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Weiss, Wendy, "Made in America: Yarns from the Heartland Brown Sheep Company" (2012). *Textile Society of America Symposium Proceedings*. 756.

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Made in America: Yarns from the Heartland

Brown Sheep Company

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Mitchell is located on the far west side of Nebraska near the Wyoming border. The town itself has a population of 1,700 and the neighboring town of Scottsbluff has about 15,000 residents. Brown Sheep Company, founded in 1980, sits under the bluffs looking out over the expansive landscape between the two towns.



Figure 1. The Haig School House where Peggy Wells went to school is across the road from of Brown Sheep Company. Both have excellent views of the bluffs. Photo courtesy of the author.

Peggy Wells and her husband Robert began working with the company in 1998, commuting from busy lives in Denver. They decided to move to Mitchell, NE to join with Harlan Brown a year later. Now retired, Mr. and Mrs. Harlan Brown live at home right next to the mill with their daughter and son-in-law not far away. Starting as a young man in the 1940's and working into the 1970's Harlan Brown farmed and raised sheep. By 1975 prices dropped and markets for lamb diminished. Rather than leave the farm, the Browns purchased used mill equipment and set up the mill under the same name as the farm.

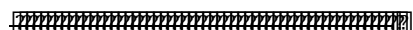
Nearly all the wool Brown Sheep Company uses is sourced regionally. Just the mohair that is mixed in with wool is sourced internationally. Historically Texas provided mohair, until that plant closed 15 years ago. Brown Sheep Company purchases greasy wool from producers in Northern Colorado and Wyoming. The fleeces typically are from Corriedales, Rambouillets, and Columbians. All the processing of the wool takes place at the mill except for the initial preparation because it is so water intensive and requires another set of specific equipment.

Before sending the fleece to Chargeurs Wool, the last surviving scouring, carding, and combing mill in the United States, located in South Carolina,¹ they take a core sample and send it to a lab in Denver for testing. The micron count they expect from these growers is 24. It is worth noting however that Peggy Wells continues to purchase greasy wool from local producers in the area with small flocks just as her father, Harlan Brown, purchased their wool.



Photo 2. Greasy wool purchased from large-scale producers is stored in a warehouse near the mill. Each bale is tested for micron count. Photo courtesy of the author.

Brown Sheep Company works with a 3 ½” staple yarn and they run it through 3 sets of pin drafters to prepare the fiber for spinning. The pin drafters draw the fiber out and align it for spinning worsted yarn. All the yarn Brown Sheep Company produces is worsted—which creates a strong, smooth, dense fiber. Most the yarn is 100% wool or majority wool, blended with mohair or cotton. A new line, Legacy Lace uses 25% nylon to add strength to a fine weight. Cotton yarn is blended with 20% wool. The wool is on average 23-25 microns; a measurement of the fiber indicating the wool is rated at medium fineness. The typical micron count of breeds they use range between 18-33 with Columbia at 24-31, Corriedale at 26-33 and Rambouillet at 18-24 microns, respectively. Put in perspective, this count assures that the yarn will be soft. A count of 27 or over would cause the yarn to be a slightly scratchy.



¹ Schreiber, Colleen. “Last Remaining Combing Plant In U.S. Must Live With Change.” *Livestock Weekly*. Internet Edition. 18 March 2004.

Equipment

Peggy Wells spent the entire day with me, July 9, 2012, giving me a complete tour of the factory, explaining the spinning process and machinery in detail over the din of production. For example, she held up a length of roving, the final sliver, at the conclusion of the pinning process and describes why they run the wool through the pinning machine three times. The first is to open up the scales, the second time is to close the scales and the third time is to open them up again for the spinning process. All the while the wool is being aligned and refined as it moves through each machine. At this point in the fiber preparation process the fiber has no twist at all, the fiber is aligned in uniform direction. Further, she explains, as she holds two different slivers up “we have to know what we are going to make before we start because the weights are all different. The pin draft operator needs to know where he is going with it. This sliver is much smaller than this sliver.”



Figure 3. Wool slivers after the first pinning. Photo courtesy of the author.

Peggy moved on to show me how the spinner works and the history of the machine, which they purchased and installed in 2007. She notes the fiber on the bobbins is going to become a single ply worsted, possibly Lambs Pride worsted weight.

When it is running, the upper gear runs a lot slower than the lower one. It literally is stretching or drafting it apart. If you were to catch it, there would be absolutely no twist. All the twist is added right here. The bobbin is spinning; the ring rail is going up and down, on the ring spinner. It can only get a limited amount on each bobbin. The machine operator doffs off the bobbins and puts new ones on. It takes about 35 minutes to fill a bobbin with single ply worsted weight. When the whole machine is running 200 heads on it, it will spin about 11,000 lbs. in 3-4 days. It takes us about two weeks in the winter when we are running real hard to dye that much. That's the kind of productivity that I am looking for on this machine. The French company we bought the equipment from built the machine in France, disassembled it, packed it into 3 40-foot containers and sent the containers with 2 Frenchman to rebuild the machine on site.

Just as the interest and demand for the Brown Sheep Company product started to increase in 2002, the mill experienced equipment failure. It had been running on the original machinery that Harlan Brown had purchased from mills in the southeast that were going out of business and which he installed on his own in 1980. Between 2004-2009, they replaced 90% of the equipment to reflect the machines that I saw when I visited the mill in July. The last piece of equipment they installed was an 800 lb. dye bath. "And the minute that went into operation the boiler was too small, so we had to buy a new boiler." In July 2012, Peggy Wells was expecting to receive a brand new 30 lb. dye tank from an Italian manufacturer.

One of the more recent innovations on the site is a wastewater treatment system that Robert Wells devised with a Stan Lueck, of RODI Systems Corporation. It reclaims 80% of the water used in the mill, while 20% goes to a nearby lagoon. The water used at the mill is well water that is already high in naturally occurring minerals from the area rock formations. Around Mitchell they have a lot of calcium and magnesium. Robert Wells told me:

The reverse osmosis system processes 15 gallons of wastewater per minute. After the first run through the system, 8 gallons per minute becomes permeate—that is water that has been cleared of all impurities, all the color and all the salts have come out—the water is returned to the mill and is recycled. Seven gallons are rejected from the first pass and run through the system again. From these seven gallons 4 gallons become permeate and 3 gallons of contaminated water remain from the original 15. These remaining 3 gallons are sent to the lined storage lagoon where the water evaporates and the precipitate is later removed.

To demonstrate how well this system works, the measured conductivity of the recycled water is lower than the original well water. Conductivity is the measure of electrical current in the water. Higher conductivity numbers indicate that higher numbers of metal ions are present. The conductivity of the permeate is significantly lower than the well water they start with, which is 1100; the reverse osmosis system generates purer water than the local well water.

Not only is the volume of water the mill requires reduced, but also importantly for the Wells, the heat from the water is also recycled, reducing the amount of propane required to operate the facility in reheating water for various mill operations.

Sales

The day that I visited the mill the phone lines were down which hampered business because the vast majority of the yarn orders are conducted over the phone and fax machine or through the Internet.

Peggy or a representative attends major trade shows. For example, at The National Needlearts Association, TNNA, she will often see a grandmother attending with a young woman interested in needlearts. The grandmother owns a yarn shop and her granddaughter has taken an interest, consistent with the upsurge in knitting that peaked from 2004 to 2006 but then decreased from 2006 to 2009, according to a TNNA 2010 summary report.

While most of the yarn Brown Sheep Company sells is for knit and crochet projects, they captured a big share of the needle point market when they became the primary providers of yarn for needlepoint with Waverly Wool, a 100% Wool Persian Yarn after other providers went out of business. Brown Sheep Company started the line started 10 years ago and by July 2012 needlepoint sales quadrupled from 2,000 lbs. to 16,000 lbs. per year. They are currently the only US producers of 4 oz. and 8 yd. hanks and have 480 colors.

All Brown Sheep Company wool is sold through retailers off site or on-line via other vendors. Only mill ends or seconds are sold at the company store at the factory. In this way, Peggy Wells supports her vendors, with a non-competitive practice. She builds collaborations with others, such Schacht Spindle Company which sells a portable table loom called the Cricket Loom, which includes two balls of yarn, often with the Brown Sheep Company label. In the factory store, she markets products that support other small producers and was especially enthusiastic about Joanna Johnson's books *Phoebe's Sweater* and *Freddie's Blanket*, published by the author's own Slate Falls Press, based out of Colorado. Eric Johnson, her husband, illustrates the books. On Ravelry.com, Brown Sheep Company yarn is listed as the recommended yarn for projects in the book.

A Facebook page and Ravelry page also provide enthusiasts social networking sites to meet up, with an increasing number of likes to the Facebook page, growing from 2,610 on September 17, 2012 to 2,734 on November 30, 2012. Ravelry.com has approximately 2.5 million users and 773 of them are admirers of Brown Sheep wool.

To keep the color selections up to date with consumer preferences, Peggy Wells sorts the yarns from top to low sellers. Old or poor selling colors are removed from individual lines and new ones added. On the second floor in the front part of the building, several small offices house both Peggy Wells and her husband when they aren't on the factory floor. A color card machine is also housed in this room.

In these upstairs offices the Wells keep track of the competition. When at shows or sales they keep on eye on new trends or novelty ideas and pay attention. Some of their buyers will purchases yarn and custom dye it, selling it under their product label. The Wells' showed me lovely examples of fiber dyed and spun yarn by Japanese producer and vendor. They also had another product by a domestic, small producer who knits on a knitting machine first, dyes the cloth in a gradation then unwinds and rewinds the wool into a ball to sell.

What is the Heart of Brown Sheep Company?

Beginning with Harlan Brown's innovative concept of transforming a livestock operation to a spinning mill—from lamb's meat to lamb's wool—this family business continues to provide a traditional product, wool yarn, with a reliable quality. They work with the resources they have at hand to make improvements consistent with the landscape of their environment, scale of business, and labor force. The Wells know their customer, from the beginning to present day; use social media for visibility and community. The Navajo weavers who were a large percentage of Harlan Brown's first customer base continue as customers, however as sales have grown and diversified the base has widened. With an ethical business model, in which the company is both loyal to the producer of the wool and their retailers, they create good will.



Photo 4. The “Color Room” shows 4 years of product, organized by sales order, left to right, high to low volume sales, with each line is organized separately. Photo courtesy of the author.