change my life for the better. It was the same when I learned to spin. And I recently started to do some embroidery—a new skill for me. My embroidery skills are terrible right now. That makes me very happy; it means that I have a lot to look forward to!

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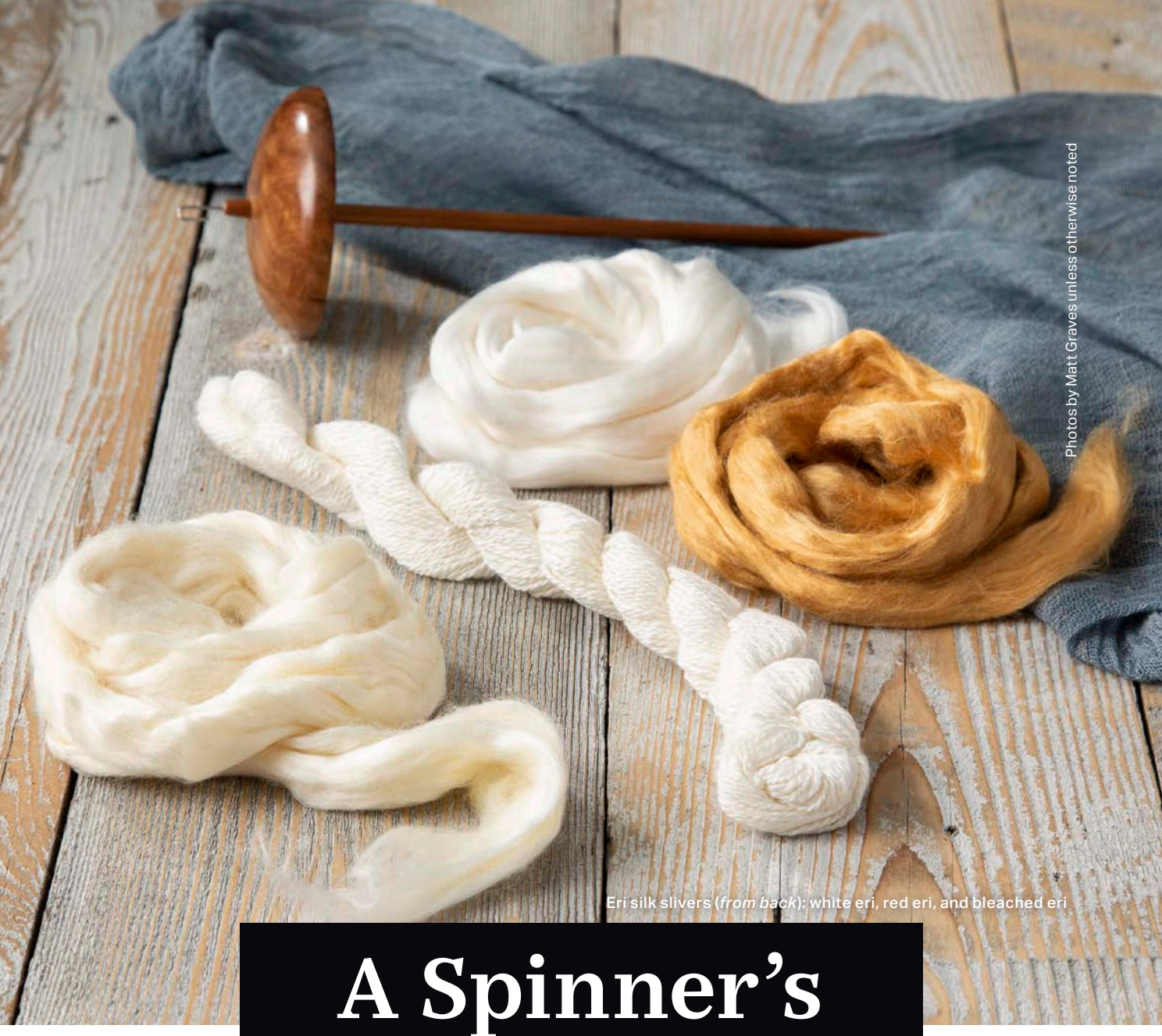
Amy Tyler has spent her adult life studying human movement, both in art (modern dance) and in science (kinesiology, physiology). She spent nine years teaching physical therapy students about motor learning, neuromuscular physiology, biomechanics, and evidence-based therapy. She left the academic life in 2004 to pursue fiber arts. When asked recently by a former physiology colleague if she uses her science background in the fiber arts, she replied, "Every single day!"



Photos by Matt Graves unless otherwise noted

Eri silk slivers (*from back*): white eri, red eri, and bleached eri

A Spinner's Tussie Mussie

Preparing Eri Silk Sliver

KIM MCKENNA

Thirty-five years ago, the eri silk I was able to purchase felt, looked, and behaved more like cotton than it did silk. But with advances in the technology used at a commercial scale, the eri silk sliver available today is quite different. Improved degumming and fiber preparation techniques have resulted in an eri silk sliver with a soft, cashmere-like hand and a delicate pearlescent sheen. I enjoy working with eri because it is almost as fine as bombyx silk, but unlike bombyx, eri blends readily with other fibers.

One of my challenges with this new and improved commercial fiber preparation was to find a way to

Redistributing the fibers and creating a crisscross orientation that reins in those slippery fibers gives me more control. This allows me to spin finer, more consistent singles faster.

preserve the fiber's luster, and at the same time, manage the fine, slick, and slippery fiber. My solution is to manipulate the fiber to form what I call a tussie mussie, which is simply an organized way of arranging and loosening the commercial sliver to give the spinner more control.

At first blush, you might think fiber spun from a silken tussie mussie would tangle horribly and result in an awful mess. Instead, the silky eri fibers simply float past one another as you draft. If you think about it, this fiber preparation is not too far a stretch from either what we know as "cloud," or the careful fanning and layering of flax when dressing a distaff, or even the spinning draft known as spinning "from the fold." Tussie mussies work well as a fiber preparation for spinning on either wheels or spindles.

It is true that this additional preparation method takes more time than simply spinning from the fold or directly from a sliver, but I find it is time well spent for the types of yarns I am making. Redistributing the fibers and creating a crisscross orientation that reins in those slippery fibers gives me more control. This allows me to spin finer, more consistent singles faster.

I find that this also keeps fibers in check during spinning; the ends do not waft away from the apex of the drafting triangle as they do when I spin from the full width of silk sliver. I encourage you to give this technique a try with either worsted or woolen spinning drafts.

HOW TO PREPARE A TUSSIE MUSSIE

I am right-handed. If you are left-handed, you may find it easier to transpose these instructions. Also, working on a smooth surface will prevent the fine strands of eri from snagging as you guide the silk across the surface. I use my leather lap cloth, smooth side up.

Depending on how the eri cocoons are processed, the commercial slivers available contain either very

1. Pull the sliver into short sections, about the length of your hand. Open up the fibers on the left-hand side of the sliver. With the side of your left hand (or index finger and base of your thumb if it works better), hold the open wisps of fiber firmly against the surface while the right hand pulls the length of fiber across the surface. This leaves a thin veil of silk fiber in its wake as you move your right hand from left to right. Stop once you have spread out a wisp of fiber approximately 6 inches wide.

2. Transfer the fiber supply to your left hand. Hold the right edge of the veil of fiber with your right hand and pull the fiber to your left. These two layers complete one pass. Repeat these steps to create a second complete pass.

short (½ to 1 inch) or medium-long to extralong (4 to 6 inches) staple lengths. I developed this fiber-preparation technique for commercial silk slivers with longer staple lengths.

3. After you have completed two passes, set the resulting "cake" of silk aside. From one length of silk, I usually get three or four cakes. Once I have eight cakes prepared, I move on to the next step and start spinning. More would be better because they spin up quite quickly, but I can never wait to start spinning this beautiful fiber.

4. To prepare the cake for spinning, pinch the fiber in its center and pull up. This results in a cone-shaped mass of crisscrossed fibers. Spin from the apex of the cone and you are away to the races. To join a new tussie mussie, I pull about an inch and a half of fiber from its apex and lay the wispy strand on top of the tuft remaining from the previous tussie mussie.

If you prefer to spin a smoother, finer yarn, you can modify the cone shape a bit. After you pinch the middle of the cake and pull up, fold the cake in half as if closing a book to create a flattened, roughly triangular shape. Starting at the apex and working toward the base, gently draft the fibers into a length of roving.

SPINNING

Tussie mussies work equally well when spun with a short-forward worsted, short-backward worsted, or woolen draft. They are a lovely fiber preparation for spinning eri on a wheel, suspended spindle, or supported spindle when consistency and control are vital.

When spinning any silk with my wheel, I add just enough tension to the brake band to wind the singles onto the bobbin. If I want to slow down the take-up the tiniest bit, instead of adjusting the brake band, I will first try cross-lacing the singles on the flyer. If that is not enough, then I will adjust the brake band.

From left: Start with a thin sheet of silk layers, pinch the center and pull into a cone shape, and then begin drafting from the tip.

What Is a Tussie Mussie?

A tussie mussie is a portable, miniature, cone-shaped flower vase, popular in the Victorian era. Tussie refers to a small flower bouquet, and mussie refers to the moistened moss wrapped around the stems to prevent the flowers from wilting. The fiber preparation method described here is similar to a tussie mussie. It is cone shaped and consists of a crisscrossed web of silk reminiscent of the delicate filigree design common to Victorian aesthetic.

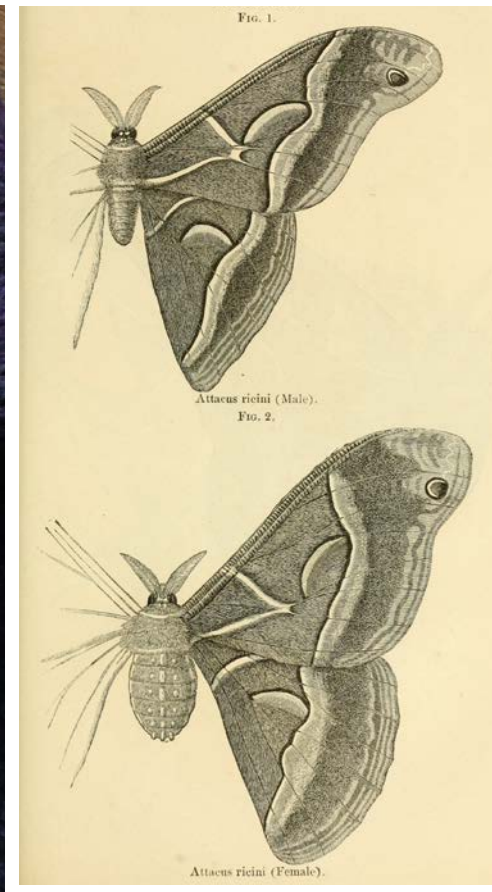
One of the reasons I love connecting this Victorian curio to the handling of eri silk is that tussie mussies were popular during the life of Sir Thomas Wardle (1831–1909), a colleague of William Morris. Wardle owned Hencroft Dye Works, which specialized in silk dyeing and, in particular, "wild" silk fiber. Wardle had a deep-seated interest in the many facets of sericulture including entomology, botany, the processing of silk cocoons, and silk spinning and weaving as well as the use of silk cloth. He wrote extensively on the subject.

In 1881, after several years of research in India, Wardle published the *Handbook of the Collection Illustrative of the Wild Silks of India, in the Indian Section of the South Kensington Museum*. The book is an interesting read for anyone who enjoys silk, botany, entomology, and history. It also contains lovely drawings of the different species of silkworms at various stages of their life cycles, leaves of the various host plants the silkworms fed upon, maps showing where the different species were reared and processed, etc.

Thomas's wife, Elizabeth, was a skilled and renowned needlewoman who led an "art embroidery" movement that used "tusser" (tussah) silk floss. In about 1879, Elizabeth and Thomas established the Leek Embroidery Society.

A Victorian-style tussie mussie

Photo by Kim McKenna



Attacus ricini **(eri silk moths). Illustration from Thomas Wardle's *Handbook of the Collection Illustrative of the Wild Silks of India, in the Indian Section of the South Kensington Museum* (1881).**

Courtesy of Smithsonian Libraries

Skein spun from Kim's eri silk tussie mussies. The silk fibers were 5 to 6 inches long. Her wheel was set at a 13.5:1 ratio, and she used a short-backward draft.

For extremely fine, consistent spinning, try creating tussie mussies made from one complete pass instead of two.

If you prefer to spin a smoother, finer yarn, you can modify the cone shape a bit. After you pinch the middle of the cake and pull up, fold the cake in half as if closing a book to create a flattened, roughly triangular shape. Starting at the apex and working toward the base, gently draft the fibers into a length of roving. For extremely fine, consistent spinning, try creating tussie mussies made from one complete pass instead of two.

If you are looking for an enjoyable spin that results in handspun with a lovely soft hand, excellent drape, and exquisite luster, I suggest you add some eri silk to your fiber repertoire.

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Curiosity is what propels **Kim McKenna**. She is constantly learning and improving upon her handspun yarn. Kim shares her learning through virtual workshops with Sanjo Silk and in-person workshops through Coniagas Fleece and Handspinning School and SweetGeorgia Yarns, as well as through the School of SweetGeorgia. You can follow her journey at claddaghfibrearts.com and on Instagram @claddaghfibrearts.

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A Period 1 textile as it is removed from an excavation site at Vindolanda in 2019

Vindolanda's Ancient Textile Finds

KIM CAULFIELD

On a cold day in December, I visited the Roman fort at Vindolanda in the far north of England. My guide was clearly freezing, but I was far too excited to worry about the cold. We explored some of the most spectacular Roman ruins in Britain before slipping into the museum—shivering—to see the remarkable bounty of finds that have been discovered from the site.

Vindolanda had been a major fort near Hadrian's Wall, and the ruins are extensive, but what makes this site unique is a combination of climate and ancient civil engineering. Archaeologists have found giant water pipes made from hollowed-out tree trunks. They've unearthed around 5,000 shoes. Perhaps the most famous finds are the thin wooden tablets used like notepaper by the Romans. These include fort records, soldiers' letters, and even an invitation to a woman's birthday party. These finds are astonishing, but they weren't what had brought me there. Vindolanda has Roman textiles.

People who study ancient textiles can get excited over a couple of small fragments. Ancient cloth is rarely preserved at all, but it can survive reasonably well in very dry environments. There are spectacular Roman textiles in Egypt, as well as many finds thousands of years older. Ancient textiles can also be preserved when impregnated with mineral salts, as at the Hallstatt mine in Austria.

Vindolanda sits on somewhat poorly drained land, so the early excavators naturally didn't expect to find

textiles or leather or wood, yet this site has yielded remarkable artifacts. They have now unearthed shoes, handwritten letters and records, and around 2,000 pieces of Roman cloth. And the excavation is ongoing. So how did all those Roman textiles, and other fragile organic materials, survive nearly 2,000 years in Britain's wet climate? Well, it helps to look back at life in Roman Vindolanda.

VINDOLANDA IN THE FIRST CENTURY CE

The fort at Vindolanda was first established in the late first century CE on somewhat soggy ground. In 122 CE, the Roman emperor Hadrian began building his wall. It ran coast to coast through Britannia—73 miles—and was guarded by small garrisons at every mile. Forts accommodating 500 to 1,000 soldiers were located along the wall at least every 10 miles; Vindolanda was such a fort. Large numbers of Roman soldiers required food and supplies, and a vibrant community developed around them. There was also an active trade network. The fort remained garrisoned into the fifth to sixth centuries, with some recent finds indicating much later dates. Researchers have identified at least nine layers of occupation at the same site.

The earliest buildings at Vindolanda were made of wood. Some may have been built out of logs, without even stripping off their bark. Over decades and centuries, important structures (administration buildings, storehouses, shops, and some houses) were built in stone. Still, many structures were made of wood, and they did not last well in the wet, harsh weather. Every few years, the wood would get too rotten to be left standing. The soldiers chopped down the old buildings and covered the remains with layers of turf and clay.

The soldiers probably figured this was a good time to get rid of unsightly trash as well. They tossed in shoes with holes, torn garments, old letters, and other trash, then covered it all in clay and packed it firm and flat to make the floor of the next building. The clay protected their trash. It enveloped fragile pieces and hardened, keeping moisture in but oxygen out. Their scraps and trash stayed safe from desiccation or decay for centuries.

In 1973, archaeologists were hoping to drain water away from some of the stone structures to make their excavations easier. In the process, though, they accidentally discovered the wealth of organic finds that had been sheltered in the damp, anaerobic clay. I wonder what those ancient Romans would think if they could see the excitement their trash has inspired.

Vindolanda was a lively town as well as a substantial fort. Merchants brought in goods from around Britannia and across the Roman Empire. Some of their orders and inventories were preserved on the writing tablets unearthed at the site, so we have an idea of what to look for. Words such as *sagum* (cloak) and *tunica* (tunic) appear, along with references to shirts, leggings, underwear, dress clothes, blankets, and curtains.

On one occasion, a merchant named Gavvo sold 38 pounds of wool to the prefect, presumably for his wife. She, with the help of servants or enslaved laborers, was likely spinning and weaving cloth for herself and her family. Making cloth was not just practical, but a fundamental part of Roman womanhood. Since sheep were raised locally, I wonder why the prefect's wife chose to order wool from the trader. She may have wanted white wool, or she may have desired finer, softer fiber than was produced locally.

The native sheep in Britannia were naturally colored, typically with medium-grade, slightly hairy fleeces. They were probably similar to Manx Loaghtan or North Ronaldsay sheep of today. There is a sheep skull in the museum that looks remarkably like a modern Manx or horned Shetland ewe. The Romans brought white sheep to Britannia, but it is not clear how quickly these genes spread. Both white and naturally colored wools are common in the Vindolanda textiles. Roughly half of the wool

Roman Research—Editor's Note

Kim's research into handheld distaffs has connected her to many fascinating museums, scholarly endeavors, and conferences around the world. Her wonderful article, "The Surprising Stick: How Handheld Distaffs Became Beautiful and Practical," appeared in *Spin Off*, Fall 2018. Check it out to see some handheld distaffs from Antiquity as well as Kim's advice for using them.

yarns were spun from gray wool. About 40 percent were white, and the rest were black or brown. Some wools are slightly finer, without hair. These fleeces, or clothes made from them, may have been imported.

Wool combing may have been brought to Britannia by the Romans. Certainly, Roman wool combs, made of iron, became common around many settlements. It is possible, though, that the native Britons had combs made of less durable materials that have not survived. Certainly, the smooth, even yarns in the Vindolanda textiles suggest that great care was put into preparing fleeces for spinning.

Both white and light-colored fleeces were frequently dyed. Since the surviving fragments have spent nearly 2,000 years absorbing mud stains, it is seldom possible to see any color. However, the ancient dyes can sometimes be recovered from textile samples. This is done by soaking them in various mixtures of pyridine or ethanol and distilling the solution. The resulting liquid gives some idea of what the original color may have looked like. Results can then be compared with modern samples dyed with traditional dyes and processed in the same way. The results are brilliant. (Sorry for the pun, but life in the Roman fort was colorful.)

Reds were common, most likely from madder, which is interesting because madder did not grow locally. There were blues, probably from woad, and purples that may have come from local lichens. There were probably yellows and greens, but these are harder to distinguish with confidence. It is not clear what mordants were used. Surely, iron was available, though this tends to make darker, sadder hues. Alum was commonly used by Roman dyers, but it would have had to have been imported. Romans occasionally used lead as a mordant, and lead was mined in Britannia, but I am not aware of

Kim's view of the site during her visit

Photo by Kim Caulfield

any evidence of it being used in dyeing in the province. Did they use urine, perhaps? Of course, some dyes do not need an added mordant.

THE FINDS

What kinds of textiles have been found at Vindolanda? All kinds. Most of the surviving textiles were probably thrown away originally because they were damaged beyond repair. Many are small, a few centimeters long, but some are much larger. Most were probably made from local wool. A few appear to be imported luxuries made from cotton or silk. They range from heavy cloth (probably cloaks) to incredibly fine weaves appropriate for luxury clothing. Many fragments have preserved hems or seams that hint at the shapes of the garments they came from. Medium fabrics had thread setts of 20 to 50 ends per inch (8–20 ends per centimeter). Some cloth was considerably finer.

More than three hundred spindle whorls have been found at Vindolanda. Most are made from clay. Romans commonly made spindle whorls from pieces of broken pots. They would drill a hole and grind the surface until it was round and smooth. There are a few whorls made from stone, jet, bone, or other materials. These would likely have been made by skilled craftsmen, so they were probably more expensive and prized, though clearly used.

Of course, spindle whorls can be made from wood, and there may have been many more spinners outside the fort whose spindles are not preserved. Many of the spindles found in Vindolanda were used enough that the repeated buildup of thread against the whorls left distinctive patterns of wear. Some spindle whorls have been found inside the fort, in officers' quarters. There were likely camp followers, but it is also possible that some of the soldiers did spin. In a frontier fort, surely many basic tasks were done locally by whoever needed them done. My experience of Vindolanda in winter convinced me that there was probably an insatiable interest in warm things.

One of the most interesting textile finds at Vindolanda is a largely intact child's sock. Unlike other Roman socks, such as those found in Egypt,

A child's sock constructed from two pieces of woven twill cloth

Plain-weave fragment woven in a stripe pattern

this one was not made with nålbinding. Rather, it was made from two pieces of woven twill cloth sewn together.

Yet another fascinating find is a wig, possibly a woman's, made of hair moss (Polytrichum commune) from the local area. This reddish moss contains compounds that act as a natural insect repellent, so perhaps

© The Vindolanda Trust

Twill fragment

this wig was intended to repel bugs and lice as well as make a fashion statement. Or was this wig perhaps worn under a soldier's helmet? Hair moss was also used in making an equally red officer's helmet crest.

Pieces of two pile rugs have been unearthed. The warp has alternating thick and thin yarns. The weave is half-basketweave, with thick and thin warps kept in pairs. The knots were formed around these pairs. It is not clear whether these rugs were intended as floor coverings or as sleeping mats. (I would so love to see a modern handspinner replicate this rug structure. I am curious to know whether the thick and thin warp threads make tying the knots easier or make the pile stand up better.)

There are some fabrics of plain weave, basketweave, and half-basketweave. At least one appeared to use a stripe of basketweave as a decoration on a plain-weave fabric. The majority of the fragments are two-by-two diamond twills, and there are some broken twills and checks. There are very few straight twills, with the majority of the twills having four-shaft patterns. This is not surprising, since the warp-weighted looms used throughout Europe are easily set up with threads in groups of four. Intriguingly, there are a few Vindolanda textiles woven in two-by-one twill, suggesting the possibility that they were woven on ground looms in Africa. Imagine a Roman soldier who moved from Egypt to Britannia—what a climate shock.

Most of the textiles were woven from two-ply yarns. The spinning is generally smooth, worsted-like, and even. Wool was clearly meticulously sorted and prepared. It was common in antiquity for many people to work together to produce cloth; however, there are no records of how local production was done.

DAY IN THE MUSEUM

I spent a couple of hours exploring the Vindolanda museum. Then it was time to get a close look at some of the textile fragments. My first impression was the smell. Even through their protective covers, the smell of rich clay came out. Some pieces were wrinkled, their creases permanently pressed by the weight of civilization and centuries.

I took a careful look at a plain-weave fragment with a stripe of basketweave. It was torn and worn in places, and where the torn yarns trailed off one edge, I could see the structure of the raveling yarn. The wool looked to be a bulky, medium-grade wool. The spinning was worsted-like and remarkably even. The yarn was two-ply, with a moderately high twist. The warp threads appeared thinner, tighter. Were they spun from a different fiber, perhaps plied more tightly, or had they stretched and tightened from the tension on the warp as the cloth was woven? The fabric appeared solid but not fulled or felted. I imagined a warm, springy cloth.

There is no way to know whether I was admiring a garment or a blanket, but I was impressed by the time and skill that went into making it. How many people had labored for how long to create this? Each fragment had its own puzzles, its own hidden story. They may hint at who made them or who wore them, but teasing information from these precious fragments takes insight, creativity, and a lot of patience. And as the archaeologists keep digging up more finds, this work will surely go on for decades.

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Kim Caulfield has been spinning and weaving since she was a child. She is passionate about studying textiles and textile tools. She lives on a farm in Tennessee with sheep, dogs, cows, and a few gypsy horses. She offers a special thanks to Marta Alberti and Barbara Birley of the Vindolanda Trust!

Learning More from Afar or Up Close

How can you learn more about Vindolanda's Roman textiles? There are many scholarly papers that are easily approachable and interesting to read. Try searching for "Vindolanda textiles" on academia.edu, jstor.org, or scholar.google.com. Vindolanda also has a great YouTube channel where you can see some of the recent finds. Visit youtube.com/c/VindolandaTrust to see it yourself.

Visiting Vindolanda is inspiring. This is one of the best-preserved Roman sites, and you can explore the ruins with or without a guide. There is an excellent museum, and frequent educational programs are open to the public.

The textiles are very fragile and sensitive to light, so there are usually not many on display. Vindolanda does sometimes allow visitors, for a fee, to see artifacts up close.

For a more in-depth experience, you might even consider volunteering at the site. Volunteers are always needed to help during excavation season and in cataloging finds. Volunteering at an archaeological dig means long, intense days with no guarantees, but there is always the chance that you will be the first person to see a wondrous piece of Roman trash that was buried in clay for nearly two millennia.

Photo by Kim Caulfield

To learn more about Vindolanda, visit vindolanda.com. There is information about the site, planning visits, volunteer opportunities, public events, and more.

Mother-of-all from a Frédéric Bordua wheel

Photos by Caroline Foty of wheels from her collection unless otherwise noted

Canadian Production Wheels

From Their Hands to Ours

CAROLINE FOTY

Spinners who have a deep love for antique wheels will often tell you that these special tools seem eager to work again, after decades of idleness. They remember what they were made for. They carry memories of their users, too, through foot impressions worn into treadles and the grooves where miles of yarn have passed over flyers. But how often are we able to remember the people who made these tools we love so much? In the case of modern wheels, we know the companies and the individual artisans. When dealing with antiques, the question is more challenging.

Some wheels are clearly marked by their creators, while others may have distinctive features that will be familiar to those who have seen such wheels before. However, even a clear mark can only give you a name—who was this person?

Michael Taylor, author of books and articles about antique spinning wheels, emphasizes that wanting to know more about a wheel becomes automatic and leads to "a collective effort." "You see a wheel in another's collection, at a dealer's, in a museum, or in an image. The answers to 'who, where, what, when, and why' flit by. If I am not certain, I send an image to Dave [Pennington] or Bill [Leinbach] or Florence Feldman-Wood [publisher of *The Spinning Wheel Sleuth*], or whoever has relevant expertise with my ideas and questions."

After developing a deep love for antique wheels and learning to "listen" for the stories they share, I became

In 10 years, we identified more than three dozen makers and found traces of others whose makers' marks we have not yet seen on a wheel.

curious about Canadian Production Wheels, or CPWs as they are commonly called. Little did I know that this curiosity would blossom into years of research, relentless ancestry sleuthing, connections with a community of fellow enthusiasts, and the great joy of reconnecting wheels with their own histories.

IN SEARCH OF CPWS

"Canadian Production Wheel" is a nickname for the large tilt-tension antique spinning wheels associated with the province of Quebec, in eastern Canada. Because my mother had Quebec ancestry, I had done genealogical research in Canadian records. I felt drawn to these wheels as soon as I learned about them, so I joined the CPW Lovers forum on Ravelry. One day, someone in the group asked, "Does anybody have an Ancestry Canada membership, so we can find out something about the people whose names are on these wheels?"

It did not take long to dispose of the notion that anything had previously been written about this subject. There had been a period of interest in studying the sociology of home-textile production, but the tools and their makers attracted no more attention in these studies than any other product purchased for the home. Like many handcrafts, handspinning lapsed from the daily life and education for younger generations. Some Quebecois-wheel enthusiasts have speculated that for people of a certain age, these wheels are reminders of hard times.

As a group, the CPW-devoted Ravelers took the names marked on the wheels—or just the initials if that is all we had—and turned to the online genealogy databases. Quebec church records are among the best preserved and accessible in the world, and the censuses of Canada are indexed in multiple locations. City directories, insurance surveys, and department store catalogs can also be found online. In a little over 10 years, we have identified more than three dozen makers and found traces of others whose makers' marks we have not yet seen on a wheel. We learned that spinning wheels were deeply woven into the culture of Quebec.

Makers' Marks

When asked *why* we work to find out who made our wheels, members of the CPW Lovers forum on Ravelry said:

"The history of many crafts has been lost because no one bothered to record it."

"It doesn't make the wheels spin better, but it makes the spinning experience better. It's a way to honor the skill and craftsmanship of the makers themselves."

"Knowing who they are connects us to them."

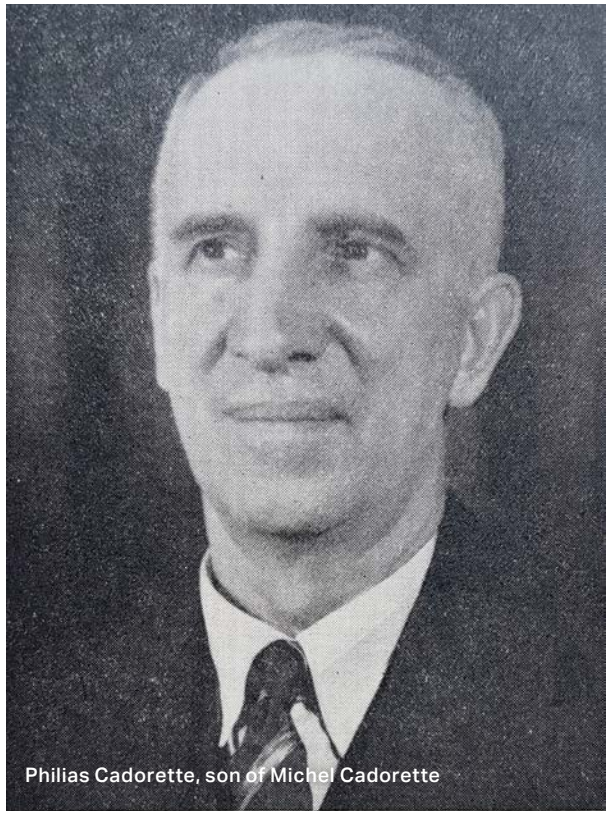
"These are not just tools but works of art."

"The connection of who we are now to who we were then is important if we want to understand who we will be later."

"I can't think of another so-called 'antique' that you can see, feel, and delight in as its maker would have. We feel a desire to know the life of that maker because in a way, we love the same child."

Jules L'Heureux maker's mark from a restored wheel

Beginning in the mid-nineteenth century and continuing as late as the 1940s, spinning wheels by the thousands were built every year in small workshops in Quebec. They were sold by mail order, through department store catalogs, from the backs of horse-drawn wagons, or even from boats on rivers. They were exported to Canada's Maritime provinces, even though there were strong wheel-making traditions there already. Census records indicate that there were at least 35 spinning wheel makers in Quebec in 1871. Clearly, these wheels were fundamental to the household economy of Quebecois and eastern Canadian families. Today, though, the artisans who supplied this demand are seldom remembered for their wheels, even by their own descendants.



Courtesy of Paul Fournier

Philias Cadorette, son of Michel Cadorette

Philias Cadorette maker's mark on a wheel

Only in a few cases have we found makers who learned the trade from their fathers. It appears that most of the prolific makers of the nineteenth century were the sons of farmers, who worked in other trades before taking up the making of spinning wheels and other turned-wood products.

Michel Cadorette (1853–1929)

The life of Michel Cadorette was typical for his time. He was the sixth son of a farmer, so he had to make a living away from the family farm. At the age of 18, he emigrated from his home near Saint-Hyacinthe, Quebec, to Fall River, Massachusetts, to work. However, within two years, he was back and took up employment on the trains supplying wood to the railroads. Soon thereafter, he established a business focusing on spinning wheel manufacture that he ran until he passed the business to his son Philias prior to his death. According to a 1933 article in the Saint-Hyacinthe newspaper, Michel Cadorette employed up to six people and maintained a production of 1,500 to 1,600 wheels per year between 1889 and 1912. Philias was still selling 500 to 600 wheels a year at that time.

Only in a few cases have we found makers who learned the trade from their fathers. Most of the makers of the nineteenth century were the sons of farmers, who worked in other trades before making spinning wheels.

The Borduas made 600 to 1,000 wheels a year during the busiest years, with a total production over the life of the business of perhaps 52,000 wheels.

Frédéric Bordua (1849–1923)

Another Saint-Hyacinthe maker of the same generation, Frédéric Bordua was the fourth child of a farmer living west of Saint-Hyacinthe and began a similar business at about the same time. By the time of his death, he had run a successful sawmill and spinning wheel business for nearly 50 years and served as city councilor of Village Saint-Joseph. According to a newspaper article published when his son Théodore closed the business in 1954, the Borduas made 600 to 1,000 wheels a year during the busiest years, with a total production over the life of the business of perhaps 52,000 wheels.

THE STORY CONTINUES

Cadorette, Bordua, Paradis, Ouellet, Desjardins, Vezina, and many other makers supplied the wheels needed by families all over eastern Canada in large numbers. Passed down within some families, a few of these impressive wheels remain. Spinning on an antique wheel is a pleasure in so many ways. Your pleasure will only increase with knowledge of the person whose work created this thing of beauty on which you make yarn.

Resources

- The details of the research spearheaded by the CPW Lovers forum on Ravelry, as well as a full list of references, are available in Caroline's book (details below). Connect with her on Ravelry @fiddletwist or on Flickr, where you can see hundreds of CPW images: flickr.com/photos/fotyc.
- The CPW Lovers and Antique Spinning Wheels forums on Ravelry are filled with people who are very good at making possible identifications of wheels and are generous with their knowledge.

Foty, Caroline. *Fabricants de Rouet: Nineteenth Century Quebec Spinning Wheel Makers and Their Twentieth Century Heirs* (1850–1950), 3rd ed. Self-published e-book, 2018.

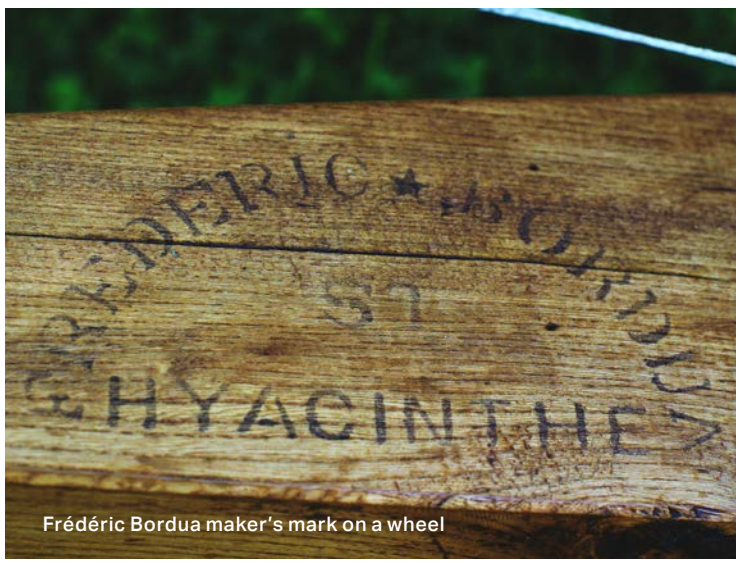
G. A. O. "Nos Vielles Maisons: La Manufacture de Rouets." *Le Clairon de Saint-Hyacinthe,* October 6, 1933.

Ralph, William. "Canadian Tilt-Tension Production Wheels." *Spin Off*, Fall 1994, 102–8.

The Spinning Wheel Sleuth. Quarterly newsletter published by Florence Feldman-Wood, spwhsl.com.

Taylor, Michael, and David Pennington. *Spinning Wheels and Accessories*. Atglen, PA: Schiffer Publishing, 2004.

Caroline Foty knits, spins, and weaves in Baltimore, Maryland, assisted by a number of cats.



Frédéric Bordua maker's mark on a wheel


Frédéric Bordua wheel

Photos by Matt Graves unless otherwise noted

Connie's charming crochet cowl is a great way to use a gorgeous braid, a favorite spindle, handmade buttons, and a few fiber-filled hours. *Shown:* Handspun Polwarth/silk from Three Waters Farm, crochet hook from Lantern Moon, and buttons by Dimensions Raku Fired Clay

Interlocking Button Cowl

CONNIE LEE LYNCH

Easy stitches and a little texture go a long way in making this little cowl a cool accessory. Five rows of treble crochet stitches are nestled in between lines created by working into the back bar of half double crochet stitches to elevate a simple design that works just as well in solid colors as in lightly variegated and speckled colorways. The five buttoned tabs interlock when the cowl is closed, creating a dramatic and bold focal point and showcasing some amazing buttons!

SPINNING NOTES

Starting with handpainted combed top, I first needed to decide how I wanted the colors to present in the finished cowl. My goal was to have stripes that worked well with the button tabs, so I decided to use chain plying to create color runs. I also wanted plenty of color changes to appear in this fairly small cowl, so I split the fiber in half along the length of the top, stopping just before the very end. I left the last bit still attached so that I could overlay the ends. My goal was for the second half of the finished skein to be a mirror image of the first, adding a nice symmetry to the stripes. Because of the silk content in this fiber (which I adore!), I decided to predraft the fibers just a bit as I worked, making drafting more comfortable.

I used a short-backward drafting technique to spin S-twist singles that I then used to create a Z-twist chain-plied yarn, which most people find preferable for crocheting. I have an affinity for chain plying because I can simply spin away, right through an entire 4-ounce braid of fiber, and then ply straight from the bobbin without further manipulation or management. It also helps create those long color runs in a three-ply yarn without a lot of planning! I'm all about a meditative spin.

While plying, I paid particular attention to color changes, working to ensure that they transitioned as gently as possible to the best of my ability. To do this, I would adjust the length of my loop (and I work with *very long* loops) as needed to allow a color shift to occur *after* the loop wherever possible. This helps prevent blunt color changes and creates a yarn with more color fluidity and fewer chain-plying bumps.

I used my Ashford e-Spinner 3 for both spinning and plying, letting it run just a tiny bit faster than I am comfortable with because it forces me to let go of some control and allow the imperfections that can be so beautiful in handspun yarn. Of course, you don't have to do it that way! This cowl would work up just as well with perfectly evenly spun yarn. I just happen to like the extra character that I get from the thick and thin texture throughout my handspun.

For finishing this yarn, I gave it a nice long soak with a bit of rinse-free wool wash and then whuzzed and snapped it a couple times after gently squeezing out the excess water. I allowed it to air-dry unweighted.

Connie is an avid crocheter and designer who caught the spinning bug in 2019.

Courtesy of Connie Lee Lynch

Polwarth/silk from Three Waters Farm and ebony hook from Lantern Moon

I hope this project encourages you to indulge in a beautiful handpainted braid and a bit of button shopping this winter!

Resources

Dimensions Raku Fired Clay, dimensionsart@juno.com.
Three Waters Farm, threewatersfarm.com.

MATERIALS

Fiber Three Waters Farm/Mary Ann Pagano, 80% organic Polwarth/20% cultivated silk, 4 oz (113 g).
Yarn Chain-ply; 250 yd; about 1,440 ypp; 11 wpi; DK to light worsted weight.
Hook Size E/4 (3.5 mm). Adjust hook size if necessary to obtain the correct gauge.
Notions Markers (m); tapestry needle; 5 or 10 buttons, 15–20 mm diameter recommended; jump rings (optional); jump-ring pliers or 2 pairs of chain- or flat-nose pliers (optional).
Gauge 21 sts and 16 rows = about 4" in pattern, blocked.
Finished Size 24¾" × 8" open; 21" circumference when buttoned.

Visit **spinoffmagazine.com/spin-off-abbreviations** for terms you don't know.

NOTES

- Length and width are easily modified by adding or subtracting stitches in multiples of two and doing fewer or more repeats for additional tabs.
- Remember to get additional buttons if you're making more tabs! Buttons may be sewn on or made to be removable/reversible by joining two buttons together with a jump ring if they are both shaft buttons as in the sample.
- When assembled, the tabs overlap over the body, creating a 21" circumference.

STITCH GUIDE

Foundation single crochet (fsc) Ch 2, insert hook in base of 2nd ch from hook, yo and pull up lp (2 lps on hook), yo and draw through one lp on hook (counts as base of new st), yo and draw through both lps on hook, *insert hook in base of st, yo and pull up lp, yo and draw through one lp on hook (counts as base of next st), yo and draw through both lps on hook; rep from * as indicated.
Foundation half double crochet (fhdc) Yo, insert hook into bottom of previous hdc. Yo and pull up a lp (3 lps on hook), yo, draw through 1 lp on hook, (counts as base of new st), yo and draw through

all 3 lps on hook, *yo, insert hook in base of st, yo and pull up a lp, yo and draw through 1 lp on hook (counts as base of next st), yo and draw through all 3 lps on hook; rep from * as indicated.

Chainless tr Pull up a lp to height of tr, and holding top of lp so it doesn't unwind, carefully wrap lp around your hook 2 times, insert hook in first st, yo and pull up a lp, [yo and draw through 2 lps, treating the tall lp wrapped around your hook as one strand] 3 times.

Sc in back bar On WS, insert hook from bottom to top under diagonal bar located below top 2 lps of next hdc, yo, pull up a lp (2 lps on hook), yo and pull through both lps.

COWL

Row 1 Work 120 fsc (see Stitch Guide), turn—120 fsc.

Row 2 (RS) Ch 1, hdc in each st across, turn.

Row 3 Ch 1, sc in both lps of first st, sc in back bar of each st across to last st (see Stitch Guide), sc in both lps of last st, turn.

Row 4 Chainless tr (counts as first tr throughout), tr in each st across, turn.

Row 5 Ch 1, sc in each st across, turn.

Row 6 Ch 1, hdc in each st across, place marker (pm) in 11th st from beg of row, turn.

Row 7 Ch 1, sc in both lps of first st, sc in back bar of each st across to m, sc in both lps of marked st, turn, leaving rem sts unworked—110 sc.

Row 8 Ch 1, hdc in each st across, work 10 fhdc (see Stitch Guide), turn—120 hdc.

Rows 9–11 Rep Rows 3–5.

Row 12 Rep Row 2.

Row 13 Ch 1, sc in both lps of first st, sc in back bar of each st across to last st, sc in both lps of last st, work 10 fsc (see Stitch Guide), pm in 10th st from beg of row, turn—130 sc.

Row 14 Ch 1, hdc in each st across to m, turn, leaving rem sts unworked—120 hdc.

Rows 15–26 Rep Rows 3–14.

Rows 27–29 Rep Rows 3–5.

Rows 30–31 Rep Rows 2–3.

Row 32 Ch 1, sc in each st across. Fasten off.

FINISHING

Weave in ends. Block to finished measurements.

Place one button 4 sts from end of any tr row behind tab, and sew button to cowl.

Once the button is attached, insert button between 4th and 5th tr at opposite end of the same row to button the cowl closed.

Optional: Using jump rings and pliers, connect shank buttons in five groups of two. Insert one button between 4th and 5th tr at one end of any tr row behind tab and also insert button through fabric under the tab to close the cowl.

Repeat on each tr row to attach rem buttons and secure tabs.

Connie Lee Lynch is a crochet instructor certified by the Craft Yarn Council and has been designing since 2009. She delights in exploring texture and color inspired by nature and the scenery that surrounds her and her family. As an Army wife, Connie moves with her family every few years, constantly finding new inspiration and sprinkling her love for the fiber arts behind her as she goes! You can find her online at crochetcetera.com as well as on Ravelry and Instagram @crochetcetera.

The combination of stitches and chain-plied yarn creates a complex fabric.

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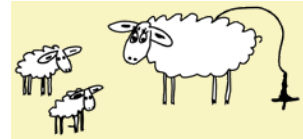

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CANADA

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(613) 306-1834
indigohilldyestudio.ca

Sisterhood Fibres
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(902) 483-3715
www.sisterhoodfibres.com

JAPAN

Kakara Woolworks
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Japan
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kakara-woolworks.com

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REVIEW BY TERRY MATTISON

Textile Travels

by Anne Kelly

London: Batsford Books, 2020. Hardcover, 128 pages.
ISBN 9781849945646.

STITCHING AS A FORM of mark making is quite popular. This book offers unique ideas for capturing travel memories using fabrics, yarns, and stitching. Paper travel journals capture memories and ideas, but journaling with textiles takes this to an entirely new level that I found inspiring and intriguing. *Textile Travels* is not a typical how-to book but is filled with many clever and interesting ideas.

What do you capture during your own travels? Maps? Colors particular to an area? Symbols? Personally, I like the idea of maps. Maps can show road travel or the route taken by airplane or ship. Maybe you are visiting another country where you have family ties and want to journal your family's migration route. There are so many possibilities!

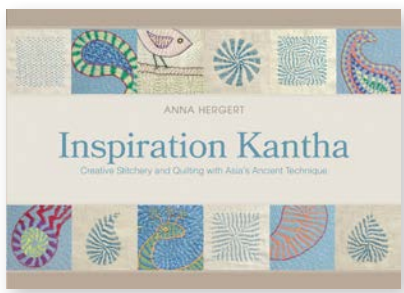
We, as spinners, can bring an additional element to this art form—we can spin our own stitching thread. Choosing the colors and textures you want to use in your own work adds a more personal touch. And if you are traveling in an area with certain sheep breeds or other fiber animal breeds, perhaps you could spin some local fiber or even use a local natural-dye source for a bit of color.

I like the idea of taking a blank canvas along on a trip—a cloth booklet you can create at home and take with you on your journey. In addition to writing in my more traditional journal, I really like the idea of spinning a bit of fiber to stitch some of my travel memories. The colors, shapes, and ideas you capture in your journal can generate project ideas after you return home.

Many of the canvases shown in *Textile Travels* are a combination of paper and fabric, resulting in a type of surface design. Interesting ideas for how to use your textile journal include as lining for a special box, as a wall hanging, or as a travel case. The author also includes some great ideas for putting together your own portable stitching case.

There are many interesting ideas for textile journaling, and I found them useful for spurring ideas for projects I never would have thought about otherwise.

Reading List



Inspiration Kantha
Creative Stitchery and Quilting with Asia's Ancient Technique
Anna Hergert
Atglen, PA: Schiffer Publishing, 2017.

Tapestry Weaving
for Beginners and Beyond
Kristin Carter
Newton Abbot, UK: David & Charles, 2022.