

Stitchery Series Part I - History and Fibers

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Introduction

I start this 5-part series with a very brief historical overview and comparison of embroidery between East and West, and then delve into materials and technique. I will try to demonstrate how embroidery can be combined with other techniques to bring new color and texture to your own textile projects.

Historical Overview

Embroidery is the technique of decorating the surface of a woven cloth with needle and thread or yarn. It has been used as a form of surface embellishment in many parts of the world since ancient times.

In the Neolithic world, beadwork and simple embroidery was applied on hides, fish skin and furs, in mostly geometric abstract motifs, using needles made from bone, ivory or bronze. The development of agriculture, sericulture and animal husbandry led to the evolution of spinning and weaving, which expanded embroidery into fabrications such as wool, linen and hemp.

In China

Silk production and embroidery were well established as industries in China by the Han Dynasty (206 BC – 220 CE). Early in recorded history, embroidery was combined with paint as a textile embellishment. This combination of processes was revived in China during the fall of the Manchu government in the late 19th century, when fully embroidered garments became cost-prohibitive.

I have seen this technique used on religious items and wall hangings and have myself used a combination of paint with embroidery outline and detail to decorate textile pieces with good effect and minimal time outlay.

By the T'ang Dynasty (618-906 CE) - considered the Golden Age of China - thousands of women were employed as seamstresses and embroideresses, and Chang An, then capitol of China, became a trade center for woven and embroidered textiles. By the Song Dynasty (960-1279 CE), embroidery embellished parasols, fans and shoes; household items such a screens and bed coverlets; temple hangings and religious banners.

By this time, embroidery had become as fundamental an art form to China, as painting was in the West.



The Ming Dynasty (1368-1644) saw embroidery further elevated with the creation of military and civilian ranking badges, court accouterment, and Imperial Dragon Robes that you see in museums. The stitches utilized in these Dragon Robes and ranking badges included satin, split, chain and couching, which are among the oldest embroidery stitches in the world.

(Shown at left: a Ming Dynasty Mandarin Square, photo credit: cathy-hunt.co.uk)

In Europe

The Bayeux Tapestry (shown below), is not actually a tapestry. It is however, one of the most recognizable embroideries in Europe, depicting the events leading up to the Battle of Hastings and the Norman Conquest of England in 1066. Created during the 11th century, it measures about 230 feet long, and consists of several panels of linen which were embroidered by a team of presumably English women from Canterbury, who worked the design in wool threads, using stitches such as stem stitch, couching and laid work (satin stitch with a couched overlay). These stitches continued to be used in Europe during the medieval and Renaissance time periods.





Embroidery saw its golden age in Europe during the 13th-14th centuries, and Opus Anglicanum, or English Work, was highly regarded as the finest of the period. Linens, silks and velvets were worked with metallic threads, and in the case of linen, the surface was almost entirely covered in couching, split stitch, stem, satin, tent and cross stitch.

(Shown at left: an example of 14th century Opus Anglicanum photo credit: needleprint.blogspot.com)

Fibers

If you are like me, the more you know about the materials that go into a project, the greater your appreciation for the finished project. In this section I will briefly describe the origin and history of some of the more commonly used fibers.

Hemp, Ramie and Linen

These plant fibers are extracted from the stalks of hemp (*cannabis sativa*), ramie (*Boehmeria nivea*) and flax (*Linum usitatissimum*). The extraction processes are similar and involve flailing or beating the stems of these plants to remove and soften the fiber, sometimes followed by boiling or bleaching. The fibers are then fused together by spinning them into thread. Hemp, ramie and line were predominately used for weaving, with linen also being used as a sewing thread.

Cotton (*Gossypium* spp)

Cotton is a shrub native to India, Africa and Mexico. The fluffy fiber is extracted from the seed pods by a process known as ginning, before it is spun, dyed and woven. It was worn in ancient Egypt and was introduced to Europe by Arab traders who brought it from India in 800 CE. After the 12th century, cotton entered China from India, however, it was more expensive than silk. By the 16th century, cotton fiber was being used across the globe as a result of international trade.

Silk

Sericulture refers to the raising of silkworms, and the production of silk, which is a filament resulting from the secretions of the silk larvae.

A silk moth lays eggs (about 400) which hatch about 10 days later. The larvae will take 4-6 weeks to fully develop and will eat 50,000 times their weight in mulberry leaves before they spin their cocoons. The larvae will spend 3-8 days spinning its cocoon, where it will sleep for the next 20 days, and if left unattended, will emerge as a silk moth, which destroys the cocoon. Cocoons that are intended for silk production are

harvested on the 4th day and are boiled to kill the larvae and release the fiber, which, unlike plant fiber, is reeled from its source in one continuous thread. These threads are then spun or twisted with other silk threads to produce yarn.

The discovery of silk is traditionally placed in China at 2646 BCE, although knife-cut silk cocoons have been found among artifacts dating from 3000 BCE. It is thought to have been discovered by the wife of the Yellow Emperor, Empress His-Ling-shi in the 7th century, when a mulberry cocoon she was studying, fell into a cup of tea and unraveled, revealing a single continuous strand that was hundreds of feet long.¹

Farmers who raised silk during the Ch'in Dynasty (221 BCE) were exempt from forced labor by royal edict. By the Han Dynasty (206 BCE - 220 CE) the silk industry was well established, and embroidery had been elevated to a fine art.

Silk became such a popular commodity that it became a form of currency in the 2nd century BC and remained so for several centuries. Silk and embroidered pieces reached Syria, India, and the Roman Empire via the trade routes through Central Asia. Complex silk textiles, including jacquards, brocades and damasks reached Rome during this time, as did some silkworm eggs, sourced through Nestorian monks. By the first century CE, knowledge of these pieces had spread to most of the known world, and both China and Byzantium emerged as sericulture centers by the T'ang Dynasty.²

Silk is one of the strongest natural fibers known to man. During the medieval period, silk shirts were worn under armor because an arrow would rarely pierce the silk, but instead would travel into the wound with the arrow, twisting around the arrow as it went. To remove the arrow, the physician would tug on the shirt and slowly 'unwind' it until the arrow came free. It not only made extracting the arrow easier but lessened the possibility of infection since the iron arrowhead would not come in direct contact with the soldier's flesh.

Wool and other animal fiber

Raising and breeding animals for textile production is said to have its beginnings in Central Asia, where sheep were raised for meat and milk, and later bred for fur. Wool had the added benefits of providing warmth, and its lanolin content made wool naturally moisture repellent.

Animal fiber was typically less labor intensive to produce than plant fiber and lent itself to the more nomadic lifestyle of the Central Asian Steppes. In addition to sheep, the fur from goats, camel and yak were also used to make woven cloth as well as felt and rope. Animal fiber was one of the first renewable resources in textile production.

Fabric Weaves

Textiles were first produced on backstrap looms. Early historical weaves included gauze and damask, with thread counts ranging from 16-200 per cm. The invention of the draw loom and the development of jacquards and brocades allowed patterns to be woven into the cloth.

In China, common patterns included diamonds, zig-zags, coins, clouds, dragons, lions, flowers, birds and fish. Brocades were often over-embroidered to augment the woven patterns (*a technique I now employ on my hats...*)

In Europe, tabby, herringbone and a variety of twills date to Roman Britain. During the medieval period velvets were a popular weave, as well as brocades that were imported from points East.

During the medieval and renaissance periods, it took something like 8 spinners to supply a single weaver with enough thread to produce cloth. Weaving (and I assume spinning) were not mechanized until the advent of the steam-powered engine during the Industrial Revolution in the 18th century.

Weaving, dyeing and textile production are extensive topics on their own. I have done some carding, some spinning, some very simple weaving and dyeing; those experiences furthered my appreciation for where my embroidery threads come from. For further information on these technologies, please visit your library or do a Google search for the history and how-to of these processes.

Footnotes

1. The Art and History of Weaving, Susan C. Wylly, Georgia State University, sourced from the Silk Road Foundation
2. Silk and Religion: an Exploration of Material Life and the Thought of People AD 600-1200, Xinru Liu, Oxford University Press, Calcutta 1998

Sources

- The Art of Oriental Embroidery; Young Yang Chung, Ph.D.; Charles Scribner's Sons, New York
- Complete Book of Needlecraft; Ida Riley Duncan, Liveright Publishing Co.; New York 1949
- The Silk Industry of Ch'ing China; Shih Min-hsiung, translated by E-tu Zen Sun; Center for Chinese Studies, University of Michigan 1976