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Knitting a New World

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Knitting has the distinction of being one of very few textile techniques not practiced by Andean people in Pre-Columbian times. The vast variety of intriguing and sophisticated cloth production techniques that were developed in the pre-Hispanic Andes has been well documented.^{1 2} Using cotton and camelid fiber, Andean people developed an extensive repertoire of methods for creating textiles including looping, knotting, oblique interlacing, twining, cross-knit looping, and sling braiding. In the broad category of weaving they used structures including doubleweave, complementary warp and weft weaves, supplementary warp and weft weaves, twill, tapestry, gauze, and discontinuous warp and weft. Often multiple techniques were combined in one artifact; for instance, a narrow tapestry border in brightly dyed alpaca could be used to edge a gauzy square of plain-weave cotton. Embellishments included everything from simple seams to the stunning examples of stem-stitch embroidery from Paracas mantles.³ All of these textiles, elaborate or simple, were produced with relatively simple tools. Extant Andean textiles from the Pre-Columbian era show that the makers were masters of color and design, but also exploited the unique properties of fiber to produce fabrics that were ribbed, silky, tufted, warm, cool, stiff, or stretchy.

In the contemporary Andes, knitting is a well-established practice. Beautifully executed hats knit at fine gauge and richly adorned with color patterning show that many modern Andean knitters are experts.⁴ It is assumed that the technique of knitting was imported along with other Spanish and European traditions after the Spanish invasion in 1532. However, not much is known about when exactly knitting first began to be practiced in the Andes, what the first knitted objects were, and how knitting knowledge was disseminated. Artifacts uncovered during recent excavations at the site of Magdalena de Cao Viejo on the north coast of Peru can help answer these questions.

The town of Magdalena de Cao Viejo is a part of the El Brujo Archaeological Complex, which is located on a triangle of land on the north coast of Peru, about an hour north of the city of Trujillo. The site has evidence of several thousand years of occupation; very early cotton twined textiles dating to about 3,000 BCE were excavated from Huaca Prieta, a part of the archaeological complex, in the 1940s.⁵

¹ d'Harcourt, Raoul. *Textiles of Ancient Peru and Their Techniques*. Seattle: University of Washington Press, 1974.

² Stone-Miller, Rebecca. *To Weave for the Sun: Ancient Andean Textiles in the Museum of Fine Arts, Boston*. New York, NY: Thames and Hudson, 1994.

³ Stone-Miller, 72-87.

⁴ Meisch, Lynn, ed. *Traditional Textiles of the Andes : Life and Cloth in the Highlands* New York :San Francisco: Thames and Hudson; Fine Arts Museums of San Francisco, 1997, 73-74; 138-141.

⁵ Bird, Junius Bouton, John Hyslop, and Milica D. Skinner. "The Preceramic Excavations at the Huaca Prieta Chicama Valley, Peru." In *Anthropological Papers of the American Museum of Natural History*. New York, 1985.

The colonial town of Magdalena de Cao Viejo (MCV) was occupied from 1578 to about 1780.⁶ It follows the plan of a Spanish *reducción*, or forced resettlement, with a church, a plaza, and streets laid out in a grid. The church was founded by the Dominican order and may have been staffed by one or more priests of Spanish descent; most of the other residents were likely native Andeans or people of mixed heritage.

Excavations of MCV began in 2004 under the direction of Dr. Jeffrey Quilter. To date, more than 3,500 textile artifacts have been recovered. The town has been extensively looted, so it is impossible to learn much from archaeological context. Nevertheless, the number and variety of textiles found make the collection exceptional. Preservation is generally very good; in fact, one can walk across the site and literally trip over cloth embedded in the ground.



Figure 1, left: Textile in situ at Magdalena de Cao Viejo, 2006. Photo by author.

Figure 2, right: Ball of cotton singles found with a burial in the church at Magdalena de Cao Viejo. Total length approximately 3 cm. Photo by author, 2008.

The most common kind of cloth found at Magdalena is warp-emphasis cotton plainweave with paired warps and single or double wefts. The cotton yarns are singles; both S- and Z- twist are found, but S-twist is by far the more prevalent. Most yarns are spun to the point of what we often call “overtwisting”, and corkscrewing can be found in many examples.

Magdalena weavers made use of the full range of available natural colors of cotton, from off-white through beige, tan, medium brown, and a dark reddish brown. These hues were augmented by blue, dyed in shades from a pale dusty blue to a dark indigo color.

⁶ Quilter, Jeffrey. "Cultural Encounters at Magdalena De Cao Viejo in the Early Colonial Period." In *Enduring Conquests: Rethinking the Archaeology of Resistance to Spanish Colonialism in the Americas*, edited by Matthew Liebmann and Melissa Murphy, 103-25. Santa Fe, NM: SAR Press, 2011.



Figure 3: Close-up of a warp-emphasis cotton plainweave textile with narrow pattern stripes. This example demonstrates the use of naturally occurring colors and dyed blue, a typical color scheme for woven cotton at MCV. Warp runs horizontally in this picture. Area pictured is approximately 22 cm x 15 cm.

Photo by Meredith Keffer, 2010.

In addition to indigenous cotton cloth, the collection of textiles from MCV includes numerous examples of elaborate fabrics and trims imported from Europe. There are fragments of hemstitched or embroidered linen, silk taffeta and satin, fine wool twills, and damasks with intricate flowered patterns. These artifacts are some of the earliest European fabrics yet excavated in Peru and show that although the town of Magdalena was small and remote, it was a part of the trade network for luxury imports from early in the colonial period. Imports were not restricted to tangible goods, however: the Magdalena collection includes the earliest known examples of knitting from the Andes.

Artifact Type	cotton	wool	Stitches Used	Color
stocking		x	stockinette	yellow
stocking		x	stockinette	yellow
stocking top?		x	stockinette, garter, purl	blue
stocking	x		stockinette	natural white and brown, striped
stocking	x		stockinette	natural white and brown, striped
border		x	garter stitch, ribbing, eyelets	blue
unknown		x	stockinette, ribbing, purl	yellow
unknown	x		stockinette	blue
unknown	x		stockinette, purl	white
unknown	x		stockinette	white
unknown			stockinette	dark brown

Table of knitted textiles found at Magdalena de Cao.

Eleven knitted artifacts have been found. Five are of cotton, five are made of sheep's wool, and the fiber of the eleventh is unknown or indeterminable. Many of the artifacts are so fragmentary or damaged that their original shape and purpose cannot be specified. However, holes and raveling edges can make the fabric and yarn structure easier to see. An example of one of the knitted fragments is shown in Figure 4. Stockinette and reverse stockinette were used in this piece. From the purl bumps it is apparent that two cotton Z-spun singles held together were used to make the fabric; the cotton yarns are identical to those used for weaving. The knitter of this piece used indigenous Andean materials to recreate a European technique.



Figure 4, left: *Fragment of cotton knit from Magdalena de Cao. Hole is approximately 2.5 cm long. Photo by Meredith Keffer, 2010.*

Figure 5, right: *Knit border of blue wool with garter-stitch points and eyelets found at Magdalena de Cao Viejo. Approximately 8 cm x 5 cm. Photo by Meredith Keffer, 2010.*

A more intricate example is shown in Figure 5. This piece was made with 2-ply sheep's wool plied S, dyed a deep blue color. This shade of blue is so common at MCV that it has been nicknamed "Brujo Blue". As previously noted, it is often found in striped cotton textiles, but is also an extremely common color for the coarse colonial woolen fabrics of local manufacture. Although this artifact is misshapen from the knot at one end, it is possible to distinguish garter-stitch points and rows of eyelets. It is possible that this was the top border of a stocking. Bishop Martínez Compañón's "Encyclopedia of Trujillo", created during the 1780's, has a portrait of an *Española* (Spanish woman) wearing lacy blue stockings.⁷ This artifact might once have been a part of a similar pair.

No complete lace stockings have yet been found, but there is an example of a nearly complete knee-high in stockinette (Figure 6). The original color of the wool yarn is uncertain; it may have been a dark golden brown. Additional research will be needed to determine whether the sock was knit from the top down or from the toe up; neither end is complete. If it follows the pattern of others at the site, top-down is most likely. The leg of the stocking is plain, but the gradually tapering form shows that the knitter was adept at shaping with decreases (or increases). The heel flap is done in garter stitch, and has been patched with a scrap of linen plainweave (Figure 7). The patching is evidence that, like many other

⁷ Martínez Compañón, *Trujillo Del Perú*. Vol. II, Estampa 1.

<http://bib.cervantesvirtual.com/servlet/SirveObras/patr/80771096008914356746280/ima0007.htm>

garments found at the site, this stocking was worn until it wore out, and was mended in an attempt to make it last longer.



Figure 6, left: Wool knee-high (?) sock or stocking from Magdalena de Cao Viejo with garter-stitch heel flap and heel patch of plainweave linen. Photo by author, 2009.

Figure 7, right: Detail of the sock in Figure 6, showing the linen plainweave heel patch. Photo by author, 2009.

Cotton was also used for knitting socks: two cotton socks have been found at the site. Both have striped patterns in natural colors of cotton. An example is shown in Figure 8. The gauge is about 5 rows and 4 stitches per cm. The stripe pattern is a simple one, three rows of off-white alternating with three rows of medium reddish-brown. Towards the top, the brown appears to turn darker, but it is not clear if this was an intentional change or if the artifact has become discolored over time. Three cotton S-spun singles were held together to knit this object. Like the stocking in Figure 6, the heel flap is in garter-stitch. The foot is incomplete--not because of disintegration, but because the sock was left unfinished. By looking closely, it is possible to see the yarns which are used as a holding thread for the instep stitches (Figure 9).



Figure 8, left: Striped cotton sock from Magdalena de Cao. Total length approximately 24 cm.

Photo by Meredith Keffer, 2010.

Figure 9, right: Detail of the sock in Figure 8. The live instep stitches are held with a length of the same yarn used for the knitting. The holding yarn is knotted at both ends to keep it from being pulled out.

Photo by Meredith Keffer, 2010.

Based on the Magdalena collection, it seems clear that one of the primary uses of knitting in Colonial Peru was for footwear. Pre-hispanic Andean dress included a variety of sandals, but no close-fitting legwear similar to socks or stockings has been found or documented. Bishop Martínez Compañón, writing in the 1780's, depicts most indigenous people in everyday dress with bare legs and feet, suggesting that even 250 years after the conquest, it was unusual for indigenous Andeans to wear shoes.⁸ Shoes were, however, an essential part of Spanish-style dress and, as far as one can tell from existing portraits and illustrations, were almost always worn with stockings. The knitted footwear found at Magdalena might therefore have been worn by people of Spanish descent. It must be remembered though that the possible categories of colonial identity were myriad; not only were there individuals with mixed Spanish and Andean parentage, but Spanish-African and African-Andean heritage. Such people may well have tried to emphasize the Spanish part of their ancestry by dressing in European styles, since Spanish-ness generally equated to higher status, greater wealth, and more social and political power.

None of the knitted examples has yet been radio-carbon dated, but ethnohistorical documents show that Magdalena de Cao Viejo was inhabited for about two hundred years, beginning in 1578. It is likely that the socks and other knitted items found at the site were made during that time period. If dated towards the beginning of the town's occupation, the Magdalena artifacts would provide evidence that knitting was being practiced in the Andes less than 50 years after the Spanish invasion. The cotton pieces show that indigenous Andean materials--spindle-spun, locally grown cotton like that used for weaving indigenous cloth--were used to execute a European technique: knitting. It would certainly have been possible for a Spanish knitter to acquire locally spun cotton yarn; but it is not clear that a Spanish person would have wanted to wear cotton stockings. It is tempting to suppose that the makers of the cotton

⁸ Compañón, Vol. II.

socks were Andean, using materials that were familiar and readily available. Given the depth and breadth of fiber expertise among Andean craftspeople, it might have been possible for them to learn to knit simply by observing and experimenting. It is also possible that indigenous people were taught to knit in order that they be able to provide stockings and other knitted items to Spaniards. Colonial bureaucracy demanded tribute from indigenous people; often this tribute took the form of textiles or completed items such as shirts or sashes.⁹ Perhaps socks were also produced on demand.

What is still unclear is where knitting was first introduced and how knitting knowledge spread throughout the Andes. Although Magdalena provides the first known examples of early colonial knitting, that does not mean it was the first place knitting was practiced; in fact, given the small size of the town and its out-of-the-way location, it is more likely that knitting was first introduced elsewhere. It may have been adopted in many different places nearly simultaneously. It would be particularly interesting to be able to trace the relationship between these early coastal pieces and the intricate colorwork knitting practiced in the highlands today. It is clear from modern examples that, once introduced, Andean fiber artists developed their own styles and traditions of knitting and made this technique fully their own. A fuller explanation of the evolution of knitting in the Andes awaits further research.

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⁹ Compañón, Vol II, Estampa 56.

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