



long thread *PRESENTS*
MEDIA

SENSATIONAL SILK

*Weave, Knit, Crochet, and Embroider
with One of Nature's Luxuries*





Photos by Michael Cook and Coleen Nimetz

Often called “the queen of fiber,” silk has captivated us for millennia with its luster, luxurious hand, and willingness to accept vibrant dyes and hold them fast. This special collection is a cross-section of silk-centric articles and projects from decades of our beloved magazines. Explore silk across the world—from Mexico to Laos—and then choose your next project: scarves and more for multi-shaft and small loom weaving, a pincushion to embroider, mitts to crochet, and a beautiful silk cowl and beret to knit. We hope you enjoy these treasured stories and projects that celebrate this remarkable fiber.

Contents

2 A Lustrous Treasure: Silk in Mexico

Eric Mindling, excerpted from *Spin Off* Spring 2016

6 A Day in the Life of a Lao Silk Farm Worker

Coleen Nimetz, excerpted from *Spin Off* Summer 2014

13 The Queen of Fibers

Michael Cook, excerpted from *PieceWork* Nov/Dec 2016

18 Glowing Embers

Marlene Lloyd, excerpted from *Handwoven* Nov/Dec 2020

21 Jin Silk Scarf

Bonnie Inouye with Robin Wilton, excerpted from *Handwoven Loom Theory*

24 “Origami” Napkins with Silk Overshot

Susan E. Horton, excerpted from *Handwoven* May/June 2013

26 Glow Scarf

Christine Jablonski, excerpted from *Easy Weaving with Little Looms* Spring 2022

28 Relaxation Eye Cover

Jennifer B. Williams, excerpted from *Easy Weaving with Little Looms* Summer 2021

31 Meghalaya Scarf

Shilpa Nagarkar, excerpted from *Easy Weaving with Little Looms* Winter 2022

33 Fingerless Silk Mitts to Crochet

Dixie Falls, excerpted from *PieceWork* July/Aug 1994

37 Heraldic Rose Biscornu Pincushion to Stitch

Katrina King, excerpted from *PieceWork* Mar/Apr 2015

40 Peace Silk Beret and Cowl to Knit

Julie Turjoman, excerpted from *PieceWork* Nov/Dec 2016


Need Assistance?

If you are having technical issues or any general site issues, please contact our Customer Service by emailing support@longthreadmedia.com.

A LUSTROUS TREASURE

Silk *in* Mexico

BY ERIC MINDLING

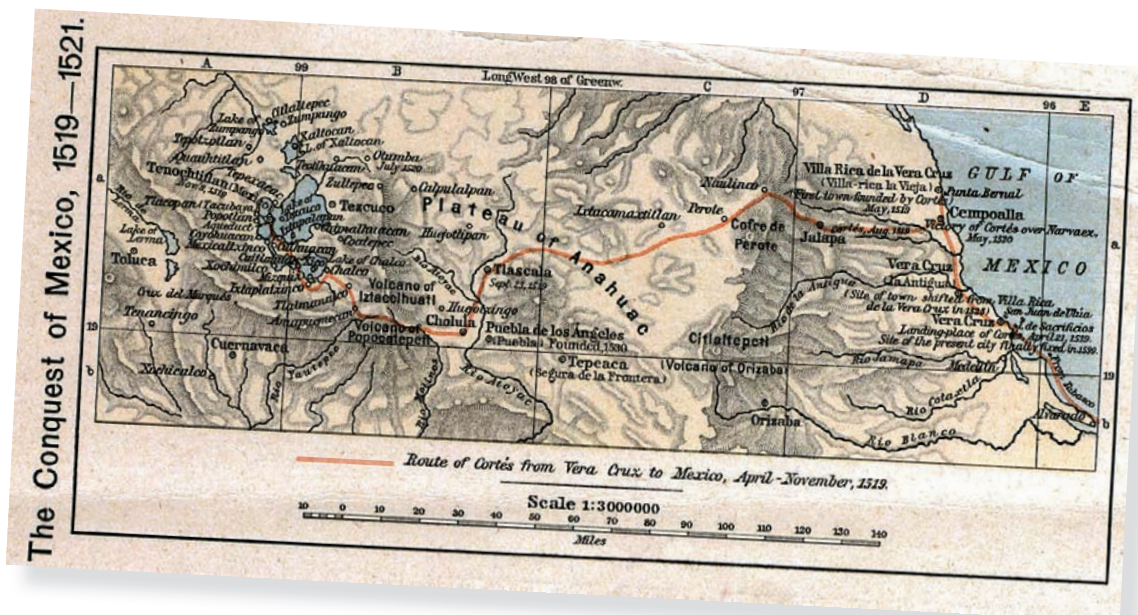


These silk scarves were grown, spun, woven, and dyed in San Pedro Cajonos, Oaxaca, using centuries-old methods.

PHOTO BY JOE COCA

Five hundred thirty mercenaries in binding leather, steel armor, rusting helmets, and sweaty boots, carrying swords and arquebuses, cut forward through the drowning tropical heat. Spurred onward by their outlaw leader, wild-eyed horses and snarling war dogs at their sides, they lunged into another bloody battle against the feather-crowned indigenous warriors of Mesoamerica.

And so it was that silk came to the Americas.



CORTÉS AND THE SILK TRADE

It was 1519 and Hernán Cortés had been sent by the Spanish governor of Cuba to initiate trade relations with the indigenous coastal tribes of what we now call Mexico. But, hungry for glory and wealth, Cortés plunged inland in search of gold and treasure, conquering the Aztecs and taking this “new” land for Spain.

Cortés and Spain wanted to extract as much wealth as possible from the colonies, but there wasn’t enough gold to go around. However, there were mulberry trees.

Although some sources report that before the

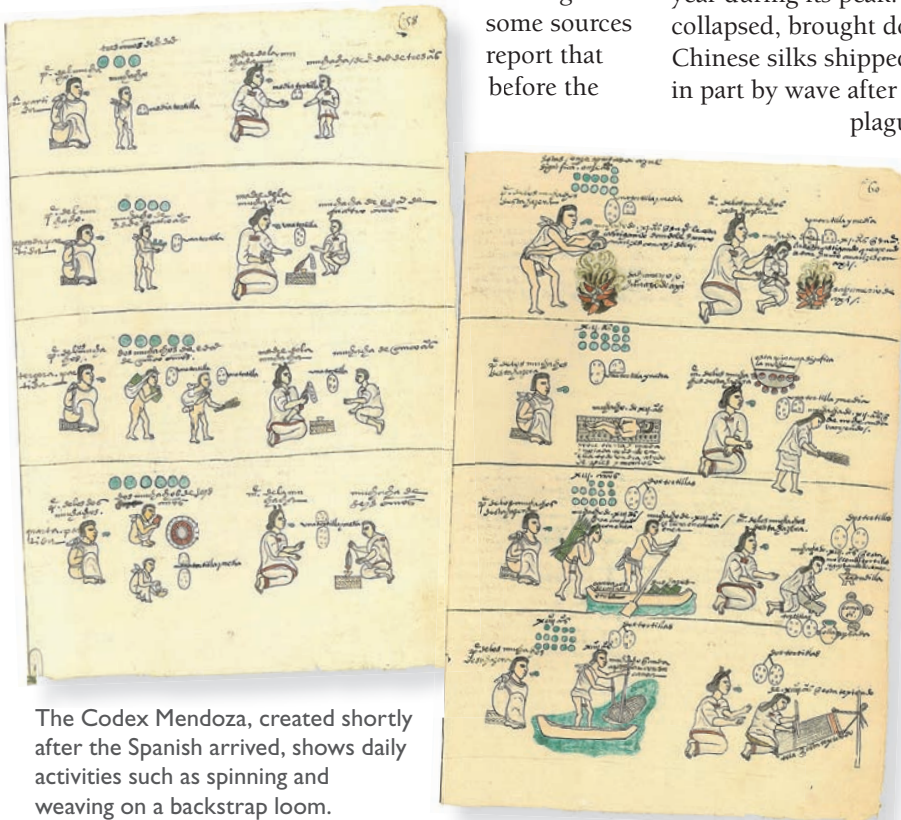
Cortés invaded Mexico in 1519. He claimed to have introduced silk to Mexico.

conquest a type of silk was processed in Mesoamerica from wild moths, Cortés claims to have brought the first silkworm eggs to New Spain (Mexico) from Spain in 1523. With the abundant free labor of the indigenous population, soon there was a flourishing trade in this luxury fiber, and for nearly a century, silk was king in southern Mexico. The region of the old Mixtec kingdoms in Oaxaca state was the greatest producing area, producing 20,000 pounds of raw silk a year during its peak. But by early 1600, the boom had collapsed, brought down in part by competition from Chinese silks shipped in on the Manila galleons and in part by wave after wave of devastating European

plagues of smallpox, measles, and flu that killed off nearly 95 percent of the indigenous population by 1600. By 1610 there was no one left to work the silk, the market shifted, and the Spanish silk industry disappeared in Mexico forever.

SILK REVIVAL

But it was not the end of silk in Mexico. During the boom, it was indigenous communities that did the hard work of cultivating and spinning the silk. However, indigenous people were forbidden by law (punishable by death) from weaving that silk. It was in weaving the cloth that the greatest value was added to the silk, and



The Codex Mendoza, created shortly after the Spanish arrived, shows daily activities such as spinning and weaving on a backstrap loom.

this right was reserved for Spanish weaving guilds in Oaxaca, Puebla, and Mexico City. The law, apparently, applied only to the Spanish floor looms and not to the indigenous backstrap looms. It was with backstrap looms that silk quickly became part of indigenous clothing. Some of those communities continued with sericulture on a cottage-industry scale, for they had incorporated silk into their richly decorative traditional dress.

SILK, SUSTAINED

Amazingly, four hundred years later there still exist two villages in Mexico where the original Spanish-indigenous tradition of sericulture survives. Offspring of those first Spanish silkworms are still fed mulberry leaves in the back rooms of adobe houses. The cocoons are boiled in ash to clean them, then handspun on support spindles as if they were cotton, and the silk thread is woven into cloth on backstrap looms.

Both villages are in remote corners of the state of Oaxaca, yet they are worlds apart from each other. San Mateo Peñasco is in the highland region of those old Mixtec kingdoms that once produced so much silk. The other village, San Pedro Cajonos, is far away in the Zapotec realms of the Sierra Madre. The villages are far removed from each other, and what they do with their silk is also quite distinct.

Many women continue to cultivate silk and spin in San Mateo Peñasco, but to this day not a single person in that village weaves. Instead, the thread is sold by the skein to two distant villages, where it is woven into traditional garments. The survival of sericulture in San Mateo is symbiotically tied to the ongoing weaving and use of textiles in those two faraway communities. Both Santiago Ixtayutla, a Tacuate village deep in the southern Sierra, and Pinotepa de Don Luis, a Mixtec village in a distant corner of the Oaxacan lowlands, still have fairly vital traditional cultures, and each of these villages creates iconic and unique weavings.

The weavers of Santiago use burgundy-dyed silk thread to brocade fine designs into their long white cotton *huipiles* (square-cut gowns). The silk is intentionally dyed to run. Freshly woven *huipiles* are folded and washed in a certain fashion so that the running burgundy dye will create an effect almost like tie-dye. In Pinotepa de Don Luis, the silk is also burgundy, but it is dyed to be colorfast. There, the silk is woven into a sarong-like wrap that is composed of narrow bands of color akin to a striped flag. In addition to the burgundy silk stripe, there are stripes of cotton thread in indigo-dyed blue and murex-dyed purple.

The other silk village, San Pedro Cajonos, is a weaving village with a long tradition of creating the red sashes once popular with women in certain

regions of Oaxaca. Over time, the silk sashes were replaced by cheaper cotton or wool sashes or the traditional style of dress was abandoned altogether. As a result, by 1990 there were only four women left in San Pedro who still wove. Fortunately, at that time a government-led design and marketing program came to the village. The designers helped the villagers adapt the form of the sash into a *rebozo*, or shawl, which is a very popular item throughout Mexico. The program provided technical training, assistance in finding new markets for the weavings, and the introduction of more productive silkworms and mulberry trees. San Pedro enjoyed a rebound, and the neighboring villages of San Mateo Cajonos and Yaganiza also got on the bandwagon.

SILK PAST, PRESENT, AND FUTURE

The silk and textiles of these villages are a sweet sampling of the richness of indigenous weaving that still exists in Mexico. In a small way, these weavings, with their Spanish-introduced silk and indigenous techniques and creativity, are a symbol of Mexico in general, a modern nation born of the clash and fusion of two grand cultures. They are also a symbol of perseverance and adaptability. With continued efforts, these may continue to exist in balance so that silk cultivation, spinning, and weaving will still be alive and well in the far corners of Mexico four hundred years from now.

Eric Mindling has lived in Oaxaca, Mexico, since 1992, working with and promoting traditional artisans. His company, Traditions Mexico, offers tours among the indigenous weavers, spinners, and dyers of Mexico, including one-day expeditions to meet sericulturists in the northern Sierra. Learn more at Eric's website, www.traditionsmexico.com.

RESOURCES

Borah, Woodrow. *Silk Raising in Colonial Mexico*. Los Angeles: University of California Press, 1943. Out of print.

Kallenborn, Carolyn. *Woven Lives: Contemporary Textiles from Ancient Oaxacan Traditions*. DVD. 2011.

Klien, Kathryn, ed. *El hilo continuo (The Continuous Thread)*. Los Angeles: J. Paul Getty Trust, 1997.

Thomas, Hugh. *Conquest: Cortés, Montezuma, and the Fall of Old Mexico*. New York: Simon & Schuster, 1995.



PHOTOS BY ERIC MINDLING UNLESS OTHERWISE INDICATED

Clockwise from Top Left: The spinner teases open each cocoon to prepare it for spinning. Otilia Masa spins silk from cocoons on a supported spindle. Otilia threads the heddles of her backstrap loom. The yellow cocoons are from the traditional worms descended from the Spanish silkworms; the white cocoons are from newer hybrid silkworm varieties. Otilia weaves either seated or standing. Reyna, a young weaver, with homegrown silkworms.

A Day in the Life of a Lao Silk Farm Worker

BY COLEEN NIMETZ



ALL PHOTOS COURTESY OF COLEEN NIMETZ



This slightly transparent worm is eating his fill and searching for a place to spin his cocoon.

“Well, why don’t you come and stay at the farm with us?”

I was hoping to study the Asian tradition of sericulture, and my husband and I were planning a trip to Southeast Asia when I received the message that would change my life. My interest in silk was sparked by a workshop with Michael Cook of www.wormspit.com in the fall of 2011, and I had turned to the Internet to search for silk farms to visit on our upcoming trip. Emails went back and forth, and then came the invitation. We looked at the map and said, “Why not?”

Mulberries Organic Silk Farm is near Phonsavan in Xieng Khouang Province in northern Laos, which seemed relatively close to where we planned to travel

in northern Thailand. Little did we know that travel in northern Laos was not for the faint of heart and entailed boat, plane, train, and a seven-hour van ride over unimaginably rugged roads in the mountains. There were times when I wondered what I had gotten us into! But through the kindness of strangers, we eventually found our way to our destination. There we met an amazing woman who is often referred to as a modern-day heroine, Madame Kommaly Chanthavong.

Madame Kommaly is a farmer's daughter from the mountains of eastern Laos. When her village was bombed during the Vietnam War, she fled to the capital city, Vientiane, carrying only her family's traditions: her knowledge of raising silkworms, weaving, and natural dyeing. When the Pathet Lao took control of Laos in 1975, they labeled silk weaving as bourgeois, and women had to hide their looms or weave cotton. But silk work never died. Women would dream of silk while they wove proletarian kapok. Silk went underground, and women wove at night to maintain their skills and remember patterns. Kommaly, a nurse by profession, used her money to buy looms. She hoped that by rekindling the interest in silk weaving, refugee women could earn money.

In 1976, she founded a cooperative for the production of silk, which she still heads. The cooperative teaches mainly women in the traditional skills of raising silkworms, making natural dye, and weaving traditional Lao patterns. In a radical reversal, the revolutionary president granted Madame Kommaly 40 hectares in Xieng Khouang province, an area known for its silk.

SILK BRINGS CHANGE (AND PRESERVATION)

When Mulberries Organic Silk Farm was established, her goal was to create income in a socially and environmentally responsible way. The farm has established partnerships with over two hundred village families, who receive training at the farm in silkworm rearing, reeling, and natural dyeing. They also learn traditional weaving techniques that are at risk of being lost.

In addition to providing a reliable supplemental monthly income, Mulberries also promotes dignity and empowers women. Laos is one of the poorest countries in Southeast Asia. More than 25 percent of the people live on less than one dollar per day, and two-thirds of

the population live without sanitary facilities or clean water. The successful marketing of products produced at Mulberries provides a fair and steady income to several hundred families. Mothers are proud to pass on the skills they have learned at the farm. Many girls learn to weave their own skirts by the time they are ten years old, and those who show weaving skill are respected by villagers.

Madame Kommaly works with expert weavers to develop new designs based on traditional patterns. They choose colors and motifs that appeal to buyers but also preserve traditional skills and artistic expression. These designs have won numerous awards from UNESCO and have received special recognition at exhibits worldwide.

In recognition of Madame Kommaly's efforts, she was nominated for the Nobel Peace Prize in 2005 for her contribution in strengthening the social and economic position of Lao women and their families. In March 2011, Secretary of State Hillary Clinton and First Lady Michelle Obama announced the International Women of Courage Awards, which were given to ten honorees from around the globe including Madame Kommaly. The recipients represent women who work in their countries against corruption and injustice,

and who fight for human rights, good governance, and economic opportunity. By working to overcome poverty, discrimination, and violence, the honorees not only champion the rights of women and girls, but also serve as inspiration to us all.

FARMING SILK

The majority of silk produced in the world is from the *Bombyx mori* moth, which has been domesticated from the wild silk moth, *Bombyx mandarina*. Through selective breeding, it has become the world's only truly domesticated insect totally dependent on human care. Madame Kommaly began a breeding program to develop a hybrid moth, which combines attributes of tough Lao silk with the length of Thai and Japanese filaments tempered with softness. *Bombyx mori* exist on an exclusive diet of mulberry leaves (*Morus alba* or *Morus nigra*). To maintain the necessary food supply, Mulberries Organic Silk Farm cultivates acres of mulberry trees. The leaves are used to feed silkworms and to make tea, while the berries are used to make preserves and wine.

During both of my visits to Mulberries, I worked as a laborer and learned the entire process of silk



production. This included growing mulberry trees, raising silkworms, reeling silk, natural dyeing, and weaving silk yarn.

The first lesson I learned is that the day revolves around feeding the worms! Just like human babies, silkworms need to be fed three to five times a day, depending on their age. My day began before breakfast, when I headed to the field to pick baskets of fresh mulberry leaves. This is backbreaking work. The baskets are then taken to the rearing sheds, where the worms are kept in shallow bamboo trays. Because the worms are prone to fungi and bacteria, it is crucial that these sheds be kept clean and free from insects and vermin. Cleanliness is particularly important, so before entering the sheds we washed our hands and removed our footwear.

The life cycle of a silkworm normally takes about thirty-two days, depending upon temperature. The worms we tended were at varying stages of maturity, from new hatchlings to mature worms ready to spin their cocoons.

It is generally accepted that a worm needs a leaf of its same age. For hatchlings, the leaves must be tender and chopped into very small pieces, whereas more mature caterpillars require older leaves. After four to five days, the hatchlings stop eating and rest as they prepare to shed their skins. Silkworms molt four times through their life cycle, with new skin allowing space for further growth. The periods before and after the molts are called instars. Over its life cycle, a silkworm increases to 10,000 times original size. After about two weeks, it is no longer necessary to chop the leaves into tiny pieces, as the worms are now able to eat uncut leaves. In fact, by the time they are at the fifth instar, we simply sprinkled leaves and small branches on top of them.

The second lesson I learned is that worms have insatiable appetites and are virtual eating machines. By the next feeding, a mere four hours later, all the leaves would be eaten back to the stems, and the worms would be looking for more food.

Between feedings, there were other chores. As the worms increased in size, it was necessary to move some of them into new bamboo trays so they would have adequate room to grow. To keep them healthy, we cleaned the frass (caterpillar poop) regularly throughout the growth cycle. Hatchlings were occasionally given a light dusting of lime powder to decrease humidity, thereby reducing the risk of disease.

In the fifth instar, the silkworms gorge themselves in preparation for pupation. Their color changes slightly, and they become translucent when held to the light. They begin to wander in search of a place to spin their cocoons.

When this occurs, the worms are removed from the feeding trays and placed on bamboo trays with plastic netting. It takes about three days for the silkworm to complete its cocoon.

I have a confession: initially, I found it really, really difficult to pick the worms up. This greatly amused my fellow workers. To save face, I made up my mind I would show no fear, and soon I was able to easily handle them.

Eventually I was actually trusted to tend the precious worms by myself. One of my small pleasures as I worked was





Eventually I was allowed to take care of the silkworms by myself.



Above: The filaments from a number of cocoons are threaded through the reel.
Left: A traditional Lao silk-reeling set up.

to hear the sounds made by the worms, which can be compared to the sound of falling rain. This sound is attributed to two sources: their mandibles as they munch on the leaves, and their feet moving on the leaves. (Not quite so romantic is the sound of their frass dropping.)

About 25 percent of the silkworms with the most desirable characteristics are allowed to mature into moths and emerge from their cocoons to mate and lay eggs. These moths have no mouths and are unable to eat or drink. They usually die within five days once their stores of water and food are depleted. The remaining 75 percent of cocoons are harvested about ten days after the worms begin spinning their cocoons. Most often the cocoons are reeled fresh. If that is not possible, the pupae are stifled (killed) with heat and stored for future reeling.

FROM COCOONS TO THREAD

Between feedings and related chores, I learned traditional methods of handreeling silk and twisting thread (throwing) to make it stronger for weaving.

There are several methods of reeling silk cocoons. Initially, I learned the more rustic Lao style of reeling in which a large number of cocoons are added to a pot of simmering water over a wood fire. The cocoons are

thoroughly wetted by stirring with a bamboo stick. In the stirring process, filaments of silk become attached to the stick. These filaments are threaded through the reel and wrapped around a *croissure*, and the thread is crossed around itself several times. The purpose of the *croissure* is to squeeze the filaments to remove excess moisture and to press them tightly together. Once the *croissure* is threaded, the silk is pulled by extending one's arm and laying the silk into a bamboo basket. The other hand constantly stirs the cocoons, thus ensuring that all cocoons become joined. Small stones are placed on top of the silk filament in the basket to prevent tangling. As the silk is reeled from the cocoons, it becomes thinner and thinner, so more cocoons are constantly added. Silk reeled in this manner is thick and textured.

Once I had mastered the traditional technique, I learned another method involving fewer cocoons, using a more advanced *croissure*. Instead of laying the silk in a basket, the silk filament is wound onto a more modern reeling machine.

Although the traditional method of reeling is still used at Mulberries, they have also adopted the use of mechanized silk-reeling equipment to increase production and improve the quality of reeled silk. The silk reeled this way is fine and smooth.



In the traditional reeling method, the silk is pulled off and laid in a basket.

Natural dyes are used to color the silk thread as a means of maintaining traditional and sustainable methods of production. Most of the dye materials are grown on the farm and include annatto, lac (a tree resin formed by an insect), indigo, turmeric, marigold, mud, and bark. Mulberries has developed a palette of more than one hundred hues using these natural ingredients. Throughout my stay, I picked annatto seeds, ground lac, prepared indigo leaves to ferment, and tended dye pots. One of my most exciting dye experiences was using indigo to produce a beautiful mauve color, a dye recipe developed by Madame Kommaly.

After the final daily feeding of the worms, I would retire to our guesthouse for a much-needed rest and to enjoy a meal prepared by one of the ladies at the farm. Early in the evening, I would fall into bed exhausted, to dream of everything I had learned throughout the day and to anticipate what the next day would bring.

SILK IN USE

At Mulberries, reeled silk is used in sophisticated weavings including complex supplementary-weft methods of tapestry, brocade, and weft ikat. My primary interest is knitted lace, so I was left with the challenge of transforming the fine silk filament into a suitable yarn.



The Queen Silvia Shawl from *Knitted Lace of Estonia* by Nancy Bush (Interweave, 2008), knitted in 6 × 2 organzine.



Even a single filament can change the final yarn. At left, a 5×2 (five filaments each in two plies) yarn is visibly thinner than the 6×2 yarn on the right.

Unlike spinning, where the challenge is to make yarn fine enough for gossamer knitting, the challenge in throwing (twisting) filament silk is to make a thread thick enough so it has enough substance and drape to be suitable for this purpose. The design possibilities are endless by merely varying the number of filaments and plies and the amount of twist.

My usual yarn for knitted lace is a fine two-ply yarn with approximately 70 to 80 wraps per inch and 10 to 15 twists per inch. In reeled-silk language, a similar yarn—a balanced plied yarn—is known as organzine. The grist is varied by the number of filaments twisted together to make the singles. I began by sampling, increasing the grist by increasing the number of filaments in the singles and varying the amount of twist. After extensive sampling, I chose a yarn consisting of six filaments in the singles, plied into a two-ply balanced yarn, which is known as a 6×2 organzine.

The amount of twist also has a dramatic effect on the hand and luster of the yarn. Tightly twisted yarns, while stronger, are stiff and matte. Less twisted yarns are soft and shiny. I varied the twist in the samples, looking for a yarn that had enough twist so the yarn wasn't limp yet not so much twist that the yarn was matte. I have always wanted to knit a shawl in the Estonian lace tradition, and the yarn I created seemed to be the perfect choice for such a project. I turned to Nancy Bush's *Knitted Lace*

of Estonia (Interweave, 2008) and began by knitting the Queen Silvia Shawl as a practice sample to learn how my reeled silk would behave in knitted fabric. I then went on to knit the Crown Prince Square Shawl. It was magical to see the yarns created in the tradition of Southeast Asia being transformed into the tradition of knitted Estonian lace. It reminded me of how truly small our world is and how craft traditions cross many cultures.

My trip to Mulberries was an incredible journey. I am grateful that Madame Kommaly has invited me to consider her farm my second home and has urged me to return whenever possible. My dreams are full of visions of raising my own worms, transforming the silk into everything from knitted lace underwear to cut-pile carpet. I also dream of my next visit to Mulberries. 🐛

Coleen Nimetz spins with tigers, works as a laborer on a silk farm in Laos, and raises silkworms at her home in Saskatchewan, Canada. She is an instructor and subject matter expert for the Olds College Master Spinner Program and teaches spinning and dyeing throughout Canada and the United States.

RESOURCES

Cook, Michael. "Lao Silk Reeling." *SpinKnit* Winter 2011.
Kemp, Melody. "Laos: The New Silk Road." www.ipsnews.net/2009/07/laos-the-new-silk-road.
www.wormspit.com.

The Queen of Fibers

Making and Using Silk for Embroidery

MICHAEL COOK



Top: Michael Cook's handmade three-ply organzine after degumming is lustrous and soft.

Above: A silkworm (*Bombyx mori*).

Unless otherwise noted, all images by Michael Cook.

Silk is one of the marvels of the natural world, and its use in textiles is one of the wonders of human ingenuity. A silkworm caterpillar (*Bombyx mori*) eats mulberry leaves every day for a month, and then spins a cocoon with nearly a mile of single, unbroken thread as fine as a cobweb. The Chinese began domesticating silkworms somewhere between 5,000 and 7,000 years ago. They learned to unwind the cocoons, joining the cobweb-weight cocoon strands into a filament and twisting that filament to make threads to create and embellish textiles.

Filament silk is translucent, and it both reflects and refracts light, making it appear glossy and luminous. It takes well to dyes, both synthetic and natural, so silk can be colored to an astounding range of hues, shades, and tints. Physically, silk is smooth, supple, soft, and strong. All of these factors add up to silk being perfect for a wide range of embroidery applications.

As it comes out of the caterpillar's spinnerets, silk is a doubled strand, called a *bave*, composed of two proteins: the long, shiny fiber called "fibroin" and the stiff, sticky gum called "sericin." Sericin binds the long strand of fibroin together to make the cocoon solid and secure to protect the pupa as it transforms from caterpillar to moth. Before I started raising silkworms, I had thought that cocoons would be soft like cotton balls, but they are hard like stiff paper. The moth uses an enzyme to break out of the cocoon; the enzyme dissolves some of the silk, leaving it unable to be reeled and suitable only for spun silk. It takes roughly 250 cocoons to make an ounce (28.3 g) of filament.

*Silk thread has been the premium standard through the ages,
decorating everything from royal robes to fancy buttons,
from sword hilts to fishing flies.*

Filament silk (also called “reeled,” “nett,” “gloss,” and “pure silk”) comes in a variety of forms. Filament is a single strand made from multiple cocoon strands (baves), which are wound off from the cocoons using hot water; they are glued together with the sericin or silk gum. A filament is about the thickness of a fine human hair and is typically off-white and waxy looking. The majority of the filament currently produced in automated silk factories is 21-denier filament (see the “Denier” sidebar), made from about six to eight cocoon strands, although there are various less-common standard weights for different applications. When I make my own filament at home, I typically work with about fifteen to twenty cocoons at a time, making a filament of about 40 to 50 denier. I find this

filament a lot easier to handle and less likely to break. The simplest silk type consists of filaments twisted together in one direction and left unplied. As a group, these threads are referred to as “tram.”

In the current embroidery market, tram silk is available from Au Ver a Soie as Soie Ovale (formerly Soie Platte) and from the Japanese Embroidery Center as Flat Silk. In the United Kingdom, DeVere carries a line of tram silks rated by weight, and Pipers sells tram in its High-Gloss Floss line. Most often, the silk is not entirely flat, because a very small amount of twist is necessary to enable the silk to be processed, dyed, skeined, and spooled. I analyzed a sample of Soie Ovale and found that it had nine twists in 12 inches (30.5 cm), only three-fourths of a revolution per inch (2.5 cm), but



A denier coin from the collection of Michael Cook. Fourteenth century. The coin was used to balance a scale against a measured length of silk filament. Skeins of silk were put into one side of the scale and dropped coins into the other side until it balanced, and that was how many denier the silk weighed. The coin is shown with Michael Cook’s handmade organzine sewing thread.

Denier

Denier (say “DEN-yer” if you want it to sound more English or “den-YAY” to approximate the original French) is a measure of weight per length, used specifically for filament threads such as silk. The original measurement was made using a denier coin, which was used to balance a scale against a measured length of silk filament. Skeins of silk were put into one side of the scale and dropped coins into the other side until it balanced, and that was how many denier the silk weighed. There were variations in different countries because of differing units of length and weights of coin.

The modern internationally accepted value used for denier is 1 gram per 9,000 meters or one-ninth of a tex. For those of us used to American weights and measures, it’s about 4.5 million yards per pound. A filament from a single cocoon typically varies between 2 and 3 denier. Most filament is about 21 denier. A fine sewing silk might be 100 or 150 denier; buttonhole thread is typically 1,000 denier. Some threads will have a formula; for example, 21d4x2, which means it starts from 21-denier filament, 4 filaments per ply, 2 plies in the finished thread. DeVere just lists the number of filaments: a 6-thread tram or a 72-thread tram; it assumes the 21-denier starting filament.

—M. C.

The Process of Making Silk for Embroidery

Reeling

First, I sort the cocoons for quality and remove the flossy outer layer of silk. The cocoons can be dried or reeled “fresh” (while the pupa inside is still alive). I typically work with dried cocoons, simply because it’s more convenient, and I’m not at the mercy of the moth’s schedule. If the moth emerges, it breaks the silk strand and the cocoon is unreelable. I submerge the cocoons in boiling water to cook and loosen the gum; doing so makes the cocoons easy to unwind. Then, using a small hand brush, I brush the filaments from the outside of the cocoons. Eventually, I will pull a layer off of the outside, and the cocoons start to unwind. I count twenty of these already-started cocoons and put them into a smaller basin of less-hot water (about the temperature of good dish-washing water or a cup of tea you could sip but not gulp). I pull the strands together and wind them through a pulley assembly called a “croissure,” which helps squeeze the cocoon strands into a single filament and drive off some of the water. I wind them using a special tool—a silk reel. The winding can be done with different types of hand tools, but the silk reel is fast and efficient.

Twisting

I wind the filament onto special silk spools, actually old factory spools from the silk-factory heyday of the American northeast. The spools sit on the floor in a tray, and the filament pulls upward from them. I use a spinning wheel to twist it. For tram, I typically aim for five to ten twists per inch (2.5 cm); for organzine, usually more like twenty. The twisted threads are stiff and wiry from the silk gum and feel like they would make good lawn-chair webbing. If I’m making organzine, this step is done twice: twisting the single and then plying the singles together to make the thread. Then I put the silk up into skeins, usually a couple of hundred yards (183 m) per skein. The ends have to be tightly tied, and I lace the skeins carefully with cotton yarn to avoid tangling.

Degumming

To soften the silk and prepare it to receive dye, I boil the gum off. I simmer the silk for 45 minutes or so in a solution of detergent (Orvus Paste) and sodium carbonate (washing soda such as Arm & Hammer). The washing soda is a mild alkaline, which chemically attacks the sericin gum; the detergent lifts the gum up and away from the silk. I follow with a rinse of citric acid in water, then a rinse in pure water, then a rinse in a conditioner called Milsoft, and finally pure water again. The skeins can be hung to dry or go directly into the dyebath.



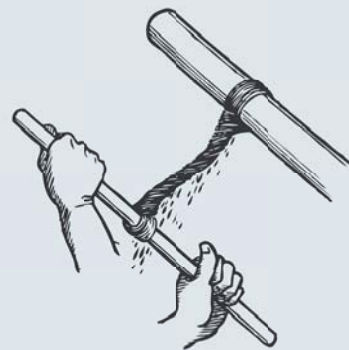
Dyeing

I split the skeins into smaller sizes, particularly if I’m aiming for a range of colors. I try to get five to seven shades of the same color from one dye vat, but it can be tricky to make the color gradations even. The preferred dyestuff for silk is acid dye; the dye powders create even, consistent, and repeatable colors on protein fibers. (Natural dyeing is an adventure all its own. I have little experience with it, so for this article, and for most of my silk embroidery threads, I’m sticking to chem-

icals.) The powder is mixed with water and some chemical adjuncts to create a dyebath, called a “liquor of color.” The skeins are wetted first in water with a little bit of detergent, then submerged in the dyebath and simmered until they have taken up sufficient color. By starting out very light (with a highly diluted dye solution, literally adding dye solution to the vat with an eyedropper) and gradually going to dark, I get a more controllable progression of shades than by going in the opposite direction. The silk is simmered or steamed for half an hour to make sure the dye is set, and then rinsed in a series of rinses like those after the degumming stage.

Lustering

This step enhances the shine of the filament silk by ensuring that the fibers are as straight and aligned as possible. I start with vigorously wringing the skeins using two sticks, and then put my hands through the skein centers and pop them apart, stretching and separating the silk. I hang the skeins with weights to dry. Doing so straightens the fibers, which makes them appear brighter. The light travels along the silk as a long straight line, instead of being rumpled or waved.



Spooling

Filament silks are famous for their tendency to snag, pill, and tangle. I wind them onto spools to keep them manageable. Most commercial filament silks are spooled to be sold for embroidery; spooling keeps them from becoming a mess during packing and shipping, and it protects the thread both in the shop and in the workbasket.

Handling Filament Silk

Low-twist filament silk will snag on any rough surface, including skin and nails, and it tangles easily. Working with a short length at a time helps. Wrapping spools with a paper towel or tissue paper helps keep them from getting roughed up, especially if you carry your work with you. If your skin is rough, use a scrub made from oil and sugar or oil and salt; be sure to wash thoroughly after so that no oil gets on the silk. I have to be very careful with my hands when I’m working on a stitching project, and I am always careful to use gloves when I garden.

Fairly fine crewel needles are best for stitching with fine tram silk; a larger needle works better with the twisted multistrand silks. Some stitchers like to use a laying tool to keep stitches orderly and smooth. Most of the time I prefer not to, but laying tools do come in handy occasionally. Mary Corbet of Needle ‘n Thread has written extensively about her work with filament threads, and I have learned a lot from her. Visit her website and blog: www.needlethread.com.

—M. C.

Above: Wringing silk illustration from *Silk: Its Production and Manufacture* by Luther Hooper (London: Sir Isaac Pitman & Sons, 1911).

Left: Dyeing silk illustration from *Silk: Its Production and Manufacture* by Luther Hooper (London: Sir Isaac Pitman & Sons, 1911).



A reeled strand at left and a spun strand at right.



Michael Cook's handmade three-ply organzine before degumming is stiff and waxy. A U.S. dime is shown for scale.

As it comes out of the caterpillar's spinnerets, silk is a doubled strand, called a bave, composed of two proteins: the long, shiny fiber called "fibroin" and the stiff, sticky gum called "sericin."

enough to make the filaments hold together. Tram silk can be carefully split to achieve finer threads, and there are many techniques for combining and twisting fine threads for special effects. Japanese embroiderers are particularly ingenious with these combining and twisting techniques.

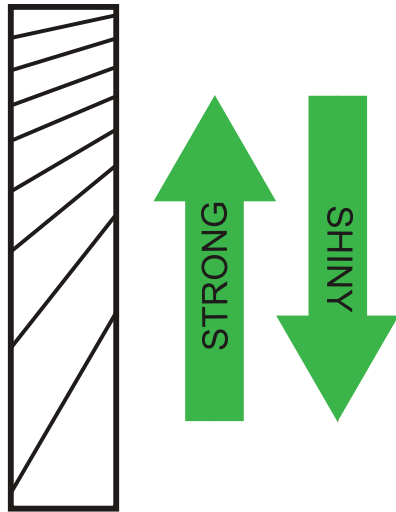
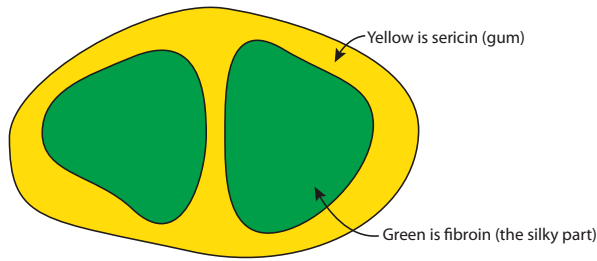
With silk, there is a direct relationship between twist and strength and an inverse relationship between twist and gloss: A high-twist thread is stronger and more resistant to abrasion but less glossy and supple; a low-twist thread has more sheen but is more susceptible to pilling, snagging, rubbing, and breaking.

The other major group of filament threads is organzine, which is basically any twisted balanced thread made from filament silk. It can be two-ply or multi-ply, and it can range from soft and supple to firmly twisted. Most knitting and weaving yarns and sewing silk, from fine appliqué weight to bulky buttonhole, are organzines. Organzine is less shiny than tram, because the long reflecting plane of the silk is broken up by twist, but organzine is stronger and

more durable. The sheen can vary from glossy to pearly, depending on the processing and the amount of twist. Many embroidery silks fall into the organzine family: Au Ver a Soie's Soie Perlee, Soie de Paris, and Soie Gobelins; Kreinik's Silk Serica and Silk Bella; Pearsall's Gossamer Silk; Trebizond Silk; and filament sewing threads from Gudebrod, YLI, and others. Most of these threads are designed to be used as single strands, rather than separated. Often, if they are separated, the resulting strands will show kinking from their original structure.

You can occasionally find embroidery silk that is a hybrid between tram and organzine—low-twist but put up into softly plied strands for stability and ease of handling. A lot of the Chinese embroidery silks are this type. These silks can be worked either with multiple strands run together or with the strands separated and used singly.

Spun silk is different from reeled silk. Spun silk threads are manufactured from a variety of silk wastes such as cocoons that are flawed or hatched and thus unreelable, filament that snarls in the



Top: Bave cross-section. A bave is composed of two proteins: the long shiny fiber called “fibroin” and the stiff sticky gum called “sericin.”

Above: Diagram showing strength and shine related to twist.

equipment and has to be cut from the reels or spools, and the outer portion of the cocoons that are removed before reeling. These wastes are graded and sorted, the gum is then boiled off, and they are teased out into fluffy masses. The fibers are cut to length, combed into roving or top, and spun into thread just like wool and cotton yarn. Spun threads tend to be pearly or even matte in their sheen, and they have a fuzzier surface, particularly under magnification. Many spun threads are gassed, which means they are moved quickly past a series of small hot flames to remove any hairy parts sticking out sideways. The best gassed threads can be difficult to distinguish from reeled threads without pulling them apart to see what they are made of.

Some examples of spun silk available for embroidery are Au Ver a Soie’s Soie d’Algier and Soie 100/3, Kreinik’s Silk Mori, The Caron Collection’s Waterlilies, and Rainbow Gallery’s Splendor. Spun silks handle, in general, much more like cotton floss; they are often put up in skeins and are more resistant to snagging and tangling than the filament threads. Most spun threads are now measured in a metric system indicating meters per gram; for example, a typical spun-silk sewing thread would be a 100/3, with each ply being 100 meters (109.4 yd) per gram and the finished thread being three-ply.

I make mostly tram for my own embroidery. I enjoy the brilliant sheen of it, and I feel like it maximizes the effect that I can get from the silk. I also have made lots of organzine for my woven work, and I’ve even threaded my sewing machine with it, just for fun. Both involve the same processes: reeling, twisting, degumming, dyeing, lustering, and spooling (see “The Process of Making Silk for Embroidery” sidebar).

Silk makes amazing embroidery. Dyed to a myriad of exquisite colors, it gives a lit-from-within quality that nothing else can match. Silk thread has been the premium standard through the ages, decorating everything from royal robes to fancy buttons, from sword hilts to fishing flies. If you’ve never tried working with filament silk, I encourage you to give it a try. If you’re already familiar with filament silk, you’ll be reading this with a quiet, secret smile because you already know it’s amazing. I hope that this article has given you new insight into the wonders of the Queen of Fibers. ❖

MICHAEL COOK has been interested in a wide range of arts, including yarn and thread, since he was too short for the sharp scissors. He has been raising silkworms since 2001 and has explored many textile and fiber arts, from weaving and embroidery to sewing and braiding. He teaches and writes to share his love of creating with fibers, and his writing and photography have contributed to books, printed and online articles, museum exhibitions, and educational materials. He lives in Dallas, Texas, with his husband, Chris, three dogs, three cats, eight laying hens, and an ever-changing menagerie of wiggly six-legged livestock. You can read more about his silk work at www.wormspit.com.

Glowing Embers

MARLENE LLOYD

I PICKED UP A VARIETY OF NATURALLY colored silk yarns for a reasonable price at a weaver's estate sale. I was elated, and, to be honest, grateful to be able to try my hand at weaving with silk. If I wove a dud, I wouldn't freak out about the cost.

After perusing Carol Strickler's book, *A Weaver's Book of 8-Shaft Patterns*, I selected the M's and W's twill #318-6. It reminded me of straw painting, and I thought it would add texture to the natural silk yarns. I wound a warp using four different sizes of the yarns placed in a random order. As I wove, I fell in love with the texture and interplay of warp and weft that transformed the silk into a luxurious scarf. Upon advancing the warp onto the cloth beam, I noticed that the underside was completely different from the top side of my scarf. Did I make a mistake in threading or treadling? Egads! I double-checked my work, and it was correct. I was pleasantly surprised that I had received a reversible design gift that I hadn't anticipated.

For another scarf using some of the same silk, I added color by space-dyeing my warp and using a commercially dyed weft. Once again, I was pleased with the results. Still excited about weaving with silk, I purchased two skeins of Treenway Silks Kiku bombyx silk for two more scarves, choosing bright red for the warp and black for the weft. The resulting fabric shimmers in black on one side and glowing red on the other. The scarves are splendidly soft and classic accent pieces for any wardrobe.

RESOURCES

- Strickler, Carol, ed. *A Weaver's Book of 8-Shaft Patterns*. Loveland, Colorado: Interweave, 1991, 87, #318-6.

1 Wind a warp of 192 ends 5 yd long using Pomegranate. Wind 2 additional ends to use as floating selvages and set them aside. Centering for a weaving width of $5\frac{7}{10}$ ", warp the loom using your preferred method following the draft in Figure 1. Sley 3-4 per dent in 10-dent reed for an epi of 35. Sley the floating selvages through empty dents on each side of the warp and weight them over the back beam.

2 Wind a bobbin with Raven. Allowing 6" of unwoven warp for fringe, spread the warp with scrap yarn.

3 Using Raven, weave 5 picks of plain weave using treadles 9 and 10. Then weave following the treadling draft in Figure 1 for about 66", ending with a pattern repeat of either a W or an M. Beat lightly to achieve 28 ppi. Weave 5 picks of plain weave to finish and then several picks of scrap yarn to protect the weft.

STRUCTURE

Twill.

EQUIPMENT

8-shaft loom, 6" weaving width; 10-dent reed; 1 shuttle; 1 bobbin.

YARNS

Warp: 20/2 silk (1,100 yd/3.5 oz skein; 5,000 yd/lb; Kiku; Treenway Silks), #12 Pomegranate, 970 yd.

Weft: 20/2 silk #57 Raven, 643 yd.

WARP LENGTH

194 ends 5 yd long (includes floating selvages; allows 13" for take-up, 12" for interstitial fringe, 23" for loom waste; loom waste includes end fringe).

SETTS

Warp: 35 epi (3-4/dent in 10-dent reed).

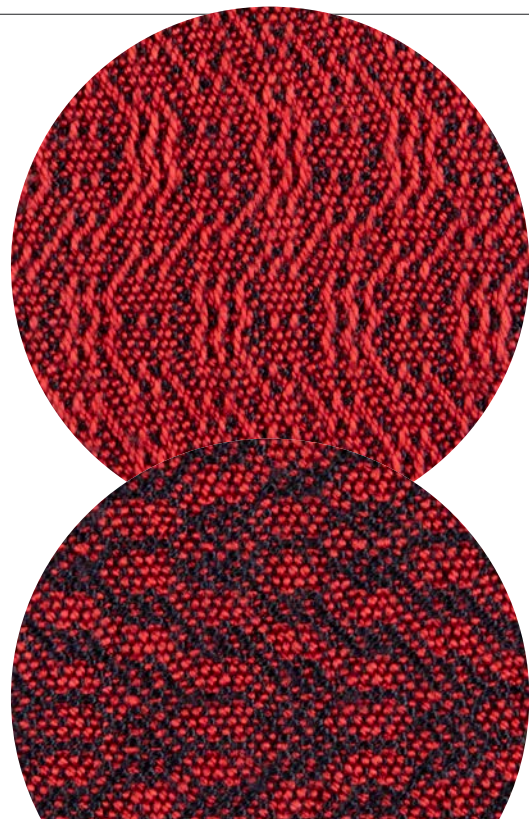
Weft: 28 ppi.

DIMENSIONS

Width in the reed: $5\frac{7}{10}$ ".

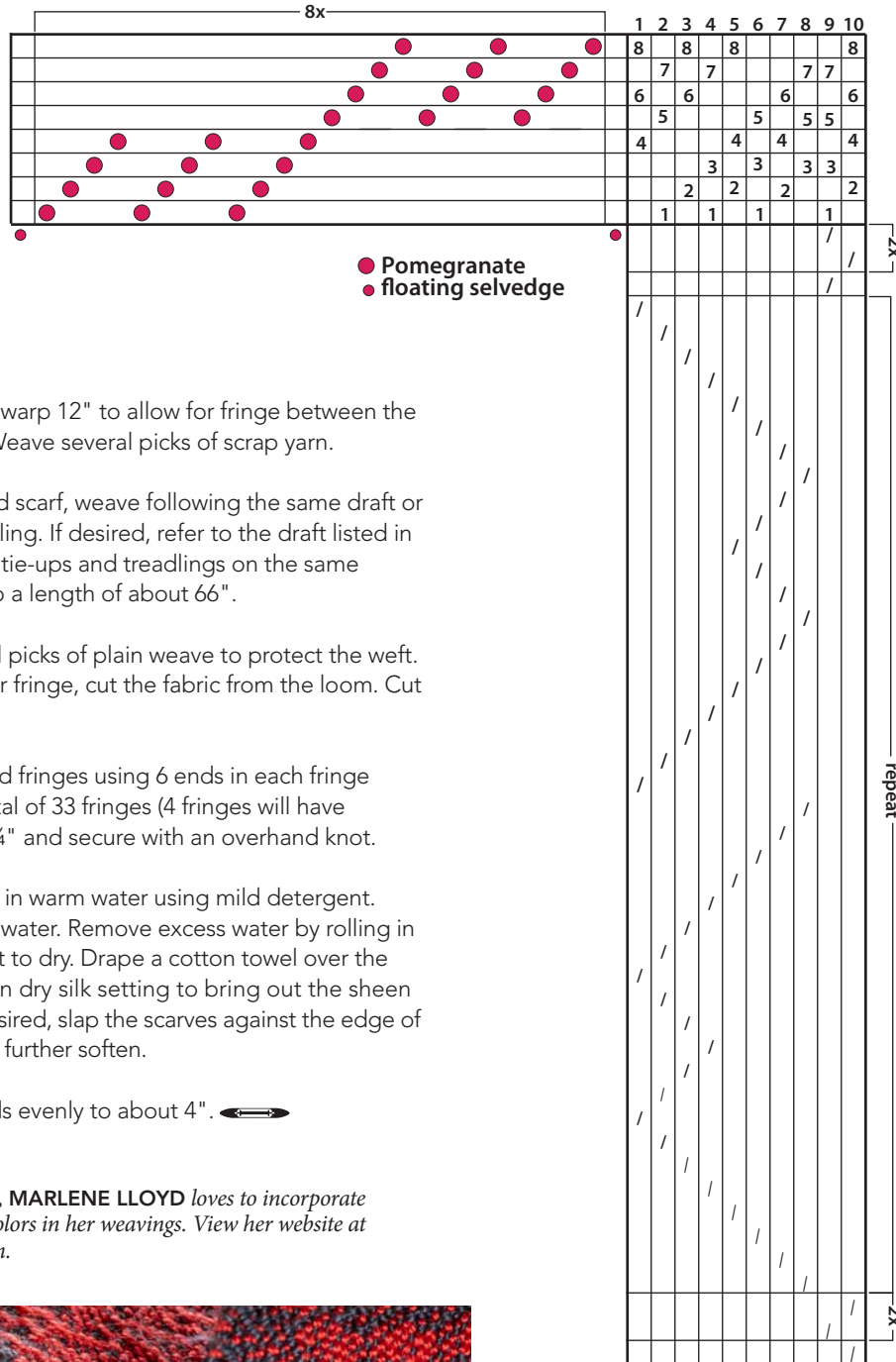
Woven length: (measured under tension on the loom) 132".

Finished size: (after wet-finishing) 2 scarves $5\frac{1}{4}$ " x 59" with 4" fringe.






1. Draft



Heddle count

Shaft 8	24
Shaft 7	24
Shaft 6	24
Shaft 5	24
Shaft 4	24
Shaft 3	24
Shaft 2	24
Shaft 1	24
Total	192

- 4 Advance your warp 12" to allow for fringe between the two scarves. Weave several picks of scrap yarn.
- 5 For the second scarf, weave following the same draft or alter the treadling. If desired, refer to the draft listed in Resources for other tie-ups and treadlings on the same threading. Weave to a length of about 66".
- 6 Weave several picks of plain weave to protect the weft. Allowing 6" for fringe, cut the fabric from the loom. Cut the scarves apart.
- 7 Prepare twisted fringes using 6 ends in each fringe group for a total of 33 fringes (4 fringes will have 5 ends); measure 3¾" and secure with an overhand knot.
- 8 Wash by hand in warm water using mild detergent. Rinse in warm water. Remove excess water by rolling in a bath towel. Lay flat to dry. Drape a cotton towel over the scarves and press on dry silk setting to bring out the sheen of the silk fiber. If desired, slap the scarves against the edge of the ironing board to further soften.
- 9 Trim fringe ends evenly to about 4". 

An avid hiker and yogi, **MARLENE LLOYD** loves to incorporate nature's textures and colors in her weavings. View her website at www.marnelloyd.com.

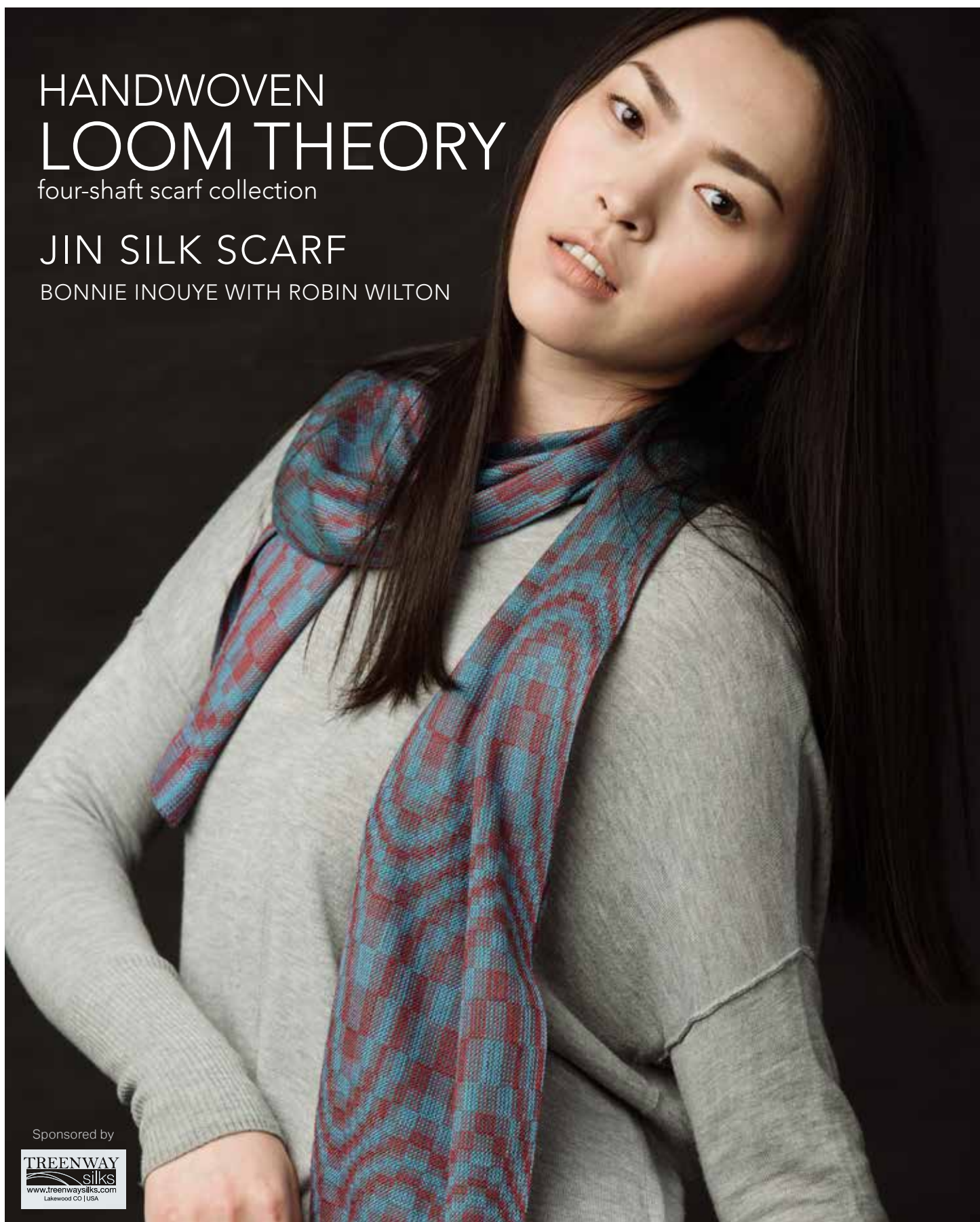


HANDWOVEN LOOM THEORY

four-shaft scarf collection

JIN SILK SCARF

BONNIE INOUYE WITH ROBIN WILTON



Sponsored by





JIN SILK SCARF

BONNIE INOUYE WITH ROBIN WILTON

4-SHAFT

CHINESE LEGEND attributes the discovery of silk as a fiber to the Empress Hsi Ling Shih in about 3000 BCE. According to the legend, a silk cocoon fell into her teacup and began to unravel. Because she was sitting under a mulberry tree, the favored food of *Bombyx mori* silkworms, she didn't have to look hard to find the cocoon's source, and so began the history of silk.

Turned taqueté, also known as *jin* in ancient China, produces a fabric with clear designs and a smooth surface. The design appears as if by magic, utilizing two colors. Each warp floats consistently over three wefts, then under one. Where one warp color is coloring one area of the design, the other warp color is dominant on the reverse side.

I always weave turned taqueté as a warp-emphasis fabric (more warp ends per inch than weft picks per inch) for a strong design and appealing drape in a stable, durable cloth. It is quick to weave but takes some extra time to warp, so I usually warp for multiple scarves. I use a weft that is thinner than the warp yarn (often much thinner), because the design comes from the warp colors. Although thin, the weft still has an impact as it blends with each of the warp colors, so I allow extra warp for sampling. A weft color that is a complement of either of the warp colors may produce iridescence in the woven cloth.

Silk is a perfect choice for iridescence and for drape. Silk scarves are warm in winter and comfortable when the weather is warmer, and they always feel good against the skin.

Because the weft color can shift the appearance of each warp color, I chose hems to finish the ends rather

STRUCTURE

Turned taqueté.

EQUIPMENT

4-shaft loom, 11" weaving width; 10-dent reed; 2 shuttles; 2 bobbins.

YARNS

Warp: Kiku 20/2 bombyx silk (5,000 yd/lb; Treenway Silks), #222 Creole Spice, 654 yd; #405 I Can't Believe It's Not Indigo, 654 yd.

Weft: Myōjō 60/2 bombyx silk (15,000 yd/lb; Treenway Silks), #9 Emerald Dream, 929 yd; Kiku 20/2 bombyx silk, #405 I Can't Believe It's Not Indigo, 19 yd.

WARP LENGTH

402 ends 3¼ yd long (includes floating selvages; allows 7" for take-up, 35" for loom waste and sampling).

SETTS

Warp: 40 epi (4/dent in a 10-dent reed).

Weft: 40 ppi.

DIMENSIONS

Width in the reed: 10²/₁₀".

Woven length: (measured under tension on the loom) 75".

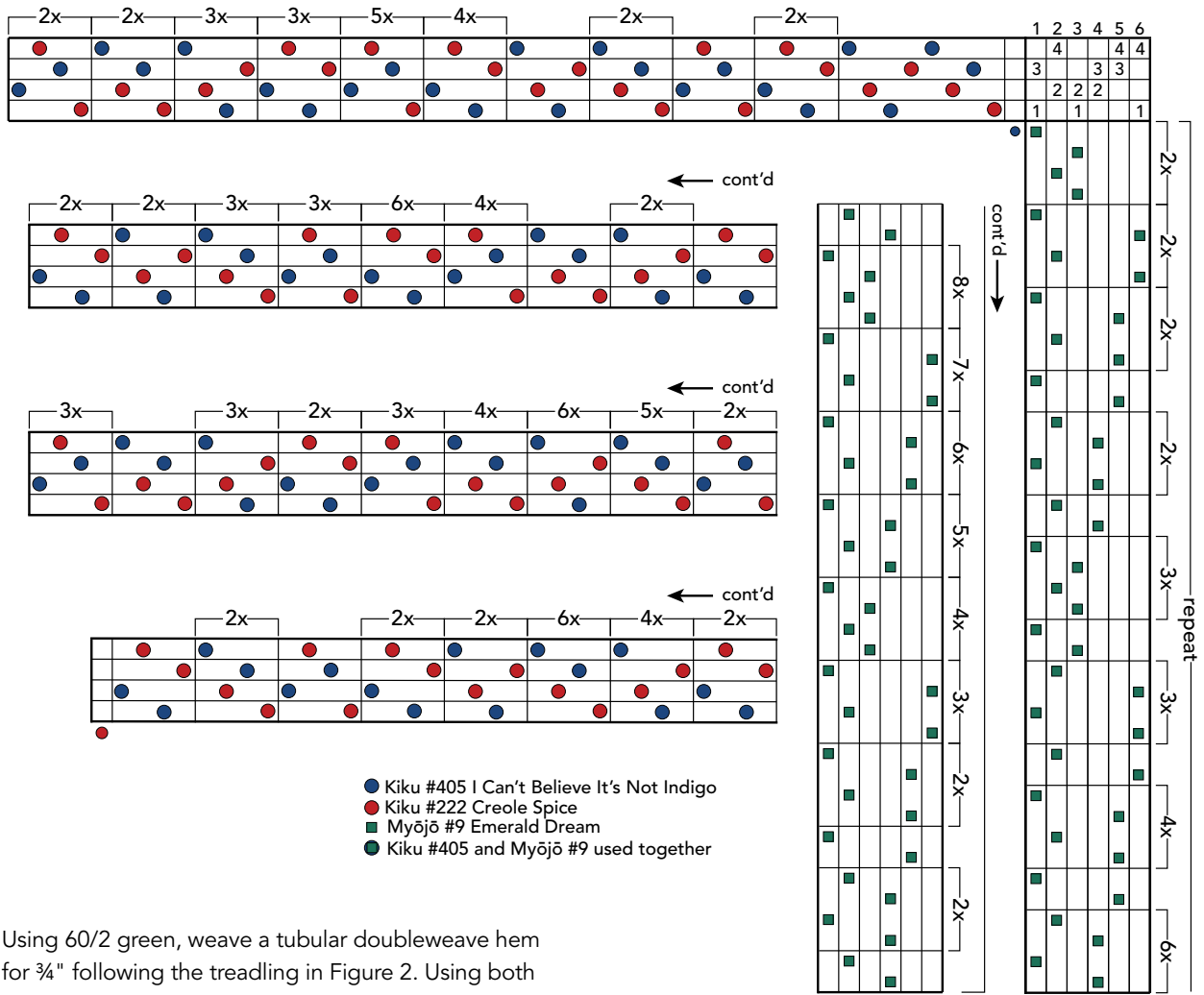
Finished size: (after washing and hemming) 8½" x 72" with ½" doubleweave hems.

than twisted fringe. With this structure, it is possible to weave two separate layers of plain weave in a tubular fashion. Folding the layers inward and handstitching the edges together creates a striking finish. I combined one of the 20/2 silk warp threads with the 60/2 silk weft to create the right color blend with a good weight for the doubleweave hems.

1 Wind 400 warp ends 3 yd long following the draft, Figure 1. For ease in warping, wind 2 ends together, holding 1 end of each color separated by your fingers to prevent twisting. Measure 1 end of each color to use as floating selvages and set them aside. Use your preferred method to warp the loom and thread following the draft, Figure 2. Sley 4 per dent in a 10-dent reed, centering for a weaving width of 10²/₁₀". Sley the floating selvages through the reed on either side of your warp and weight them over the back beam.

2 Spread your warp with scrap yarn in a contrasting value that will show up against your warp. Use treadles 1 and 2 for 4 picks and then check your threading for errors. The warp threads should lift pairs of the 2 colors, with the weft going over 2 and then under 2 warp threads at a time.

3 Wind a bobbin with the 60/2 silk Emerald Dream (green) and a bobbin with 20/2 silk I Can't Believe It's Not Indigo (blue).



4 Using 60/2 green, weave a tubular doubleweave hem for $\frac{3}{4}$ " following the treadling in Figure 2. Using both 20/2 blue and 60/2 green together, weave another $\frac{3}{4}$ " following the hem treadling.

5 Continuing with only the shuttle of 60/2 green, weave following the treadling in Figure 2 for 11 repeats, or about 72" from the end of the first hem.

6 Using 20/2 blue and 60/2 green together, weave a tubular hem for $\frac{3}{4}$ ". With 60/2 green only, weave another $\frac{3}{4}$ " of hem. Weave a few picks of scrap yarn to hold the weft in place and remove the scarf from the loom.

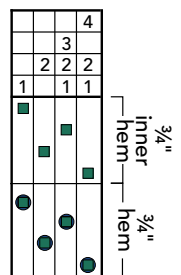
7 Tuck in the $\frac{3}{4}$ " green hem areas and press. Handstitch across opening.

8 Handwash in warm water with gentle detergent. Add a splash of vinegar to the next-to-last rinse. Hang to dry. Press using the silk setting on your iron and a press cloth to protect your weaving.

Tie-up and treadling for hems

HEDDLE COUNT

Shaft 4	100
Shaft 3	100
Shaft 2	100
Shaft 1	100
Total	400



“Origami” Napkins with Silk Overshot

SUSAN HORTON

I could wish it were otherwise, but the inspiration for these napkins came while I was ironing. As I was pressing a store-bought napkin, it occurred to me that it would be great to have napkins that look pretty when open but could be folded in different ways to achieve different looks. After playing with construction paper, tape, and colored pencils, I designed these napkins. They can be folded traditionally, but in four different ways to show various aspects of the design. One of my friends called them “origami” napkins and the name stuck.

I used three strong colors, yellow, blue, and aqua, in large swaths strategically placed in the warp and weft. When woven across one another, they create three softer colors. To add interest and get my different looks, I added four stripes of overshot, also strategically placed. The overshot is woven in blue violet, a color close to the blue and almost opposite the yellow on the color wheel. The blue violet “pops” when it crosses the yellow but is much more subdued when it crosses the blue. I chose “Primrose” by Bertha Gray Hayes as my overshot pattern for its clean, modern look. To keep the overshot stripes from dominating, I didn’t double the pattern weft as is usually done in overshot. (Silk pattern weft is an unusual choice for napkins, I know, but

Handwoven Presents

4-SHAFT LOOM
PROJECT

STRUCTURE

Overshot and plain weave.

EQUIPMENT

4-shaft loom, 23" weaving width; 12-dent reed; 2 shuttles, 4 bobbins.

YARNS

Warp: 10/2 pearl cotton (4,200 yd/lb, UKI.), Duck #60, 745 yd, Yellow #113, 1,330 yd, Paradise #105, 585 yd.

Tabby weft: 10/2 pearl cotton, Duck, 559 yd, Yellow, 685 yd, Paradise, 695 yd.

Pattern weft: 20/2 silk (5,000 yd/lb, Treenway Silks), Purple Rain, 500 yd.

OTHER SUPPLIES

Sewing thread; Synthrapol textile detergent.

WARP LENGTH

530 ends 5 yd long (allows 7" for take-up, 35" for loom waste). Add $\frac{3}{4}$ yd for each additional napkin.

SETTS

Warp: 24 epi (2 per dent in a 12-dent reed). **Weft:** 20 ppi in plain-weave areas; 40 ppi (20 ppi tabby, 20 ppi pattern) in overshot areas.

DIMENSIONS

Width in the reed: 22 $\frac{1}{4}$ ".
Woven length (measured under tension on the loom): 138" (6 napkins 23" each). **Finished size after washing:** 6 napkins 19" x 19" with $\frac{3}{4}$ " hems on 4 sides.

JOE COCA

2. Draft

															15x				1	2	3	4	5	6						
4	4	4	4						4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
3	3		3	3	3	3						3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
2	2		2	2	2	2						2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1	1	1	1	1	1						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

1. Warp color order

148	148	10/2 pearl cotton, Duck #60	
117	117	10/2 pearl cotton, Paradise #105	
265	117	148	10/2 pearl cotton, Yellow #113
530 ends (not including floating selvages)			

Numbers in pattern-weft symbols give the number of pattern picks used in that block, alternating with tabby. Use tabby: Weave a tabby pick before each pattern pick, alternating treadles 5 and 6, and using the color indicated in the tabby columns for the tabby picks.

Repeats in the treadling are based on a weft sett of 20 ppi in plain-weave areas and 40 ppi (20 pattern ppi/20 tabby ppi) in pattern areas. If your beat produces a different weft sett, use the inch measurements to the left of the treadling as a guide for weaving the length of the plain-weave areas.

- Floating selvage
- 10/2 pearl cotton, Duck
- 10/2 pearl cotton, Yellow
- 10/2 pearl cotton, Paradise
- Pattern weft: 20/2 silk

it holds up well and really makes the overshot pattern shine.)

Weaving overshot is easier if you practice a consistent shuttle order. Start each overshot stripe with the pattern shuttle coming from the same side as the tabby shuttle and either following or leading it. This will help keep track of your progress through the overshot portions of the draft. When weaving plain weave or tabby, a simple trick to avoid errors is to use the plain-weave treadle on the left whenever the shuttle is entering the shed on your left, and vice versa for the right side. To keep track of color changes and overshot stripes, I marked the location for every color change and overshot stripe on a paper measuring tape. Once I had woven a few inches, I pinned the tape directly onto the cloth and used it as a guide.

Mitered corners, while not necessary, contribute to the overall look of the napkins.

Refer to the blog in Resources for an easy method for creating flawless mitered corners.

The napkins really show off when you start folding them. There are four ways to fold them so that the top edges closest to the plate are the hemmed edges, two that show horizontal stripes and two that show vertical stripes, each with a different color palette. If you aren't a stickler for etiquette, there are other ways (and for oodles of ideas go to www.napkinfoldingguide.com). If you veer off the traditional napkin-folding path altogether, there are probably more looks I haven't considered. Origami indeed!

RESOURCES

- Smayda, Norma, Gretchen White, Jody Brown, and Katharine Schelleng. *Weaving Designs by Bertha Gray Hayes*. Atglen, Pennsylvania: Schiffer, 2009. "Primrose" p. 81. "Mitered-Corner Cloth Napkins." Prudent Baby blog, June 21, 2011. (prettyprudent.com/mitered-corner-cloth-napkins-2).




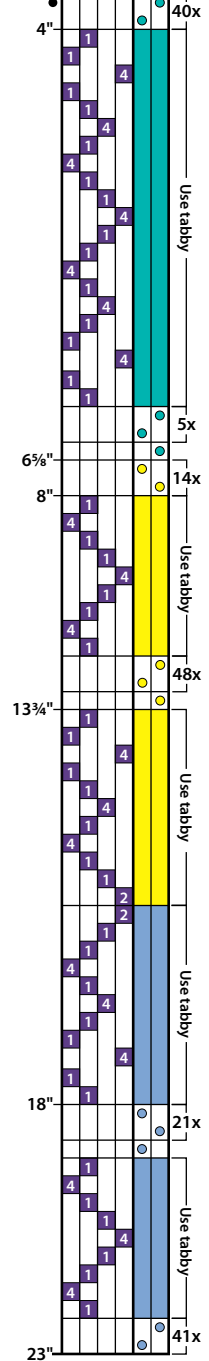
1 Wind a warp of 530 ends 5 yd long following the warp color order chart in Figure 1. (For more than 6 napkins, add ¾ yd to warp length for each additional napkin.) Measure 2 floating selvages, 1 Duck and 1 Yellow, and set them aside. Centering for a warp width of 22½", use your preferred method to warp the loom and thread the shafts following the draft in Figure 2. Thread the floating selvages through the reed and weight them separately over the back beam.

2 Spread the warp with scrap yarn. Weave 6 napkins, following the treadling in Figure 2. Take care to start each new color and each stripe of overshot as indicated to ensure that the napkins can be folded into the traditional rectangle shape showing the 4 different looks. The repeats in the treadling draft are based on 20 ppi for the plain-weave areas and 40 ppi for the overshot stripes, to weave

each napkin 23" long. If your beat is different, weave to match the inch measurements to the left of the treadling. Separate each napkin with 2 picks in a contrasting color yarn for a cutting line.

3 Remove the fabric from the loom and machine stitch the raw edges. To avoid tracking, fill a large tub with warm water and ½ cup (2 tablespoons) of Synthrapol. Gently lay the napkin fabric on top of the water and leave it for 24 hours without disturbing it. You may see some color migration into the yellow. Machine wash with hot water and an additional ½ cup of Synthrapol if needed. Machine dry and hard-press the fabric.

4 Cut apart between cutting lines. Trim and adjust where needed to square up the napkins and press in ¾" hems (¾" folded twice). Miter the corners, then topstitch the hems down on all 4 sides. For help with the mitered corners, refer to the blog listed in Resources. 





GLOW SCARF

Christine Jablonski

Photos by Matt Graves unless otherwise noted

Pair soft, light silk noil with a subtle ombre striping in your warp to weave a scarf evocative of the glow of a morning sky as it shifts from its winter palette to spring or from night to dawn.



RIGID HEDDLE

GLOW SCARF

Christine Jablonski

At the change from winter to spring, you can almost watch the sky transition from a chilly coolness into a warm spring glow. The ombré striping in this scarf plays with this idea of shifting from dark to light and from cool to warm during that period when it's no longer winter but not quite spring. The light and soft Silk Noil makes this scarf a perfect layering piece, and a weft change at the midpoint creates the illusion of a double-sided fabric when worn.

RESOURCES

Selby, Margo. *Color and Texture in Weaving*. Loveland, CO: Interweave, 2011.

MATERIALS

STRUCTURE Plain weave.

EQUIPMENT Rigid-heddle loom, 14" weaving width; 10-dent heddle; 2 shuttles.

YARNS *Warp*: Silk Noil (100% silk; 2,500 yd/lb; Gist Yarn), Sky, 220 yd; Cherry, 190 yd. *Weft*: Silk Noil, Sky and Cherry, 167 yd each.

OTHER SUPPLIES Fray Check (optional).

WARP LENGTH 134 ends 110" long (allows 7" for take-up, 23" for loom waste; loom waste includes fringe).

SETTS *Warp*: 10 epi. *Weft*: 10 ppi.

DIMENSIONS *Width in the heddle*: 13 $\frac{3}{16}$ ".

Woven length: (measured under tension on the loom) 80". *Finished size*: (after wet-finishing) 10 $\frac{3}{4}$ " x 73" plus 1 $\frac{1}{2}$ " fringe.

PROJECT STEPS

1 Set up your loom for direct warping a length of 110" or wind a warp of 134 ends 110" long following the warp color order in Figure 1. Warp the loom using your preferred method, centering for a weaving width of 13 $\frac{3}{16}$ ".

2 Wind a shuttle with each of the weft colors. Allowing 6" for fringe, spread the warp with scrap yarn.

3 Leaving a tail 4 times the width of the warp for hemstitching, weave 4

picks with Sky. Using the long tail, hemstitch in bundles of 4, except for the center bundle, which will have 6 ends. Continue weaving following the weft color order in Figure 2. Finish with Cherry and hemstitch as you did at the beginning.

4 Remove the scarf from the loom leaving 6" of unwoven warp at each end for fringe.

5 Wet-finish by hand in cool water with mild detergent. Lay flat to dry. Press with a warm iron. Braid or twist fringe bundles as desired, or trim fringe to preferred length (shown at 1 $\frac{1}{2}$ ") and dab the ends with Fray Check to prevent untwisting over time. *

1. Warp color order

72	10	8	6	4	2	2	2	2	2	2	2	2	2	4	6	8	10	Sky
62	2	2	2	2	2	4	6	8	10	8	6	4	2	2	2	2	2	Cherry
134 ends total																		

2. Weft color order

Sky	Cherry
8	39"
2	2
39"	8





RELAXATION EYE COVER

Jennifer B. Williams

Photos by Matt Graves unless otherwise noted

Can't get away? Create a spa experience in your own home with this inkle-woven eye pillow filled with flaxseeds and lavender. Downtime is better when you can lean back, breathe deeply, and soothe your eyes with this weighted and scented eye cover.

RELAXATION EYE COVER

Jennifer B. Williams

When you need to take a moment to relax and release stress, silk and lavender are perfect for the job. Inkle bands woven with soft, indulgent silk make a luxurious relaxation eye pillow. Drape this cushion over your eyes, breathe in the lovely scent of lavender, and feel the stress melt away.

RESOURCES

- Seizenn: Band Weaving Pattern
Editor, raktres.net/seizenn/loom_weaving_editor.html

MATERIALS

Type of Project: Inkle

STRUCTURE Warp-faced plain weave.

EQUIPMENT Inkle loom with 3¼ yd weaving length; belt shuttle.

YARNS *Warp:* 2/12 Gemstone Silk (100% silk; 2,800 yd/lb, 105 yd/mini cone; Halcyon), #1050 Cornflower, 55 yd; #1180 Green Tea, 77 yd; #1130 Indigo, 114 yd; #1170 Lilac, 49 yd.

Weft: 10/2 pearl cotton (100% cotton; 400 yd/1.5 oz cone; Lunatic Fringe), Very Light Gray, 51 yd.

OTHER SUPPLIES Gütermann silk thread (110 yd/spool), #143 Blue; 100% Sandwashed Silk Charmeuse fabric (Prism Silks, remnant 9" x 22"); Fray Check; straight pins; ruler or tape measure; blunt embroidery needle; iron; ¼ cup flaxseeds; ¼ cup dried lavender buds; funnel or spoon.

WARP LENGTH 96 ends 110" long (allows 9" for take-up and 29" for loom waste).

SETTS *Warp:* 64 epi. *Weft:* 12 ppi.

DIMENSIONS *Width:* 1½". *Woven length:* (measured under tension on the loom) 72". *Finished size:* (after sewing) 4½" x 9".



Figure 1. Warp color order and draft

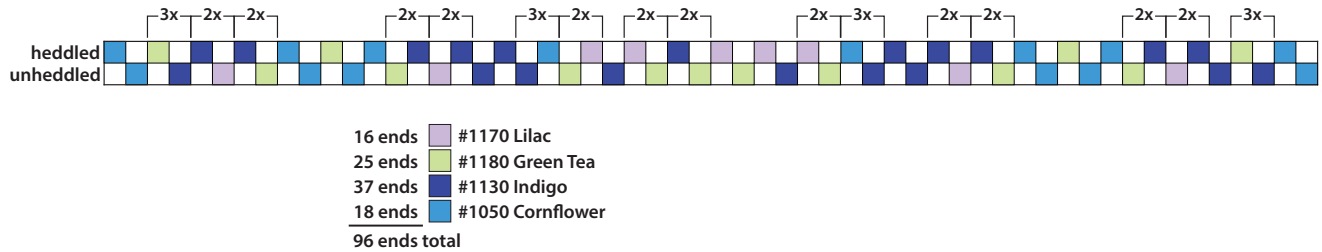
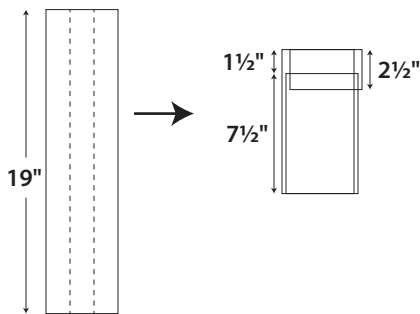


Figure 2. Stitching and folding guide



PROJECT STEPS:

- 1 Wind a warp of 96 ends 110" long onto your inkle loom following the warp color order and draft, Figure 1.
- 2 Wind a belt shuttle with Very Light Gray. Weave a band measuring 72", maintaining a width of 1 1/2" and 12 ppi.
- 3 Cut the band off the loom and cut the loom waste off the band. Apply Fray Check to the cut ends.
- 4 Cut the band into three 19" lengths. Apply Fray Check to all cut ends. Allow to dry completely.
- 5 Silk binding: Cut two 6" x 2" pieces of silk fabric. Fold each in half lengthwise; press. Open the folded fabric. Using the center creases as guides, fold the left edges to meet the middle creases; press. Repeat with the right edges to create two pieces that measure 1/2" x 6" each.

SEWING INSTRUCTIONS:

Pillowcase

- 6 Sew the three 19" woven lengths together following the stitching guide, Figure 2. Backstitch at the beginning and end of each seam.
- 7 Sew the silk binding to the sewn inkle bands: Place one raw edge of the sewn bands inside the silk binding centered along the crease. Unfold the top flap of the binding. Fold the short ends of the binding over the bands and press in a crease. Fold the top flap back down and stitch a 1/8" seam along the sides and bottom of the binding. Repeat to bind the opposite cut end of the sewn bands.
- 8 Fold the bottom of the sewn inkle bands up 7 1/2". Fold the top of the band fabric down 2 1/2", overlapping the edge of the bottom fold 1" (See Figure 2). Sew the left and right sides of the pillowcase closed.

Pillow insert:

- 9 Cut a piece of silk fabric 19 1/2" x 5". Fold the fabric in half matching the long sides, wrong sides together. Using a 1/2" seam allowance, sew a seam along the two long sides. Sew a 1/2" seam at the top, leaving a 1" opening for turning.
- 10 Turn the pillow to the right side. Iron the seams flat. Using a spoon or funnel, fill the pillow with flaxseeds and lavender. Use a needle and thread to stitch the opening closed.
- 11 Insert the pillow into the pillowcase. *



MEGHALAYA SCARF

Shilpa Nagarkar

Photos by Matt Graves unless otherwise noted

Use two heddles on your rigid-heddle loom to weave this silk scarf influenced by Indian travel books. The silk is produced in the northeastern state of Meghalaya, India, but it is readily available in the United States.

MEGHALAYA SCARF

Shilpa Nagarkar

During the pandemic, Shilpa read a lot of travel books and, in doing so, found ideas not just for future vacations but also for weaving projects. This scarf is a tribute to the fabric woven by the Khasi tribe of Meghalaya, the north-eastern state of India and home to three major tribes: Khasi, Jaintia, and Garo. The women of the Khasi tribe wear beautiful handwoven garments made from spun eri silk that is dyed using natural dyes.

RESOURCES

McKnight, Amy D. "Module 4: Beyond Basics." *Master YOUR Loom with Amy D. McKnight*. Videos. youtube.com/c/AmyDMcKnight.

MATERIALS

STRUCTURE Plain weave.

EQUIPMENT Rigid-heddle loom,

20" weaving width; two 12.5-dent heddles; 4 shuttles. **Note:** Have 12-dent heddles? See the heddle conversion chart at LittleLooms.com.

YARNS Warp: 60/2 Natural Eri Silk Weaving Yarn (2,600 yd/100 g; Muezzart), Lemon Yellow, 1,474 yd; Ruby Red, 836 yd; Fern Green, 165 yd. **Weft:** 60/2 Natural Eri Silk Weaving Yarn, Lemon Yellow, 530 yd; Ruby Red, 130 yd; Fern Green, 100 yd.

WARP LENGTH 450 doubled ends (900 threads total) 99" (2¾ yd) long (allows 7" for take-up, 17" for loom waste; loom waste includes fringe).

SETTS Warp: 25 epi (doubled in slots and holes). **Weft:** 18 ppi.

DIMENSIONS Width in the heddle: 17.75".

Woven length: (measured under tension on the loom) 75". **Finished size:** (after hemming and wet-finishing) 16½" × 71½" plus 3" fringe.

PROJECT STEPS

1 Place the back heddle in the loom. Set up your loom for direct warping a length of 99" (2¾ yd) or wind a warp of 450 doubled ends (900 total threads) 99" long following the warp

color order, Figure 1. Centering for a weaving width of 17.75", thread 1 working end (2 threads) in each hole and 3 working ends (6 threads total) in each slot. Wind onto the back beam. Place the second heddle in the front position. Thread the working end (2 threads) in the back hole through the slot to the right in the front heddle. Thread the 3 working ends (6 threads) in the next back slot through the front heddle, 1 working end (2 threads) in the slot to the right (same slot as the previous hole end), 1 working end (2 threads) through the hole to the right, and 1 working end (2 threads) through the slot directly in front (see Reader's Guide at LittleLooms.com). Repeat across.

2 Wind shuttles with each of the weft colors used single. Wind an additional shuttle with Lemon Yellow doubled. Allowing 5" for fringe, spread the warp with scrap yarn.

3 Leaving a tail 4 times the width of the warp for hemstitching, weave 2" of plain weave with doubled Lemon Yellow (both heddles up, both heddles down). Hemstitch in bundles of 6 using the long tail. Continue weaving using single wefts, following the weft color order in Figure 2. Finish with 2" of doubled Lemon Yellow and hemstitch as you did at the beginning.

4 Remove the scarf from the loom, leaving 5" of unwoven warp at each end for fringe.

5 Wet-finish by handwashing in warm water with mild detergent. Lay flat to dry. Press with a warm iron. Trim ends of fringe to the length desired. *

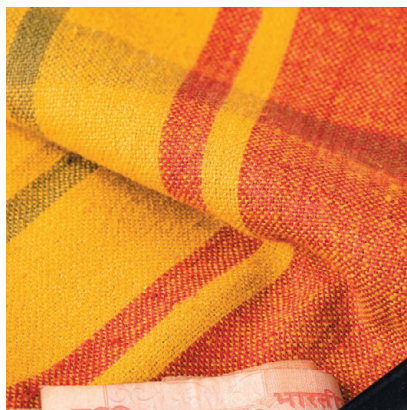
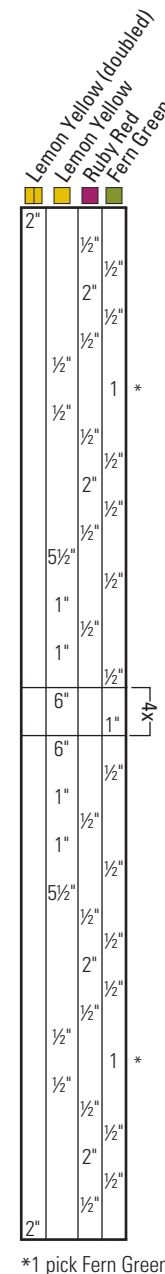


Figure 1. Warp color order

	2x						
152	12	52	12				Ruby Red
30	10			10			Fern Green
268	38	38	10	10	38	38	Lemon Yellow
450 ends total (900 threads total)							

Figure 2. Weft color order



WEAVING TIPS

While weaving in the up shed, it helps to have a pick-up stick on edge between the two heddles to help separate the warp ends and get a clean shed.

Fingerless Silk Mitts to Crochet

DESIGNED BY DIXIE FALLS

The fingerless silk mitts crocheted of tussah silk will provide a unique accent to any outfit and at home will afford warmth and support for your handwork.

Yarn provided by Aurora Silk / Cheryl Kolander.



TUSSAH SILK is produced by the larvae of a number of different species of wild or semi-domesticated silk moths. The color varies from light beige to amber, depending on the species of moth and the diet of the larvae. The fibers are almost twice the diameter of white or cultivated silk, making tussah silk an excellent choice in situations where

strength and resistance to abrasion are an advantage.

Dixie Falls used tussah silk in these mitts for its soft, muted color and durability. They're not only decorative: you may find that their warmth and light support also help to ease the strain of knitting and other handwork, or long sessions at the computer or typewriter.

MATERIALS

Natural tussah silk yarn, three 110-yd skeins. Dixie used size IV, #187 from Aurora Silk.
Steel crochet hook, #4 (1.75 mm) or the size needed to give the correct gauge
Knitters' split ring markers or scraps of contrasting yarn for markers
Tapestry needle, size 18
Polyester stuffing, handful
Sewing pins

CROCHET ABBREVIATIONS

beg—beginning	prev—previous
ch—chain	rem—remaining
dc—double crochet	rep—repeat
hdc—half double crochet: yarn over hook, insert hook in st from prev rnd, draw thread through (3 loops on hook), yarn over hook and draw through all 3 loops on hook	rnd—round
inc—increase	sc—single crochet
join—join with a slip stitch in the stitch specified by the pattern	sl st—slip stitch
	sp—space
	st—stitch
	V-st—V-stitch: * In next ch-1 sp of prev row, work (1 dc, ch 1, 1 dc); rep from * to end.

CORDED EDGING

Worked with right side facing on a foundation of hdc. When you reach the end of the rnd of hdc, join but **do not turn**.

Next rnd: Ch 1, working from left to right instead of from right to left as usual, work 1 sc in each st of prev rnd. Fasten off.

GAUGE

13 hdc = 2 inches	3 V-stitches = 1 inch
5 rnds hdc = 7/8 inch	4 rnds V-stitch = 1 inch

LEFT MITT

Ch 66, join in first ch made to form a ring.

Rnd 1: Ch 2 (counts as 1 hdc), work 1 hdc in 3rd ch from hook, work 1 hdc in each ch around, join to 2nd ch of beg ch 2. (66 hdc)

Rnds 2–5: Rep rnd 1. (66 hdc)

Rnd 6: Ch 4, dc in same hdc (counts as 1 V-st), * skip 2 hdc, (1 dc, ch 1, 1 dc) in next hdc (1 V-st made); rep from * around, join in 3rd ch of beg ch 4. (22 V-sts)

Rnds 7–9: Sl st in ch-1 sp of 1st V-st, ch 4, 1 dc in same ch-1 sp, work 1 V-st in ch-1 sp of each V-st of prev rnd around, join in 3rd ch of beg ch 4. (22 V-sts)

Rnd 10: Sl st in ch-1 sp of 1st V-stitch, ch 4, 1 dc in same sp, V-st in ch-1 sp of next 10 V-sts, work a double V-st inc as follows: (1 dc, ch 1, 1 dc, ch 1, 1 dc) into sp **between** the 11th and 12th V-sts, V-st in ch-1 sp of rem 11 V-sts, join in 3rd ch of beg ch 4.

Rnds 11 and 12: Sl st in ch-1 sp of 1st V-st, ch 4, 1 dc in same sp, V-st in ch-1 sp of each V-st of prev rnd around, join in 3rd ch of beg ch 4. (24 V-sts)

Rnd 13: Sl st in ch-1 sp of 1st V-st, ch 4, 1 dc in same sp, V-st in next 11 V-sts, double V-st inc between 12th and 13th V-sts of prev rnd, V-stitch in 12 rem V-sts of prev rnd, join in 3rd ch of beg ch 4.

Rnd 14: Repeat rnd 12. (26 V-sts)

Rnd 15: Sl st in ch-1 sp of 1st V-st, ch 4, 1 dc in same sp, V-st in next 12 V-sts, double V-st inc between 13th and 14th V-sts of prev rnd, V-st in rem 13 V-sts of prev rnd, join in 3rd ch of beg ch 4.

Rnds 16 and 17: Repeat rnd 12. (28 V-sts)

Rnd 18: Sl st in ch-1 sp of 1st V-st, ch 4, 1 dc in same sp, V-st in next 13 V-sts, double V-st inc between 14th and 15th V-sts of prev rnd, V-st in rem 14 V-sts of prev rnd, join in 3rd ch of beg ch 4.

Rnds 19 and 20: Repeat rnd 12. (30 V-sts)

SHAPE THUMBHOLE

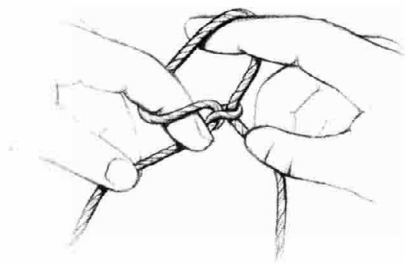
Rnd 21: Sl st in ch-1 sp of first V-st, ch 4, 1 dc in same sp, V-st in next 9 V-sts, 1 dc in ch-1 sp of next V-st, ch 6, skip 6 V-sts, work 1 dc in center of next V-st, V-st in rem 12 V-sts of prev rnd, join in 3rd ch of beg ch 4.

Rnd 22: Sl st in ch-1 sp of first V-st, ch 4, 1 dc in same sp, V-st in next 9 V-sts, V-st in first ch of ch 6, skip 2 ch, V-st in next ch, skip 2 ch, V-st in top of next dc, V-st in rem 12 V-sts of prev rnd, join in 3rd ch of beg ch 4. (25 V-sts)

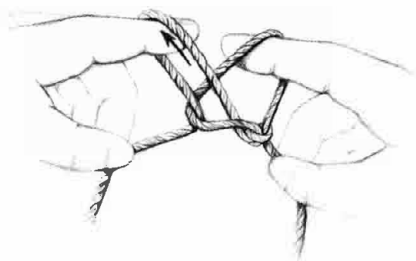
Rnds 23–29: Sl st in ch-1 sp of 1st V-st, ch 4, 1 dc in same space, V-st in each V-st of prev rnd around, join in 3rd ch of beg ch 4.

Fasten off.

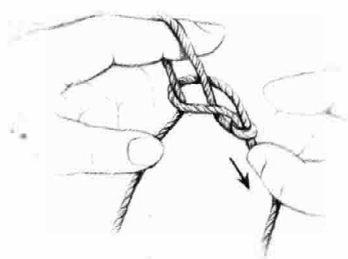
STEPS FOR MAKING A FINGER-WOVEN CORD



1. Cut a length of yarn about 40 inches long. Make a slipknot in the middle of the yarn and leave a 2-inch loop in the knot. Place the loop over your right forefinger so that the side of the loop that slips is to the rear and right. Bring your left forefinger across the front of the loop and reach in from the right to pick up the free thread on the left.



2. Loop the thread over your left forefinger and pull the new loop through the old loop still on the right forefinger.



3. With the new loop remaining on your left forefinger, release the right-hand loop and pull on the right-hand free end until the loop is snug against the slipknot.

PLACING MARKERS FOR THE FINGERS

Starting at beg of rnd, place markers between 3rd and 4th, 6th and 7th, 9th and 10th V-sts on palm side of mitt and between 16th and 17th, 19th and 20th, and 22nd and 23rd V-sts on back of mitt.

INDEX FINGER

Join yarn at marker between 16th and 17th V-sts on back of mitt, ch 3, join to palm side at marker between 9th and 10th V-sts, ch 2.

Rnd 1: Work 1 hdc into each dc and each ch 1 around index finger, join to 2nd ch of beg ch 2. If finger opening is too large, decrease 1 or 2 sts on this rnd. Refer to rnd 5 of crocheted ball for decrease instructions.

Rnd 2: Work corded edging around finger hole. Fasten off and darn in yarn ends.

MIDDLE FINGER

Join yarn at marker between 19th and 20th V-sts on back of mitt, ch 4, join between 6th and 7th V-sts on palm side of mitt, ch 2. Rnd 1: Repeat rnd 1 of index finger, working into the opposite side of the ch 3 between index and middle finger.

Rnd 2: Repeat rnd 2 of index finger.

RING FINGER

Join yarn at last marker on back of mitt, ch 3, join to last marker on palm side of mitt, ch 2.

Rnd 1: Repeat rnd 1 of index finger, working into the opposite side of ch 4 between middle and ring finger.

Rnd 2: Repeat rnd 2 of index finger.

LITTLE FINGER

Join yarn at beg of rnd, ch 2.

Rnd 1: Repeat rnd 1 of index finger, working into the opposite side of ch 3 between ring and little finger.

Rnd 2: Repeat rnd 2 of index finger.

THUMB

Join yarn at top of single dc at beg of

ch 6 of rnd 21 where thumb and hand separate, ch 1, dc in same sp, V-st in next 6 V-sts of thumb, dc in sp containing 1 dc at opposite end of ch 6 of rnd 21, ch 1, join to top of next dc, ch 2. Finish thumb as for other fingers, working a hdc decrease at each end of the ch 6.

RIGHT MITT

Make right mitt, following directions for left mitt to end of rnd 20.

SHAPE THUMBHOLE

Rnd 21: Sl st in ch-1 sp of 1st V-st, ch 4, dc in same sp, V-st in next 11 V-sts, dc in ch 1 of next V-st, ch 6, skip 6 V-sts, dc in ch 1 of next V-st, V-st in rem 10 V-sts of prev rnd, join in 3rd ch of beg ch 4.

Rnd 22: Sl st in ch-1 sp of 1st V-st, ch 4, dc in same sp, V-st in next 11 V-sts, V-st in first ch of ch 6, skip 2 ch, V-st in next ch, skip 2 ch, V-st in top of next dc, V-st in rem 10 V-sts of prev rnd, join in 3rd ch of beg ch 4. (26 V-sts)

Rnds 23 to 29: Work as for rnds 23 to 29 of left mitt.

PLACING MARKERS FOR THE FINGERS

Starting at beg of rnd, place markers between 3rd and 4th, 6th and 7th, 9th and 10th V-sts on back of mitt and between 16th and 17th, 19th and 20th, and 22nd and 23rd V-sts on palm side of mitt.

INDEX FINGER

Join yarn at marker between 16th and 17th V-sts of palm of mitt, ch 3, join to back of mitt at marker between 9th and 10th V-sts, ch 2. Continue to finish as for left index finger.

REMAINING FINGERS AND THUMB

Complete the remaining fingers and thumb according to the instructions given for the corresponding fingers of the left mitt.

FINISHING

Work one row of corded edging

around the cuff of each mitt. Darn in all ends.

Work 2 rose-and-leaves motifs, 4 crocheted balls, and two 3-inch lengths of finger-woven cord (see page 50). Stitch a crocheted ball to each end of both pieces of cord. Fold the cord slightly off center (so that the balls hang at different lengths) and mark the fold. Find the lower center of the third row of petals on the rose and stitch the marked fold to this point. Pin a rose-and-leaves motif in place on the back cuff of each mitt and blind-stitch in place.

ROSE-AND-LEAVES MOTIF

ROSE

Ch 5, join into a ring.

Rnd 1: Ch 5, 1 dc in ring, (ch 2, 1 dc in ring) 4 times, ch 2, join in 3rd ch of beg ch 5. (6 spaces)

Rnd 2: (1 sc, 1 hdc, 3 dc, 1 hdc, 1 sc) in each ch-2 sp, join to beg of rnd.

Rnd 3: *In back of work, sl st in next dc of 1st rnd, ch 5: rep from *, making 6 ch-5 loops behind the petals of the 2nd rnd, join to beg of rnd.

Rnd 4: * (1 sc, 2 hdc, 4 dc, 2 hdc, 1 sc) in each ch-5 loop of prev rnd; repeat from * around, join to beg of rnd.

Rnd 5: Repeat rnd 3, making ch 6 between each sl st.

Rnd 6: * (1 sc, 2 hdc, 6 dc, 2 hdc, 1 sc) in each ch-6 loop of prev rnd; rep from * around, join to beg of rnd.

Rnd 7: Repeat rnd 3, making ch 8 between each sl st.

Rnd 8: * (1 sc, 2 hdc, 7 dc, 2 hdc, 1 sc) in each ch-8 loop of prev rnd; rep from * around, join to beg of rnd.

Fasten off, leaving a 3-inch tail of yarn. Darn in yarn ends.

LEAVES

Starting at tip, make foundation of ch 11.

Row 1: Sc in 2nd ch from hook, sc in each ch to last ch, 3 sc in last ch, sc in each ch along opposite side of foundation ch, sc in same place as last sc. Mark last sc for base of leaf. From this point,

work only into back loop of each stitch. **Do not turn** but continue to work around the base of the leaf, work sc in each sc to within 3 sc of center sc at leaf tip, ch 1, turn.

Row 2: Sc in each sc to marked sc, 3 sc in marked sc, sc in each sc on opposite side to within 3 sc of center sc at leaf tip, ch 1, turn.

Rows 3 and 4: Sc in each sc to within center sc of 3-sc group, 3 sc in next sc, sc in each sc on other side to within last 3 sts, ch 1, turn.

Row 5: Sc in each sc to center sc of 3-sc group, attach to rose between 2 petals with a sc, sc in same sc, sc in each sc on opposite side of leaf.

Fasten off and darn in yarn ends.

Make a second leaf and attach between rose petals directly opposite first leaf, leaving 3 petals between leaves.

CROCHETED BALL

Ch 3 and join to form a ring, ch 2.

Rnd 1: 9 sc into ring, join in 2nd ch of beg ch 2, ch 2.

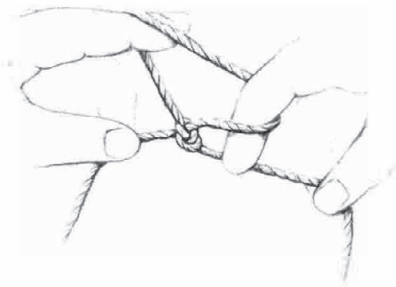
For all following rounds, work only into back loop of each st.

Rnd 2: 2 sc into each sc around, join, ch 2.

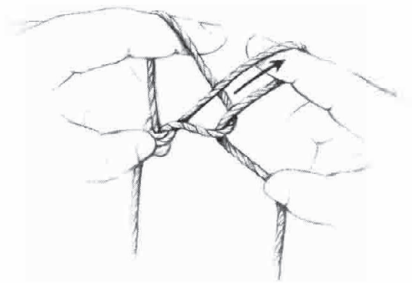
Rnds 3 and 4: Sc into each sc around, join, ch 2.

Rnd 5: * (Yarn over hook, insert hook in next st and draw thread through) twice, yarn over hook and draw through all 3 loops on hook; repeat from * around, ending with a sl st. Fasten off, leaving a 5-inch tail.

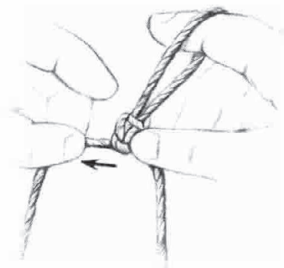
Thread tapestry needle with tail and make a running stitch in each sc around. Put a small amount of stuffing into the center of the ball and pull on the thread to close. Stitch to anchor end firmly.



4. Reach the right forefinger across the front of the loop, reach in from the left to pick up the right-hand free thread.



5. Loop the free thread over your right forefinger and pull the new loop through the old left-hand loop.



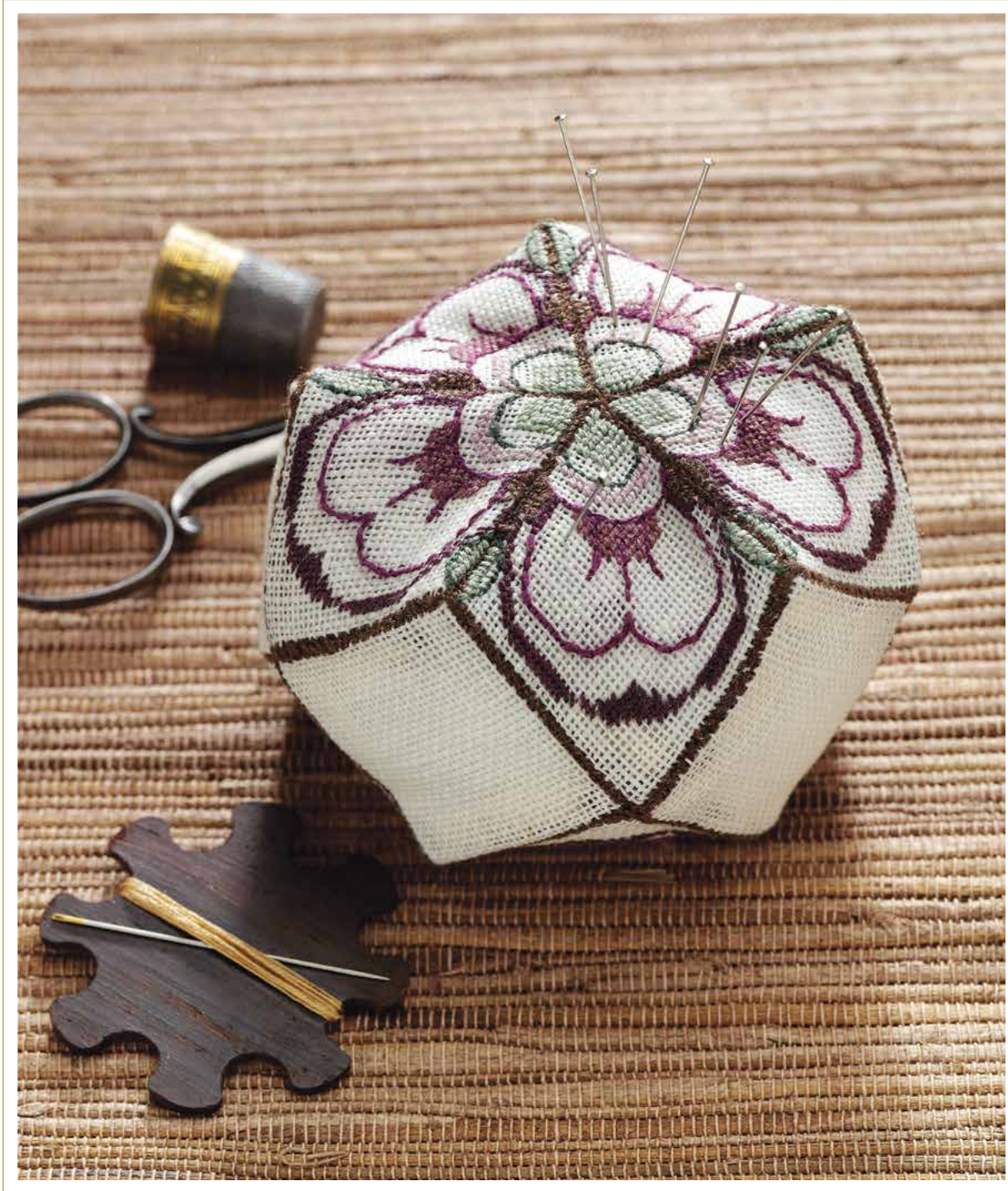
6. Holding the slipknot in your right thumb and middle finger, release the left-hand loop and pull the left end until the loop is snug against the cord.



7. Repeat steps 2 to 7, holding the cord between the thumb and middle finger of alternate hands as you work, until it is the required length. To finish the cord, thread the left-hand free end through the right-hand loop and pull the loop closed.

Heraldic Rose Biscornu Pincushion to Stitch

KATRINA KING



Photos by Joe Coca

Store your pins in style with Katrina King's beautiful Heraldic Rose Biscornu Pincushion. Katrina used the five-petaled Tudor rose as the motif. Thimble, scissors, and thread winder from the collection of Loene McIntyre.

Heraldry is the use of colors, images, and image positions as a system of identification. More than nine hundred years ago, it began as a way to distinguish between combatants who wore heavy armor on the battlefield. Over time, heraldry evolved from a coat of arms on shields and standards to seals and crests for family or business identification. Every nuance of a coat of arms has significance.

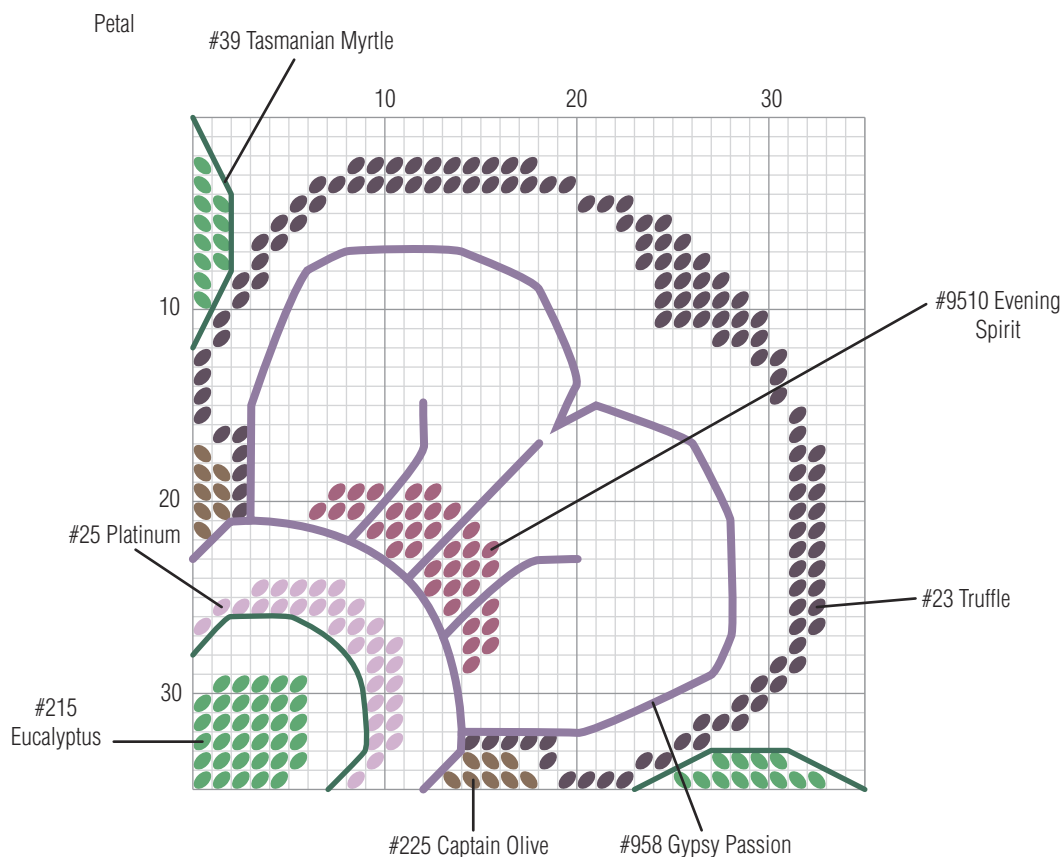
The rose came to the forefront of heraldry during the Wars of the Roses that raged in England from 1455 to 1485 between the House of York (white rose) and the House of Lancaster (red rose). This conflict was finally resolved by marriage between the two houses, giving rise to the Tudor rose, which contains white inner petals and red outer ones. My first contact with the Tudor rose symbol was at a Colorado Renaissance Festival, where the metal-smiths of Quick Silver Mint said that it represented the five stages of a woman's life: child, maiden, woman, mother, and crone.

A fifteen-sided biscornu works perfectly for the five-petaled shape of the rose; each top and bottom square becomes an individual petal of the flower. I used continental stitch, modified continental stitch, and backstitches.

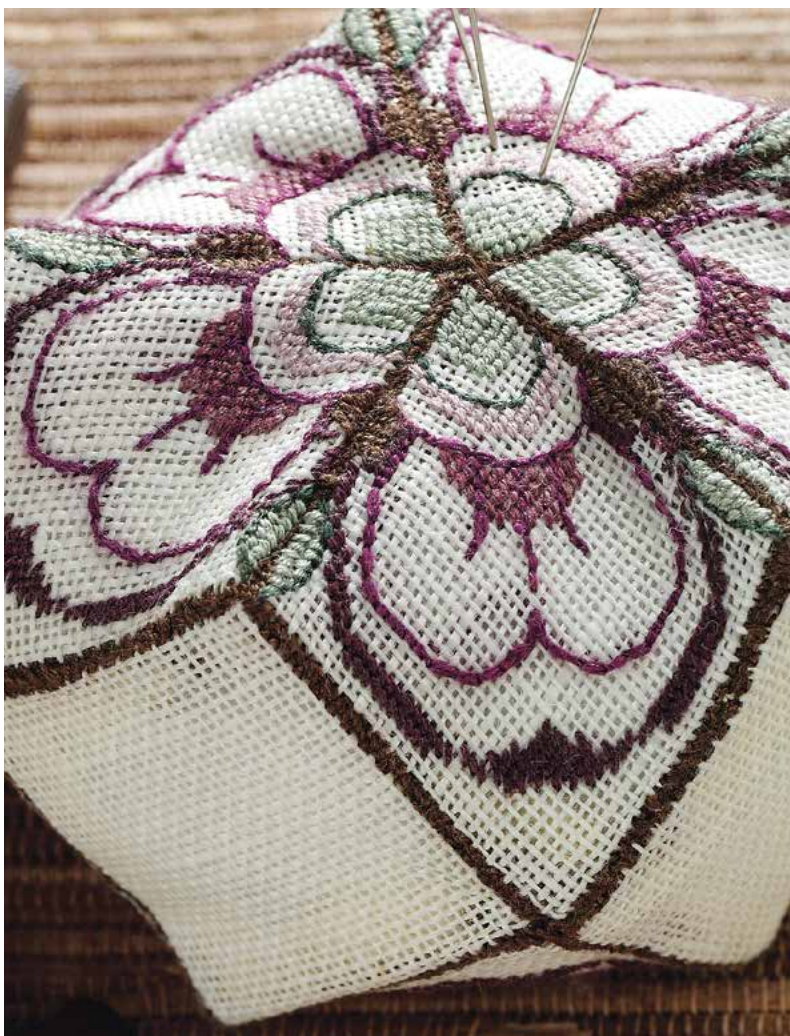
MATERIALS

- ◆ Treenway Silks Harmony, 6 strand 100% bombyx spun silk thread, 10 yards (9.1 m)/skein, 1 skein each of #23 Truffle, #9510 Evening Spirit, #215 Eucalyptus, #225 Captain Olive, #25 Platinum, #39 Tasmanian Myrtle, and #958 Gypsy Passion; www.treenwaysilks.com
- ◆ Wichelt Fabric, 100% linen, 28 count, Ivory, 1 piece, 8 x 12 inches (20.3 x 30.5 cm); www.wichelt.com
- ◆ John James Needle, tapestry, size 26; www.colonialneedle.com
- ◆ Wool roving or polyester fiberfill

Finished size: 2¾ x 1⅞ inches (7.0 x 4.8 cm)



All stitching is done over one thread.
Chart may be photocopied for personal use.



Whipstitch

Hold pieces to be sewn together so that the edges to be seamed are even with each other. With yarn threaded on a tapestry needle, *insert needle through both layers from back to front, then bring needle to back. Repeat from *, keeping even tension on the seaming yarn.

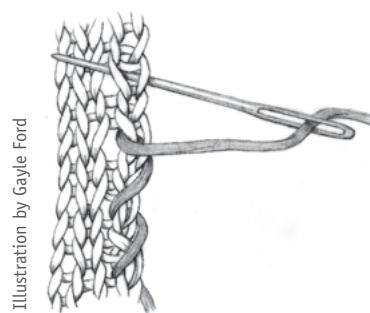


Illustration by Gayle Ford

INSTRUCTIONS

Pincushion

Use one strand of thread for all stitching. Work #39 Tasmanian Myrtle and #958 Gypsy Passion in backstitch; work all other colors in continental or modified continental stitch.

Backstitch 15 squares of 35 x 35 threads in #225, leaving at least a ¼-inch (6-mm) seam allowance on all 4 sides of each square. Following the chart, stitch the Petal pattern on 10 of the 15 squares, leaving 5 blank.

Finishing

Cut the squares apart, allowing for seam allowances. Firmly fold the fabric along the outside edge

of the backstitched lines. Using whipstitch and sewing only under the backstitches (not the fabric) in #225, sew five flower pieces together, aligning the petal centers (see photograph) to create the top piece; repeat for the bottom piece. Whipstitch the blank squares to the top and then the bottom pieces (see photograph for arrangement). Stuff the biscornu before closing the last seam.

In addition to fiber arts, KATRINA KING is also passionate about cake decorating, including wedding cakes. When not tangled in laceweight yarn or covered in sugar, she can be found chasing her daughters to archery and gymnastics activities in and around Fort Collins, Colorado. Visit her website at www.threadeddreamstudio.com.

Peace Silk Beret and Cowl to Knit

JULIE TURJOMAN



Photos by Joe Coca

Julie Turjoman's delightful beret and cowl set.

While researching and writing about ethically harvested Peace Silk, my curiosity about the fiber led me to seek out a variety of skeins to sample. Having designed with silk yarn in the past, I knew that it could be both smooth and pleasurable soft as it slid through my fingers onto the needles or rough and easily split, leaving my fingers covered with both dye and tiny abrasions. Thankfully, Muga silk from Vijay Fibers falls into the first category; from start to finish it is a tactile delight.

A very slight haze on the yarn surface keeps its multiple plies from raveling, making it glide easily from needle to needle with no concern about splitting. And although Peace Silk must be spun from thousands of shorter filaments (rather than reeled from a single long thread), my skeins had a tensile strength that never showed signs of breakage. The finished beret and cowl have a luxurious hand that contrasts surprisingly with the sturdy toughness of the fiber itself. In addition, because the silk takes dye well, with depth and subtlety, it never bled onto my fingers, and very little dye showed up in the warm-water bath before blocking. The semisolid palette adds dimension and character to these knitted projects but never distracts from the stitch textures.

Although I suspected that the hazy surface of Muga silk might diminish the visibility of my chosen lace and stitch textures, that concern proved unfounded. The beret and cowl are as lacy as I could hope for, with a slouchy grace and a delicious softness next to the skin. The satisfaction of knowing that the silkworm pupae were allowed to complete their life cycles was a bonus. Although the production of Peace Silk makes it more expensive than yarn from traditional sericulture, the fiber that results from this method is exceptional.

BERET

MATERIALS

- ◆ Vijay Fibers Muga Etude, 100% Muga silk yarn, worsted weight, 274 yards (250.5 m)/100 gram (3.5 oz) skein, 1 skein of Country Garden; www.yarningforewe.net
- ◆ Needles, circular 16 inches (40 cm) and set of 4 or 5 double pointed size 7 (4.5 mm) or size needed to obtain gauge
- ◆ Stitch markers
- ◆ Tapestry needle



Julie Turjoman's Peace Silk Beret is captivating.

- ◆ Sewing needle (optional)
- ◆ Fine elastic thread (optional)
- ◆ Decorative button, 1 inch (2.5 cm) in diameter or other embellishment (optional)

Finished sizes: 19 (21) inches (48.3 [53.3] cm) band circumference, blocked

Gauge: 19 sts and 24 rnds = 4 inches (10.2 cm) in seed st, blocked; 18 sts and 24 rnds = 4 inches (10.2 cm) in Lace patt, blocked

Special Abbreviation

sk2p—slip 1 knitwise, knit 2 together, pass slipped stitch over (2 stitches decreased)

Instructions

Notes: See above and page 44 for Abbreviations and Techniques. The beret is worked in the round from the bottom up. Keep in mind that silk does not have the stitch memory of wool or other animal fibers and as a result will stretch over time. The beret is intended to fit loosely in a soft slouchy style.

Beret

Using the cable method and cir needles, CO 90 (100) sts. Pm and join in the rnd.

Seed Stitch Brim

Rnd 1: *K1, p1; rep from * to end.

Rnd 2: *P1, k1; rep from * to end.

Rep last 2 rnds until brim measures 1½ inches (3.8 cm).

Inc Rnd: *K8 (9), k1f&b; rep from * to end—100 (110) sts.

Next 2 Rnds: K.

Inc Rnd: *K9 (10), k1f&b; rep from * to end—110 (120) sts total.

Body

Rnd 1: *K1, yo, k3, sk2p, k3, yo; rep from * to end.

Rnd 2: K.

Rnds 3–7: Rep Rnds 1 and 2 two more times, then work Rnd 1 once more.

Rnd 8 (Inc Rnd): *P3, p1f&b, p2, p1f&b, p3; rep from * to end—132 (144) sts.

Rnd 9: Remove m, sl 1 from right needle to left needle, pm for new beg of rnd, *sk2p, k4, yo, k1, yo, k4; rep from * to end.

Rnd 10: K.

Rnds 11–15: Rep Rnds 9 and 10 two more times, then work Rnd 9 once more.

Rnd 16 (Inc Rnd): *P2, p1f&b, p6, p1f&b, p2; rep from * to end—154 (168) sts.

Rnd 17: *K1, yo, k5, sk2p, k5, yo; rep from * to end.

Rnd 18: K.

Rnds 19–23: Rep Rnds 17 and 18 two more times, then work Rnd 17 once more.

Next Rnd: P.

Crown

Note: Change to dpn when needed.

Rnd 1: Remove m, sl 1 from right needle to left needle, pm for new beg of rnd, *sk2p, k3, k2tog, yo,

k1, yo, ssk, k3—132 (144) sts rem.

Rnd 2: K.

Rnd 3: Remove m, sl 1 from right needle to left needle, pm for new beg of rnd, *sk2p, k2, k2tog, yo, k1, yo, ssk, k2—110 (120) sts rem.

Rnd 4: K.

Rnd 5: Remove m, sl 1 from right needle to left needle, pm for new beg of rnd, *sk2p, k1, k2tog, yo, k1, yo, ssk, k1—88 (96) sts rem.

Rnd 6: K.

Rnd 7: Remove m, sl 1 from right needle to left needle, pm for new beg of rnd, *sk2p, k2tog, yo, k1, yo, ssk—66 (72) sts rem.

Rnd 8: K.

Rnd 9: *K2, s2kp, k1; rep from * to end—44 (48) sts rem.

Rnd 10: K.

Rnd 11: *K1, s2kp; rep from * to end—22 (24) sts rem.

Rnd 12: K.

Rnd 13: *K2tog; rep from * to end—11 (12) sts rem.

Rnd 14: K1 (0), *k2tog; rep from * to end—6 sts rem.

Break yarn, leaving a 6-inch (15.2-cm) tail. With tail threaded on the tapestry needle, draw tail through rem sts and pull tight to gather.

Finishing

Weave in ends. Block.

If desired for a more secure fit, sew fine elastic thread into the seed-stitch band, using running stitch and a sewing needle. Stitch a decorative button or other embellishment to the side of the brim, if desired.



COWL

MATERIALS

- Vijay Fibers Muga Etude, 100% Muga silk yarn, worsted weight, 274 yards (250.5 m)/100 gram (3.5 oz) skein, 1 skein of Country Garden; www.yarningforewe.net
- Needles, circular 16–24 inches (40–61 cm) size 7 (4.5 mm) or size needed to obtain gauge
- Stitch marker
- Tapestry needle

Finished size: 29 inches (73.7 cm) in circumference and 9 inches (22.9 cm) deep, blocked

Gauge: 18 sts and 24 rnds = 4 inches (10.2 cm) in Lace patt, blocked

INSTRUCTIONS

Notes: See page 44 for Abbreviations and Techniques. The cowl is worked in the round.

Cowl

CO 130 sts. Pm and join in the rnd.

P 2 rnds.

Work Rnds 1–16 of Cowl Lace Chart 3 times, working Rnds 9, 11, 13, and 15 as foll,

Rnds 9, 11, 13, and 15: Remove m, sl 1 from right needle to left needle, pm for new beg of rnd, work in charted patt to end.

P 1 rnd. BO all sts pwise.

Finishing

Weave in ends. Block to measurements. The cowl will scrunch softly around wearer's neck.



Designed as a companion to the beret shown above, Julie Turjoman's Peace Silk Cowl is amazingly soft next to the skin.

Cowl Lace

•	•	•	•	•	•	•	•	•	•							
			○	○											△	
			○	○											△	
			○	○											△	
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
○			△												○	
○			△												○	
○			△												○	
○			△												○	

15 *

13 *

11 *

9 *

7

5

3

1

10-st rep

* Work as given in directions

Cowl Key



□ k



□• p



□○ yo



□△ sl 2 as if to k2tog, k1, p2sso



□ patt rep

Chart may be photocopied for personal use.

Abbreviations & Techniques

beg—begin(s); beginning	M1p—increase 1 by purling into the front and then the back of the same stitch before slipping it off the left-hand needle	sp(s)—space(s)
BO—bind off	M1L—(make 1 left) lift the running thread between the stitch just worked and the next stitch from front to back, and knit into the back of this thread	ssk—slip 1 knitwise, slip 1 knitwise, knit 2 slipped stitches together through back loops (decrease)
CC—contrasting color	M1R—(make 1 right) lift the running thread between the stitch just worked and the next stitch from back to front, and knit into the front of this thread	sssk—slip 3 stitches one at a time as if to knit, insert the point of the left needle into front of slipped stitches, and knit these 3 stitches together through their back loops (decrease)
ch—chain	p—purl	ssp—slip 1 knitwise, slip 1 knitwise, purl 2 slipped stitches together through back loops (decrease)
cir—circular	p2tog—purl 2 stitches together	st(s)—stitch(es)
cn—cable needle	p3tog—purl 3 stitches together	St st—stockinette stitch
CO—cast on	p4tog—purl 4 stitches together	tbl—through back loop
cont—continue(s); continuing	p5tog—purl 5 stitches together	tch—turning chain
dc—double crochet	p7tog—purl 7 stitches together	tog—together
dc3tog—double crochet 3 stitches together	patt—pattern(s)	tr—treble crochet
dec(s) ('d)—decrease(s); decreased; decreasing	pm—place marker	tr2tog—treble crochet 2 together
dpn—double-pointed needle(s)	prev—previous	ttr—triple treble crochet
fsc—foundation single crochet	psso—pass slipped stitch over	WS—wrong side
foll—follow(s); following	p2sso—pass 2 slipped stitches over	wyb—with yarn in back
hdc—half double crochet	pwis—purlwise; as if to purl	wyf—with yarn in front
inc(s) ('d)—increase(s); increased; increasing	rem—remain(s); remaining	yo—yarnover
k—knit	rep(s)—repeat(s); repeating	yo twice—bring yarn forward, wrap it counterclockwise around the right needle, and bring it forward again to make two wraps around the right needle
k1b—knit 1 in back of stitch	rev St st—reverse stockinette stitch (p right-side rows; k wrong-side rows)	*—repeat starting point
k1f&b—knit into the front and back of the same stitch—1 stitch increased	RLI—knit into the back of stitch (in the “purl bump”) in the row directly below the stitch on the left needle	()—alternate measurements and/or instructions
k2b—knit 2 in back of next 2 stitches	rnd(s)—round(s)	[]—work bracketed instructions a specified number of times
kwis—knitwise; as if to knit	RS—right side	
k2tog—knit 2 stitches together	sc—single crochet	
k3tog—knit 3 stitches together	sk—skip	
k5tog—knit 5 stitches together	sl—slip	
LLI—insert left needle into back of the stitch below stitch just knitted, knit this stitch	sl st—slip(ped) stitch	
lp(s)—loop(s)		
m(s)—marker(s)		
MC—main color		
M1—make one (increase)		
M1k—increase 1 by knitting into the front and then the back of the same stitch before slipping it off the left-hand needle		



Cable Cast-On

Begin with a slipknot and one knitted cast-on stitch if there are no established stitches. Insert right needle between first two stitches on left needle (Figure 1). Wrap yarn as if to knit. Draw yarn through to complete stitch (Figure 2) and slip this new stitch to left needle as shown (Figure 3).



Figure 1



Figure 2



Figure 3