Surface Ornamentation
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CHAPTER I

Ornament (art)

In architecture and decorative art, ornament is a decoration used to embellish parts of a building or object. Large figurative elements such as monumental sculpture and their equivalents in decorative art are excluded from the term; most ornament does not include human figures, and if present they are small compared to the overall scale. Architectural ornament can be carved from stone, wood or precious metals, formed with plaster or clay, or painted or impressed onto a surface as applied ornament; in other applied arts the main material of the object, or a different one such as paint or vitreous enamel may be used. A wide variety of decorative styles and motifs have been developed for architecture and the applied arts, including pottery, furniture, metalwork. In textiles, wallpaper and other objects where the decoration may be the main justification for its existence, the terms pattern or design are more likely to be used.

In a 1941 essay, the architectural historian Sir John Summerson called it "surface modulation". Decoration and ornament has been evident in civilizations since the beginning of recorded history, ranging from Ancient Egyptian architecture to the apparent lack of ornament of 20th century Modernist architecture.

History

The detailed study of Eurasian ornamental forms was begun by Alois Riegl in his formalist study Stilfragen: Grundlegungen zu einer Geschichte der Ornamentik (Problems of style: foundations for a history of ornament) of 1893, who in the process developed his influential concept of the Kunstwollen.

2] Riegl traced formalistic continuity and development in decorative plant forms from Ancient Egyptian art and other ancient Near Eastern civilizations through the classical world to the arabesque of Islamic art; while the Kunstwollen has few followers today, his basic analysis of the development of forms has been confirmed and refined by the wider corpus of examples known today.

[3] Jessica Rawson has recently extended the analysis to cover Chinese art, which Riegl did not cover, tracing many elements of Chinese decoration back to the same tradition; the shared background helping to make the assimilation of Chinese motifs into Persian art after the Mongol invasion harmonious and productive.

[4] Styles of ornamentation can be studied in reference to the specific culture which developed unique forms of decoration, or modified ornament from other cultures. The Ancient Egyptian culture is arguably the first civilization to add pure decoration to their buildings. Their ornament takes the forms of the natural world in that climate, decorating the capitals of columns and walls with images of papyrus and palm trees. Assyrian culture produced ornament which
shows influence from Egyptian sources and a number of original themes, including figures of plants and animals of the region.

Ancient Greek civilization created many new forms of ornament, with regional variations from Doric, Ionic, and Corinthian groups. The Romans Latinized the pure forms of the Greek ornament and adapted the forms to every purpose.

**Pattern Books**

From the 15th to the 19th century, "Pattern books" were published in Europe which gave access to decorative elements, eventually including those recorded from cultures all over the world. Andrea Palladio's *I quattro libri dell'architettura* (Four Books on Architecture) (Venice, 1570),

[5] which included both drawings of classical Roman buildings and renderings of Palladio's own designs utilizing those motifs, became the most influential book ever written on architecture. Napoleon had the great pyramids and temples of Egypt documented in *Description de l'Egypte* (1809). Owen Jones published *The Grammar of Ornament* in 1856 with colored illustrations of decoration from Egypt, Turkey, Sicily and Spain. He took residence in the Alhambra Palace to make drawings and plaster castings of the ornate details. Interest in classical architecture was also fueled by the tradition of traveling on The Grand Tour, and by translation of early literature about architecture in the work of Vitruvius and Michelangelo.

During the 19th century, the acceptable use of ornament, and its precise definition became the source of aesthetic controversy in academic Western architecture, as architects and their critics searched for a suitable style. "The great question is," Thomas Leverton Donaldson asked in 1847, "are we to have an architecture of our period, a distinct, individual, palpable style of the 19th century?".

[6] In 1849, when Matthew Digby Wyatt viewed the French Industrial Exposition set up on the Champs-Elysées in Paris, he disapproved in recognizably modern terms of the plaster ornaments in faux-bronze and faux woodgrain:

Both internally and externally there is a good deal of tasteless and unprofitable ornament... If each simple material had been allowed to tell its own tale, and the lines of the construction so arranged as to conduce to a sentiment of grandeur, the qualities of "power" and "truth," which its enormous extent must have necessarily ensured, could have scarcely fail to excite admiration, and that at a very considerable saving of expense.

Contacts with other cultures through colonialism and the new discoveries of archaeology expanded the repertory of ornament available to revivalists. After about 1880, photography made details of ornament even more widely available than prints had done.
Modern Ornament

Modern ornaments are made of wood, plastic etc. They come in many different colours and shapes. Modern architecture, conceived of as the elimination of ornament in favor of purely functional structures, left architects the problem of how to properly adorn modern structures.

[8] There were two available routes from this perceived crisis. One was to attempt to devise an ornamental vocabulary that was new and essentially contemporary. This was the route taken by architects like Louis Sullivan and his pupil Frank Lloyd Wright, or by the unique Antoni Gaudí. Art Nouveau, for all its excesses, was a conscious effort to evolve such a "natural" vocabulary of ornament.

A more radical route abandoned the use of ornament altogether, as in some designs for objects by Christopher Dresser. At the time, such unornamented objects could have been found in many unpretending workaday items of industrial design, ceramics produced at the Arabia manufactory in Finland, for instance, or the glass insulators of electric lines.

This latter approach was described by architect Adolf Loos in his 1908 manifesto, translated into English in 1913 and polemically titled Ornament and Crime, in which he declared that lack of decoration is the sign of an advanced society. His argument was that ornament is economically inefficient and "morally degenerate", and that reducing ornament was a sign of progress. Modernists were eager to point to American architect Louis Sullivan as their godfather in the cause of aesthetic simplification, dismissing the knots of intricately patterned ornament that articulated the skin of his structures.

With the work of Le Corbusier and the Bauhaus through the 1920s and 1930s, lack of decorative detail became a hallmark of modern architecture and equated with the moral virtues of honesty, simplicity, and purity. In 1932 Philip Johnson and Henry-Russell Hitchcock dubbed this the "International Style". What began as a matter of taste was transformed into an aesthetic mandate. Modernists declared their way as the only acceptable way to build. As the style hit its stride in the highly-developed postwar work of Mies van der Rohe, the tenets of 1950s modernism became so strict that even accomplished architects like Edward Durrell Stone and Eero Saarinen could be ridiculed and effectively ostracized for departing from the aesthetic rules.

At the same time, the unwritten laws against ornament began to come into serious question. "Architecture has, with some difficulty, liberated itself from ornament, but it has not liberated itself from the fear of ornament," Summerson observed in 1941.

One reason was that the very difference between ornament and structure is subtle and perhaps arbitrary. The pointed arches and flying buttresses of Gothic architecture are ornamental but structurally necessary; the colorful rhythmic bands of a Pietro Belluschi International Style
skyscraper are integral, not applied, but certainly have ornamental effect. Furthermore, architectural ornament can serve the practical purpose of establishing scale, signaling entries, and aiding wayfinding, and these useful design tactics had been outlawed. And by the mid-1950s, modernist figureheads Le Corbusier and Marcel Breuer had been breaking their own rules by producing highly expressive, sculptural concrete work.

The argument against ornament peaked in 1959 over discussions of the Seagram Building, where Mies van der Rohe installed a series of structurally unnecessary vertical I-beams on the outside of the building, and by 1984, when Philip Johnson produced his AT&T Building in Manhattan with an ornamental pink granite neo-Georgian pediment, the argument was effectively over. In retrospect, critics have seen the AT&T Building as the first Postmodernist building.

**Types of Garment Decoration:**

There are many types of surface decoration and they are:

Appliqué - This is a popular way of decorating fabrics. Shapes of one fabric are applied to the surface or background of another fabric using a fine zigzag stitch or as in the example shown, with a straight stitch, which overlaps the edge of each shape. The pattern pieces that make up the appliqué are usually backed with interfacing to give them strength.

![Appliqué Example](image)

Embellishment - This is the application of a variety of techniques onto one fabric. For example, a currently popular technique is called Shisha work. This is where tiny mirrors are embroidered onto fabrics. Others stitch, dye or print techniques may also be used to give an ornate fabric.
Fabric Manipulation - The properties of a fabric can be manipulated using heat or chemicals. A popular process called Shibori, from Japan, explores the manipulation of fabrics in this way. The fabric can be tied in simple or elaborate patterns, the fabric is then subjected to high steam and colour is added. This process works well on synthetic fabrics as they have hermoplastic properties or memories, which allow the fabric to retain its shape. Once heated to a high temperature the shape of the fabric cannot be changed unless the fabric is subjected to high temperatures again.

Quilting - This is a method of applying texture and colour by stitching through layers of fabric. The surface texture in fabric is achieved by sandwiching wadding or stuffing between layers of fabric. Interesting patterns and 3D surface textures can be achieved.
CHAPTER 2

INTRODUCTION

Punjab, is one of the most vibrant, dynamic and culturally rich north western states of India, where people especially village women use their time productively by engaging themselves with various crafts.

Phulkari being one of them is the ancient and most distinguished tradition which its people have and are still trying to maintain in spite of uncertainty and changing times.

“PHUL” means “flower “and “KARI” means work. Also known as “Gulkari” a very intricate needle work, along with bright coloured threads mainly red, orange, blue, green, etc Phulkari is mainly associated with duppatas commonly known as “odhini”.

HISTORY:

The origin of Phulkari has not been traced. Where, Phulkari has been mentioned in the famous, Punjabi folklore of Heer Ranjha (a love tale) by Waris Shah. “Its present form and popularity goes back to 15th century, during Maharaja Ranjit Singh's Reign”.

Phulkari plays a very important role in a girl’s life. Birth of a girl marks the beginning of the child’s grandmother of the task in creating the future bride’s trousseau, which is worn by the bride when she walks around the sacred fire during her wedding ceremony. When a woman gives birth to a boy she is given a Phulkari which is worn by her when she goes out for the first time after delivery, and during any religious festivals. Likewise when a lady dies her body is covered with Phulkari.
Phulkari was never fabricated for sale; it was embroidered by a family for its own use, for every important moment in their local life like wedding, birth, and religious functions, therefore the birth of this handicraft was mere domestic necessity and not any artistic motive. Finishing a “Phulkari” signifies an important step for a girl to become a woman, as is mentioned even in the holy book for the Sikhs “‘Only then will you be considered an accomplished lady when you will you – self, embroider your own blouse.”

The embroidery work was made on a plain cotton fabric (khaddar) whose thread was manually spun, loomed and dyed with natural pigments, which would be joined either before or after the embroidery to form desired designs. Khaddar could be of various colours, but the most popular was red (red being auspicious), and it was considered as a colour for youth whereas white was used by mature women or widows.

The embroideries were a mere reflection of their life. Things that they see, observe, vegetables that they eat, animals that they owned, were embroidered. Every woman had her way of embroidery, her way of representing. Just like any other daily chores she would teach this art to her daughter, thus there are no techniques or patterns that have been documented. For the same reason each family had their own styles, patterns and designs.

Embroidering on the rough coarse material “khaddar” reflects the tough, hard nature of the Punjabi women. Use of bright colours portrayed the colourful life and the use of different motifs reflected their observation, their imagination. Wearing a “Phulkari” adds delicacy, grace, simplicity to their heavy build personality.

**TYPES OF PHULKARI**

**PHULKARI**

Phulkari, a rural tradition of handmade embroidery, literally meaning “flower work” is an auspicious, head cover embroidered by the versatile fingers of Punjabi women.

Embroidering on a Phulkari reveals a lot of ground cloth. A variety of characters, forms and designs are scattered and embroidered on a Phulkari.
BAGH

With time Phulkari became increasingly elaborate and decorative which led to the evolution of a special ceremonial, Bagh Phulkari.

Bagh literally means “garden of flowers”, and the term distinguishes the flowered Phulkari is that the embroidery is so profuse that the ground colour is no longer visible thus the embroidery becomes the fabric itself.

Unlike Phulkari, Bagh demands more time and patience and more material, thereby increasing the expense. Thus bagh set out to be a status symbol.
CHOPE

Chope is usually embroidered on the borders. It is gifted to the bride by her grandmother during some ceremony before wedding.

The “Chope” is embroidered straight with two sided line stitch which appears same on both the side. Unlike Phulkari and Bagh where a variety of colours are used, Chope is generally embroidered with one colour (Golden or yellowish golden mostly).

MOTIFS

Using their fertile imagination the women of Punjab developed various motifs. Inspiration was drawn from the vegetables, flowers, animals that they had. Some of them are karela bagh (bitter gourd), gobhi bagh (cauliflower), dhaniya bagh (coriander) and mirchi bagh (chilli). Some as lehriya bagh (wave) some as satranga meaning seven-coloured and panchranga meaning five-coloured motifs while the most common and beautiful motifs are based on the wheat and barley stalks that grow all over Punjab. Amongst animals the most common were the mor (Peacock) Designs.

Recently new motifs have been developed known as Parantha (originally with eight colours), Kanchan Design, Butti Design etc.

Thus every possible representation of life and nature find expression therein.
EMBROIDERY

Phulkari derives its richness from the use of darn stitch in different directions (horizontal, vertical, and diagonal). Unlike others, embroidery on Phulkari was done from the wrong side of the khaddar with a floss silk thread called pat. Darning stitch was the most commonly used technique to make Phulkari and the quality of a piece could be measured according to size of the stitch. The smaller the stitch, the finest was the piece.

Only a single strand was used at a time, where each part was worked in one colour. What was more interesting was that the shading and variation were not done by using various colours instead; one colour thread was used in a horizontal, vertical or diagonal stitch which resulted in giving an illusion of more than one shade when light fell on it or when viewed from different angles.

Earlier the patterns to be embroidered were not drawn on the fabric beforehand; the embroiderer with utter care would count each thread of the khaddar to build her designs. This was because even a shift of one thread in the counting would have a visible impact on the final result.

As it was easier to count the threads of a light coloured khaddar than of a dark one, it happened that sometimes the fabric was dyed only after the embroidery work was achieved.

In order to create an unusual design or to border the khaddar, some other stitches like the herringbone stitch, running stitch, Holbein stitch or button hole stitch were occasionally used. Nowadays even French knot work, Stem stitch, Mirror work and as many as 12+ other embroideries are passed off as Phulkari.
PEOPLE AND PLACE:

As the women gets done with the household work, they get together for their daily chit chat be it on terraces, verandas, outside their houses with some on folding beds, some on stair, others on “peedhe” or “charpoy” (small jute chairs) the women of Patiala (Tripuri), Rajpura enjoy the sun “dhoop sakna”, along with their Phulkari. While elderly women are busy cutting vegetables, playing with grandchildren, the young group enjoys embroidering Phulkari. It has become a part of their daily chores.

Sitting in groups, the women help each other with their Phulkaris. Even if a woman is not able do the embroidery (age factor, loss of eyesight, bad health) still she is constantly helping the young generation, telling them stories of her Phulkari to keep the art alive.

Shammi Bai, is one of the finest Phulkari embroiders in Rajpura, Patiala. She is 90 years old but still manages to embroider 2-3 Phulkari a year. She is helped by her grand-daughter who helps her in putting thread in a needle; and loves to learn and hear stories about Phulkari from her grandmother.

Parwinder Kaur, a Phulkari appreciate, who taught herself the Phulkari, always wanted to do something for this art. So at the age of 29 with the help of “Nabard Bank” she started a Gurbachan welfare society. Here she teaches and brings out awareness about this art. So far she has visited, conducted workshops, started a “self help group” in almost 25 villages and has helped around 1500 women with this art. Her dream is to keep this art alive, teach as many women about this rich art and take it to an international level.

PROCESS

Today the Phulkari has reached a new level; it now serves the purpose of employment for a lot of women in Punjab. But unlike early Phulkari, today making a single Phulkari is a collaborative work between lots of people, from dealers to printers, to embroider.
THE BLOCK PRINTING:

Introduction of block printing was to aid women in embroidering. Serving the purpose of guidelines, the block does not allow the women to think or use her imagination to create something new. It has helped both the women and the shopkeeper in maintaining the size, the design and has tremendously reduced the amount of time spent in finishing a single Phulkari.

Once the cloth is bought, the shopkeeper decides the design and sends it across for block printing. Different motif blocks, with various sizes are used for printing. For bed covers, big blocks are generally used in the centre and corners along with one on each pillow cover.

At times one motif is derived by stamping the block 3-4 times in different directions. Also while block printing the person has to keep in mind the continuity of the design. This is maintained by making sure that after one block the following block is matched with the previous, which sometime also leads to the formation of a new motif.

The colour used for block printing is temporary dye. The colour is in the form of granules which is boiled in water for couple of hours and then when it cools down it is poured over a wooden block (wrapped up in cloth) which is used as a stamping pad. This dye gets easily cleaned after a single wash. Thus the blocks are just the guidelines for embroider.

Mr Amit in his small shop does as many as 300 pieces per day and charges Rs 3 per cloth.
THE EMBROIDERY:

With a stack of his blocked cloth, the shopkeeper travels different villages where he distributes the pieces to different women in same or different villages. The colours and threads are already decided either by the shopkeeper or by the buyer. Many women have started the use of frame as the cloth used nowadays is not coarse enough to be embroidered without a frame. Following the guidelines the embroidery is done from the top.

There are some women who do embroidery without any guidelines or any patterns drawn beforehand. These Phulkaris are known as “bolpuri”. Here the woman pulls a strand of thread as a mark of reference, and following that they do the embroidery.

Sometimes the embroidery is so thick that the Phulkari looks same on both the ends, such type is known as “kaeta Phulkari”.

The embroidery is done from top to bottom. Women have started using a combination of stitches like stem stitch, chain stitch, running stitch etc. Quality of a Phulkari have reduced tremendously, earlier where women would take years to finish a single Phulkari, women today are able to finish around 2-3 Phulkari in a month. Thus there is a wide range of Phulkari depending on the neatness of the embroidery.
CHAPTER 3

Kantha Embroidery
Introduction

India has a long history associated with incredible and inspiring embroidery. Young girls were taught to embroider from a young age, usually at around six years old and traditional after they lost their first tooth. They were taught not only so they could acquire practical skills, but also as a form of education and so they could learn to observe the world full of beautiful plants and animals by drawing and stitching them.

Fabric and embroidery has always been of particular importance both economically and culturally to India.

India is a vast country and each region, and indeed sometimes each village or community has its own unique form of embroidery. It would therefore be impossible to write a short research project on all the forms of embroidery of this country. This research will therefore concentrate on the Kantha, a well known, simple but very effective embroidery.

The History of Kantha

Kantha can rightly be called the ‘recycling art’. It became popular due to the need to reuse fabrics and threads when they became worn out because of the extreme poverty of the people in India.

A legend tells the story that the Kantha owes its origin to Lord Buddha and his disciples. It is told that they used to cover themselves rags that had been thrown away and patched and stitched them together.

It is estimated that Kantha origins are some 500 years old and traditionally narrates a story and portrays the emotions and the life of the artist.

Kantha is said to be ‘dorukha’ which means turning the worn out old textiles and fabrics into things of beauty.

Women used old and worn out pieces of fabric, including precious silks and threads from old saris to make the Kantha’s which would usually comprise of 2 to 3 layers of Fabric.

Although five to six layers of the fabric were used in quilt making so that these kept out the cold at night. Once the Fabric pieces were tacked into place, the Kantha craft is designed entirely of tiny running stitch in different colours.
Kantha Embroidery is the predominantly the most popular form of embroidery practised by rural women and in particular in Bengal where this work has its origins, but has since spread to cover the north – east of India (Behar, West Bengal and Bangladesh).

Kantha embroidery in India today not only keeps alive the craftsmanship, but is also an important source of income for poor families.

Indian Kantha is a fine example of rich tradition of handicrafts still blossoming in rural India.

The original Fabric and cotton thread used by the embroiderer would have been grown in India and traded by the itinerant travellers at markets throughout the country.

Themes from day to day activities are also a common subject for the embroidery. It can be seen today on garments like the saris, dupatta, shirts for men and women, bedding and other furnishing fabrics.
Types of Kantha:

There are seven different types of Kantha based on how it is made and the end use.

**Archilata Kantha** are small, covers for mirrors or toilet accessories with wide, colourful borders.

**Baiton Kantha** is a square wrap used for covering books and other valuables. They have elaborate borders.

**Durjani/Thalia** these are quilted wallets made out of rectangular Kantha pieces.

**Lep Kantha** is a rectangular wrap heavily padded to make warm quilts. The whole piece is stitched in a wavy pattern. Simple embroidery is done on the finished quilt.

**Oaar Kantha** is a pillow covers in simple designs and a decorative border is sewn afterwards.

**Sujani Kantha** is a decorative quilted Kantha used as blankets or spreads during religious rituals or other occasions.

**Rumal Kantha** is used as absorbent wipes or plate’s coverings. They also feature a central lotus with ornamented borders.
The Process of Kantha Making

Techniques and Stitches

A simple running stitch is traditionally used to make a Kantha and usually the fabric is covered entirely with the running stitch which gives it a slightly wrinkled wavy effect.

The joy of the Kantha is in the simplicity of the design and the stitch. The fabric is covered in running stitches which change colour and direction to form pictures from everyday life. It is the way in which the running stitch is used that makes the results quite extraordinary.

The stitches commonly found in Kantha can include various forms of running stitch including back stitch, parallel running stitch, and free style running stitch. Commonly cosmic whirls are also embroidered, which are symbols of cosmic forces and are considered to represent good luck.

The recycled fabric was layered and stitched together using running stitch. The Kanthas were used to make quilts for the bed but was also used for saris borders, table tops, covers for mirrors, boxes, pillows.
How to Work basic Kantha Stitch

Running Stitch

Pass the needle in and out of the fabric, making the surface stitches of equal length. The stitches on the underside should also be of equal length, but half the size or less than the upper stitches.

Design and Colour

Designs are traditionally taken from nature and include beautiful folk motifs such as fish, flowers, snakes, leaves, tigers, elephants, the sun, the lotus flower and the river. Such images have defined village life for many hundreds of years and although the Kantha is busy and dynamic there is always a central image which pulls the design
Colours tend to be very bright, red, blue black and yellow have always been popular, as much for the richness they bring to the design as for their symbolic meaning. White, red and black are the colours of purity, passion and darkness they also represent water, fire and earth.

The outer layers of the Fabric for the Kantha were usually white or light coloured to enable the embroidery to stand out.
INTRODUCTION

Kasuti Embroidery is a typical traditional form of art mainly practiced in Karnataka. The name Kasuti is derived from the words Kai (meaning hand) and Suti (meaning cotton), indicating an activity that is done using cotton and hands. The art was practiced by ladies of Maharashtra and Karnataka especially in Dharwad and Bijapur. The design scheme used in Kasuti includes the ‘Nandi’ (the holy bull), lotus, chariots, ‘Gopuram’ (temple towers) and many other traditional artifacts. Kasuti designs can be embroidered on Saris, Frocks, Handkerchiefs, Blouses, Bed covers, curtains, table cloth and any other material.

History

The history of Kasuti dates back to the Chalukya period. The name Kasuti is derived from the words Kai (meaning hand) and Suti (meaning cotton), indicating an activity that is done using cotton and hands. The women courtiers in the Mysore Kingdom in the 17th century were expected to be adept in 64 arts, with Kasuti being one of them. It is also said that the Lambani clan left their traditional home of Rajasthan and settled down in Karnataka and brought the Kasuti craft along with them. Sarees embroidered with Kasuti were expected to be a part of the bridal trousseau of which one saree made of black silk with Kasuti embroidery called Chandrakali saree was of premier importance.

Kasuti work

Kasuti work involves embroidering very intricate patterns like gopura, chariot, palanquin, lamps and conch shells. Locally available materials are used for Kasuti. The pattern to be embroidered is first marked with charcoal or pencil and then proper needles and thread are selected. The work is laborious and involves counting of each thread on the cloth. The patterns are stitched without using knots to ensure that both sides of the cloth look alike. Different varieties of stitches are employed to obtain the desired pattern. Some of the stitches employed are Ganti, Murgi, Neyge and Menthe. Ganti is a double running stitch used for marking vertical, horizontal and diagonal lines, Murgi is a zig-zag stitch, Neyge is a running stitch and Menthe is a cross stitch resembling fenugreek seeds.

Process:

The geometric designs of Kasuti are derived from the temple sculptures. They depict bells, chariots birds and animals. There is a strong resemblance between kasuti and Rangoli motifs, only that rangoli is done on floor at the doorsteps of houses and temples and Kasuti on fabric with needle and thread. The similarity of the motifs can be because both the things are done by
the lady of the house, one as a religious ritual and another to occupy her after the household chores.

The pattern is never drawn on the cloth. The design remains in the mind and is recreated on the cloth directly with the needle and thread. The colors traditionally used in Kasuti are brighter shades of red, orange yellow and purple. The stitches involved are running stitch and cross stitch, Murgi and Gavanthi. There are many designs under Kasuti Embroidery like Gopi Kamala Chittu Kamala, Gundala Gopura, Dagabaji Gopura, Gandolagida, Tulasi, Peacock, Elephant, Lions, Vankipatti, Kayapatti etc.

The pattern is created in such a way that both the sides of the cloth have similar in appearance. Earlier only cotton threads were used on the cotton cloth now the silk fabric is also used.

Fabric Used:

The pattern is created in such a way that both the sides of the cloth are similar in appearance. Earlier only cotton threads were used on the cotton cloth now the silk fabric is also used.

Motifs Used:

Traditional Kasuti motifs are geometric in design and as in cross stitch, is executed by counting the threads of the fabric, and the designs are worked along in such a way that it finishes at the point where it started. The weft and the warp threads were counted and an exact count of stitches calculated and the eyes of the embroider has to be acute to get a fine finish.

Stitches Used:

Kasuti Embroidery is done with four main stitches:

Ganti: Ganti is a double running stitch used extensively in Kasuti work for marking vertical, horizontal and diagonal lines.
**Muragi**: Muragi is a zigzag running stitch and looks like a ladder when it is used. Small motifs like squares, hexagons, octagons and ladders are created with this stitch.

**Neygi**: This darning stitch in which long and short lines are used which gives the effect of weaving.

**Menthe**: Menthe is a cross stitch resembling fenugreek seeds. Menthe is a cross stitch resembling fenugreek seeds.

**Technique**

Kasuti is a delicate embroidery form with geometric design that is done by counting warp and weft threads. It is comprised of four types of stitches, using the counted thread method. Kasuti is such a unique art form because of the symmetry. Both sides of the fabric look identical in design.

**Gavanti**

Gavanti meaning knot, is a double running stitch and is used in straight, horizontal, vertical and diagonal lines.

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**Muragi**

Muragi is running stitch in a zig-zag line. Small motifs such as squares, hexagons, octagons and ladders are created with this stitch.
Negi

Negi is derived from “neyi” which is the Kannada word for “weave.” A darning stitch in which long and short lines are crossed to make it look like a weave, Negi is the most complicated and therefore scare of the Kasuti stitches.
Menthe

Menthe, or the Kannada word for the fenugreek seed, is a cross stitch used mostly for filling purposes.

Sources of Inspiration

Kasuti embroidery of dharwad is basically very light embroidery that is formed out of variety of geometrical patterns. These patterns are close folded and, formed out of four stitches known as gavanti, muragi, nevgi and menthe. These stitches are completely based on the thread count method and are equidistant. Hand woven fabrics make this design look amazing and different. The artisans work hard before engaging in this embroidery. They insist on drawing out the designs on paper before they can weave it on a saree. The designs and patterns are all inspired by the surrounding temples. Kasuti embroidery of dharwad is basically done on brighter shades.

Current scenario

Kasuti work has grown beyond its traditional boundaries to be used in other dress materials like the Mysore silk saree. A Lambani Kasuti centre was set up in Hubli by the Department of Social Welfare, Government of Karnataka to encourage the Kasuti culture and also provide a single roof for the Lambani women to showcase their craft. However Kasuti work is suffering from poor patronage with not many people willing to take the craft seriously; an indication of which is the closure of the Karnataka Kasuti classes by the JSS college in Dharwad.
Chikan (Hindi: चिकन, Urdu: چکن) is a traditional embroidery style from Lucknow, India. Literally translated, the word means embroidery. Believed to have been introduced by Nur Jehan, Mughal emperor Jahangir's wife, it is one of Lucknow's most famous textile decoration styles.

**Origin**

There are several theories about the origin of Chikankari. Chikankari - the process of chikan - was basically invented in Lucknow. It developed quickly during the period when the Mughals ruled and consisted of styles inspired by Persians. Lucknow grew into an international market for its renowned Chikankari work. There are references to Indian Chikan work as early as 3rd century BC by Megasthenes, who mentioned the use of flowered muslins by Indians. There is also a tale that mentions how a traveler taught Chikankari to a peasant in return of water to drink. However, the Noor Jahan story is the most popular of the lot. The name Chikan has been derived from the Persian word Chakin or Chikeen meaning a cloth wrought with needlework.

Chikan began as a type of white-on-white (or whitework) embroidery.
History

Chikankari is an ancient form of white floral embroidery, intricately worked with needle and raw thread. Its delicacy is mesmeric. For centuries, this fine white tracery on transparent white fabric has delighted the heart of king and commoner alike. It is centered mainly in the northern heartland of India, namely Lucknow, the capital of a large state, called Uttar Pradesh. It has survived the loss of royal patronage, suffered deeply at the hands of commercialization, lost its way sometimes in mediocrity and yet stayed alive, is a tribute to the skill and will of the crafts persons who have handed down this technique from one generation to another.

Today, this delicate form of embroidery is traditionally practiced in and around the city of Lucknow.

Lucknow is a lovely old city, a city of old gardens and palaces, fine architectural conceit mosques, temples and ageing monuments, a city so favoured by European travelers once upon a time, that it was popularly called the Constantinople of the East. Like Marseille, it has a great deal of historicity. It is synonymous with architectural elegance, cultural finesse, social warmth and an enduring love for gracious living.

Lucknow also has the distinction of being today, the cusp of a very beautiful, very aesthetic form of white floral embroidery, unique to this geographical location. Chikankari has been practiced in Lucknow for almost more than two hundred years. But it did not originate in Lucknow. It flourished in the Mughal Court at Delhi in the 16th and 17th centuries. When the Mughal Court disintegrated the artisans scattered across the country. Some of them came and settled in Awadh. They brought this craft with them and gave it roots.

The origins of chikan are shrouded in mystery and legend. Some historians opine, that chikan is a Persian craft, brought to the Mughal Court of the Emperor Jahangir by his beautiful and talented consort Mehrunissa. The queen was a talented embroiderer and she so pleased the king with this ethereal, white floral embroidery that it was soon given recognition and royal patronage. Workshops were established wherein this embroidery was practiced and perfected.

Technique

The technique of creation of a chikan work is known as chikankari (چکنگاری). Chikankari is a delicate and artfully done hand embroidery on a variety of textile fabric like muslin, silk, chiffon, organza, net etc. White thread is embroidered on cool, pastel shades of light muslin and cotton garments. Nowadays chikan embroidery is also done with coloured and silk threads in different colours to meet the recent fashion trends and keep chikankari trendy with fashion. Lucknow is the heart of the Chikankari industry today and the variety is known as Lucknowi chikan.
The piece begins with the use of one or more pattern blocks that are used to block-print a pattern on the ground fabric. The embroiderer then stitches the pattern, and the finished piece is carefully washed to remove all traces of the printed pattern. Process of Chikankari includes following steps:

- Design
- Engraving
- Block printing
- Embroidery
- Washing & finishing

The patterns and effects created depend on the types of stitches and the thicknesses of the threads used in the embroidery. Some of the varieties of stitches used include backstitch, chain stitch and hemstitch. The result is an open work pattern, jali (lace) or shadow-work. Often the embroiderer creates mesh-like sections in the design by using a needle to separate threads in the ground fabric, and then working around the spaces.

It consists of 36 different stitches, which are:

- Tepchi
- Bakhiya
- Hool
- Zanzeera
- Rahet
- Banarsi
- Khatau
- Phanda’
- Murri
- Jali
- Turpai
- Darzdari
Pechani
Bijli
Ghaspatti
Makra
Kauri
Hathkadi
Banjkali
Sazi
Karan
Kapkapi
Madrazi
Bulbul-chasm
Taj Mahal
Janjeera
Kangan
Dhania-patti
Rozan
Meharki
Chanapatti
Baalda
Jora
Keel kangan
bulbul
sidhaul
ghas ki patti
the basic stitches are six in number and all except one are common to other forms of embroidery.

1. **Tepchi** is a long running or darning stitch worked with six strands on the right side of the fabric taken over four threads and picking up one. Thus, a line is formed. It is used principally as a basis for further stitchery and occasionally to form a simple shape.

2. **Bakhiya**, double back or shadow stitch in chikan work is done from the wrong side of the fabric and the design is rendered in the herringbone style. The shadow of the thread is seen through the cloth on the right side.

3. **Hool** is a fine detached eyelet stitch. Herein, a hole is punched in the fabric and the threads are teased apart. It is then held by small straight stitches all round and worked with one thread on the right side of the fabric. It can be worked with six threads and often forms the center of a flower.

4. **Zanzeera** is a small chain stitch worked with one thread on the right side of the fabric. Being extremely fine, it is used to finally outline the leaf or petal shapes after one or more outlines have already been worked.

5. **Rahet** is a stem stitch worked with six threads on the wrong side of the fabric. It forms a solid line of back stitch on the right side of the fabric and is rarely used in its simple form but is common in the double form of dohra bakhiya as an outlining stitch.

6. **Banarsi** stitch has no European equivalent and is a twisted stitch worked with six threads on the right side of the fabric. Working from the right across about five threads a small stitch is taken over about two threads vertically. The needle is reinserted halfway along and below the horizontal stitch formed and is taken out about two threads vertically on the right above the previous stitch.

7. **Khatau** is similar to Bakhia, but finer and is a form of applique. In Khatau, the design is prepared on calico material. That is placed over the surface of the final fabric and then paisley and floral patterns are stitched on to it.

8. **Phanda** and Murri are the forms of stitches used to embroider the centre of the flowers in ordinary chikan work motifs. They are typically French knots, with murri being rice-shaped and phanda millet-shaped.

9. **Jali** stitch is the one where the thread is never drawn through the fabric, ensuring that the back portion of the garment looks as impeccable as the front. The warp and weft threads are carefully drawn apart and minute buttonhole stitches are inserted into the cloth.

10. **Turpai** and Darzdari are also significant stitches in chikan work. Turpai should have an effect of a thin thread. Darzdari have several varieties, the popular ones are Kohidarz, Kamal darz, Shankarpa darz, Muchiand Singbhada darz.
11. The various other types of legendary chikankari stitches are: Pechani, Bijli, Ghaspatti, Makra, Kauri, Hathkadi, Banjkali, Sazi, Karan, Kapkapi, Madrazi, Bulbul-chasm, Taj Mahal, Janjeera, Kangan, Dhania-patti, Rozan, Mehandi, Chanapatti, Baalda, Jora, Keel kangan, bulbul, sidhaul, ghas ki patti etc. Drifting apart from the original pristine setting, the tone-on-tone embroidery is in vogue these days. The significant use of beads, sequin and mokaiash (white flat silver strip embroidery) have gained wide acceptance. Fabric In addition to the white base fabric, colored fabrics and threads are also used. Silk and cotton threads are employed for embroidery work on sarees, dupattas, table linen and kurtas. Cotton being the most preferred choice, chikankari is also done on mulls, muslins, voiles, organzas and polyester. Some more include: chiffon, viscose, georgette, polyester georgette, cotton crepe and net. The designs change every other month, as per the market trends, with colors that perfectly match with the season.

The Innovations and Experimentations in Chikan Work

The color selection for chikan has undergone a change tremendously. Out went the voiles and mulmuls and the pastel shades and came georgettes, tussars and silk that exhibit the Chikan Work in symphony with the traditional and western designs and styles. It's not just chikan work on fabrics like cotton, but experimentation, the order of the day, has enhanced basic chikan with more detailing- with zardozi, crystals and so on.
LACE WORK

Lace is an openwork fabric, patterned with open holes in the work, made by machine or by hand. The holes can be formed via removal of threads or cloth from a previously woven fabric, but more often open spaces are created as part of the lace fabric. Lace-making is an ancient craft. True lace was not made until the late 15th and early 16th centuries. A true lace is created when a thread is looped, twisted or braided to other threads independently from a backing fabric.

Originally linen, silk, gold, or silver threads were used. Now lace is often made with cotton thread, although linen and silk threads are still available. Manufactured lace may be made of synthetic fiber. A few modern artists make lace with a fine copper or silver wire instead of thread.

Origin

Bobbin lace evolved from passementerie or braid-making in 16th-century Italy. Coarse passements of gold and silver-wrapped threads or colored silks gradually became finer, and later bleached linen yarn was used to make both braids and edgings.

The making of bobbin lace was easier to learn than the elaborate cutwork of the 16th century, and the tools and materials for making linen bobbin lace were inexpensive. There was a ready
market for bobbin lace of all qualities, and women throughout Europe soon took up the craft which earned a better income than spinning, sewing, weaving or other home-based textile arts. Bobbin lace-making was established in charity schools, almshouse, and convents.

In the 17th century, the textile centers of Flanders and Normandy eclipsed Italy as the premiere sources for fine bobbin lace, but until the coming of mechanization hand-lacemaking continued to be practiced throughout Europe, suffering only in those periods of simplicity when lace itself fell out of fashion.

**Structure**

Bobbin lace may be made with coarse or fine threads. Traditionally it was made with linen, silk, wool, or, later, cotton threads, or with precious metals. Today it is made with a variety of natural and synthetic fibers and with wire and other filaments.

Elements of later bobbin lace may include toile or toilé (clothwork), réseau (the net-like ground), braids, picots, tallies, and fillings, although not all styles of bobbin lace include all these elements.

**Contemporary laces**

The advent of machine-made lace at first pushed lace-makers into more complicated designs beyond the capabilities of early machines, and then eventually pushed them out of business almost entirely. The resurgence of lace-making is a recent phenomenon and is mostly confined to a hobby status. Guilds of modern lacemakers still meet in regions as varied as Devonshire, England and Orange County, California. In the European towns where lace was once a major industry, especially in Belgium, England, Spain (Camariñas), northern and centre Portugal and France, lacemakers still demonstrate the craft and sell their wares, though their customer base has shifted from the wealthy nobility to the curious tourist.

Bobbinet is the name for the machine-made bobbin lace, made by machinery designed by John Heathcoat in 1806.

**Types**

Many styles of lace were made in the heyday of lacemaking (approximately the 16th-18th centuries) before machine-made lace became available. Some well-known types of bobbin lace are:

- Bedfordshire lace (Beds) – this has flowing lines and picots (to foil the machines)
- Bucks point Buckinghamshire lace – very "lacy" with characteristic hexagon ground and often with a gimp thread (a heavier thread worked through for emphasis)
- Cluny – flowers, braids and picots (tiny loops of thread) make this light and delicate
- Honiton – very fine English lace with many flowers
- Mechlin – fine, transparent Flemish lace known for its floral patterns, fine twisted-and-plaited, hexagonal ground, and outlined designs
- Chantilly lace – bobbin lace, mostly black, produced in France and Belgium
- Torchon – well known for its variety of beautiful, often geometric grounds
- Valenciennes – French bobbin lace with a net-like background originating in the 18th century

**BOBBIN LACE**

Bobbin lace is a lace textile made by braiding and twisting lengths of thread, which are wound on bobbins to manage them. As the work progresses, the weaving is held in place with pins set in a lace pillow, the placement of the pins usually determined by a pattern or pricking pinned on the pillow.

Bobbin lace is also known as pillow lace and bone lace, because early bobbins were made of bone or ivory.

Bobbin lace is one of the two major categories of handmade laces, the other being needle lace, derived from earlier cutwork and reticella

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**Needle Lace**

*Needle lace* (also known as *needlelace* or *needle-made lace or point lace*) is a type of lace created using a needle and thread to stitch up hundreds of small stitches to form the lace itself.

In its purest form the only equipment and materials used are a needle, thread and scissors. This form of lace making originated in Armenia where there is evidence of an Armenian needle lace making tradition dating back to the pre-Christian era. Turkish needle lace is also very popular around the world. This form however arose separately from what is usually termed needle lace and is generally referred to as knotted lace. Such lace is very durable and will not unravel if one or more loops are broken.

Beginning in the 17th century in Italy, a variety of styles developed where the work is started by securing heavier guiding threads onto a stiff background (such as thick paper) with stitches that can later be removed. The work is then built up using a variety of stitches - the most basic being a variety of buttonhole or blanket stitch. When the entire area is covered with the stitching, the stay-stitches are released and the lace comes away from the paper. See reticella.

Needle lace is also used to create the fillings or insertions in cutwork.

**Chemical lace**

*Chemical Lace* (sometimes referred to as *Schiffli Lace*) is a form of machine-made lace. This method of lace-making is done by embroidering a pattern on a sacrificial fabric that has been chemically treated so as to disintegrate after the pattern has been created.

This embroidery is typically done on a multi-head or multi-needle Schiffli machine or loom that has a very large, continuous and overlapping embroidery field. The lace pattern is designed such that the embroidery thread creates an interlocking series of threads that will, in essence, become a "stand alone" piece of lace.
After the embroidery is completed the embroidered fabric is immersed in a solution that will not harm the embroidery thread but completely dissolves the sacrificial fabric leaving just the lace.

Utilizing these large machines and this technique a single piece of lace could be, using today's state-of-the-art machines, over 60" wide by 15 yards long. In practice, this system is used to produce many smaller items with one setup.

The original composition of the disintegrating "bath" was not very friendly to the environment and has all but ceased to exist in developed countries. However, the practice is still being used to create laces in third world countries. Since the original development of chemical lace, other methods have been developed beyond the chemical washing method described above. This includes the use of base fabrics that are water soluble or that disintegrate under heat. These methods are generally too expensive or impractical for large-scale production. These are typically used by smaller embroidery facilities specializing in targeted markets, home-based businesses, or hobbyists.
CHAPTER 7

SEQUIN WORK

Sequins are disk-shaped beads used for decorative purposes. In earlier centuries they were made from shiny metals. Today, sequins are most often made from plastic. They are available in a wide variety of colors and geometrical shapes. Sequins are commonly used on clothing, jewelry, bags, shoes and lots of other accessories.

Sequins are sometimes also referred to as spangles, paillettes, or diamantes. Paillettes themselves are commonly very large and flat. Sequins may be stitched flat to the fabric, so that they do not move, and are less likely to fall off; or they may be stitched at only one point, so that they dangle and move easily, to catch more light. Some sequins are made with multiple facets, to increase their reflective ability.

History

Evidence exists that gold sequins were being used as decoration on clothing or paraphernalia in the Indus Valley as early as 2500 BC, during the Kot Diji phase.

The word "sequin" is from a rendition into French of the Italian word zecchino, which was a gold coin that was issued in the late medieval and early post-medieval centuries in Republic of Venice and also issued in Ottoman Turkey; see Sequin (coin). By the early 19th century the sequin coins were no longer being issued, and the name sequin was falling out of use in its original sense. It was then that the name was taken up in France to designate what it means today. The 19th century sequins were made of shiny metal.

Large sequins, fastened only at the top, have been used on billboards and other signage, particularly prior to the development of lighted and neon signs.

Patch Work
Patchwork or "pieced work" is a form of needlework that involves sewing together pieces of fabric into a larger design. The larger design is usually based on repeat patterns built up with different fabric shapes (which can be different colors). These shapes are carefully measured and cut, basic geometric shapes making them easy to piece together. Precise joining by the most part with a quarter inch foot makes for a patchwork that lies flat without puckers.

**Uses**

Patchwork is most often used to make quilts, but it can also be used to make bags, wall-hangings, warm jackets, cushion covers, skirts, waistcoats and other items of clothing. Some textile artists work with patchwork, often combining it with embroidery and other forms of stitchery.

When used to make a quilt, this larger patchwork or pieced design becomes the "top" of a three-layered quilt, the middle layer being the batting, and the bottom layer the backing. To keep the batting from shifting, a patchwork or pieced quilt is often quilted by hand or machine using a running stitch in order to outline the individual shapes that make up the pieced top, or the quilting stitches may be random or highly ordered overall patterns that contrast with the patchwork composition.

**History**

Evidence of patchwork—piecing small pieces of fabric together to create a larger piece, then quilting layers of textile together—has been found throughout history. The earliest examples have been located in Egyptian tombs and also in early age of China about 5000 years ago. Further finds have been dated from the early Middle Ages, where layers of quilted fabric were used in the construction of armour—this kept the soldiers warm and protected. Japanese armour was made in a similar fashion.

Using this technique, quilts began to appear in households of the 11th to 13th centuries. As the European climate became colder around this time, the incidence of the use bed quilts rose, and so developed the practice of embellishing a simple cloth through the creation of pattern and design,
alongside the development of decorative quilting. The tradition of making quilts in this fashion was taken to America by the Pilgrims.

**In America**

Patchwork enjoyed a widespread revival during the Great Depression as a way to recycle worn clothing into warm quilts. Even very small and worn pieces of material are suitable for use in patchwork, although crafters today more often use new 100% cotton fabrics as the basis for their designs.

In the US, patchwork declined after World War II, but was again revived during the American bicentennial.

**Making**

In the past, hand quilting was often done in a group around a frame. Instead of quilting, the layers are sometimes tied together at regular intervals with pieces of yarn, a practice known as tying or knotting, and which produces a "comforter".

In India stitching blanket using different small pieces of cloth is an art. It is popularly known as Kaudhi in Karnataka. Such blankets are given as gifts to new born babies in some parts of Karnataka. Also Lambani tribes wear skirts with such art

**Structure**

There are three traditional structures used to construct a patchwork or pieced composition: 1) the block, 2) overall, and 3) strip piecing. Traditional patchwork has identifying names based on the arrangement of colors and shapes.

**Blocks**

Patchwork blocks are pieced squares made up of colored shapes that repeat specific shapes to create patterns within the square or block, of, say, light and dark, or contrasting colors (motif (textile arts)). The blocks can all repeat the same pattern, or blocks can have several different patterns. The patchwork blocks are typically around 8–10” square (20 cm to 25 cm). They are sewn together in stacked rows to make a larger composition. Often strips of contrasting fabric forming a lattice separate the patchwork blocks from each other. Some common patchwork block names are Log Cabin, Drunkard's Path, Bear's Paw, Tulip, and Nine Patch.

A unique form of patchwork quilt is the crazy quilt. Crazy quilting was popular during the Victorian era (mid–late 19th century). The crazy quilt is made up of random shapes of luxurious fabric such as velvets, silks, and brocades and buttons, lace, and other embellishments left over from the gowns they had made for themselves. The patchwork pieces are stitched together forming "crazy" or non-repeat, asymmetric compositions. Fancy embroidery embellishes the
seam lines between the individual, pieced shapes. The crazy quilt was a status symbol, as only well-to-do women had a staff to do all the household work, and had the time to sew their crazy quilt. Traditionally, the top was left without lining or batting. Many surviving crazy quilts still have the newspaper and other foundation papers used for piecing.

Overall

Overall patchwork designs are incrementally pieced geometric shapes stitched together to form a larger random or composed design. The colored shapes can be randomly pieced or follow a strict order to create a specific effect, e.g. value (light to dark) progressions, or checkerboard effects. Names such as Hit or Miss, Clamshell, back-stitch, needle weave, criss-cross and Starburst identify some overall patchwork structures.

Strip piecing

Strip piecing involves stitching together pieces of fabric in repeat patterns into long strips and then stitching the strips together lengthwise. The patchwork strips can be alternated with strips of contrasting colors. A typical strip patchwork quilt is the Flying Geese pattern.

Forms

Specialised forms of patchwork include:

- Cathedral window
- Scrap piecework
- Foundation piecework or the closely related
- English paper piecework
- Seminole patchwork
- Hawaiian piecework (primarily applique)
- Stained glass window patchwork

Stained glass window patchwork is a type of patchwork which simulates the effect of stained glass in church windows. Satin fabrics simulate the colored glass, and black bias binding tape simulates the lead.

Popularity

The 2003 Quilting in America survey estimated that the total value of the American quilting industry was $2.7 billion. International quilting exhibitions attract thousands of visitors, while countless smaller exhibitions are held every weekend in local regions. Active cyber-quilting communities abound on the web; books and magazines on the subject are published in the hundreds every year; and there are many active local quilting guilds and shops in different
countries. "Quilt Art" is established as a legitimate artistic medium, with quilted works of art selling for thousands of dollars to corporate buyers and galleries. Quilt historians and quilt appraisers are re-evaluating the heritage of traditional quilting and antique quilts, while superb examples of antique quilts are purchased for large sums by collectors and museums. The American Quilt Study Group is active in promotion of research on the history of quilting.

**Trends**

Today, many things are quilted using a Longarm quilting system. The system consists of a frame and a sewing machine. The patchwork, batting and backing are loaded onto the frame and in some systems each layer can be tensioned independently. No basting is usually necessary. The frames can be up to 14' long which is big enough for a king size quilt to be tensioned ready for quilting. The sewing machine known as the Longarm machine has an extended throat space, up to 36", and it can be moved on a two-axis rail system—left and right, forwards and backwards, enabling a 360-degree movement over the surface of the quilt.

Until recently, most longarm machines were hand-guided which meant the operator had to synchronise the speed of their hands with that of the machine motor. Fast hands and slow motor meant big stitches. Slow hands and fast motor meant small stitches. Since just after the turn of the century, most longarm machines are now sold with stitch-regulation, which means that the operator no longer has to synchronize hand speed with that of the motor. Electronics in the machine ensures the stitch length remains constant. More recently, fully computerized machines are being sold. Fully computerized machines have been available for over 12 years. They were invented by Paul Statler but have only recently become popular. These machines use specialised machine-driver software and CAD-type drawing packages to enable pattern digitisation and automatic quilting. An operator is still required to mind the machine and set the pattern onto the quilt.

It is thought that over 10,000 longarm quilting machines are in use today. In the US, there are many brands available and many places to obtain training and few distributors and trainers in other countries where business quilters are more likely to travel to the States for ongoing longarm training.
CHAPTER 8

DYEING

INTRODUCTION:

Dyeing is the process of adding colour to textile products like fibres, yarns, and fabrics. Dyeing is normally done in a special solution containing dyes and particular chemical material. After dyeing, dye molecules have uncut chemical bond with fiber molecules. The temperature and time controlling are two key factors in dyeing. There are mainly two classes of dye, natural and man-made.

The primary source of dye, historically, has generally been nature, with the dyes being extracted from animals or plants. Since the mid-18th century, however, humans have produced artificial dyes to achieve a broader range of colors and to render the dyes more stable to resist washing and general use. Different classes of dyes are used for different types of fiber and at different stages of the textile production process, from loose fibers through yarn and cloth to completed garments.

Acrylic fibers are dyed with basic dyes, while nylon and protein fibers such as wool and silk are dyed with acid dyes, and polyester yarn is dyed with disperse dyes. Cotton is dyed with a range of dye types, including vat dyes, and modern synthetic reactive and direct dyes.

Etymology

The word dye is from Middle English deie and from Old English dag and dah. The first known use of the word dye was before the 12th century.
**History**

Natural dye Fes, Morocco. Archaeologists have found evidence of textile dyeing dating back to the Neolithic period. The earliest surviving evidence of textile dyeing was found at the large Neolithic settlement at Çatalhöyük in southern Anatolia, where traces of red dyes, possibly from ochre, an iron oxide pigment derived from clay), were found. In China, dyeing with plants, barks, and insects has been traced back more than 5,000 years. Early evidence of dyeing comes from Sindh province in Pakistan, where a piece of cotton dyed with a vegetable dye was recovered from the archaeological site at Mohenjo-daro (3rd millennium BCE). The dye used in this case was madder, which, along with other dyes such as indigo, was introduced to other regions through trade. Natural insect dyes such as Tyrian purple and kermes and plant-based dyes such as woad, indigo and madder were important elements of the economies of Asia and Europe until the discovery of man-made synthetic dyes in the mid-19th century. The first synthetic dye was William Perkin's mauveine in 1856, derived from coal tar. Alizarin, the red dye present in madder, was the first natural pigment to be duplicated synthetically in 1869, a development which led to the collapse of the market for naturally grown madder. The development of new, strongly colored synthetic dyes followed quickly, and by the 1870s commercial dyeing with natural dyestuffs was disappearing.

**Methods**

Dyes are applied to textile goods by dyeing from dye solutions and by printing from dye pastes. The methods are -

**Direct application**

The term "direct dye application" stems from some dyestuff having to be either fermented as in the case of some natural dye or chemically reduced as in the case of synthetic vat and sulfur dyes before being applied. This renders the dye soluble so that it can be absorbed by the fiber since the insoluble dye has very little substantivity to the fiber. Direct dyes, a class of dyes largely for dyeing cotton, are water soluble and can be applied directly to the fiber from an aqueous solution. Most other classes of synthetic dye, other than vat and surface dyes, are also applied in this way.

The term may also be applied to dyeing without the use of mordants to fix the dye once it is applied. Mordants were often required to alter the hue and intensity of natural dyes and improve color fastness. Chromium salts were until recently extensively used in dyeing wool with synthetic mordant dyes. These were used for economical high color fastness dark shades such as black and navy. Environmental concerns have now restricted their use, and they have been replaced with reactive and metal complex dyes that do not require mordant.
Yarn dyeing

There are many forms of yarn dyeing. Common forms are the package form and the hanks form. Cotton yarns are mostly dyed at package form, and acrylic or wool yarn are dyed at hank form. In the continuous filament industry, polyester or polyamide yarns are always dyed at package form, while viscose rayon yarns are partly dyed at hank form because of technology.

The common dyeing process of cotton yarn with reactive dyes at package form is as follows:

1. The raw yarn is wound on a spring tube to achieve a package suitable for dye penetration.
2. These softened packages are loaded on a dyeing carrier's spindle one on another.
3. The packages are pressed up to a desired height to achieve suitable density of packing.
4. The carrier is loaded on the dyeing machine and the yarn is dyed.
5. After dyeing, the packages are unloaded from the carrier into a trolley.
6. Now the trolley is taken to hydro extractor where water is removed.
7. The packages are hydro extracted to remove the maximum amount of water leaving the desired color into raw yarn.
8. The packages are then dried to achieve the final dyed package.

After this process, the dyed yarn packages are packed and delivered.

Removal of dyes

If things go wrong in the dyeing process, the dyer may be forced to remove the dye already applied by a process called "stripping". This normally means destroying the dye with powerful reducing agents such as sodium hydrosulphite or oxidizing agents such as hydrogen peroxide or sodium hypochlorite. The process often risks damaging the substrate (fiber). Where possible, it is often less risky to dye the material a darker shade, with black often being the easiest or last option.

Tie – dye

![Tie-dye pattern](image)
**,tie-dye** is a modern term coined in the mid-1960s in the United States for a set of ancient resist-dyeing techniques, and for the products of these processes. The process of tie-dye typically consists of folding, twisting, pleating, or crumpling fabric or a garment and binding with string or rubber bands, followed by application of dye(s). The manipulations of the fabric prior to application of dye are called resists, as they partially or completely prevent the applied dye from coloring the fabric. More sophisticated tie-dyes involve additional steps, including an initial application of dye prior to the resist, multiple sequential dye and resist steps, and the use of other types of resists (stitching, stencils) and discharge.

Unlike traditional resist-dyeing techniques, tie-dye is characterized by the use of bright, saturated primary colors and bold patterns. These patterns, including the spiral, mandala, and peace sign, and the use of multiple bold colors, have become cliched since the peak popularity of tie-dye in the 1960s and 1970s. The vast majority of currently produced tie-dyes use these designs, and many are mass produced for wholesale distribution. However, a new interest in more 'sophisticated' tie-dye is emerging in the fashion industry, characterized by simple motifs, monochromatic color schemes, and a focus on fashionable garments and fabrics other than cotton. A few artists continue to pursue tie-dye as an art form rather than a commodity.

**Vat Dye:**

Vat dyes are an ancient class of dyes, based on the natural dye, indigo, which is now produced synthetically. Vat dyeing is a process that refers to dyeing that takes place in a bucket or vat. Almost any dye, including fiber-reactive dyes, direct dyes, and acid dyes, can be used in a vat dye. Cotton, wool, and other fibers can be all dyed with vat dyes. Although almost all dyeing can be done in a vat, the term vat dye is used to describe a chemical class of dyes that are applied to cellulosic fibre (i.e. cotton) using a redox reaction as described below. Because of the use of caustic soda, and the very high ph of the dye bath in the dyeing process, wool cannot be dyed using vat dyestuffs. Wool is soluble in caustic soda solutions. It is possible to dye wool at room temperatures with indigo (vat blue 1) and other low substantive vat dyes using soda ash as the alkali source with very little strength loss. Vat red 10, vat violet 13 and vat orange 1 can be applied in this manner as well.

**Dyeing process**

Most vat dyes, which require a reducing agent to solubilize them, are less suitable than fiber-reactive dyes for amateurs. Chemical reactions such as oxidation, reduction, pH control are often necessary; even the dissolution process necessitates measuring out appropriate quantities of caustic soda and sodium hydrosulphite in order to achieve reduction. The dye is soluble only in its reduced (oxygen-free) form. The fiber is immersed repeatedly in this oxygen-free dyebath, then exposed to the air, whereupon the water-solublereduced form changes color as oxygen turns it to the water-insoluble form.
Indigo is an example of this dye class: it changes from yellow, in the dyebath, to green and then blue as the air hits it.

Not all vat dyeing is done with vat dyes.

**Properties**

The vat dyes have high color fastness, which is uncommon in other dye classes. On the other hand, vat dyes tend to have poor rubbing fastness, but this can be mitigated with special treatments to the fabric.

Indigo is subject to major crocking (i.e., rubbing the dye off onto other items) unless it is applied carefully. This means use a weaker dyebath, and dipping many times, rather than a single strong dipping.

**Light-oxidized vat dyes**

Inkodye is a type of vat dye that uses light rather than oxygen to "fix" the dye, with a wide variety of possible effects. These dyes, which are chemically similar to vat dyes, are developed by light instead of being applied in an oxygen-free bath and being developed in the fabric by exposure to oxygen. Inkodyes are true dyes, not fabric paints. A dye itself attaches to the fabric; fabric paint includes a glue-like binder, which imparts a stiffer feeling to the fabric. The process is more difficult than tie-dyeing.

**Natural dyes:**

Natural dye are dyes or colorants derived from plants, invertebrates, or minerals. The majority of natural dyes are vegetable dyes from plant sources —roots, berries, bark, leaves, and wood—and other organic sources such as fungi and lichens.

Archaeologists have found evidence of textile dyeing dating back to the Neolithic period. In China, dyeing with plants, barks and insects has been traced back more than 5,000 years. The essential process of dyeing changed little over time. Typically, the dye material is put in a pot of water and then the textiles to be dyed are added to the pot, which is heated and stirred until the color is transferred. Textile fibre may be dyed before spinning ("dyed in the wool"), but most textiles are "yarn-dyed" or "piece-dyed" after weaving. Many natural dyes require the use of chemicals called mordants to bind the dye to the textile fibres; tannin from oak galls, salt, natural alum, vinegar, and ammonia from stale urine were used by early dyers. Many mordants, and some dyes themselves, produce strong odors, and large-scale dyeworks were often isolated in their own districts. Throughout history, people have dyed their textiles using common, locally available materials, but scarce dyestuffs that produced brilliant and permanent colors such as the natural invertebrate dyes, Tyrian purple and crimson kermes, became highly prized luxury items in the ancient and medieval world. Plant-based dyes such as woad (Isatis tinctoria), indigo,
saffron, and madder were raised commercially and were important trade goods in the economies of Asia and Europe. Across Asia and Africa, patterned fabrics were produced using resist dyeing techniques to control the absorption of color in piece-dyed cloth. Dyes such as cochineal and logwood (Haematoxylum campechianum) were brought to Europe by the Spanish treasure fleets, and the dyestuffs of Europe were carried by colonists to America.

The discovery of man-made synthetic dyes in the mid-19th century triggered a long decline in the large-scale market for natural dyes. Synthetic dyes, which could be produced in large quantities, quickly superseded natural dyes for the commercial textile production enabled by the industrial revolution, and unlike natural dyes, were suitable for the synthetic fibres that followed. Artists of the Arts and Crafts Movement preferred the pure shades and subtle variability of natural dyes, which mellow with age but preserve their true colors, unlike early synthetic dyes, and helped ensure that the old European techniques for dyeing and printing with natural dyestuffs were preserved for use by home and craft dyers. Natural dyeing techniques are also preserved by artisans in traditional cultures around the world.

In the early 21st century, the market for natural dyes in the fashion industry is experiencing a resurgence. Western consumers have become more concerned about the health and environmental impact of synthetic dyes in manufacturing and there is a growing demand for products that use natural dyes. The European Union, for example, has encouraged Indonesian batik cloth producers to switch to natural dyes to improve their export market in Europe.
CHAPTER 9

TRIM (SEWING)

Trim or trimming in clothing and home decorating is applied ornament, such as gimp, passementerie, ribbon, ruffles, or, as a verb, to apply such ornament.

Before the industrial revolution, all trim was made and applied by hand, thus making heavily trimmed furnishings and garments expensive and high-status. Machine-woven trims and sewing machines put these dense trimmings within the reach of even modest dressmakers and home sewers, and an abundance of trimming is a characteristic of mid-Victorian fashion. As a predictable reaction, high fashion came to emphasize exquisiteness of cut and construction over denseness of trimming, and applied trim became a signifier of mass-produced clothing by the 1930s. The iconic braid and gold button trim of the Chanel suit are a notable survival of trim in high fashion.

In home decorating, the 1980s and 1990s saw a fashion for dense, elaborately layered trimmings on upholstered furniture and drapery.

Today, most trimmings are commercially manufactured. Scalamandré is known for elaborate trim for home furnishings, and Wrights is a leading manufacturer of trim for home sewing and crafts. Trims are used generally to enhance the beauty of the garments. It attracts buyers. Appropriate use of it creates more value of the product.

- Bias tape
- Braid
- Buttons
- Cord
- Embroidery by hand or machine
- Gimp
- Lace edgings or insertions
- Passementerie
- Piping
- Ribbon
- Rickrack
- Ruffles or frills
- Tassels
A braid (also called plait) is a complex structure or pattern formed by intertwining three or more strands of flexible material such as textile fibres, wire, or hair. Compared to the process of weaving a wide sheet of cloth from two separate, perpendicular groups of strands (warp and weft), a braid is usually long and narrow, with each component strand functionally equivalent in zigzagging forward through the overlapping mass of the others.

The simplest possible braid is a flat, solid, three-strand structure in some countries/cases called a plait. More complex braids can be constructed from an arbitrary (but usually odd) number of strands to create a wider range of structures: wider ribbon-like bands, hollow or solid cylindrical cords, or broad mats which resemble a rudimentary perpendicular weave.

Braids are commonly used to make rope, decorative objects, and hairstyles (also see pigtails, French braid). Complex braids have been used to create hanging fibre artworks. Braiding is also used to prepare horses' manes and tails for showing, polo and polocrosse.

**History**

The oldest known image of hair braiding was traced back to a burial site called Saqqara located on the Nile river during the first dynasty of Pharaoh Menes. It was a means of communication so that at a glance one individual could distinguish a wealth of information about another, whether they were married, mourning, or of age for courtship, simply by observing their hairstyle. Certain hairstyles were distinctive to particular tribes or nations. Other styles spoke to an individual’s status in society.

Braiding is traditionally a social art. Because of the time it takes to braid hair the women took time to socialize while braiding and having their hair done. It begins with the elders making simple knots and braids for younger children. Older children watch and learn from them, start practicing on younger girls and eventually learn the traditional designs. In the US, you see mothers and grandmothers braiding and putting colorful beads in little children’s hair. This carries on a tradition of bonding between elders and the new generation.
Braiding hair down to the scalp has been traditional in many African ethnic groups such as the Tuareg, Bushmen, Copts, Amhara, Nubian, Akan, Beja, Himba, Somali, Ababda, Dogon, Fula, Bedouin, Pygmies, Tigrayan, and the Yoruba. Asian ethnic groups such as the Sumerians, Akkadians, Babylonians, Phoenicians and Assyrians, the ethnic groups of North and South America such as the Cherokee, Sioux, Blackfoot Confederacy, Inca, Maya, Aztec and the Olmec, and European ethnic groups such as the Spanish, Dutch, French, Hellenes and Italians.

Ropes and cables

Braiding creates a composite rope that is thicker and stronger than the non-interlaced strands of yarn. Braided ropes are preferred by arborists, rock climbers and in sport sailing because they do not twist under load, as does an ordinary twisted-strand rope. These ropes consist of one or more concentric tubular braided jackets surrounding either several small twisted fibre cords, or a single untwisted yarn of straight fibres, and are known as Kernmantle ropes.

In electrical and electronic cables, braid is a tubular sheath made of braided strands of metal placed around a central cable for shielding against electromagnetic interference. The braid is grounded while the central conductor(s) carry the signal. The braid may be used in addition to a foil jacket to increase shielding and durability.

Another use is for litz wire which uses braids of thin insulated wires to carry high frequency signals with much lower losses from skin effect or to minimise proximity effect in transformers.

Flat braids made of many copper wires are also sometimes used for flexible electrical connections between large components. The numerous smaller wires comprising the braid are much more resistant to breaking under repeated motion and vibration than is a cable of larger
wires. A common example of this may be found connecting a car battery's negative terminal to the metal chassis.

Similar braiding is used on pressurized rubber hoses, such as in plumbing and hydraulic brake systems in automobiles. Braiding is also used for fibres for composite reinforcements.

A property of the basic braid is that removing one strand unlinks the other two, as they are not twisted around each other. Mathematically, a braid with that property is called a Brunnian braid.

Australian plaiting

Plaiting (or braiding) with kangaroo leather has been a widely practiced tradition in rural Australia since pioneering times. It is used in the production of fine leather belts, hatbands, bridles, dog leads, bullwhips and stockwhips etc. Other leathers are used for the plaiting of heavier products suitable for everyday use.

Other braids

**Gold braids** and **silver braids** are components or trims of many kinds of formal dress, including military uniform (in epaulettes, aiguillettes, on headgear).

Metaphors

Braids are often used figuratively to represent interweaving or combination, such as in "He braided many different ideas into a new whole."

Braiding happens when a river is carrying vast amounts of eroded sediment. Sediment is deposited as islands in the channel causing the river to split up into many winding channels.

In some river and stream systems, small streams join together and redivide in many places. Such stream systems are said to be braided. These are often found in alluvial fans at the outlet of canyons. This is a result of heavy sediment deposition at high flows followed by re-erosion at low flows. See also river delta.

**TASSEL:**
A tassel is a finishing feature in fabric decoration. It is a universal ornament that is seen in varying versions in many cultures around the globe.

**Etymology**

The word "tassel" comes from the Latin "tassau", which refers to a clasp (as for the neck of a garment).

**History and use**

Tell them to make tassels on the corners of their garments throughout their generations, and to put a blue thread in the tassels of the corners. 39 And you shall have the tassel, that you may look upon it and remember all the commandments of the LORD and do them, and that you may not follow the harlotry to which your own heart and your own eyes are inclined, 40 and that you may remember and do all My commandments, and be holy for your God. Numbers 15:38-40 (NKJ).

In the West, tassels were originally a series of windings of thread or string around a suspending string until the desired curvature was attained. Decades later, turned wooden moulds, which were either covered in simple wrappings or much more elaborate coverings called "satinings", were used. This involved an intricate binding of bands of filament silk vertically around the mould by means of an internal "lacing" in the bore of the mould.

These constructions were varied and augmented with extensive ornamentations that were each assigned an idiosyncratic term by their French practitioners. In France those practitioners were called "Passementiers", and an apprenticeship of seven years was required to become a master in one of the subdivisions of the guild. The French widely exported their very artistic work, and at such low prices that no other nation developed a mature "trimmings" industry. Tassels and their associated forms changed style throughout the years, from the small and casual of Renaissance designs, through the medium sizes and more staid designs of the Empire period, and to the Victorian Era with the largest and most elaborate. Some of these designs are returning today from the European and American artisans who may charge a thousand dollars for a single hand-made tassel.

Tassels (also called tufts) were traditionally worn by Oxford and Cambridge University undergraduates on their caps (hence a slang word - tassel for an undergraduate), those wearing gold tassels were those who had paid for the status of "gentleman-commoner", thus receiving increased social prestige and more luxurious accommodation than ordinary commoners who wore plain black tassels on their caps.

(double edge or kor)

( the names marked in green are the gujarati names for the patterns )
Today, only the Chancellor of Oxford wears a gold tassel.

In the Middle East, tassels were worn as talismans, especially on headwear. In Egypt, Mesopotamia, and throughout the Arab world tassels were worn by children on hoods or caps to protect them from malevolent spirits and ward off demons.

**Ceremonial wear**

In the US, tassels, or liripipes, are also found on mortarboards during university graduation ceremonies and possibly upon the shoes of the graduates at the ceremony. Near the conclusion of the graduation ceremony the tassel that hangs from the graduate's mortarboard is moved from the right to the left. Typically the entire graduating class does this in unison.

**Creation**

A tassel is made by binding or otherwise gathered threads from which at one end protrudes a cord on which the tassel is hung, and which may have loose, dangling threads at the other end. Tassels are normally decorative elements, and as such one often finds them attached, usually along the bottom hem, to garments, curtains, pasties covering the nipples of burlesque performers, or other hangings.

A tassel is primarily an ornament, and was at first the casual termination of a cord to prevent unraveling with a knot. As time went on, various peoples developed variations on this, until by the 16th century in France the first Guild of Passementiers was created and documented the art of passementerie. The tassel was its primary expression, but it also included fringes (applied, as opposed to integral), ornamental cords, galloons, pompons, rosettes, and gimps as other forms. Tassels, pompons, and rosettes are point ornaments; the others are linear ornaments.

**RUFFLE:**
In sewing and dressmaking, a ruffle, frill, or furbelow is a strip of fabric, lace or ribbon tightly gathered or pleated on one edge and applied to a garment, bedding, or other textile as a form of trimming.

The term flounce is a particular type of fabric manipulation that creates a similar look but with less bulk. The term derives from earlier terms of frounce or fronce. A wavy effect effected without gathers or pleats is created by cutting a curved strip of fabric and applying the inner or shorter edge to the garment. The depth of the curve as well as the width of the fabric determines the depth of the flounce. A godet is a circle wedge that can be inserted into a flounce to further deepen the outer floating wave without adding additional bulk at the point of attachment to the body of the garment, such as at the hemline, collar or sleeve.

Ruffles appeared at the draw-string necklines of full chemises in the 15th century, evolved into the separately-constructed ruff of the 16th century. Ruffles and flounces remained a fashionable form of trim, off-and-on into modern times.

**RIBBON:**
A **ribbon** or **riband** is a thin band of material, typically cloth but also plastic or sometimes metal, used primarily as decorative binding and tying. Cloth ribbons are made of natural materials such as silk, velvet, cotton, and jute and of synthetic materials, such as polyester, nylon and polypropylene. Ribbon is used for innumerable useful, ornamental and symbolic purposes. Cultures around the world use ribbon in their hair, around the body, and as ornamentation on animals, buildings, and packaging. Some popular fabrics used to make ribbons are satin, organza, sheer, silk, velvet and grosgrain.
**Etymology**

The word ribbon comes from Middle English ribban or riban from Old French ruban, which is probably of Germanic origin.

**Cloth ribbon**

Along with that of tapes, fringes and other smallwares, the manufacture of cloth ribbons forms a special department of the textile industries. The essential feature of a ribbon loom is the simultaneous weaving in one loom frame of two or more webs, going up to as many as forty narrow fabrics in modern looms. To effect the conjoined throwing of all the shuttles and the various other movements of the loom, the automatic action of the power-loom is necessary; and it is a remarkable fact that the self-acting ribbon loom was known and extensively used more than a century before the famous invention of Cartwright. A loom in which several narrow webs could be woven at one time is mentioned as having been working in Dantzig towards the end of the 16th century. Similar looms were at work in Leiden in 1620, where their use gave rise to so much discontent and rioting on the part of the weavers that the states-general had to prohibit their use. The prohibition was renewed at various intervals throughout the century, and in the same interval the use of the ribbon loom was interdicted in most of the principal industrial centres of Europe. About 1676, under the name of the Dutch loom or engine loom, it was brought to London; and, although its introduction there caused some disturbance, it does not appear to have been prohibited. In 1745, John Kay, the inventor of the fly-shuttle, obtained, conjointly with Joseph Stell, a patent for improvements in the ribbon loom; and since that period it has benefited by the inventions applied to weaving machinery generally.

Ribbon-weaving is known to have been established near St. Etienne (dep. Loire) as early as the 11th century, and that town has remained the headquarters of the industry. During the Huguenot troubles, ribbon-weavers from St. Etienne settled at Basel and there established an industry which in modern times has rivalled that of the original seat of the trade. Krefeld is the centre of the German ribbon industry, the manufacture of black velvet ribbon being there a specialty. In England Coventry is the most important seat of ribbon-making, which is also prosecuted at Norwich and Leicester.

While satin and other sorts of ribbon have always been used in lingerie, the usage of ribbon in the garment industry, while subject to fashion trends, saw an upsurge in the mid to late 90's. This upsurge led to increased ribbon manufacturing as well as new and improved manufacturing techniques. Due to more competitive production rates, as well as past experience in this field, companies in the Far East - especially those in China - gradually secured themselves to be the major ribbon suppliers in the world and improved both the quality and the variety of their merchandise to match those of their established European and North American competitors.
Presently, the North American continent remains the largest importer of ribbon and ribbon derivative products (such as bows, rosettes, and other garment accessories made from ribbon). However, due to outsourcing of production of garments by North American garment manufacturers, countries in Asia and South America have started to contribute to the change of the statistical figures of ribbon imports.

Inspired by European silk ribbons obtained through trade, Great Lakes and Prairie Native American tribes created art form of appliqué ribbon work.
CHAPTER 10

ZARDOZI

Zardozi or Zar-douzi (Persian and Urdu: زردوزی, Hindi: زردوزی) work is a type of embroidery in Iran, India Pakistan and Bangladesh.

Etymology

Zardozi is a Persian word that means Sewing with gold string.

Iran

Zardozi is one of the most important elements of Persian cultural signs and Handicrafts. It is named around the country by names such Zar-douzi (Persian: زردوزی), Kam-douzi (Persian: کمدوزی), Gol-douzi (Persian: گولدوزی) and Kaman-douzi (Persian: کامندوزی). Today it is more popular in Hormozgan, especially in Bandar-e Lenge and Bandar-e Abbas and Minab that known as the center of that. Persian Zardozi’s are three kinds:

• Some are completely sewing the basic fabric with Bakhie (Persian: بخشی) in order to make a new sight of pattern and colors, such as Baloch's Souzan-douzi (Persian: سوژندوزی), Rasht's Qollab-douzi (Persian: قلابدوزی) and Kerman's Pate-douzi (Persian: پاتدوزی).

• Some are in different way sewing with less density of work on original fabric. In this way they cross the strings throughout the woof of the original fabric and sew this string to each other to make a lattice and colorful pattern. Such as Sekke-douzi (Persian: سکیدوزی) and Qollab-douzi (Persian: قلابدوزی) in Isfahan.

• Another way is sewing a variety of patterns on original fabric with golden and silver strings. Such as Dah-Yek-Douzi (Persian: داهیپاندوزی) (1 of 10 sewing which today is demode), Naqade-douzi (Persian: ناقده‌دوزی), Tafte-douzi (Persian: تفتیدوزی), Kous-douzi (Persian: خوش‌دوزی) or Golabatoun-douzi (Persian: گلابتون‌دوزی).
India

It prospered during the Mugal Emperor, Akbar, but later a loss of royal patronage and industrialization led to its decline. Today, it is popular in the Indian cities of Lucknow, Farrukhabad and Chennai. In 2013 the Geographical Indication Registry (GIR) accorded the Geographical Indication (GI) registration to the Lucknow Zardozi – the world renowned textile embroidery from Lucknow. The Zardozi products manufactured in areas in Lucknow and six surrounding districts of Barabanki, Unnao, Sitapur, Rae Bareli, Hardoi and Amethibecame a brand and can carry a registered logo to confirm their authenticity.
CHAPTER 11

PRINTING

Textile printing is the process of applying colour to fabric in definite patterns or designs. In properly printed fabrics the colour is bonded with the fiber, so as to resist washing and friction. Textile printing is related to dyeing but, whereas in dyeing proper the whole fabric is uniformly covered with one colour, in printing one or more colours are applied to it in certain parts only, and in sharply defined patterns.

In printing, wooden blocks, stencils, engraved plates, rollers, or silkscreens can be used to place colours on the fabric. Colourants used in printing contain dyes thickened to prevent the colour from spreading by capillary attraction beyond the limits of the pattern or design.

Traditional textile printing techniques may be broadly categorised into four styles:

- Direct printing, in which colourants containing dyes, thickeners, and the mordants or substances necessary for fixing the colour on the cloth are printed in the desired pattern.
- The printing of a mordant in the desired pattern prior to dyeing cloth; the color adheres only where the mordant was printed.
- Resist dyeing, in which a wax or other substance is printed onto fabric which is subsequently dyed. The waxed areas do not accept the dye, leaving uncoloured patterns against a coloured ground.
- Discharge printing, in which a bleaching agent is printed onto previously dyed fabrics to remove some or all of the colour.

Resist and discharge techniques were particularly fashionable in the 19th century, as were combination techniques in which indigo resist was used to create blue backgrounds prior to
block-printing of other colours. Most modern industrialised printing uses direct printing techniques.

**Origins**

Woodblock printing is a technique for printing text, images or patterns used widely throughout East Asia and probably originating in China in antiquity as a method of printing on textiles and later paper. As a method of printing on cloth, the earliest surviving examples from China date to before 220.

Textile printing was known in Europe, via the Islamic world, from about the 12th century, and widely used. However, the European dyes tended to liquify, which restricted the use of printed patterns. Fairly large and ambitious designs were printed for decorative purposes such as wall-hangings and lectern-cloths, where this was less of a problem as they did not need washing. When paper became common, the technology was rapidly used on that for woodcut prints. Superior cloth was also imported from Islamic countries, but this was much more expensive.

The Incas of Peru, Chile and the Aztecs of Mexico also practiced textile printing previous to the Spanish Invasion in 1519; but owing to the imperfect character of their records before that date, it is impossible to say whether they discovered the art for themselves, or, in some way, learned its principles from the Asiatics.

During the later half of the 17th century the French brought directly by sea, from their colonies on the east coast of India, samples of Indian blue and white resist prints, and along with them, particulars of the processes by which they had been produced, which produced washable fabrics.

**Technology**

Textile printing was introduced into England in 1676 by a French refugee who opened works, in that year, on the banks of the Thames near Richmond. Curiously enough this is the first print-works on record; This is an old story from a reference in the late 1800s but it has never been proven and is generally not believed to be the case any more. There are no French names on the list of fabric printers and dyers at that time. Later a few French Huguenots arrived but that was after the British had a flourishing calico printing industry established. ] but the nationality and political status of its founder are sufficient to prove that printing was previously carried on in France. In Germany, too, textile printing was in all probability well established before it spread to England, for, towards the end of the 17th century, the district of Augsburg was celebrated for its printed linens, a reputation not likely to have been built up had the industry been introduced later than 1676.

As early as the 1630s, the East India Company was bringing in printed and plain cotton for the English market. By the 1660s British printers and dyers were making their own printed cotton to sell at home, printing single colors on plain backgrounds; less colorful than the imported prints,
but more to the taste of the British. Designs were also sent to India for their craftspeople to copy for export back to England. There were many dyehouses in England in the latter half of the 17th century, Lancaster being one area and on the River Lea near London another. Plain cloth was put through a prolonged bleaching process which prepared the material to receive and hold applied color; this process vastly improved the color durability of English calicoes and required a great deal of water from nearby rivers. Again, there were many dyehouses, the one I am most familiar with was that started by John Meakins, a London Quaker who lived in Cripplegate. When he died, he passed his dyehouse to his son-in-law Benjamin Ollive, Citizen and Dyer, who moved the dye-works to Bromley Hall where it remained in the family until 1823, known as Benjamin Ollive and Company] Ollive & Talwin, Joseph Talwin & Company, Talwin & Foster... Samples of their fabrics and designs can be found in many museums in England and the United States, including the Victoria and Albert Museum in London and the Smithsonian Copper-Hewett in New York.

On the continent of Europe the commercial importance of calico printing seems to have been almost immediately recognized, and in consequence it spread and developed there much more rapidly than in England, where it was neglected and practically at a standstill for nearly ninety years after its introduction. During the last two decades of the 17th century and the earlier ones of the 18th new works were started in France, Germany, Switzerland and Austria; but it was only in 1738 that calico printing was first, practiced in Scotland, and not until twenty-six years later that Messrs Clayton of Bamber Bridge, near Preston, established in 1764 the first print-works in Lancashire, and thus laid the foundation of the industry. At the present time calico printing is carried on extensively in every quarter of the globe, and it is pretty safe to say that there is scarcely a civilized country in either hemisphere where a print-works does not exist.

From an artistic point of view most of the pioneer work in calico printing was done by the French; and so rapid was their advance in this branch of the business that they soon came to be acknowledged as its leading exponents. Their styles of design and schemes of colour were closely followed—even deliberately copied by all other European printers; and, from the early days of the industry down to the latter half of the 20th century, the productions of the French printers in Jouy, Beauvais, Rouen, Alsace-Lorraine, &c., were looked upon as representing all that was best in artistic calico printing. This reputation was established by the superiority of their earlier work, which, whatever else it may have lacked, possessed in a high degree the two main qualities essential to all good decorative work, viz., appropriateness of pattern and excellency of workmanship. If, occasionally, the earlier designers permitted themselves to indulge in somewhat bizarre fancies, they at least carefully refrained from any attempt to produce those pseudo-realistic effects the undue straining after which in later times ultimately led to the degradation of not only French calico printing design, but of that of all other European nations who followed their lead. The practice of the older craftsmen, at their best, was to treat their ornament in a way at once broad, simple and direct, thoroughly artistic and perfectly adapted to the means by which it had to be reproduced. The result was that their designs were characterized,
on the one hand, by those qualities of breadth, flatness of field, simplicity of treatment and pureness of tint so rightly prized by the artist; and, on the other, by their entire freedom from those meretricious effects of naturalistic projection and recession so dear to the modern mind and so utterly opposed to the principles of applied art.

**Methods of printing**

There are seven distinct methods at present in use for producing coloured patterns on cloth:

**Hand block printing**

This process, though considered by some to be the most artistic, is the earliest, simplest and slowest of all methods of printing.

In this process, a design is drawn on, or transferred to, a prepared wooden block. A separate block is required for each distinct colour in the design.

A blockcutter carves out the wood around the heavier masses first, leaving the finer and more delicate work until the last so as to avoid any risk of injuring it during the cutting of the coarser parts. When finished, the block presents the appearance of flat relief carving, with the design standing out.

Fine details are very difficult to cut in wood, and, even when successfully cut, wear down very rapidly or break off in printing. They are therefore almost invariably built up in strips of brass or copper, bent to shape and driven edgewise into the flat surface of the block. This method is known as coppering.

To print the design on the fabric, the printer applies colour to the block and presses it firmly and steadily on the cloth, ensuring a good impression by striking it smartly on the back with a wooden mallet. The second impression is made in the same way, the printer taking care to see that it fits exactly to the first, a point which he can make sure of by means of the pins with which the blocks are provided at each corner and which are arranged in such a way that when those at the right side or at the top of the block fall upon those at the left side or the bottom of the previous impression the two printings join up exactly and continue the pattern without a break. Each succeeding impression is made in precisely the same manner until the length of cloth is fully printed. When this is done it is wound over the drying rollers, thus bringing forward a fresh length to be treated similarly.

If the pattern contains several colours the cloth is usually first printed throughout with one, then dried, and printed with the second, the same operations being repeated until all the colours are printed.

Block printing by hand is a slow process it is, however, capable of yielding highly artistic results, some of which are unobtainable by any other method.
Perrotine Printing

The perrotine is a block-printing machine invented by Perrot of Rouen in 1834, and practically speaking is the only successful mechanical device ever introduced for this purpose. For some reason or other it has rarely been used in England, but its value was almost immediately recognized on the Continent, and although block printing of all sorts has been replaced to such an enormous extent by roller printing, the perrotine is still largely employed in French, German and Italian works.

The construction of this ingenious machine is too complex to describe here without the aid of several detailed drawings, but its mode of action is roughly as follows: Three large blocks (3 ft. long by 3 to 5 in. wide), with the pattern cut or cast on them in relief, are brought to bear successively on the three faces of a specially constructed printing table over which the cloth passes (together with its backing of printers blanket) after each impression. The faces of the table are arranged at right angles to each other, and the blocks work in slides similarly placed, so that their engraved faces are perfectly parallel to the tables. Each block is moreover provided with its own particular colour trough, distributing brush, and woolen colour pad or sieve, and is supplied automatically with colour by these appliances during the whole time that the machine is in motion. The first effect of starting the machine is to cause the colour sieves, which have a reciprocating motion, to pass over, and receive a charge of colour from, the rollers, fixed to revolve, in the colour troughs. They then return to their original position between the tables and the printing blocks, coming in contact on the way with the distributing brushes, which spread the colour evenly over their entire surfaces. At this point the blocks advance and are gently pressed twice against the colour pads (or sieves) which then retreat once more towards the colour troughs. During this last movement the cloth to be printed is drawn forward over the first table, and, immediately the colour pads are sufficiently out of the way, the block advances and, with some force, stamps the first impression on it. The second block is now put into gear and the foregoing operations are repeated for both blocks, the cloth advancing, after each impression, a distance exactly equal to the width of the blocks. After the second block has made its impression the third comes into play in precisely the same way, so that as the cloth leaves the machines it's fully printed in three separate colours, each fitting into its proper place and completing the pattern. If necessary the forward movement of the cloth can be arrested without in any way interfering with the motion of the block, san arrangement which allows any insufficiently printed impression to be repeated in exactly the same place with a precision practically impossible in hand printing.

For certain classes of work the perrotine possesses great advantages over the hand-block; for not only is the rate of production greatly increased, but the joining up of the various impressions to each other is much more exacting fact, as a rule, no sign of a break in continuity of line can be noticed in well-executed work. On the other hand, however, the perrotine can only be applied to the production of patterns containing not more than three colours nor exceeding five inches in
vertical repeat, whereas hand block printing can cope with patterns of almost any scale and continuing any number of colours. All things considered, therefore, the two processes cannot be compared on the same basis: the perrotine is best for work of a utilitarian character and the hand-block for decorative work in which the design only repeats every 15 to 20 in. and contains colours varying in number from one to a dozen.

**Engraved copperplate printing**

The printing of textiles from engraved copperplates was first practiced in the United Kingdom by Thomas Bell in 1770.

The presses first used were of the ordinary letterpress type, the engraved plate being fixed in the place of the type. In later improvements the well-known cylinder press was employed; the plate was inked mechanically and cleaned off by passing under a sharp blade of steel; and the cloth, instead of being laid on the plate, was passed round the pressure cylinder. The plate was raised into frictional contact with the cylinder and in passing under it transferred its ink to the cloth.

The great difficulty in plate printing was to make the various impressions join up exactly; and, as this could never be done with any certainty, the process was eventually confined to patterns complete in one repeat, and was made obsolete by roller printing.

**Roller printing, cylinder printing, or machine printing**

This elegant and efficient process was patented and worked by Bell in 1785 only fifteen years after his application of the engraved plate to textiles. Bell's first patent was for a machine to print six colours at once, but, owing probably to its incomplete development, this was not immediately successful, although the principle of the method was shown to be practical by the printing of one colour with perfectly satisfactory results. The difficulty was to keep the six rollers, each carrying a portion of the pattern, in perfect register with each other. This defect was soon overcome by Adam Parkinson of Manchester, and in 1785, the year of its invention, Bells machine with Parkinson's improvement was successfully employed by Messrs Livesey, Hargreaves and Company of Bamber Bridge, Preston, for the printing of calico in from two to six colours at a single operation.

The advantages possessed by roller printing over other contemporary processes were three: firstly, its high productivity, 10,000 to 12,000 yards being commonly printed in one day of ten hours by a single-colour machine; secondly, by its capacity of being applied to the reproduction of every style of design, ranging from the fine delicate lines of copperplate engraving and the small repeats and limited colours of the perrotine to the broadest effects of block printing and to patterns varying in repeat from I to 80 in.; and thirdly, the wonderful exactitude with which each portion of an elaborate multicolour pattern can be fitted into its proper place without faulty joints at its points of repetition.
**Stencil printing**

The art of stenciling is not new. It has been applied to the decoration of textile fabrics from time immemorial by the Japanese, and, of late years, has found increasing employment in Europe for certain classes of decorative work on woven goods for furnishing purposes.

The pattern is cut out of a sheet of stout paper or thin metal with a sharp-pointed knife, the uncut portions representing the part that is to be reserved or left uncoloured. The sheet is now laid on the material to be decorated and colour is brushed through its interstices.

It is obvious that with suitable planning an all over pattern may be just as easily produced by this process as by hand or machine printing, and that moreover, if several plates are used, as many colours as plates may be introduced into it. The peculiarity of stenciled patterns is that they have to be held together by ties, that is to say, certain parts of them have to be left uncut, so as to connect them with each other, and prevent them from falling apart in separate pieces. For instance, a complete circle cannot be cut without its center dropping out, and, consequently, its outline has to be interrupted at convenient points by ties or uncut portions. Similarly with other objects. The necessity for ties exercises great influence on the design, and in the hands of a designer of indifferent ability they may be very unsightly. On the other hand, a capable man utilizes them to supply the drawing, and when thus treated they form an integral part of the pattern and enhance its artistic value whilst complying with the conditions and the process.

For single-colour work a stenciling machine was patented in 1894 by S. H. Sharp. It consists of an endless stencil plate of thin sheet steel that passes continuously over a revolving cast iron cylinder. Between the two the cloth to be ornamented passes and the colour is forced on to it, through the holes in the stencil, by mechanical means.

**Screen-printing**

Screen printing is by far the most used technology today. Two types exist: rotary screen printing and flat (bed) screen printing. A blade squeezing the printing paste through openings in the screen onto the fabric.

**Digital textile printing**

Digital textile printing, often referred to as direct to garment printing, DTG printing, and digital garment printing is a process of printing on textiles and garments using specialized or modified inkjet technology. Inkjet printing on fabric is also possible with an inkjet printer by using fabric sheets with a removable paper backing. Today major inkjet technology manufacturers can offer specialized products designed for direct printing on textiles, not only for sampling but also for bulk production. Since the early 1990s, inkjet technology and specially developed water-based ink (known as dye-sublimation or disperse direct ink) has offered the possibility of printing directly onto polyester fabric. This is mainly related to visual communication in retail and brand
promotion (flags, banners and other point of sales applications). Printing onto nylon and silk can be done by using an acid ink. Reactive ink is used for cellulose based fibers, such as cotton and linen. Using inkjet technology in digital textile printing allows for single pieces, mid-run production and even long-run alternatives to screen printed fabric.

Other methods of printing

Although most work is executed throughout by one or other of the seven distinct processes mentioned above, combinations of them are frequently employed. Sometimes a pattern is printed partly by machine and partly by block; and sometimes a cylindrical block is used along with engraved copper-rollers in the ordinary printing machine. The block in this latter case is in all respects, except that of shape, identical with a flat wood or coppered block, but, instead of being dipped in colour, it receives its supply from an endless blanket, one part of which works in contact with colour-furnishing rollers and the other part with the cylindrical block. This block is known as a surface or peg roller. Many attempts have been made to print multicolour patterns with surface rollers alone, but hitherto with little success, owing to their irregularity in action and to the difficulty of preventing them from warping. These defects are not present in the printing of linoleum in which opaque oil colours are used, colours that neither sink into the body of the hard linoleum nor tend to warp the roller.

"Inkjet Printing on Fabric" is a way anyone can print on fabric using their home printer. Specially treated Cotton, as well as various types of Bamboo and Silk fabric sheets, are available in various sizes. The fabric sheets have a paper backing which enable the fabric to go through the inkjet printer. Family photos printed on fabric are used to make memory quilts, pillows, notebook covers, wall hangings, ornaments and many other products. The printed fabric is dipped in water to set the ink after the inkjet ink dries, making it washable. Print on Fabric paper-backed inkjet sheets are available on Amazon and other websites.

The printing of yarns and warping is extensively practiced. It is usually carried on by a simple sort of surface printing machine and calls for no special mention.

Lithographic printing, too, has been applied to textile fabrics with somewhat qualified success. Its irregularity and the difficulty of printing all over patterns to repeat properly, have restricted its use to the production of decorative panels, equal in size to that of the plate or stone, and complete in themselves.

Pad printing has been recently introduced to textile printing for the specific purpose of printing garment tags (care labels).

Preparation of cloth for printing

Goods intended for calico printing ought to be exceptionally well-bleached, otherwise stains, and other serious defects, are certain to arise during subsequent operations.
The chemical preparations used for special styles will be mentioned in their proper places; but a general prepare, employed for most colours that are developed and fixed by steaming only, consists in passing the bleached calico through a weak solution of sulfated or turkey red oil containing from 21/2 per cent, to 5 per cent, of fatty acid. Some colours are printed on pure bleached cloth, but all patterns containing alizarine red, rose and salmon shades, are considerably brightened by the presence of oil, and indeed very few, if any, colours are detrimentally affected by it.

Apart from wet preparations the cloth has always to be brushed, to free it from loose nap, flocks and dust that it picks up whilst stored. Frequently, too, it has to be sheared by being passed over rapidly revolving knives arranged spirally round an axle, which rapidly and effectually cuts off all filaments and knots, leaving the cloth perfectly smooth and clean and in a condition fit to receive impressions of the most delicate engraving. Some figured fabrics, especially those woven in checks, stripes and crossovers, require very careful stretching and straightening on a special machine, known as a stenter, before they can be printed with certain formal styles of pattern which are intended in one way or another to correspond with the cloth pattern. Finally, all descriptions of cloth are wound round hollow wooden or iron centers into rolls of convenient size for mounting on the printing machines.

**Preparation of colours**

The art of making colours for textile printing demands both chemical knowledge and extensive technical experience, for their ingredients must not only be properly proportioned to each other, but they must be specially chosen and compounded for the particular style of work in hand. For a pattern containing only one colour any mixture may be used so long as it fulfills all conditions as to shade, quality and fastness; but where two or more colours are associated in the same design each must be capable of undergoing without injury the various operations necessary for the development and fixation of the others.

All printing pastes whether containing colouring matter or not are known technically as colours, and are referred to as such in the sequence.

Colours vary considerably in composition. The greater number of them contain all the elements necessary for the direct production and fixation of the colour-lake. Some few contain the colouring matter alone and require various after-treatments for its fixation; and others again are simply mordants thickened. A mordant is the metallic salt or other substance that combines with the colouring principle to form an insoluble colour-lake, either directly by steaming, or indirectly by dyeing.

All printing colours require thickening, for the twofold object of enabling them to be transferred from colour-box to cloth without loss and to prevent them from running or spreading beyond the limits of the pattern.
**Selecting thickening agents**

The printing thickeners used depend on the printing technique and fabric and dyestuff used. Typical thickening agents are starch derivatives, flour, gum arabic, guar gum derivatives, tamarind, sodium alginate, sodium polyacrylate, gum Senegal and gum tragacanth, British gum or dextrine and albumen.

Hot water soluble thickening agents as native starch are made into pastes by boiling in double or jacketed pans, between the inner and outer casings of which either steam or water may be made to circulate, for boiling and cooling purposes. Mechanical agitators are also fitted in these pans to mix the various ingredients together, and to destroy lumps and prevent the formation of lumps, keeping the contents thoroughly stirred up during the whole time they are being boiled and cooled to make a smooth paste. Most thickening agents used today are cold soluble and require only extensive stirring.

**Starch paste**

This is made from wheat starch, cold water, and olive oil, and boiled for thickening.

Non modified Starch was the most extensively used of all the thickenings. It is applicable to all but strongly alkaline or strongly acid colours. With the former it thickens up to a stiff unworkable jelly, while mineral acids or acid salts convert it into dextrine, thus diminishing its viscosity or thickening power. Acetic and formic acids have no action on it even at the boil. Today mostly modified carboxymethylated cold soluble starches are used which have a stable viscosity and are easier to rinse out of the fabric and give reproducible "short" pasty rheology.

Flour paste is made in a similar way to starch paste. At the present time it is rarely used for anything but the thickening of aluminum and iron mordants. In the impressive textile traditions of Japan, several techniques using starch paste resists of rice flour have been perfected over several centuries.

**Gums**

Gum arabic and gum Senegal are both very old thickenings, but their expense prevents them from being used for any but pale delicate tints. They are especially useful thickenings for the light ground colours of soft muslins and sateens on account of the property they possess of dissolving completely out of the fibers of the cloth in the washing process after printing and have a long flowing, viscous rheology, giving sharp print and good penetration in the cloth. Today guar gum and tamarind derivates offer a cheaper alternative.

British gum or dextrin is prepared by heating starch. It varies considerably in composition sometimes being only slightly roasted and consequently only partly converted into dextrine, and at other times being highly torrefied, and almost completely soluble in cold water and very dark
in colour. Its thickening power decreases and its gummy nature increases as the temperature at which it is roasted is raised. The lighter coloured gums or dextrines will make a good thickening with from 2 to 3 lb of gum to one gallon of water, but the darkest and most highly calcined require from 6 to 1 lb per gallon to give a substantial paste. Between these limits all qualities are obtainable. The darkest qualities are very useful for strongly acid colours, and with the exception of gum Senegal, are the best for strongly alkaline colours and discharges. Like the natural gums, neither light nor dark British gums penetrate as well into the fiber of the cloth so deeply as pure starch or flour, and are therefore unsuitable for very dark strong colours.

Gum tragacanth, or Dragon, is one of the most indispensable thickening agents possessed by the textile printer. It may be mixed in any proportion with starch or flour and is equally useful for pigment colours and mordant colours. When added to starch paste it increases its penetrative power, adds to its softness without diminishing its thickness, makes it easier to wash out of the fabric and produces much more level colours than starch paste alone. Used by itself it is suitable for printing all kinds of dark grounds on goods that are required to retain their soft clothy feel. A tragacanth mucilage may be made either by allowing it to stand a day or two in contact with cold water or by soaking it for twenty-four hours in warm water and then boiling it up until it is perfectly smooth and homogeneous. If boiled under pressure it gives a very fine, smooth mucilage (not a solution proper), much thinner than if made in the cold.

Starch always leave on the printed cloth somewhat harsh in feel (unless modified carboxymethylated starches are used) but are well suited to obtain very dark colours. Gum Senegal, gum arabic or modified guar gum thickening are yielding beautifully clear and perfectly even tints comparing to starch, but give lighter colours and are washed away too much during the rinsing or washing of the printed fabric and are thus less suited for very dark colours. (The gums are apparently preventing the colours from combining fully with the fibers.) So a printing stock solution is mostly a combination of modified starch and gum stock solutions usually made by dissolving 6 or 8 lb of either in one gallon of water.

Albumen

Albumen is both a thickening and a fixing agent for insoluble pigments such as chrome yellow, the ochres, vermilion and ultramarine. Albumen is always dissolved in the cold, a process that takes several days when large quantities are required. The usual strength of the solution is 4 lb per gallon of water for blood albumen, and 6 lb per gallon for egg albumen. The latter is expensive and only used for the lightest shades. For most purposes one part of albumen solution is mixed with one part of tragacanth mucilage, this proportion of albumen being found amply sufficient for the fixation of all ordinary pigment colours. In special instances the blood albumen solution is made as strong as 50 per cent, but this is only in cases where very dark colours are required to be absolutely fast to washing. After printing, albumen thickened colours are exposed to hot steam, which coagulates the albumen and effectually fixes the colours.
Printing thickeners and the dye system

Combinations of cold water soluble carboxymethylated starch, guar gum and tamarind derivatives are most commonly used today in disperse screen printing on polyester, for cotton printing with reactive dyes alginates are used, sodium polyacrylates for pigment printing and with vat dyes on cotton only carboxymethylated starch is used.

Printing paste preparation

Formerly colours were always prepared for printing by boiling the thickening agent, the colouring matter and solvents, &c., together, then cooling and adding the various fixing agents. At the present time, however, concentrated solutions of the colouring matters and other adjuncts are often simply added to the cold thickenings, of which large quantities are kept in stock.

Colours are reduced in shade by simply adding more stock (printing) paste. For example, a dark blue containing 4 oz. of methylene blue per gallon may readily be made into a pale shade by adding to it thirty times its bulk of starch paste or gum, as the case may be. Similarly with other colours.

Before printing it is very essential to strain or sieve all colours in order to free them from lumps, fine sand, &c., which would inevitably damage the highly polished surface of the engraved rollers and result in bad printing. Every scratch on the surface of a roller prints a fine line in the cloth, and too much care, therefore, cannot be taken to remove, as far as possible, all grit and other hard particles from every colour.

The straining is usually done by squeezing the colour through filter cloths as artisanal fine cotton, silk or industrial woven nylon. Fine sieves can also be employed for colours that are used hot or are very strongly alkaline or acid.

Silk printing

The colours and methods employed are the same as for wool, except that in the case of silk no preparation of the material is required before printing and the ordinary dry steaming is preferable to damp steaming.

Both acid and basic dyes play an important role in silk printing, which for the most part is confined to the production of articles for wearing apparel dress goods, handkerchiefs, scarves, articles for which bright colours are in demand. Alizarine and other mordant colours are mainly used, or ought to be, for any goods that have to resist repeated washings and prolonged exposure to light. In this case the silk frequently requires to be prepared in alizarine oil, after which it is treated in all respects like cotton steamed, washed and soaped the colours used being the same.

Silk is especially adapted to discharge and reserve effects. Most of the acid dyes can be discharged in the same way as when they are dyed on wool; and reserved effects are produced by
printing mechanical resists, such as waxes and fats, on the cloth and then dyeing it up in cold dye-liquor. The great affinity of the silk fiber for basic and acid dyestuffs enables it to extract colouring matter from cold solutions, and permanently combine with it to form an insoluble lake. After dyeing, the reserve prints are washed, first in cold water to get rid of any colour not fixed on the fibre, and then in hot water or benzene, to dissolve out the resisting bodies.

As a rule, after steaming, silk goods are only washed in hot water, but, of course, those printed entirely in mordant dyes will stand soaping, and indeed require it to brighten the colours and soften the material. (E. K.)

COLORHUE silk dyes do not require heat setting or steaming. They strike instantly, allowing user to dye color upon color. They are concentrated and should be diluted with water before dyeing. Intended mostly for silk scarf dyeing, they may also be used on silk clothing and other projects. They also will dye bamboo, rayon, linen, and some other natural fabrics like hemp and wool to a lesser extent, but will not set on cotton.

CHAPTER 12

SINDHI

Sindhi style is prevalent in the Thar Parkar and adjoining districts of Sind, in Banni Kutch and in the western Rajasthan districts of Barmer and Jaisalmer. All the work in the Sindi style is characterized by a great range of fine stitchery and liveliness of needlework and color-matching. Sindhi embroidery consequently became an activity of beautifying fabric for any use, using a overabundance of stitches and other add-on elements.

The Sindhi embroidery in different regions of Sindh has different styles. In north, it accepts Baloch influence, in Laar or lower Sindh it has a peculiar Sindhi pattern and in Thar it is decorated with patterns of Kutch and Gujarat. It continues to state, The rural Sindhi women who largely depend on embroidery work as the main source of livelihood use different techniques and ornaments such as mirrors, threads, beads, golden and silver ribbons, coins etc.

Process:

A hooked needle is used in the embroidery called the aar. The fabric is first fixed over the frame often made of bamboo. The pattern is traced on it and the embroidery work begins. The needle is pushed through the fabric. From behind, thread is pushed into the hook. When the needle is pulled up again, it comes up with a loop. The next time, the needle goes through the loop and comes up with another loop through the previous loop.
Motifs Used:

Motifs are generally derived from Mughal and Persian arts and they also used designs that are based on animal forms. Vibrant embroidery and mirror work are used to decorate the fabric.

Stitches Used:

The embroidery of Gujarat is also famous for the embroidery that executes architectural designs known as the ‘heer bharat’. The stitch has gained this name from the floss-silk (heer). The stitch, almost three inches long runs parallel to the warp in one part of the motif and to the weft in the other giving it a natural texture. A mirror secured with chain-stitch in the center is placed to beautify the embroidery work. The items of this brocaded stitch are available in the shades of off-white, yellow, madder red, black, indigo, ivory, and green.

Varieties of embroidery in Gujarat include:

Toran: The embroidered doorway decoration with hanging flaps, which is said to ventilate good luck.

Chaklas: Embroidery used as furniture covers.

Kathi: Geometrical motifs are fabricated with multicolored fabric pieces leading to patch work effect.

Abhala: Abhala is the embroidery where small round pieces of mirrors are fixed on to the fabric using buttonhole stitching.

Ari: Done with a cobbler’s stitch. The motifs found commonly are, dancing peacocks, flowers, human figures in dancing poses.

Embroidery In Gujarat

Gujarat’s contemporary indigenous dress is a cultural manifestation that has evolved over centuries and has remained a principal mark of identity and social cohesion. While dress is indicative of social difference, it is also one of the first indicators of identity that disappears in the process of cultural assimilation and racial mingling.

Kutch's World Renowned Work

The best pick up point for ethnic embroidery in Gujarat is Kutch, which was once a part of the trade route between Central Asia and the Far East. Given Gujarat’s coastline and numerous
harbours, it exposed the land to the outside world. Some of the best and oldest textiles were created in Gujarat and they were in great demand in other parts of Asia. Old Kutchis still recount romantic tales of caravans laden with silk, pearls, carpets, etc. traversing the Rann to reach the port cities. Influences and impact of the outside world had its effect on embroidery as well. As in all desert and semi-desert regions, life here is varied, there is little to celebrate but for the women of Kutch who weave a magical world of colour and celebrate everyday life. Elements and traces of Baluch or Sindhi embroidery merging with those of the Kutch are well established. Marco Polo, writing about Gujarat, says “They also work here beautiful mats in red and blue leather, exquisitely inlaid with figures of bird and beasts and skillfully embroidered with gold and silver wire. They are marvelously beautiful things, they are used by the Saracens to sleep upon.”

**Diverse Variety of Embroidery**

Embroidery, in Gujarat, is akin to ritual decoration and can be found everywhere. Toran is the most common embroidered doorway decoration with hanging flaps, which is supposed to ventilate good luck. Pachhitpatis (embroidered frieze) are hanged from the corners as a welcome symbol to the visitors. Chaklas (embroidered square pieces) are used as furniture covers while Bhitiya is the impressive wall hanging. Abhala (mirror inset embroidery) has now become a part of the ethnic chic fashion world, where small mirror discs are fixed with closely worked silken thread. Usually the mirror work is done on a dark background with motifs like flowers, creepers, petals, etc. The motifs are inspired by daily life; ancient belief and rituals but they vary from place to place and are passed down over the centuries from mother to daughter.

**Embroidery- An Inherit Talent**

It is not an unusual site in Kutch to find young girls, their mother and even grandmother sitting together to create the best of cholis (bodices), gaghras (skirts), odhnis (shawls), bed spreads, bags, wall hanging and a variety of ornamental pieces for home decor.

Until recently long hours were spent to create the best in embroidery for personal use but today things are a bit organised and slightly speedier in order to cater to the needs of the tourists as well. At a very early age the girls acquire the embroidery skills, honed by generations and with pride and patience they prepare their own wedding garments. These exclusively created embroidered works are sent to the in-laws for closer examination, which is one of the important criteria for deciding matrimonial alliances.

**Distinctive Style of Needlework**

Each community in Kutch has its own distinctive style of needlework. Geometric patterns of Sauf embroidery by the Sodha community appear to be the earliest extension of Iranian Baluchistan influence. The time consuming needlework involves stitches on the base by counting every single thread that imparts a uniform balanced look as if the design was woven on cloth.
Sodha Rajputs, who migrated from Pakistan during the 1971 Indo-Pak war, are scattered around the village of Sumerasar and border area of Banaskantha.

**The Ancient- Ari Embroidery**

Ari Embroidery is equally old and famous for its heavy work. Prepared with the help of an awl it represents a cobbler’s stitch, which requires considerable skill and practice. The sharper and finer the hook of the awl, the more refined the quality of the embroidery. This is done in silk or locally made satin called Gajji or on a silky satin fabric Atlash. The royal ladies of Kutch who were fascinated by the Persian motifs like peacock and flowers patronized Ari embroidery. The garments under the spell of Ari embroidery are usually dotted with bootis (motifs), which round off with big sized ones known as Nadir Shahi booti.

**Rabari Embroidery**

Rabari Embroidery is the most prominent work and widely available. The women of this community wear black skirts with creative edges embroidered and so are their profusely decorated veils with tie and dye patterns. A Rabari bridegroom’s embroidered longcoat is worth a look. Even children wear heavily embroidered salwars and shirts. The Kutchi Rabaris make use of mirrors of various shapes and sizes and therefore their works have a variety though they stick to minute chain stitches.

The finest embroidery with most intricate patterns created by the needle comes from Mutwa and Jat communities. The Mutwas, living in Banni, excel in all styles of embroidery and they work out the tiny mirrors with ease. Fine handspun cotton and quality silk is used in red, white, golden yellow, blue and black to develop patterns and booties interspersed with bird and animal motifs. The Jats, who migrated from Baluchistan, are experts in inserting the smallest of the mirrors with utmost perfection, amidst pleasing colours and design that are usually geometric patterns. The Jats are confined to Dhordo, border villages of Sherwa and Savada. Few of the Jat families also dwell at Naranpar: (17kms from Bhuj en route to Kera).

The ladies from Lohana community in Banni create fantasy with silk thread thickly piled in deep orange, golden yellow, dark red and bright black. The bootis are inset with mirrors, making use of chain stitch, buttonhole stitch, etc.
Applique or Katab

Applique or Katab is another form of decorative needlework, more pronounced in Saurashtra where women from the darzi (tailor) community prepare it for commercial use. Its origin relates to a tailor’s wife who saved the cloth remnants in the shop, which finally created quilt covers, and other decorations. After all, in the land of scarcity nothing should go waste. Unlike the Pipli works of Orissa, here it is done in patchwork based on pieces of coloured and patterned fabric, which is finely cut to serve the motif and then stitched on to a plain background to produce quilts, curtains and wall hangings. Patchwork quilts from Kutch are worked upon by neat running stitches and are quite popular with tourists. The higher the pile of quilts, the higher the owner’s status for it is an indicator to the owner’s status which establishes his ability to accommodate the number of guests simultaneously.

The Creation of Animal Decorations

Next to garments and home decors, a variety of decorations are created for the bullock, horses, camels and palanquins. Shingadiyas (horn covers), lalavati (forehead covers), jhul (saddles), body hangings and kandia (neck ornaments) for bullocks and camels are most popular. At one time the finesse of the palanquin decoration demonstrated the power and wealth of the owner. Leather embroidery is later addition in the long list of marketable craft, being discounted earlier as the produce from lower caste. Now embroidered jootis (shoes) of Banaskantha are quite popular along with a variety of leather products including bedspreads!

Shisheh or Abhla Bharat embroidery (Shisheh Persian شیشه, Abhala Bharat Hindi: अभला भरत, Abhla Bharat Gujarati: અભલા ભારત, ), or mirror-work, is a type of embroidery which attaches small pieces of mirrors reflect metal to fabric. Mirror embroidery is spread throughout Asia, and today can be found in the traditional embroidery of Iran, India, Pakistan, Afghanistan, China, and Indonesia.

The Shisha embroidery was originated in THE 17th-century in India. Traditionally, shisheh or abhla bharat work was done using Mica but Beetle, Tin, Silver or Coins were not uncommon depending on the region. This was replaced by glass blown into large thin bubbles and broken into small pieces for this use. Traditional shisha mirrors have a convex curve due to this process. The tradition of making circular shisha was extensively done by women in South Asia, who use special scissors that are repeatedly dampened to prevent flying shards, and snip them into smaller circular shapes.
The use of decorative mirror or shisheh was introduced from Iran during the Mughal Empire. However shisheh embroidery was not used on Mughal clothing but rather found only on traditional folk clothes of South Asia and Central Asia. The term shisheh means glass in Persian, from where the word transferred to Urdu/Hindi and other related languages. Contemporary shisheh work almost entirely consists of mass-produced, machine-cut glass shisha with a silvered backing. Today most craft stores in South Asia carry small mirrors purchasable for use in embroidery, which come in varying shapes and sizes.

This form of embroidery work is now most common on the Indian subcontinent, especially in parts of Gujarat, Rajasthan, Haryana, Delhi, Madhya Pradesh, Bihar, Karnataka, Andhra Pradesh, Manipur, Baluchistan and Sindh. This type of embroidery lends a sparkling appearance to the brightly colored clothes worn in the region, and is very popular for use on clothing, hangings, tapestries, and domestic textiles.

India is a land of diverse cultures and her uniqueness lies in her unity in diversity. The sheer variety of the costumes, the traditions, festivals in enough to keep one fascinated. The same can be said about embroidery. Embroidery in India is different in different parts and states of India. One can identify the origins of an embroidered piece of fabric simply by the style, colors, fabric and stitched used. Among the many different types of embroidery one can see in India, the embroideries of Sindh, Kutch and Kathiawar are very popular.

Kutch embroidery was practised from the sixteenth and seventeenth century in Patan, a little town in the state of Gujarat. (Gujarat lies on the west coast of India) It is believed that this art was taught to the Mochi’s by a Muslim who came from Sindh. The embroideries of Sindh, Kutch and Kathiawar are very similar and almost identical. The embroidery is very pictoral and original, the mirrorwork and intertwining stitch set it apart from any other kind of embroidery.

**Kutchwork** or Kutchi bharat as it is called in Gujarati comes from the Western region of India. Also known as Sindhi stitch, this beautiful technique is geometric in form. The stitches are worked by laying a foundation framework of herringbone stitch or cretan stitch. In the second part, this framework is filled with interlacing to completely fill the framed area. And combination of perfect framework and intertwining only, can produce the perfect motif.

A unique thing about this stitch is that you never know how it will look till it is completed and the final product is a wonderful surprise to the embroiderer. A part of the wedding trousseau young girls are taught this craft as soon as they are able to hold the needle and they graduate from simple to complex designs as they learn this art from their elders.

It is said that this technique originated in far away land of Armenia and found its way to Gujarat by travelling Nomads. Sindhi stitch or Maltese cross stitch is also similar but the innovation of the Kutchi women have taken it beyond the traditional designs.
Though the variety of motifs is vast, the basic pattern remains more or less the same. It is only an arrangement and repeat of the basic pattern that can create a variety of motifs in every shape and size!

Basic patterns around which the embroidery is based are:

- single square

 four corner square or chokdi
big square or *moti chokdi*

round or *ladvo*
triangle or *trikon*

line

simple edge or *sadi kangri*
double edge or kor

( the names marked in green are the gujarati names for the patterns )

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