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PREVIOUS PAGE Detail of an intricate floral shawl in chain stitch and buttonhole stitch.

LEFT A cover from Rasht, Iran, with a pieced floral pattern and embroidered details in silk using chain stitch (c.1876).

SECTION TWO

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What Is Embroidery?

Just about everybody knows someone who embroiders, or will have a piece of embroidery in their home or on their clothing. So, the question “What is embroidery?” may come as a bit of a surprise—of course everyone knows what embroidery is. And yet there are so many possibilities, variations, and adaptations within its world that it is virtually impossible to give a clear and precise definition of the term.



The word “embroidery” is derived from Old English and in particular the Anglo-French word *embrouderie*. The English word “embroidery” as we know it today started to appear in written records from the late Middle Ages (1400–1500) in England. But the term *embrouderie* itself has a proto-Germanic origin. The term *borda* means a border, edge, or side (compare modern English “border”). This would suggest that originally, embroidery referred to the making, decorating, or strengthening of an edge.

Further southward within Europe, the words for embroidery derive from another linguistic tradition. The Italian word for embroidery, for instance, is *ricamo*. This is borrowed from Arabic *raqm*, which is a word for a number, digit, or (counted thread) embroidery. Derivations of the same Arabic word are found in Spanish and Portuguese (*recamado*), although *bordado* is now the more general term in both countries.

Semantics aside, there remains the question: What is embroidery? Some of the definitions that can be found in dictionaries and online sources are precise

and concentrate on embroidery as the art of creating patterns using stitches made with a needle and a thread. Other definitions are broader and include the wider field of decorative needlework. These definitions often state that the term embroidery refers to decorating cloth with a variety of elements, mainly threads and stitches, but also with other items such as beads, feathers, fur, glass, metal, or seeds, and in a variety of forms and techniques, which do not necessarily make use of a needle. In some cultures, for example, in order to make a chain stitch, people use a hook (tambour) rather than a needle, such as in Indian *ari* work (see page 273). There are also forms of embroidery that use a sharpened metal strip as the needle and thread simultaneously.

It is also possible to define thread-and-needle embroidery (stitched embroidery) according to its appearance. In counted-thread embroidery, for example, the patterns are created by making stitches over a predetermined number of warp and/or weft threads in the ground cloth. Counted-thread embroidery includes a wide

PREVIOUS PAGE A nineteenth-century silk embroidery from Japan, depicting a rocky outcrop with cranes, flowering pine trees, and a pair of sea turtles.

OPPOSITE A Ramallah woman wearing an embroidered dress and head covering (1898–1914, Palestine).

RIGHT Detail of an embroidered sleeve band from early twentieth-century China, with a floral motif worked in tiny Peking knots and outlined with a white cord.

range of forms, as can be seen by the various styles from Morocco, Palestine, India, and Japan (see pages 185, 208, 270, 340).

In contrast, the term “freestyle embroidery” is used to describe a pattern, design, or image that is created without regard to the structure of the ground. The ground material may be anything, including felt, leather, metal, or a woven cloth, such as a twill, satin, or velvet. Often, the required design is drawn onto the ground in some manner and then stitched. This type of work can be found in many countries, literally spanning the globe from Mexico to China.

For the purpose of this book, embroidery is defined as the craft of decorating a piece of cloth, whereby a needle (or hook or another tool) and thread are an essential but not necessarily the only elements used to create the design or pattern. This means that techniques such as appliqué and patchwork also come under the general term of “embroidery.” In this way, the term can be used in the general sense of decorative needlework.



Domestic versus professional embroidery

Embroidery can be divided into two main groups: domestic (for use by families, households, and friends); and professional (for public sale, but normally made on a commission basis).

An aspect of the history of embroidery that is often forgotten is that for centuries, due to various guild systems, professional embroidery was dominated by male embroiderers, especially those producing forms with gold and silver metal threads commissioned for royal courts, religious institutions, the military, and so forth. As a generalization, women were not publically engaged in embroidery on a professional scale, although there were some exceptions.

One such exception were the professional embroiderers of the fashion industry from the mid-eighteenth century. Particularly in France, these were

typically women using tambour hooks (Lunéville work), which is associated with beading and sequin work. Another female aspect of embroidery was the use of the owners' initials, which were stitched onto garments, sheets, and pillowcases. This was generally a domestic practice carried out at home and for personal use, but in some countries, notably France, from the late medieval period there were professional embroiderers of initials who worked from home to produce items for general sale.

In general, it was only after the Second World War (1939–1945) that European professional embroidery shifted from being a male preserve to a mainly female one. But it should be stressed that male embroiderers are still dominant in many countries, such as the appliqué makers of Cairo and the *zardozi* embroiderers of India (see pages 197 and 274).

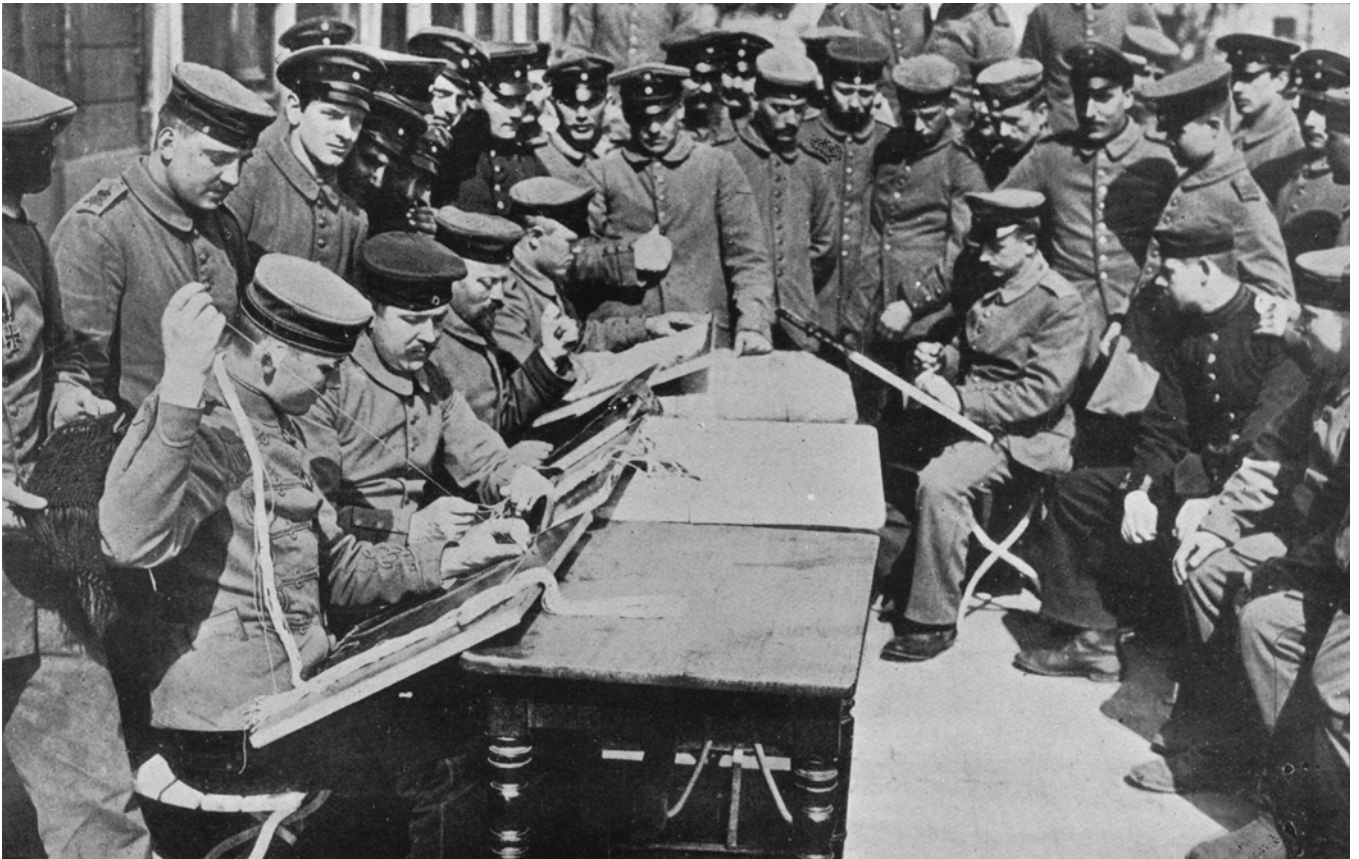
In contrast, domestic embroidery for home and family use has long been generally carried out by girls and women within the household. Proficiency in needlework



LEFT Painting of a young woman embroidering using a frame, by Russian artist Vasily Tropinin (1776–1857).

OPPOSITE ABOVE Newspaper print of a group of German prisoners-of-war working on embroidery. Some of these men were wounded and learnt embroidery as part of their recuperation, others took up embroidery to pass the time (1915, *Manchester Guardian*).

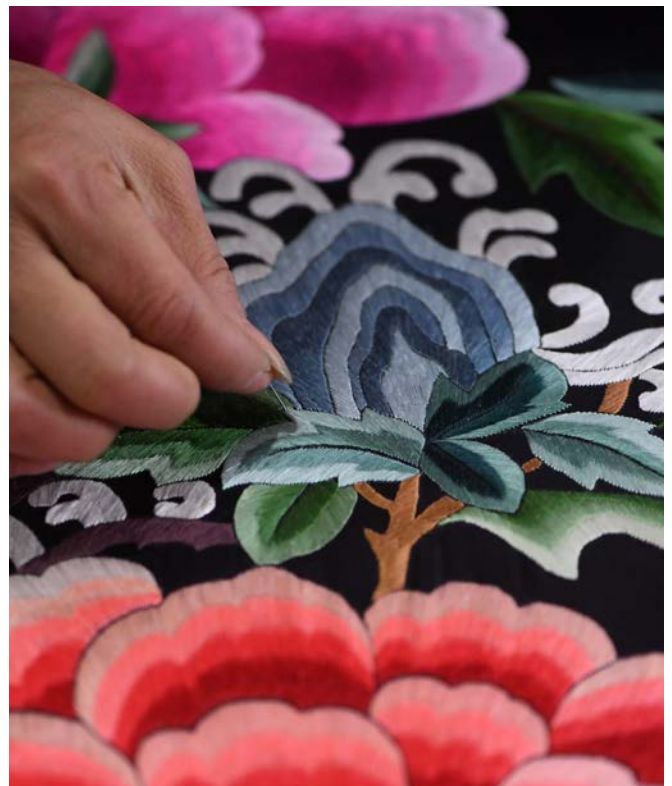
OPPOSITE BELOW A Miao embroideress called Liu Ying at the workshop in Kaili city, southwest China's Guizhou province (2018). Having first learnt embroidery aged six, Liu Ying went on to open a workshop in Beijing in 2003 to promote Miao craftsmanship.



was regarded by many cultures as an essential skill for any married or indeed unmarried woman. Wealthier families might employ seamstresses to make and mend basic clothing, while tailors were used for more complicated forms, but girls and women were still required to pursue various forms of needlework, including embroidery.

Skill in needlework was often used as a test to determine if a girl would be a suitable bride, such as the delicate lotus shoes made and decorated by Han Chinese girls for themselves and their new family (see page 309). Similarly, examples of embroidery were used in Scandinavia and elsewhere from the late medieval period to see if a girl would be able to manage the household needs with respect to weaving and decorating textiles.

An interesting exception to the mainly female, nonprofessional embroiders are the so-called Jack Tar Embroiderers—sailors on British warships of the nineteenth century who passed the time at sea by working embroideries depicting ships of various kinds. Another similar example comes from the First World War (1914–1918), when wounded German prisoners of war were given embroidery to work on in order to strengthen their hand and arm muscles.





ABOVE LEFT Created around 1800, this sample book was used to record various patterns and techniques for future reference.

ABOVE RIGHT Part of a school sampler made by Maria Debaene in 1926. This piece includes a range of stitches, including running stitch, cross stitch, herringbone stitch, blanket stitch, buttonhole stitch, chain stitch, and stem stitch. This type of sampler is known in Belgium and the Netherlands as a *pronkstuk*.



OPPOSITE A mid-nineteenth century sample (*chelliga*) from Salé, Morocco, made from linen ground embroidered with silk threads of various colors.

Samples versus samplers

There is sometimes confusion between what is a sample and what is a sampler. In basic terms, a sample is a piece of cloth or book of cloth on which someone tests out one or more patterns or techniques, working part or all of it, or perhaps in different colors. The aim is to learn a particular form or technique and to keep an inventory of a group of useful or interesting patterns (see Chinese embroidery samples, page 308).

Embroidery samples have been made in many different cultures and come in a wide variety of sizes, from several inches to feet in length. Regardless of size, all were made to be picked up, put away, and used as a reminder of techniques, patterns, and ideas. In contrast, a sampler is a Western concept that developed in the sixteenth century, whereby a girl or woman created a formalized piece of embroidery, often with a name, date, the place where she

lived, and which school she went to, as well as a series of motifs, such as houses, birds, animals, figures of human beings, ships, and religious motifs. These were regarded as a more or less official certificate of someone's achievements that could be placed on a wall for all to see, or handed to potential employers (and potential mother-in-laws).

An extended form of sampler are the so-called *pronkstuk* (Dutch for "showpiece") that were produced in northern France, Belgium, the Netherlands, and western Germany from the mid-nineteenth century. As a girl went through the early years of school education, she would produce a small, half-letter-size piece of cloth displaying various sewing and embroidery techniques at regular intervals. These pieces were then sewn together to create rolls that could be up to 40 ft (12 m) in length and were used as a school certificate of needlework knowledge and skill.



The uses of embroidery

Before the late nineteenth century, the technique of embroidery was often only applied for decorating practical items, such as bags, drapes, garments, wall hangings, pillow covers, tablecloths, boxes, and book covers. It could be flat, raised (English stumpwork), worked in braids or bands, or consisting of more holes than ground (needle laces). It is rare to find a piece of historical embroidery that was made to exist by itself, such as a modern embroidery picture, rather than being part of something else.

With respect to clothing, traditionally the most elaborate embroidery has tended to be reserved for women's and children's garments, and to a lesser extent for men's items. Across cultures and around the globe, festive and occasion wear is a particularly rich area of elaborate and highly decorative embroidery. This includes men's wedding garments from India, women's blouses from Romania, men's pants from Guatemala, to mention just a few examples.



An exception to this generalization is the embroidery used to decorate the daily clothes of (usually male) members of various royal courts, as well as diplomatic and military uniforms. Embroidered military insignia to denote the rank, status, and division of the wearer is a feature of military forces from the Roman Empire to the American Civil War, ranging from the intricate mandarin squares in Imperial China to Disney-designed motifs for the U.S. military in the Second World War. In royal courts, embroidery was similarly used for centuries as a way of indicating status—a striking example being the dragon robes worn by Chinese emperors and various members of their families and royal courts (see page 313).

The religious use of embroidery is broad, encompassing scrolls, hangings, wall covers, as well as the garments worn by priests and others during specific services. In some countries, a religious embroidery may be up to 100 ft (30 m) in size, such as the Tibetan giant *thangkas* (see page 330). The use of embroidery also has a very long history within the Catholic as well as the Orthodox Christian Churches.

One aspect that must be remembered when looking at historical embroidery is the influence of light—modern, flat electric light deadens embroidery. Most textiles, including embroideries, were meant to be viewed by the flickering light of candles and lamps, and often with a draft causing the embroidery to move slightly. Similarly, embroidery on clothing is three-dimensional and moves as the body moves, another factor that should be taken into consideration when looking at embroidery patterns, their layout, individual motifs, and color combinations.

LEFT An embroidered Roman Catholic vestment known as the "White 'Alleluia' chasuble, decorated with symbolic flowers, birds, and the Jesuit "IHS" symbol. This garment was embroidered by seamstress Helena Wintour (c.1600–1671).

OPPOSITE A painting by Frans Hals (c.1580–1666) called "The Laughing Cavalier" (1624). The sitter is wearing an expensive outfit that includes a coat with slit and embroidered sleeves and needle lace cuffs. The sleeves feature symbols associated with love, fortune, strength, and virtue.



Hand embroidery

It is stated in many online embroidery sources that the oldest surviving pieces of embroidery come from the fifth or fourth century BC and are Chinese in origin, and as a result all embroidery, especially chain-stitch forms, originated from China. This is incorrect. The oldest extant embroideries currently known come from the tomb of the ancient Egyptian pharaoh Tutankhamun, who died in c.1322 BC. The embroideries were all made using linen threads on linen grounds and include chain stitch, filling stitch, and buttonhole stitch.

The embroidered items are mainly garments worn by the pharaoh, spanning from his childhood coronation gown to a tunic produced by the Mitanni (who lived in what are now northern Syria and Turkey) that he would have worn as a teenager, and the formal and occasion-

wear of his adulthood. In addition to repeating rosette motifs in chain stitch, there are elaborate embroideries with hunting scenes in a variety of stitches, all of which were produced by skilled embroiderers. These pieces are a clear indication that there were generations of embroiderers at work in the Middle East by at least 1400 BC and probably much earlier. The embroideries include both freestyle and counted-thread forms. Some garments, notably two pairs of wings worn by the king, include fine appliqué and embroidery, both using linen threads and cloth in red, blue, and white.

Archeological excavations of multiple sites dating from the fourth century BC have revealed yet more early examples of fine embroidery work. These include Chinese chain-stitch embroideries discovered at Pazyryk in the Altai Mountains of Siberia, which were made in silk on a silk ground.



By the first millennium AD, embroidery could be found throughout the world, from Peru to Japan. The rich variety of forms that emerged are a testament to the different needs of the cultures that made these pieces, as well as to the adaptability of the embroiderers who used what was locally available—everything from human hair to silk—for making a wide variety of forms, shapes, and functions.

Perhaps one of the most famous European embroideries is the so-called Bayeux Tapestry (which is not a tapestry, despite its name), depicting the conquest of England by the Normandy French in 1066. The embroidery is worked using wool threads on a linen ground using a “quick” technique of laidwork, which can be used to cover a large space relatively swiftly. Made in the eleventh century, the Bayeux Tapestry is believed to have been commissioned by Bishop Odo, the half-brother of William the Conqueror, and is an impressive piece of political propaganda.



Another example of embroidery as political propaganda are the so-called Dragon Robes from China. As mentioned earlier, these impressive garments were worn by the emperor and his family, as well as senior members of the court. The gowns vary in size, color, and decoration, but are usually either decoratively woven and/or embroidered. The robes worn by the emperor himself were particularly important and had a deliberate story to tell. The emperor's robes were decorated with—from the hem upward—the sea and land (rocks representing mountains), followed by the clouds (air) where dragons and birds frolic, then onto the neck opening, where the wearer supports and carries the universe with his body, while his head brings the seen and unseen universes together. As such, the decorative robes literally wove a story of power and impregnability around the royal wearer.

With the development of both land and sea trade routes from the 1200s onward, including the Silk Roads and the Indian Ocean Maritime routes, a wide range of textiles, including embroideries, were being moved on a global scale. The interest in exotic forms, new ideas, and hitherto unknown techniques blossomed from the seventeenth century onward, and this was reflected in Indian embroidery being shipped to Japan and Europe, while Chinese embroidery was transported to Europe and the Americas. All of these developments helped to expand the range of decorations and their techniques worldwide, and promoted embroidery for both professional and home use in a wide variety of forms.

By the end of the nineteenth century, for example, there were nearly 150 different types of embroidery being produced in North Africa and the Middle East alone. If all the different regional forms of embroidery found at that time across the globe, from the Americas, Europe, Middle East, Africa, the Ottoman Empire, Persia, Indian sub-continent, Central Asia, East Asia, and Southeast Asia are added to the embroidery pot then we are talking of hundreds and hundreds of different styles of hand embroidery, based upon a wide range of grounds, threads, stitches, techniques, designs, and functions.

LEFT Detail of the Bayeux Tapestry that depicts the Norman invasion of England in 1066. This particular image shows the Norman knights on horseback attacking English soldiers.



LEFT An early twentieth-century poster depicting a woman using a machine to embroider a cloth.

OPPOSITE LEFT & RIGHT Two details of an embroidered garden with many types of flowers. This form of embroidery was very popular in the 1930s.

The introduction of machine embroidery

A significant development in the history of embroidery came in the nineteenth century with the invention of sewing machines. The early versions could not create the complex forms of stitching associated with some hand embroideries, but in 1829 Joshua Heilmann patented the *Handstickermaschine* (literally “hand embroidery machine”) and, by the 1850s this machine was able to imitate the appearance of (simple) hand embroidery stitches such as cross stitch, herringbone stitch, and satin stitch.

By the latter half of the nineteenth century, a much larger range of machines were developed that were

capable of a wide range of forms, such as the Singer (1851), Schiffli (1863), Cornely (1865), and Chenille (1866) machines. The early twenty-first century saw computer-driven embroidery machines virtually taking over the market, dramatically changing how embroidery could be produced and used.

Ironically, once embroidery could be made by machine, the value given to this textile form declined considerably and it was regarded by many as “only” embroidery. Since the Covid pandemic of 2020, however, a significant shift has taken place in how embroidery, as an important textile craft, is regarded, and there is a significant renewal and revival in its practice.

The rise of art embroidery

The eighteenth century saw the rise of Art Embroidery in Western Europe and northern America, with embroiderers romanticizing the Middle Ages (fifth to fifteenth centuries) and looking to this period for inspiration in stitches and subject matter. In particular, embroiderers copied and interpreted oil paintings using embroidery techniques. This interest in the fine arts became a feature of early nineteenth-century and later embroidery. The trend was also picked up by some East Asian embroiderers who adopted Western perspective and naturalism to produce fashionable items, often technically amazing works.

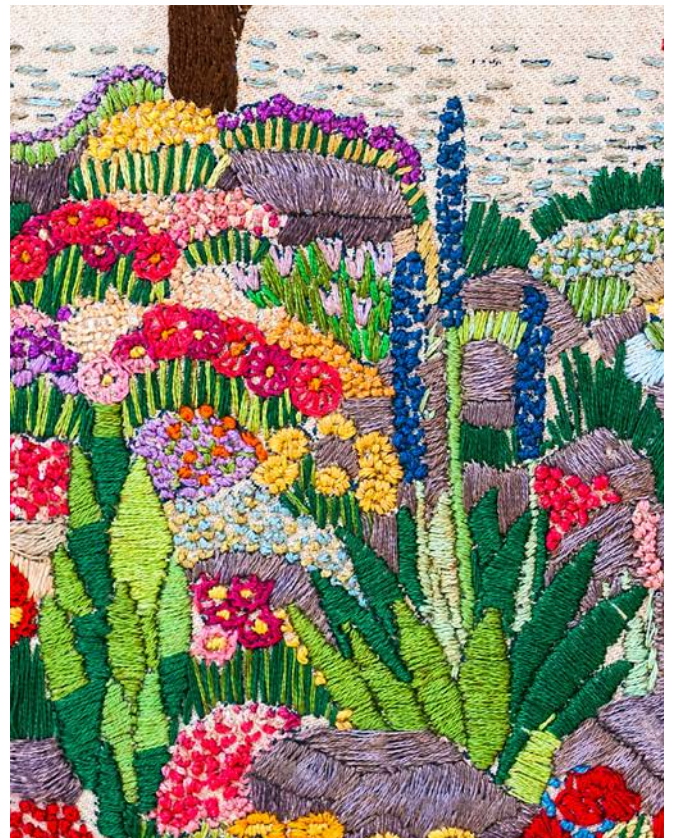
Another major development in this area took place in the latter half of the nineteenth century with the introduction of the Arts and Crafts movement. A reaction against the increasing industrialization of manufacturing, Arts and Crafts emphasized the importance of skills in order to combat the debasement of knowledge caused by machines and their products. The work of British designer William Morris and his daughter May Morris was of particular importance at this time.

In the late 1960s, another change took place in the teaching of visual crafts, including embroidery,

as creativity started to be valued above technical knowledge and experience. The process and emotions of the piece were often regarded as more important than the end result. This emphasis on the artistic process led to the flourishing of art installations, objects, and “thread paintings” made of yarns and textiles. Some pieces are amazing in their construction and structure, others are simply baffling.

This emphasis on the artistry of embroidery continued to the 2020s, when “sustainability” became the key word and the Covid pandemic gave people time to explore the balance between creativity and skill. Gradually, the balance between the two is coming back with both artistic flair and technical mastery being valued.

From the artistry of ancient Egypt to contemporary creations, the global story of embroidery is vast in its scope and rich in its variety. Our survey of the history of this craft demonstrates the many factors and developments that have shaped the production of embroidery, from locally available materials to the development of trading routes, industrialization, globalization, and commercialism. In the threads of embroidery, we can find stories of cultures and peoples across the globe and throughout history.



Materials and Techniques

As well as the many historical and cultural forces that have shaped the development of different embroidery styles around the world, so too have traditions and styles been directed by the materials and tools available.

A wide range of fibers, dyes, and applied objects, as well as tools, equipment, and techniques are used for creating embroidery. Some of these are used and can be found all over the world. Others are more specific to the place from where the materials and techniques originate, and for a particular technique of embroidery or purpose.

The materials, tools, and techniques used are often closely intertwined: a felt ground is decorated with different threads, with different tools, and with different techniques than is a piece of silk. Similarly, the structure of the ground cloth will influence the type of embroidery, either freestyle or counted-thread work. For freestyle embroidery, the way in which the cloth is woven is not important; what matters is its general appearance and weight (thick or thin). Satin, for instance, is a shiny and expensive form of cloth that has been used for working freestyle embroideries for hundreds of years, especially for textiles and garments used at royal courts or for religious use. Counted-thread work tends to be worked on an even-weave (same number of threads in the warp and weft) cloth, usually in a tabby (plain, linen) weave. Berlin woolwork, which was particularly popular in the nineteenth century, is one of the best-known forms of counted-thread work (see page 96).



ABOVE A birch bark case from the 1800s decorated with hair and porcupine quills.

OPPOSITE A Qing-period civil servant rank badge (fifth grade) for a man. The silver pheasant is worked in small pearls and surrounded by silk embroidered clouds.



Fibers, threads, and grounds

There are hundreds of different types of threads that can be used for the making of textiles and more specifically for embroidery, and they come in a wide variety of forms and textures, let alone colors.

Some of the threads are made from spun fibers, and may be plant-based, such as cotton, flax, and raffia fiber, or come from animals, such as silk and wool. There are even threads that are made from metal, paper, or plastic. The early 1880s saw the introduction of artificial fibers (usually based on cellulose), followed by synthetic ones

(usually based on oil) in the 1930s. The proliferation of these manufactured fibers has greatly increased the variety of materials available and, subsequently, the tools and techniques being applied. The emphasis in this book is on “traditional” embroideries, although this does not mean that modern materials, tools, and techniques are ignored.

Animal-based materials

Various types of animal fibers are used for the spinning of threads and the production of cloth. The main forms are silk and animal hairs.



LEFT Detail of an embroidered silk banner of the Buddha Shakyamuni preaching on Vulture Peak. The banner was found in the Buddhist cave temples of Dunhuang (618–906 AD, China).

OPPOSITE Detail from a nineteenth-century silk hanging from Japan. The elaborately embroidered bird is worked in silk using a variety of stitches, including satin stitch and filling stitch, as well as gilt paper that has been surface couched onto the design.



Silk is a by-product of the cocoons made by certain moths when they metamorphose. As part of this process, the moth creates a cocoon around itself, which is made from a filament produced by glands called spinets. The filaments can be several hundred feet in length; they are wound on large reels, cleaned, dyed, and then used as floss silk (unspun silk threads) or as plied (twisted) threads.

Silk is particularly associated with China, which is the main source of the *Bombyx mori* or cultivated silk moth that spread from China westward to Europe, as well as eastward to Korea and Japan. But the *Bombyx mori* is not the only form of commercially viable natural silks. *Sanyan* silk (wild silk) from the *Anaphe*, *Epanaphe*, and *Gonometa* silk moths, is produced in Ghana, Nigeria, and Madagascar; while India produces silk from four different types of moths: the *Bombyx mori*, tussah moth (tasar; *Antheraea paphia*), muga moth (*Antheraea assamensis*), and the eri moth (*Samia ricini*), each one producing a slightly different color of silk.

Various types of silk thread are used in embroidery, notably floss silk and twisted (spun) silk threads. "Floss

silk" is an English phrase that describes a thread made from a series of separate filaments grouped together as one, rather than being spun or twisted. As such, it needs to be used flat and creates a large, shiny surface. This thread is made from cocoons that have been dipped in boiling water to kill the silkworm before it is able to eat its way through the silk fibers, therefore resulting in the longer filaments. Floss silk is widely used in China, Japan, and Korea. In contrast, spun silk relates to silk filaments being spun (twisted) together; it is less shiny than floss but can be used for a wide range of stitches and to create different textures. The term is also used for threads that are made by plying (twisting) two or more threads together. Spun silk is more common in the Americas, Europe, the Middle East, and the Indian subcontinent, and is made from cocoons where the worm has emerged, resulting in shorter lengths of fiber.

The so-called Silk Routes were in operation by the third century AD and overshadowed in popular perception the earlier cotton routes from India, though these were more significant in terms of trade.



OPPOSITE A *namda* or embroidered felt floor covering from Kashmir. The animal motifs are worked in chain stitch using woolen threads.

RIGHT A man's embroidered waistcoat from Hungary made from a pelt (with the fleece on the inside) decorated with floral motifs in satin stitch, chain stitch, and cross stitch, using colored woolen threads.

Wool and hair fibers are used all over the world for the spinning of threads and the production of embroideries. Wool is generally described as the under hairs of an animal fleece—those which keep the animal warm. In contrast, a hair is from the outer (or top) layer of a fleece and protects the animal from rain and wind. Over the centuries, animal breeding has accentuated the difference between wool and hair, although with some animals they are barely distinguishable.

Throughout history, people have made ingenious use of the materials available to them, and this has led to strong associations of various animal fibers in the areas to which the species are indigenous. The ground and threads of a range of embroideries were, and still are, made from sheep's wool (*Ovis* species). Goat, sheep, and yak hair is particularly associated with Mongolia, Siberia, and northern parts of East Asia, while moose hair can be found in Indigenous embroidery from Canada and northwestern USA. The Miao in China are associated with threads made of horsehair wrapped with silk and then used to embroider and highlight outline motifs and patterns (see page 326).

Human hair is occasionally used for embroidery, as for instance in Siberia in the nineteenth century when there was a lack of other fiber types. In Europe, human hair was used for commemorative embroideries recording the death of a family member or close friend.

There are two main types of embroidery threads made from wool, namely woolen and worsted threads. The former are made from carded rather than combed wool fibers, and are usually soft and relatively fluffy. In contrast, worsted threads are made from fibers that have first been laid parallel by combing, which means they have a longer surface area to reflect light and thereby shine more.

Many publications do not distinguish between woolen and worsted threads, but the different properties—such as the smoothness, strength, and shine—of the two types of threads has been deliberately used by embroiderers for centuries (the Bayeaux Tapestry is worked in worsted



threads, for example, while Berlin woolwork of the nineteenth century is made of woolen threads).

Felt is produced by matting and compressing various types of fibers, especially animal hair fibers. This material has been made for thousands of years and used for many functions, including floor coverings and garments. Some of the most elaborately embroidered felt pieces come from Kashmir and other notable forms are found in Hungary.

Leather is skin that has been processed and usually does not include hair. **Fleece** has been removed from the animal and does not include skin, while **pelt** is where the hair is still attached to the skin, and this then may or may not be turned into leather.

Processed fleece and leather may be decorated with embroidery, such as waistcoats from Hungary and Romania (see pages 114 and 116). Furthermore, embroidered leather shoes and boots can be found throughout the world, from the *ari* embroidered shoes from Pakistan and India to boots from Uzbekistan and embroidered shoes made and worn by various ethnic groups in China and Korea.



Plant-based materials

A wide range of plant-based materials are used to create threads and cloths. They generally consist of fibers that are spun into threads and then used to weave the ground or to produce the embroidery threads themselves.

Bark cloth, or tree bast cloth, is made from a fiber that originates from the inner bark of trees that grow in various tropical countries, including the mulberry, paper mulberry, elm, fig, and various members of the cedar family. The resulting cloth looks a little like felt, with what resemble fibers running in different directions. The fabric is relatively cheap and easy to make but is not particularly hard wearing.

One of the world's leading agricultural crops, hugely popular for a whole range of textile uses, **cotton** comes from various plants of the genus *Gossypium*, from the family of Malvaceae. Raw cotton takes the form of cellulose fibers that surround the cotton seeds inside the seed case or boll; the fibers act as a protective layer that helps prevent damage to the seed. Cotton fibers may be used as a padding material for quilts, while once spun into threads, they are used for various types of ground materials, as well as embroidery threads.

Commercially produced cotton threads come in two main forms: mercerized and perlé threads. Mercerization is a specific treatment of raw cotton or cotton yarns. The individual fibers are made to swell in a strong alkaline, which is then neutralized in a special acid bath.

This process causes the fibers to swell, which straightens and strengthens them while giving them a shiny or lustrous appearance. The initial process was developed in 1844 by John Mercer, who treated cotton fibers with sodium hydroxide but without neutralizing the alkaline with acid. This part of the process was developed later by other scientists.

Some of the most widely used embroidery threads made from mercerized cotton are the so-called six-stranded forms, which are made up of six threads loosely twisted together. They can easily be split or divided, depending on the thickness of thread required.

Cotton perlé threads are tightly twisted (plied) threads that are mercerized. However, unlike the stranded forms mentioned above, they cannot be easily divided into individual strands. A strong thread with an attractive luster, perlé was first developed by the French company of Dollfus-Mieg et Compagnie (more generally known as DMC) in the 1920s, but was later copied by many other firms.

Flax is an oil and fiber crop that has been cultivated for thousands of years in Europe and elsewhere (including ancient Egypt). Flax fibers are taken from the stem of the flax plant. The yarns spun from the flax fibers, and any cloth woven from these yarns, are called linen. Linen yarns and cloth have long been used for embroidery—at first, linen cloth has a rough texture, which makes it easy to embroider (tensioning), but it gets softer and softer as it is used and washed, making it more pleasant to wear.

OPPOSITE Detail of a Bushong (Kuba) raffia woven and embroidered panel that once formed part of a man's ceremonial skirt. The ground cloth for the panel is woven by men, while the embroidery is done by women.

BELOW An English fixed fan made of green silk with straw embroidery (c.1740).



Hemp is a perennial plant native to Central Asia that has spread to many parts of the world. Hemp fibers are a bast form (strong woody fiber) that come from the stem of the plant; the raw material has a long history of use for a range of textiles, including as the ground cloth for embroideries, but so far no evidence has been found that it was widely used for embroidery threads.

Hemp, like nettle, is often used to produce a thick material generally known as “canvas.” By the early seventeenth century, canvas had gained the meaning of an unbleached, even-weave cloth with meshes of various kinds, which were suitable for counted-thread work using a needle. By the nineteenth century, various types of canvas were being made from different fibers, including cotton, hemp, linen, silk, and wool.

The common or stinging **nettle** is native to Europe but over the centuries has spread to both Asia and North Africa. Nettle fibers are a bast form that derive from the stem of the plant and are used for the production of cloth in northern Europe, Nepal, and elsewhere. As with hemp, no evidence has (yet) been found that it was used to produce embroidery threads; it was, and still is, being used to produce canvas.

Raffia comes from palm trees of the genus *Raphia*, which is native to the tropical parts of Africa, as well as the species *R. taedigera*, which grows in Central and South America. Raffia is the epidermis of the plant (a protective membrane), found on the underside of the leaf fronds. The membrane is removed in long, thin strips, which are then rolled together and dried. They can be lightly twisted to make a thread and then woven into a cloth. The resulting fabric is hard, stiff, and can be uncomfortable to wear; it is mainly reserved for ceremonial occasions.

Ramie, also known as China grass or white ramie, is a herbaceous perennial of the nettle family, native to eastern Asia. Another form, known as green ramie, is particularly associated with the Malay Peninsula.

Straw is a general name for dried stems and leaves of a variety of grasses, and in particular of wheat. Threads are made by splitting the dried stems and leaves into narrow strips, which may or may not be twisted or spun. Normally the pale golden color of straw is preserved, but occasionally dyed or painted versions are found. Straw is sometimes used to decorate other types of cloth, such as a woolen material, but it is seldom used to make a garment as it is too stiff, scratchy, and does not wash well. It is sometimes used to embroider elite items that do not need to be washed or can be discarded after use.



OPPOSITE Detail of an *or nué* (shaded gold) embroidery worked in gold and silk threads. The embroidery depicts the Virgin Mary at prayer and is from a Catholic orphrey (decorative band on a priestly vestment) or altar frontal (c. fourteenth century).

RIGHT Detail of an embroidered four-clawed dragon from twentieth-century China, worked in gilt paper and silk threads.



Other materials

In addition to the familiar animal and plant-based fibers introduced above, there is a range of other materials that have been developed and used for embroidery grounds and threads around the world, both past and present.

Artificial fibers were first developed by Hilaire de Chardonnet (1839–1924), a French engineer who used regenerated cellulose to create artificial silk (also known as art silk). Later forms include rayon and viscose. Since the late nineteenth century, artificial threads have been widely produced throughout the world.

Synthetic fibers were developed in the 1930s and manufactured in various countries, including the USA, Germany, and France. The earliest commercial form was nylon, but since then many other types of synthetic threads have been developed, such as acrylic and polyester. Since their introduction, synthetic fibers have become increasingly important, particularly in their use for machine embroidery.

Metal threads are used to produce ornate gold and silver embroidery. A vast array of metal threads exist; many of these types derive from Europe (especially France) and India, but by the end of the twentieth century they were also being produced in China for both the national and international market.

It is rare to find a thread made of pure gold; in most cases, the gold is either alloyed with another metal to make it stronger (pure gold is very soft and easily damaged), or it is gilded onto something else, such as a metal base (usually silver, brass, or copper), paper, or parchment of some form.

There are various forms of metal threads, from simple wire to plate (made of flat strips) and purl, which is made by wrapping a very fine wire around a metal rod, then removing the rod to leave a springlike thread. Pearl purl is another springlike thread that is hard and yet can be stretched. This thread is often used to create the outline for motifs worked in silk threads.

Gilded paper is a form of gold or silver thread, also called flat gold in China. It is made from bamboo paper that is covered with a layer of glue (fish gelatin) and then gold or silver foil is rubbed onto the paper. The paper is cut into long, narrow strips that are used as a thread for both weaving and embroidery purposes. A variation is where the narrow strips are wrapped around a silk core to create a form of spun thread (passing). Both types have been used in East Asia for thousands of years, both for clothing as well as Buddhist wall hangings and panels from the fifth century onward.



LEFT A belt for a Kuba king or immediate family, which has numerous small pendants, including ram's heads, bells, and harps, all covered with glass beads and cowries.

OPPOSITE A piece of cotton cloth with a stylized floral spray using silk threads, gold foil, spangles, and leaves in beetle elytra (wing casing). This type of embroidery was produced in India for the European and especially the British market (nineteenth century).

Applied objects

From beetle wings and shells to precious stones, an incredible range of items have been applied to textiles and garments, either by themselves or as part of a much larger and more complicated embroidery pattern. There are some fascinating forms of embroidery based upon the use of applied objects, including the distinctive ribbon embroidery of Brazil (see page 80) and use of Job's tears seeds in Southeast Asia (see page 366).

Various forms of **bands, ribbons, laces, and trims** are used to decorate textiles and garments, in particular a wavy style of trim known as rickrack. These are sometimes sewn directly onto the ground cloth; on other occasions

they are made into small shapes (such as flowers) before being applied. In general, these forms of decoration are regarded as a cheap and quick method of creating an ornamental effect (when viewed from a distance), replacing more expensive and time-consuming techniques such as embroidery.

Until the beginning of the twentieth century, **beads** were often locally made from materials such as clay, glass, and wood, but in the twentieth century more and more beads began to be exported from Italy (in particular glass beads) and what is now the Czech Republic, gradually replacing locally made forms. In the latter half of the twentieth century, Indian beads came to the fore, available in a far wider range of bright colors



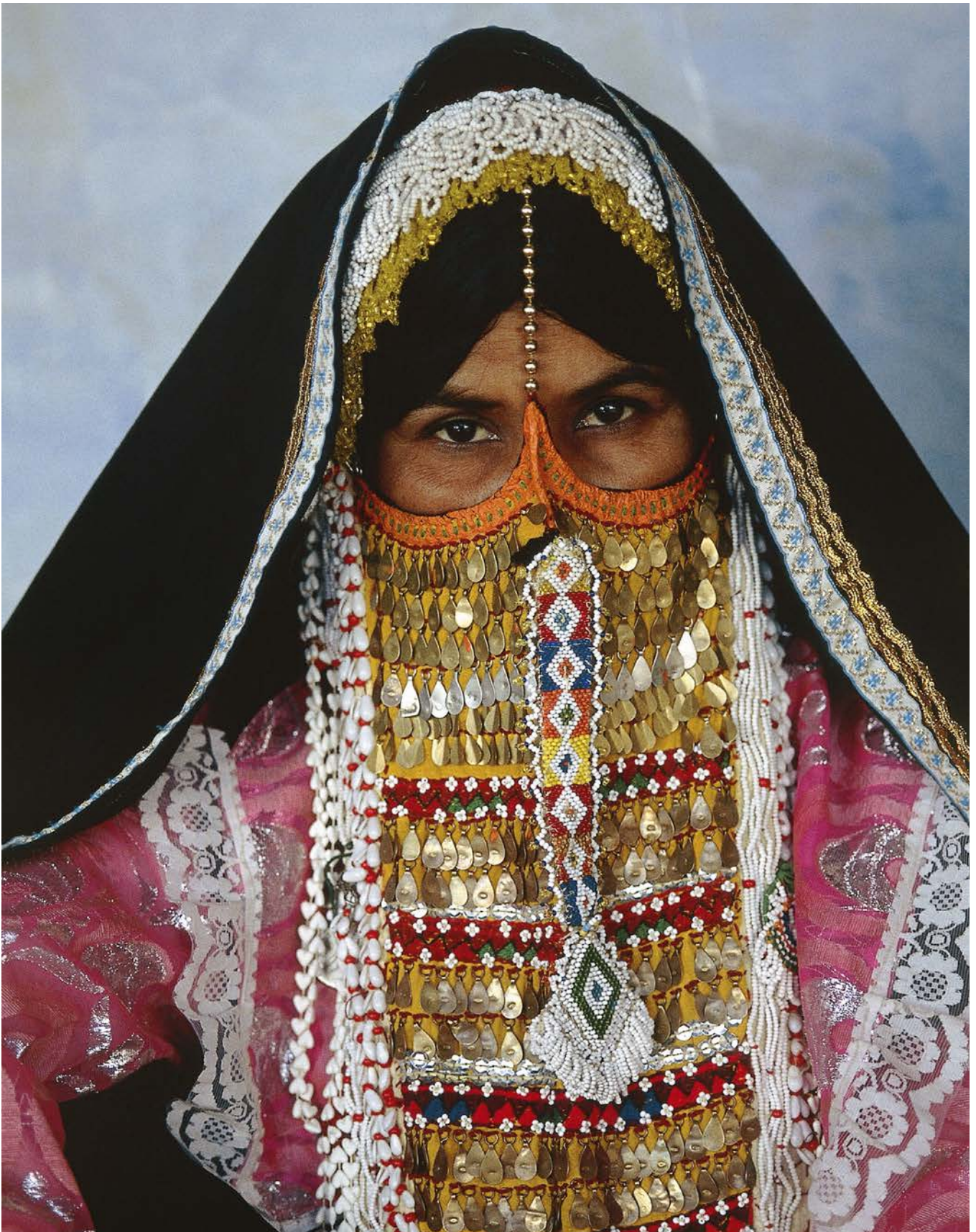
than the European forms. At first it was felt that these beads were not of the same quality, as they varied considerably in size and shape, but this opinion was revised as more machine-produced beads came onto the market .

It is interesting to note that beads and beading are not a widespread form of decoration for textiles and garments in some parts of the world (such as in East Asia), while in others it is one of the most dominant decorative forms (notably in North America and Africa).

Sometimes, beads and beading are used in conjunction with various embroidery techniques, but in many cases embroidery and beadwork are regarded as two separate processes.

The term **beetle wing embroidery** is misleading because this type of embroidery uses the hard, iridescent wing casings, rather than the actual wings themselves, which tend to be very fine and delicate. The casings from different species of wood-boring beetles are used, especially those of the genus *Sternocera*, whose casings have a metallic emerald green and bronze iridescence. The casings are usually cut into small pieces and then stitched down by hand.

For centuries, this type of work was carried out in various Asian countries, notably India, Japan, Myanmar (Burma), and Thailand. Beetle wing embroidery can also be found in Britain and France, both of which had strong historical connections with Asia, especially India.



OPPOSITE A Bedouin woman wearing a burqa decorated with gold-colored metal pendants, shells, plastic beads, chains, as well as a beaded panel along the lower edge of the veil.

RIGHT A Russian festive collar decorated with silk and gold threads as well as semi-precious stones, pieces of mother-of-pearl shell, and pearls (1830–80).



Bracteate is the general term for a range of metal chains, coins, disks, plaques, and so forth that are applied to other surfaces as embellishment, including being sewn onto a textile in some manner. Often included as an amulet or talisman, the use of bracteates goes back thousands of years and some of the oldest textile finds are identified by the presence of these metal items after the (organic) cloth has disintegrated.

Examples of bracteates and embroidery can be found on dresses from the Swat Valley (Khyber Pakhtunkhwa Province) in Pakistan; on the embroidered face veils worn by some Sinai women in the Middle East; and on embroidered garments worn in Central Asia, notably among the Turkmen.

Sequins and spangles are a subcategory of bracteates that are a widely used form of metal decoration in Europe, the Middle East, and the Indian subcontinent. Essentially, they are small, shiny disks, but a spangle is made from a coil of wire that is flattened and as a result has a characteristic notch in the outer edge. In contrast, a sequin is a round disk punched out of a piece of metal (with no notch in the side), although from the early

twentieth century onward, examples in cellulose, glass, metal, or plastic are frequently used.

The distinctive feature of birds, **feathers** come in many different types, such as down, flight, and tail forms. Feathers have been a fashionable and popular form of embellishment throughout history and around the world. Sometimes feather shafts were covered in silk and then used to outline a particular motif or pattern, such as the kingfisher feathers used in some Chinese embroideries and jewelry, to give the garments and accessories a shiny blue appearance.

Precious and semiprecious stones have long been used for a wide range of decorative garments and accessories, as well as for items such as banners, wall hangings, and wall covers, to add an extra degree of texture and relief, while showing off wealth. To fix the stones to the fabric, they may have a hole drilled into them; have threads passed over the top to make a cloth envelope (as in *shisha* work), or be fitted into a metal case sewn onto the cloth ground. Precious and semiprecious stones are particularly associated with royal court and religious embroideries.

Various **seeds** are used to decorate embroidered garments and panels of various kinds—one of the most popular seeds are those of Job's tears, a grass found in parts of Africa, South Asia, East Asia, Oceania, and North and South America.

The seeds of Job's tears vary in size and are found in various colors such as beige, black, brown, gray, and white. Job's tears come in four different shapes depending on the particular plant species: a teardrop shape, a round and large seed, a tube or bottle shape, and a small, round variety. All are used extensively to

decorate garments, bags, and related items, often in combination with embroidery.

Shells are used to decorate textiles and garments, but their application is not widespread and in most cases, it is a fashionable notion used for urban embroidery, rather than continuing a long-standing (rural) tradition. Complete shells may be used to decorate a piece of embroidery, such as the cowrie shells used on Banjara embroidery from western India; on other occasions, only parts of a shell are used, such as the mother-of-pearl (*nacré*) buttons found on Siwa embroidered dresses from Egypt.





OPPOSITE A man's festive headwear with an embroidered front section and an upright panel decorated with cowrie shells.

ABOVE A twentieth-century Miao woman's apron decorated with embroidery as well as applied shells and seeds.



Appliqué, patchwork, and quilting

Returning to our earlier question: What is embroidery? There are various other relevant techniques that can be found in combination with decorative needlework, including appliqué, patchwork, and quilting. Together, these forms create striking textile pieces.

Appliqué is a technique whereby a piece of cloth is laid on top of another piece, or something similar, such as net, and the two are then stitched together, often to create a decorative effect. The technique probably started as a cheap method of repairing textiles, but it quickly became appreciated as an easy and cost-effective way of decorating a large piece of cloth. Appliqué is sometimes found in combination with patchwork and stitched embroidery.

Patchwork (also known as pieced work) involves the sewing together of pieces of cloth to create a larger, flat pattern. In Britain and North America, patchwork generally involves the required shape (hexagon, square, etc.) being drawn onto paper or thin cards using a template; the resulting shapes are then cut out, covered with cloth, and stitched together.

A variation is inlay patchwork, also known as inlay or mosaic embroidery. This is a technique whereby the design is cut out of two pieces of cloth—one creates a positive design, the other a negative—and the two pieces are then sewn together. It seems to have been developed in Mamluk Egypt from the eleventh century and became popular throughout Europe in the seventeenth century.

Another form is so-called reverse patchwork, in which two or more layers of cloth, usually in different colors, are placed on top of each other and then a pattern is cut out through the various layers of material. One of the most famous types of reverse patchwork is that applied to the *mola* blouses from Panama (see page 78).

Quilting is a sewing technique whereby two or more layers of material are sewn together to make a thicker structure. Usually, but not always, quilts have a padding (wadding, batting) material of some kind in between. The layers of cloth are usually stitched together using a back stitch or a running stitch. The lines of quilting can be plain or decorative.

For padded or trapunto quilting, the outlines of a motif are stitched and then the area in between the stitches is filled with a padding of some kind (such as raw fibers, spun yarns, or cords). Sometimes colored wools are used to give a vague, softened effect to a particular design, a technique known as shadow quilting. The oldest-known example of trapunto quilting is the Tristan Quilt from the fourteenth century. Now housed in the Victoria and Albert Museum, London, with another section in the Palazzo del Bargello, Florence, the quilt depicts the tragic romance of Tristan and Isolde, with the trapunto technique lending a raised texture to the storytelling design.



OPPOSITE A pieced quilt made from hundreds of small hexagonal pieces of printed cotton. The quilt was made in New York, c.1830, by Elizabeth Van Horne Clarkson.

RIGHT The back of a late nineteenth-century Ainu robe (*attush*) from Japan. The robe is made from elm bark fiber and decorated with cotton cloth appliqué panels with lines in embroidery.

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