

Kingdom of Meridies

On the Other Foot

A Second Attempt at Recreating Western Han Dynasty Silk Shoes

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1. Silk Shoes from the Western Han Dynasty

Inspired by Cinderella né Ye Xian's Golden Shoes

In the 9th century, Duan Chengshi (段成式) (c. 800-63) wrote *Miscellaneous Morsels from Youyang*, which includes one of the earliest datable versions of the Cinderella cycle. The story was supposedly told to Duan by Li Shiyuan, who worked for the Duan family and was originally from the Yungchou caves, found in Nanning, in the Guangxi Province¹. In the story, Ye Xian is the daughter of a chief who is orphaned and raised by her cruel stepmother and stepsister. She befriends a large fish who becomes her benefactor. After the stepmother tricks the fish, kills, and eats it, Ye Xian communicates with its spirit. The fish gives her beautiful clothes to wear to a festival, including a pair of golden shoes. She is the most beautiful maiden there, but when she thinks she has been recognized by her stepmother and stepsister, Ye Xian leaves, accidentally leaving one of the shoes behind. The shoe is found by peasants and traded until it reaches the king of a nearby strand of islands. The King begins a search to find out who the shoe belongs to and eventually reaches Ye Xian's community. Ye Xian sneaks out at night and stole the shoe when it is on display, but she is caught and brought before the King. She explains everything, and the King lets her leave with the shoe. The next day the King goes to find her at her house and sees her in her festival finery. The King asks Ye Xian to join him as his queen, and the stepmother and stepsister are banished to the wilderness, where they are later killed by a rain of fiery stones.



Figure 1 Silk shoes from the Mawangdui exhibit at the Hunan Provincial Museum (n.d.)

While the story was recorded during the Tang Dynasty, it is set in the Chinese equivalent of “once upon a time - before the Qin-Han conquest². I found the story when researching the earliest known versions of fairytales, in response to an inaccurate BuzzFeed article³. The story, along with my primary research of Tang Dynasty clothing inspired me to try and recreate Ye Xian's shoes.

Extant Inspiration: Xin Zhui's Silk Slippers

This item is a recreation of the shoes found in the tomb of Xin Zhui (辛追), also known as Lady Dai, at Mawangdui in Changsha, China (FIGURE). The shoes were created during the Western Han Dynasty 206 BCE – CE 25) and presumably before or shortly after Xin Zhui's death in 163 BCE.

¹The caves aren't literally caves, but an ethnic term for dwelling, as the aboriginals originally lived in caves on the mountainside and referred to themselves as “cave owners.” The term “caves” came to mean “native settlements” (Waley, 1947, pp. 229-30).

²Ibid (p. 229)

³Someone was wrong on the internet. (Yang, Koeppl, Celestino, & Duits, 2015) (Hummel, 2011)

Mawangdui, Changshan

Xin's husband, Li Cang (利蒼), was the Marquis of Dai and Chancellor of Changsha⁴. Changsha is a region of China that has been populated for thousands of years – it was named during the Western Zhou Dynasty (1046-771 BCE), but archaeological evidence points to inhabitants in the area from 3,000 years prior⁵.

The Mawangdui Tomb site is located in northern Changsha, near the Yangzi River⁶. Li Cang owned land between present-day Luoshan County and Guangshan County, which is north of the river⁷.

Xin Zhui died in 163 BCE and was buried with over 1,000 items⁸ including two pairs of shoes⁹. The English version of the Hunan Provincial Museum's website describes the shoes as being "worn by the owner of one of the tombs."¹⁰ Xin was an aristocrat, given that her husband was a government official equivalent to a Marquis. There were 700 households under the Dai manor¹¹. The museum's description of the shoes makes it difficult to discern if these were the shoes the preserved cadaver of Xin was laid to rest in, shoes she wore in life, or if they were a pair provided as part of the Han/Chu burial tradition.

Burial Customs and Grave Goods

The grave goods at Mawangdui were placed there because "the separation of the body and soul was felt to cause some fear and confusion to the near spirit, so the surviving members of the family tried to provide it with the support it needed."¹² Daoists believed that a person had two souls – a *hun*, the "ethereal soul associated with *yang* energies," and a *po*, the "corporeal soul associated with *yin* energies."¹³ Death occurred when the *hun* separated from the *po*. One of the first acts of mourning was for family members to try and summon the *hun* back to the *po* through the rite of *fu*, or "summoning the soul."¹⁴ Once it has been established that the *hun* was not returning, Daoists believed the two parts of the soul needed guidance either to ensure a smooth journey to the afterlife or return to the tomb to live in comfort.¹⁵

Challenges

Researching Chinese material culture can be difficult for a variety of reasons. First, I do not speak or read Chinese. This makes Chinese-language sources either inaccessible or dependent on assistance from translators, or (as a last resort) computer translations – which are often difficult to parse and hold no assurance of accuracy. Second, while much of the Mawangdui tombs' goods have been studied and analyzed by English-speaking scholars (or else translated into English), there seems to have been no particular attention paid to the shoes. Given these challenges, I had to make assumptions and piece

⁴ (Psarras, 2015, p. 110)

⁵ (Ministry of Culture, 2003)

⁶ See Map of Relevant Sites in Appendix A.

⁷ (Lui-Perkins, 2014, p. 16)

⁸ (Bonn-Muller, 2009)

⁹ (Hunan Provincial Museum, n.d.)

¹⁰ (Hunan Provincial Museum, 2010)

¹¹ (Hunan Provincial Museum, 2006)

¹² (Victoria and Albert Museum, 2015)

¹³ (Lee J. H., 2014, p. 104)

¹⁴ Ibid. (p. 105)

¹⁵ Ibid. (p. 105)

together information along the way based on what I have been able to learn about basic shoe construction, both in Western Europe during SCA period as well as modern cloth shoe construction from the DIY movement.

Project Goals

My goal for this project was to produce a pair of shoes worthy of a noblewoman from the Western Han Dynasty, specifically around the time that Xin Zhui lived. While the pair in her tomb may have never actually been worn, I wanted mine to be something I could wear with an appropriate outfit. Given the materials used and the status of the wearer, these are clearly not shoes that one would wear to traipse across a campsite – so while they need to be sturdy and function as a shoe, they also need to convey a sense of sheltered luxury.

This is my second attempt to make these shoes, and so I will be comparing what I did the first time around with what I have learned for this revision as I describe my understanding of the extant shoes and my construction process.

At some point, I would like to recreate all of Ye Xian's festival outfit – the equivalent to the western European Cinderella's ball gown. The bifurcated shoe of the Han Dynasty can be seen as a predecessor to the rising toes of the Tang Dynasty. In the scope of a larger project to recreate "period princess" outfits based on the time periods when we find their stories written, Ye Xian's clothing would be from the latter part of the Tang Dynasty. It is my hope to apply what I have learned from making Xin Zhui's shoes to methods of Tang Dynasty shoe construction.



Figure 2 Larger view of the Mawangdui shoes (Hunan Provincial Museum, n.d.)

2. Making the Shoes

A Closer Look at the Mawangdui Shoes

The Mawangdui shoes (Figures 1 and 2) are 26 centimeters (10.23 inches) long and 7 centimeters (2.75 inches) wide. This would make the shoe, in modern sizes, a women's 10 ½ with a very narrow width. Using the information from the Hunan Provincial Museum's digital exhibit walkthrough, I worked from

translations by Lord Þórfinnr Hróðgeirsson¹⁶ and Lady Song Zidie¹⁷ to get a description of the shoes. When I made my first pair in 2015, I only had Song's translation. Based on this description, my new interpretation of the shoe has four elements, which I've numbered the elements to serve as an easy reference.

[1]The uppers (or face) of the shoes are made of a plain weave, blue-green silk with a comparatively wide weft. [2]The soles are a plain weave, pale reddish-purple hemp. [3]The lining is also reddish purple, and is a herringbone and [4] lined (or padded) with a plain weave fabric.

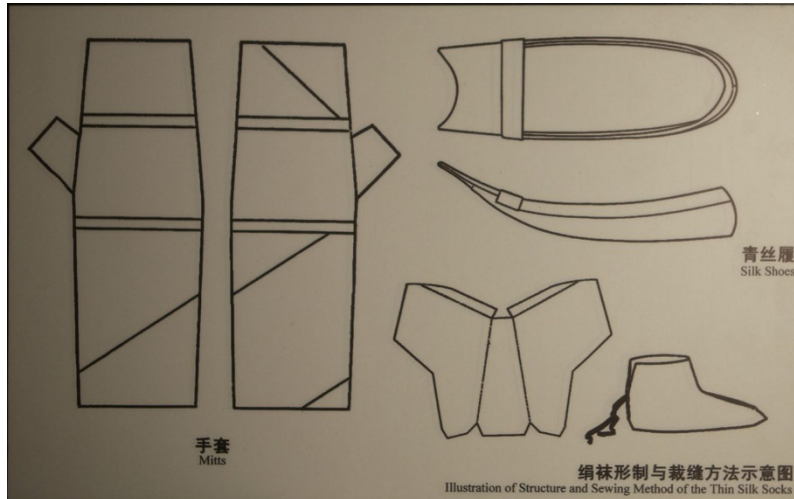


Figure 3 Diagram of mittens, shoes, and socks (Hunan Provincial Museum, n.d.)



Figure 4 Potential alternate view of Mawangdui shoe (Fang, 2013)

reproduction. The image does not show a binding on the edge of the upper or instep, but it does provide a better idea of the curve of the upper and lining. When compared to the diagram, it does not appear that the toes of these shoes rise at much of an angle – at least not when worn. Both shoes seem sturdy enough to hold their shape independent of a wearer.

The primary difference between the two translations I received was how the herringbone was identified. Initially, Song read it as a decoration consisting of a pattern of symbols, but Þórfinnr had the insight, and based on magnified images of the shoes, determined that it was a herringbone twill.

The Hunan Provincial Museum provides a placard next to the case housing the silk shoes which includes a side and top diagram of their construction (Figure 3). This makes it easier to identify the different pattern pieces. The sole of the shoe curves upward toward the toe, which is capped with a top and bottom piece, the latter being approximately half the length of the former. The upper is bound with an edging as is the toe-cap at the instep.

Figure 4, taken from a Chinese-language site, is described as being a pair of shoes from the Mawangdui tomb, but it is unclear whether they are one of the extant pairs or a

¹⁶ East Kingdom

¹⁷ Kingdom of Ealdomere

Other Western Han Dynasty Shoes

The Mawangdui shoes appear to be stylistically in line with other footwear of the Western Han Dynasty. By this period, shoes featured separate uppers and soles, and were made of a variety of materials including hemp, leather, or silk.¹⁸ They were often decorated with woven or embroidered designs and were “forked at the front.”¹⁹ Footwear was often worn with socks. The materials a shoe was made of reflected its use as well as the status of their wearer.²⁰

There are artistic representations of this style of shoe – with the upturned, forked toe – being worn during the Western Han Dynasty.

Draped over Xin Zhui’s innermost casket was a T-shaped banner which is painted with scenes of Xin Zhui, servants, family members, gods, beasts, and other symbols (Figure 5).²¹ In the middle of the banner, Xin Zhui is depicted wearing an embroidered robe and leaning on a cane.²² A line drawing of the image from *Research on Ancient Chinese Clothing and Adornments* by Shen Congwen is included in Hua Mei’s *Chinese Clothing: Garment, Accessory and Culture*.²³ In this drawing (Figure 6), the upturned, forked toe is more visible. However, it appears to have been exaggerated in the painting when compared to the extant shoes and period sculpture.



Figure 5 Detail of Xin Zhui with attendants, from the T-Shaped banner (Hunan Provincial Museum, 2010)



Figure 6 Line drawing of Xin Zhui taken from T-shaped banner (Hua, 2011, p. 16)

¹⁸ (Langford, 2009, p. 233)

¹⁹ Ibid. (p. 233)

²⁰ Ibid. (p. 233)

²¹ (Lui-Perkins, 2014, p. 49)

²² Ibid. (p. 49)

²³ (Hua, 2011, p. 16)

The Terracotta Army of Emperor Qin, the first emperor of the Qin Dynasty, is made up of nearly 8,000 soldiers and horses, each believed to be modeled after a unique individual.²⁴ Construction of Emperor Qin's tomb began shortly after he became emperor in 220 BCE and lasted almost 40 years.²⁵ Shoe tips on the soldiers vary, but both unarmored, armored, and presumably high-ranking soldiers had shoes with curved toes, while the toes of cavalry-men were square.²⁶

In his 2007 thesis, Jana Strakova worked to reproduce two different styles of shoes worn by the Terracotta Army, and in doing so corresponded with Zhang Wembi, director of the Museum of the Terracotta Warriors and Horses of Emperor QinShinhuang's Research Office.²⁷ Zhang noted that while they have not unearthed a female statue in the Terracotta Army, footwear was the same for both males and females.²⁸ This is in line with what extant footwear, fragments, and art survive today. Some of the warriors have shoes that lace in a variety of ways, some with a bound edge to stabilize the vamp and topline (Figure 7), while others do not have either feature (Figure 8). There is also evidence of a heel seam,²⁹ much like modern ballet flat construction. Strakova was recreating shoes meant for soldiers and so used thick wool felt for the upper and leather for the sole, both of which were used in period.³⁰ Because Strakova was using felt, he was able to shape the upper, including the insole, from one piece of felt by putting it over a wooden shoe last and using steam.³¹ Silk does not behave this way; therefore, a silk shoe was more likely cut and sewn from several pieces to achieve a similar shape.



Figure 7 Terracotta warrior shoe with binding on topline and vamp for stiffening (Strakova, 2007, p. 46)

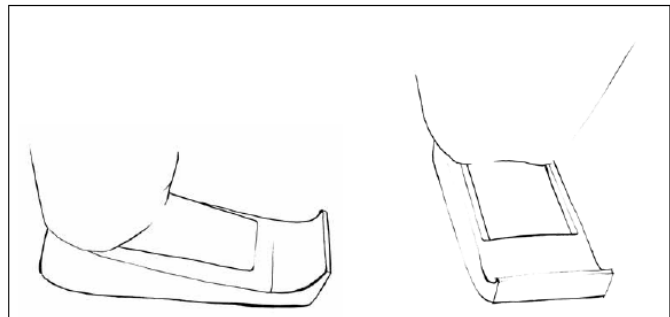


Figure 8 Views of square-shaped shoes with raised toes (Strakova, 2007, p. 46)



Figure 9 Finished felt reproductions of terracotta warrior shoes, with laces and leather bindings along the topline and vamp (Strakova, 2007, p. 55)

²⁴ (Strakova, 2007, p. 28)

²⁵ Ibid. (p. 14)

²⁶ Ibid. (pp. 29-35)

²⁷ Ibid. (p. 37)

²⁸ Ibid. (p. 37)

²⁹ Ibid. (p. 46)

³⁰ Ibid. (p. 48)

³¹ Ibid. (p. 49)

The Limes Watchtowers' Shoes

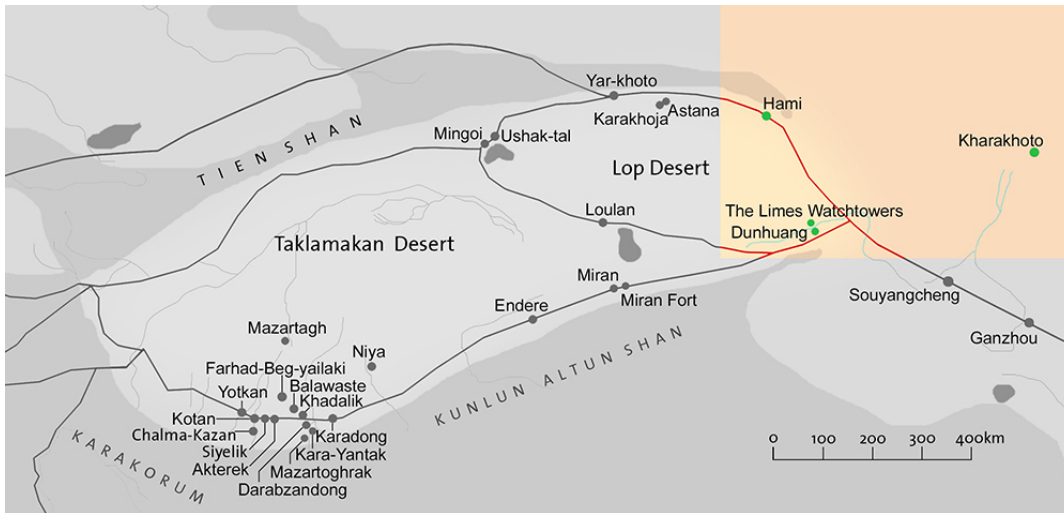


Figure 10 Map of the areas explored by Sir Aurel Stein (Victoria and Albert Museum, n.d.)



Figure 11 Limes Watchtower Shoe fragment (Victoria and Albert Museum)

The Stein Collection at the Victoria and Albert Museum includes the textiles fragments found at the Limes Watchtowers, which date to the Western Han Dynasty. Unfortunately, the Limes Watchtowers are approximately 1,700 miles northwest of Mawangdui (see Appendix A). The shoes from the Limes Watchtowers aren't as well preserved, nor are the majority of them made from materials as fine as Xin Zhui's shoes. That being said, some insight can be drawn from their construction that can be applied to the Mawangdui shoes.

Figure 11 shows what might be the closest analog from the Limes Watchtowers to the shoes at Mawangdui. The fragment is missing the outer sole and toe. It is impossible to know if the toe was rounded, or upturned and forked, but the fragment does show that there was an outer sole in addition to an insole, which makes sense given that these are cloth shoes as opposed to leather. The upper is a monochrome plain-weave of an unidentified plant fiber. There is a blue band at the edge that would have joined the sole to the upper, which was woven to the needed shape.

The opening of the shoe has a patterned, polychrome weave of green and brown silk. These are also

evidence of a lining that consisted of the same, monochrome plain-weave plant fiber as the inner sole. There were “decorative additions” of blue silk thread.³²

There appears to be some stitching on the insole of the shoe, but I cannot tell if this is the same sort of curved, warp-faced band as in the Mawangdui shoe. From what I can tell of the limited views of this fragment, it seems very similar to the back half of a modern ballet flat, such that I would not be surprised to see a heel seam.

Figure 12 shows a shoe from the Limes Watchtowers that is intact and made with plain-woven, unidentified plant fiber, woven in two colors to resemble twill. The sole appears to be a solid piece of fabric as opposed to a single band stitched together along one side.³³

Lastly, the fragment in Figure 13, is described as being from a “string shoe.”³⁴ It appears to be what it also referred to as a rope sole shoe, where spun fibers are coiled into a shape and stitched together.



Figure 13 Limes Watchtower "String Shoe" fragment (Victoria and Albert Museum)



Figure 12 Limes Watchtower Shoe (Victoria and Albert Museum)

³² (Victoria and Albert Museum)

³³ (Victoria and Albert Museum)

³⁴ (Victoria and Albert Museum)

Insights for Shoes 2.0

After I made my first attempt at these shoes, Mistress Wuennemon die Naherin noted that the insole looked like a woven, warp-faced band that had been sewn to itself to create the curve at the heel. This theory would provide the shoe with additional structure, and a second tablet woven band may serve as the twill referred to in the museum description.

While this band served as the insole, I believe it is reasonable to include an outer sole, similar to what is seen on the Limes Watchtower fragment. Like the complete shoe from the watchtowers, this outer sole could be of a single piece of fabric. This would allow for better support, and, if the insole is only attached at the topline, it could be easily removed and replaced as needed.

After this realization, and the following understanding that what I had previously thought was a reference to the shoes being embellished was actually a description of twill, it made sense that the uppers of the insole were a tablet woven herringbone twill. Prior to this project, I had only woven inkle bands twice before, and so I did not feel I had the time to learn tablet weaving and attempt a twill.

I used cotton buckram to stiffen the vamp and toes of the first pair of shoes, but the theory of the insole band would give the shoes enough structure that this element would be unnecessary. There is no mention of lacquered fabrics in the museum description, which lends further support to the theory.

Western Han Dynasty Textiles, Tools, and Techniques

Textiles

Silk

Silk and sericulture in China dates back to the Shang Dynasty (c. 1500-c.1050 BCE), and was an essential part of agriculture, commerce, government, and material culture.³⁵ The first imperial workshops for silk were established in the Han Dynasty on the east coast of the Shandong Province (see Appendix A).³⁶ Prior to the Han Dynasty, restrictions on the use and production of silk that were supposedly in place during the Western Zhou Dynasty (1046 – 771 BCE) were documented in the Zhou Li, or Rites of Zhou.³⁷ These restrictions included colors and types of garments predicated on social rank, but also included regulation regarding manufacture, such as standard widths and lengths and weave densities.³⁸ These dimensions are equivalent to just over a half a meter in width and approximately nine and a quarter meters (just over ten yards) in length. More silk was being produced in the Han Dynasty than previously, but one had to have a royal connection or financial means to purchase the expensive material – the price was determined by the quality and pattern of the silk.³⁹ Silk was used to pay taxes, so in every region capable of breeding silkworms, households grew mulberry trees and produced silk.⁴⁰

³⁵ (Vainker, 2004, p. 6)

³⁶ Ibid. (p. 12)

³⁷ Ibid. (p. 42)

³⁸ Ibid. (p. 42)

³⁹ (Langford, 2009, p. 56)

⁴⁰ (Zhao F., 1999, p. 398)

Hemp and Ramie

Hemp and ramie, both bast fibers, were used for textile production in the Han Dynasty,⁴¹ with hemp being prevalent in the north and ramie in the south.⁴² The soles of the shoes from Mawangdui, as well as several shoes from the Limes Watchtowers, have been identified as hemp or unidentified plant fibers. Hemp production in the Han Dynasty had evolved to a point where various grades could be produced – not simple the coarse fabric we think of today.⁴³ Hemp was also bleached and cleaned, indicated as being “white as snow” in a book that pre-dates the Han Dynasty.⁴⁴ Hemp could be spun and woven either finely or coarsely, then shaped and lacquered to create a stable shape.⁴⁵

Cotton

Though cotton and how to produce it was known in western China by the Han Dynasty, it does not appear to have been popular or used very often.⁴⁶ Archaeologists have discovered cotton handkerchiefs, pants, and printed calico in Han Dynasty tombs.⁴⁷ Perhaps the rarity of use was due to the fact that sericulture was already well established and cotton production was as labor intensive, if not more so, for a product that was inferior to silk and the native bast fibers.

Weaves

Plain, or tabby-weave, was the primary weave used during the Western Han Dynasty.⁴⁸ *Leno*, or gauze, was also used, as well as jacquard and brocade.⁴⁹ Damask, brocade, plain-weave, embroidered, and printed fabric were found in Xin Zhui’s tomb.⁵⁰



Figure 14 Woven silk textiles from Xin Zhui's tomb (Wikipedia contributors, 2017)

⁴¹ (Langford, 2009, p. 38)

⁴² (Zhao F. , 1999, p. 381)

⁴³ (Langford, 2009, p. 52)

⁴⁴ Ibid. (p. 52)

⁴⁵ Ibid. (p. 52)

⁴⁶ Ibid. (p. 10)

⁴⁷ Ibid. (p. 59)

⁴⁸ (Zhao F. , 2014, p. 398)

⁴⁹ Ibid. (p. 398)

⁵⁰ (Hunan Provincial Museum, n.d.)

Tools

Like modern garment construction, it can be assumed that the shoemaker used tools to cut and stitch the fabric.

A pair of scissors from the Han Dynasty is on display at the China Knife, Scissors, and Sword Museum. The scissors were made from one piece of iron that had been twisted into a figure-eight.⁵¹ A similar pair from the Tang Dynasty (618-907 CE) is made of a twisted figure-eight handle welded to flat blades.⁵²

Bone and ivory needles that are estimated to be between 30,000 and 23,000 years old were found at Xiaogushan, in the Liaoning Province.⁵³ Steel needles made it from China westward during the first century BCE, and needle rings (similar to thimbles) have been found in archaeological sites dated to the Han Dynasty.⁵⁴



Figure 16 Scissors from the Han Dynasty on display at the China Knife, Scissors, and Sword Museum (Information Office of Hangzhou Municipal People's Government, 2009)



Figure 15 Three bone needles from Xiaogushan, China. Image by Chip Clark (Smithsonian Institution, 2015)

⁵¹ (Information Office of Hangzhou Municipal People's Government, 2009)

⁵² (Sotheby's, 2008)

⁵³ (Smithsonian Institution, 2015)

⁵⁴ (Beaudry, 2006, p. 91)

Techniques

Textile Production

Spinning wheels and looms were used in the Han Dynasty to produce a variety of fabrics, from hemp⁵⁵ to silk. Raw silk was spun into thread using hand-operated spinning wheels, called “reeling machines.”⁵⁶ This type of silk reeling machine is operated with two hands – one is used to drive the wheel and the other to feed in the cocoons after they have been boiled.⁵⁷ Various kinds of looms were used in the Han Dynasty, including: the pedal loom, with sheds operated by the weaver’s foot, which was used to weave both hemp and silk; the jacquard loom, used exclusively for silk;⁵⁸ and the backstrap loom.⁵⁹ Parts of a backstrap loom were found in Zhejiang Province dating to the Bronze Age, about 1000 BCE,⁶⁰ which helps when creating a timeline of the evolution of weaving technology in ancient and medieval China. The Han Dynasty textiles *wansu*, a plain woven fabric, and *sha*, a cross-weave gauze, was produced on a backstrap loom.⁶¹

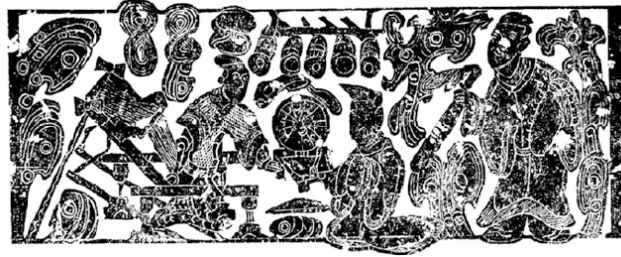


Figure 17 A stone relief featuring a weaving scene with a treadle loom (Zhao F. , 2014, p. 422).

Dyeing

Han Dynasty fabric was dyed in the summer and autumn, when the plants used for dyeing were harvested.⁶² Yellow dye was made from *Arthaxon hispidus*,⁶³ *Cotinus coggygia*, and *Gardenia augusta*.⁶⁴ Millet-based adhesives were used with mineral pigments when dyeing fabrics, while vegetable dyes employed mordants, dipping, and soaking techniques.⁶⁵ Plant ash and “iron-bearing materials” were used as mordants.⁶⁶ For more information on these dyes and period dyeing techniques, see Appendix B.

⁵⁵ (Langford, 2009, p. 53)

⁵⁶ (Zhao F. , 2014, p. 398)

⁵⁷ (Lee Y. , 1999)

⁵⁸ (Zhao F. , 2014, p. 398)

⁵⁹ (Langford, 2009, p. 15)

⁶⁰ Ibid. (p. 77)

⁶¹ Ibid. (p. 78)

⁶² (Vainker, 2004, p. 43)

⁶³ Ibid. (p. 43)

⁶⁴ (Zhao F. , 2014, p. 399)

⁶⁵ (Vainker, 2004, p. 43)

⁶⁶ (Zhao F. , 2014, p. 399)

Ye Xian's Shoes

The description of Ye Xian's shoes has been translated as "shoes of gold,"⁶⁷ "golden shoes,"⁶⁸ and "golden slippers."⁶⁹ The Chinese word for "golden" (金黄色) refers to a color closer to what we think of as yellow than metallic gold. Pantone 108-C is a good approximation, based on a comparison with Google Image search results.

Some of the Ye Xian stories describe the slippers as having some sort of decoration. In one, the shoes are "woven of golden threads in a pattern of a scaled fish."⁷⁰ Victor Mair notes that the shoes were likely "embroidered with gold thread."⁷¹ The word for metal and the color gold in Chinese is the same,⁷² and given that several versions and translations of the story go on to describe Ye Xian as being lighter than air and making no noise when she walks, as well as the evidence of silk shoes in ancient China, there is support for the concept of cloth shoes.⁷³ However, because I am looking to use Xin Zhui's extant shoes as a basis for Ye Xian's folkloric ones, I will forego any embellishment as previously noted.



Figure 18 Pantone color 108-C (Cabo, n.d.).

Modern Choices

The Mawangdui shoes are made of a plain weave silk, so while there are examples of silk with woven patterns from the Western Han Dynasty, I decided to keep the fabric of the shoes a plain, or tabby weave. I chose a 40 momme silk taffeta for the outer shell of the shoe, and I had originally planned to use a lighter weight, 16 momme habotai for the linings. I decided to use the same taffeta for the outer shell of the shoes as well as the lining in order to provide the shoe with more structure. For the first pair of shoes, I had ordered the taffeta, which did not come in on time to make the shoes, and so ended up using the habotai for the entire shoe. Using the same fabric for the outer shell and lining worked well, so I wanted to replicate this with the heavier silk.

I used wet-spun hemp yarn in thread weight 10/3 to weave the bands for the insole and the narrower upper band attached to it, and 12 ounce weight, 100% hemp/linen canvas for the outer soles. I dyed the hemp/linen canvas yellow to match better match the taffeta. I used Rit dyes, due to availability and convenience.

I used Gutermann silk thread throughout this project on all silk items. For stitching the insole to itself, I used a larger needle and the same hemp yarn I wove with.

⁶⁷ (Waley, 1947, p. 150)

⁶⁸ (Jameson, 1988, p. 76)

⁶⁹ (Mair, 2005, p. 365)

⁷⁰ (Cultural China, n.d.)

⁷¹ (Mair, 2005, p. 366)

⁷² (Beauchamp, 2010, p. 457)

⁷³ (Beauchamp, 2010, p. 457)

Reproduction

Planning and Patterning

When making the first pair of shoes, I did several mock-ups using a variety of materials including quilting cotton, muslin, craft felt, and 16 momme habotai for the toes and uppers and cotton canvas for the soles. I also made some modern ballet flats to get an understanding for how the “turn-shoe” method would work with cloth. Using a combination of patterns from a cut up pair of modern ballet flats, foot tracings and measurements, and the duct-tape shoe last method, I

came up with what I felt was a workable pattern that achieved the look of the Mawangdui shoe without being an exact replica. The two challenges I faced were to allow enough space for the toes before the rising cap, and to achieve the proper rise at the toe. My feet are wider than Xin Zhui’s, so I had to make the vamp higher on my instep in order to keep the shoe on my foot.



Figure 19 I made various mock-ups to develop the final pattern.



Figure 21 Side view of successful mock-up.



Figure 22 Top view of successful mock-up.

My most successful mock-up was made from four pattern pieces out of cotton duck for the upper and cotton canvas for the sole. It also included two pieces of buckram to help the toe hold its shape. However, with the realization of the woven insole, the toe stabilization is taken care of with the structure it provides. The pattern consists of an upper, vamp, lower toe, and sole. I also used a narrow width of fabric as the binding on the topline. This is consistent with the line drawing on display at the Hunan Provincial Museum.⁷⁴

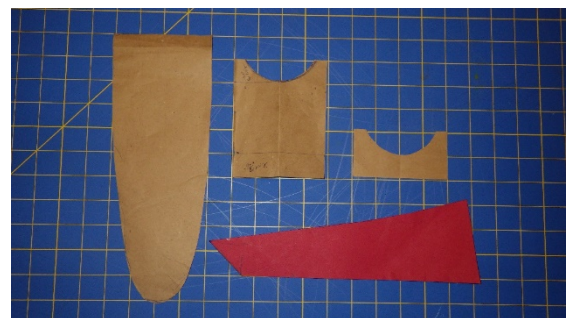


Figure 23 Final pattern.

⁷⁴ (Hunan Provincial Museum, n.d.)

Making the Shoes

The construction steps I used for the uppers and the linings were similar. I used a backstitch for all the seams except one side of the binding, since that would be visible on both sides. When I finished seams, I used flat felling, blind hem stitches, rolled hem stitch, and overcasting.

First, I stitched the heel seam, which I then finished by flat felling and using a blind hem stitch. Next, I stitched the lower toe to the sole and used flat felling and a blind hem stitch to finish the seam. I then stitched the upper to the sole, and finished the seam with an overcast stitch. Next, I stitched the vamp to the upper and bottom toe and used a rolled hem stitch to finish the seam. The lining was constructed the same way, only I removed the bifurcation from the toe pieces and did not include the lower toe piece.

Figure 24 From top to bottom: top view of outer shoe, side view of outer shoe, side view of lining, top view of lining.



I took the one inch strip set aside for the binding and pressed it in fourths to make a binding. I finished the edges of the binding with a blind hem stitch. I put the lining inside the outer shoe, wrong sides together, and lined up one raw edge the binding strip along the topline, so that when folded over, the primary



Figure 25 Side view of finished shoes.

fold of the binding would be the new topline. I pinned this and stitched it down with a backstitch. I then folded the strip over the edge of the shoe, using the creases I had pressed, and stitched it down with a blind hem stitch from the inside.

After weaving and stitching the insole together, I inserted them in the shoe to determine where to make the length adjustment. I cut the insole and finished the edge with the same hemp yarn I used to weave them and a blanket stitch. I then used a straight stitch and silk thread to attach the hemp insole to the topline.



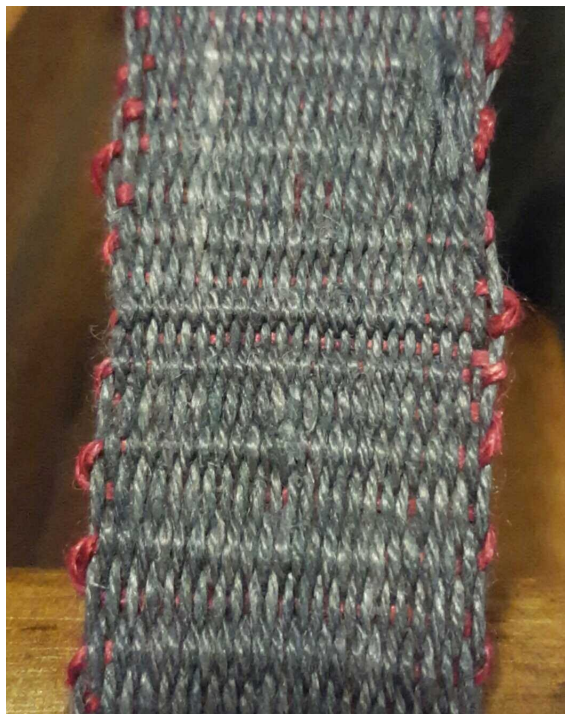
Figure 26 Top view of finished shoes.

Making the Insole

I wove the soles on an inkle loom, using a continuous warp. My first piece of weaving (the blue) was a test to both reacquaint myself with weaving (this was only my third piece) and weave with hemp. This narrow band also helped me calculate how wide I would need to warp for the larger insole. The insole ended up being narrower than I had anticipated, and so I attached the blue band in order to get it to be wide enough. In retrospect, given the realization of the clearly separate, narrow band of twill, this “mistake” ended up working to my advantage from a construction standpoint.

The blue band came out roughly one inch wide, while the purple band is two inches wide. For the purple band, I warped until there was no more room on the inkle loom, which had what appeared to be the standard three inches long.

Figure 27 Clockwise from right: purple sole weaving on the loom, finished insoles, first hemp weaving which became upper edge of insoles.



3. Conclusions

I was able to create a pair of silk shoes that echoed the style of the shoes found in the Mawangdui tomb. The insole combined with the heavier weight silk gave the shoes much needed structure, but the insole affected the fit. The shoes are tight, and I feel like I don't have the room I need in the toe. This could be fixed by scaling up the pattern slightly, or perhaps either adding the lower-toe piece to the lining, or extending the hemp sole for the lining. Alternatively, it may be that the insole is too narrow and is affecting the fit. My first pair were a little loose, so I may need to experiment to adjust the pattern to find a good fit. This will also help as I move forward with Chinese shoe-making into Tang Dynasty, where the rising toes rise even higher.

Materials

Ye Xian's shoes were a gift from her fish-benefactor, and during my research I came across mentions of the Nanai people of north-eastern China, who traditionally make clothes out of fish leather.⁷⁵ The possible connection intrigued me. I have yet to find a good source for yellow carp leather, as the fish in the story is most likely a large carp, but I have obtained some salmon leather. It is thin and I could see making shoes (lined with silk) out of it, if I wanted to draw the connection between the fish benefactor and the shoes it gives to Ye Xian.

Execution

I have plenty of room for improvement in regard to my hand-stitching. This is a skill that I need to develop further, and that I will always be developing. I was pleased that I was once again able to achieve the slight upward curve of the toe, given that this is a hallmark of both Han and Tang Dynasty footwear.

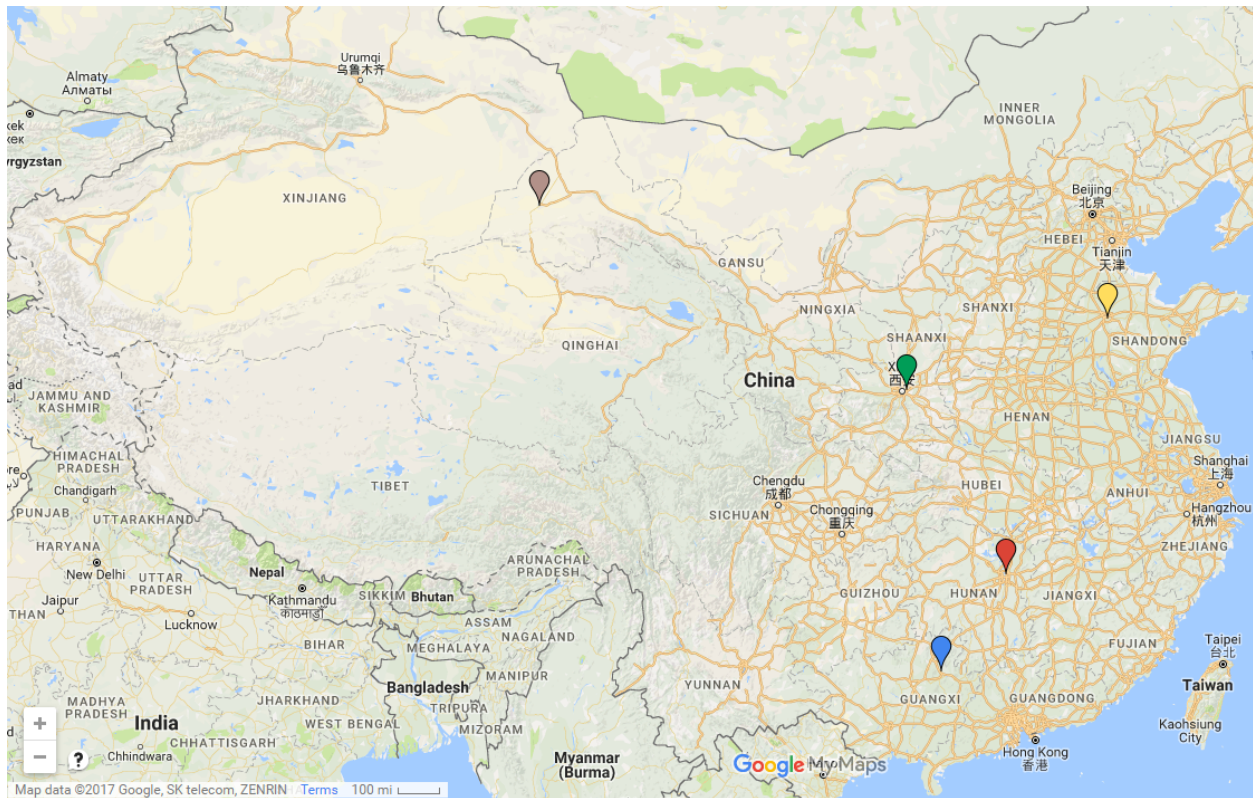
Looking to the Future

I am interested in researching more about the Nanai people and their use of fish leather, but their geographical distance from the origin of Ye Xian's story makes it difficult for me to justify the use of fish leather in shoes apart from for the fun of it. I would also like to do more folkloric research into Ye Xian's story. As part of a larger project to recreate period fairytale princesses, I would need to make the decision to try and recreate their clothing based on the best assumption of when their "once upon a time" occurred, or else use the time period of the author relating the story. In the case of Ye Xian, her author lived during the Tang Dynasty. Even if I decide for the later date as the "origin," recreating Xin Zhui's shoes has given me a good foundational understanding of Chinese shoe construction that I feel will serve me well in applying it to later styles.

⁷⁵ (Ehrlich, 2015, pp. 264-6)

Appendix A

Map of Relevant Sites



Key	Location	Relevance
	Limes Watchtowers, near Dunhuang	Site where several shoes and shoe fragments made of various materials were found, dating to the Western Han Dynasty.
	Shandong Province	First imperial silk workshops established during the Han Dynasty (206 BCE - CE 220)
	Emperor Qin's Tomb	The Terracotta Army guards Emperor Qin's tomb.
	Mawangdui Tomb	Burial site of Xin Zhui, her husband, and her son.
	Yangshou Park and Caves	Potential origin of the storyteller, Li Shiyuan.

Appendix B

Period Dyes for Yellow

Arthaxon hispidus: Kobunagusa

Kobunagusa is the Japanese name for this low, annual grass with blades reaching twenty and fifty centimeters high. It is found in the lowlands and low mountains of Japan and other areas of tropical Asia. All of the parts of the grass exposed to air are used to make dye. Luteolin and luteolin-7-glucoside are the main colorants, along with arthraxin. Aconitic acid is also present. The stems and fresh leaves are boiled together, and the fabric (silk) is introduced to a series of dye-baths ending with concentrated wood-ash lye in order to produce a saturated yellow.⁷⁶

Cotinus coggygia: Young Fustic, Venetian Sumac, or Wig Tree

Young fustic is a rounded shrub with egg or paddle-shaped leaves that reaches up to five meters high. It is native to southern and central Europe, Slovakia, Ukraine, Turkey, and Asia Minor. It was introduced to China as an ornamental plant. To make dye, the dense, inner part of the trunk (heartwood) is reduced to dust or chips. The leafy branches are also used. The colorants in the wood are flavonol, fisetin, and sulfuretin. On average, the wood contains 3% tannins, which act as mordants to darken the dye. There are additional colorants in the branches and leaves: fisetin, myricetin, quercetin, kaempferol and other flavonol glycosides, anthocyanins, and tannins. Dominique Cardon, the main reference used in this appendix, describes the process for dyeing silk from an early 15th century Florentine treatise.⁷⁷

Gardenia augusta: Cape Jasmine

Cape jasmine is an evergreen shrub that can grow up to two meters tall, but some small trees have been found to grow up to twelve meters. It is native to southern China, Taiwan, the Ryukyu islands, and southern Japan. Traditionally, the fresh fruit is picked and pressed or dried fruits are boiled and concentrated. The present colorants are four glycosides, carotenoid pigments, flavonoids, and iridoids. Cape jasmine produces a direct dye that does not require a mordant – only the processed fruits and heat. Chinese dyers also used cape jasmine to give textiles a yellow ground before using other plant-based dyes to achieve the final color – such as green and a variety of reds. The yellow produced by cape jasmine (*huangzhi*) is considered one of the five “correct” colors associated with the five elements, representing earth. This color yellow was reserved for the imperial family’s clothing and imperial documents.⁷⁸

⁷⁶ (Cardon, 2007, pp. 203-4)

⁷⁷ Ibid. (pp. 191-2)

⁷⁸ Ibid. (pp. 307-9)

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