COTTON
COTTON

A journey into the world of cotton, the fabric of life.
Acknowledgement

To the Bestseller Foundation
for inspiration and opportunity...
History

Cotton that Inspired Human Creativity

The Cotton Industry

Gandhi and Cotton

Cotton that Inspires our Consciousness
Thousands of years ago,
In a pure and transparent state;
Cotton embarked on a journey.
Flowing through cultures and civilizations,
Bringing color to our world…
Here is the story of cotton.
Cotton and its History
Cotton, the mesmerizing ancient fabric of life

Tracing a historic journey, reels of cotton threads scatter on the wind, from the fields of India and the dunes of Egypt, to the cobbled streets of England and America - A universal cloth with a mixed and rich heritage.

It is said that…
...cotton is the oldest textile woven by humans.
...the word cotton comes from the Arabic “al-qutn”, which in turn comes from the Sanskrit word, Karpasi.
…cotton weaving was the pride of Asia and Africa.

Throughout history, this wisp of a cloth has inspired humans. Cotton has caused wars, exploitation, peace and many of the small joys of life. Coursing through civilizations, its threads have caught the moods of human history.
The Origins of Cotton

Cotton has acquired many names in diverse languages, and this ancient fabric has been discovered at various excavation sites the world over. It seems certain that cotton cultivation and manufacture started in India, where people were exporting their cottons long before the rest of the world knew how to cultivate it, extract the fibers, spin, weave and dye it in fast colors.

Many believe that cotton also originated in Africa and America. The cotton plant certainly grew wild there, but so far, no evidence has been found of its manufacture in these countries before the 6th Century B.C., when travelers reported that cotton was already in use in India.

At the excavation of an early Mesopotamian royal tomb, the fabrics found have all proved to be linen. There was no evidence of cotton. Mesopotamia was the contemporary civilization in Africa of the Indus Valley civilization in India. This led historians to believe that cotton was not manufactured in Mesopotamia, while it was flourishing in India.

Findings of cotton fabric inside earthenware at the site of the Indus Valley civilization, confirmed this theory. Additionally, a piece of fabric was discovered in an Egyptian tomb, which was identified to be cotton of the Indian variety, dyed purple, using dyes from the madder group. Madder dyeing needs a certain understanding of its chemistry, and India was the only country which had developed this complex dyeing technology in the ancient era.
Earliest Physical Evidence of Cotton in Asia

It is extremely difficult to find any physical evidence to date the origin of cotton. Unlike stones, terracotta, ceramics and metal, natural cloth fibers disintegrate quickly, so it is rarely found during archeological excavations. The earliest surviving fragment of cotton cloth was found wrapped up in an earthen container, which appears to have protected it from disintegrating.

Cotton has been cultivated in India since ancient times. The earliest physical remains of any cloth in India were found at a Chalcolithic Period site at Balathal in the Marwar region of Rajasthan state. (Shinde 2005)

Harappans, who lived during the Chalcolithic Period, cultivated cotton at some point. Cotton cloth was discovered at a Mohenjodaro site dating from 2,500 BC. The only fragment of cloth found at a Harappan site, on examination, was revealed to be from the Gossypium arboreum plant. It was dyed purple using natural dyes from the madder group. This confirms that Indians had already developed spinning, weaving, and dyeing technologies and were well versed in them, in the Harappan Period.
The Route that Cotton took

From India, the cultivation of cotton spread to Persia, Arabia and Egypt, and then on to Central and Western Africa. From Persia, the culture migrated to Syria, Asia Minor, and Turkey, eventually reaching parts of Southern Europe.

Although China had contact with India from ancient times, and the Chinese had imported Indian cotton since the development of the silk route, cotton cultivation did not advance significantly until the Song Dynasty, in the 12th century. Initially cotton cultivation occurred in Southern China on Heinan Island and in the Yunnan region. From there, it extended to Central and Western China. In the Yuan Dynasty dramatic changes took place in China, as hemp weaving was replaced by cotton weaving.

From China, cotton spread to Korea and later to Japan. Although cotton reached Japan in the 8th century, its cultivation was only established in the 14th century.
Indian Cottons before the Christian Era

During the Vedic age, in the library of the Assyrian King Assurbanipal (668-626 B.C.), the word Sindhu was used for Indian cotton. He sent for plants called ‘wool bearing trees’ from India.

The early Greeks mention that Indians wore cloths made of wool grown on trees. Herodotus (around 530 B.C.) is perhaps the first to refer to the cotton fiber. In his account of India he writes, “Wild trees of that country bear fleeces as their fruit surpassing those of sheep in beauty and excellence, and the Indians use clothes made from these trees.” He also states that cuirass sent by Anasis, King of Egypt to Sparta “was adorned with gold and with fleece from trees.”

The 15th to 19th century was the golden era of the cotton trade, when fine Indian cottons were valued more than silk, and one piece was worth 8 to 10 gold coins! According to Mettabelle Gittinger, a textile historian, Indian textiles had become the dominant currency of exchange. Whoever entered the spice trade in the 16th and 17th centuries had to procure these textiles in India as a prerequisite to other trade.
Development of Techniques

In India

As early as 326 B.C., muslins from Decca in Bengal were famous for their gossamer quality. They were known to become invisible when placed on dew covered grass!

During the Vedic Period, bleaching was perfected and natural dyes were used. Embroidery and cut-work were well established, and the cloths had *katikinari* (appliqué) borders. Buttons were made of bone, conch shell, yarn, gold and silver. (Alkazi 1982 17)

Greek visitors to the court of Chandragupta Maurya have commented on resist dyeing and hand printing techniques. Indian glazed cotton was commonly used by 400 B.C. Washer men, known as *rajaka*, perfumed garments after washing them. Unfortunately the technology of perfuming cotton cloths is now lost.

Under the Mughal rule, the production of fine malmals received patronage and financial support. Malmals flourished and they were in demand in various parts of India and the rest of the world. They were given exotic names based on the location of their production, the process of manufacture or their use. The most popular were known as *Malmal Khas, Shabnam, Abirawan, Tanzeb* and *Jamdani*. 
In Africa

The Gossypium arboreum species of cotton was introduced in East Africa about 2,000 years ago. It was grown by the Meroe civilization in Nubia, the first cotton weavers in Africa.

Gossypium herbaceum, currently known as African cotton, is actually named desi (local) cotton in India. It was categorized in the series of Indian cottons by British scholars and botanists of the 19th century. It seems likely that it migrated to Africa from India and was changed there to some extent, since most of these cottons are hybrids.

In America

Columbus found cotton in use among the natives of Hispaniola, but only in the most primitive way. Cortez found cotton manufacture at a much more advanced stage in Mexico. The Spanish historian remarks, “The Mexicans made large webs, as delicate and fine as those of Holland. They wove their cloths with different figures and colors, representing different animals and flowers. Of feathers interwoven with feathers, they made mantles and bed curtains, carpets, gowns and other things not less soft than beautiful. With cotton they also interwove the finest hair of the belly of rabbits and hares, after having spun into thread; of this they made most beautiful cloths, and particularly winter waistcoats, for their lords.”
Indian Cotton and Trade with China Before the Establishment of the Silk Route

It is amazing that Indian cotton textiles were already exported to Egypt and some European countries, as well as to Shu (Sichuan region of present day China), before the establishment of the famous silk route! Chinese goods reached Europe via India at that time. Moti Chandra, a well known Indian scholar, has stated in his book that before 122 B.C. Zhang Qian, the Han emissary, during his visit to Bactria (Daxia) discovered that cloth from Shu and bamboo canes from Qiong, (both in the Sichuan region) had reached Bactria via Shendu (India). Thus Indians traded with Shu, before Han China (now East China) knew about it!
Cotton Plants

Cotton fibers are produced by various species of plants belonging to the genus Gossypium. There are many types of cotton plants in the world. The flowers all yield cotton fibers. Each plant produces a different variety of cotton fibers. Out of the numerous cotton plants, those belonging to four main species are domesticated and cultivated. Cotton is grown in areas with a warm, temperate climate, between the latitudes of 45 degrees North and 30 degrees South. Presently India, Pakistan, China, Uzbekistan and the USA are the main cotton producing countries.

**Gossypium arboreum** is commonly called tree cotton. This species of cotton is native to India, Pakistan and other tropical and subtropical regions of the world. Tree cotton is a shrub reaching heights of 1 to 2 meters.

**Gossypium hirsutum** has the longest fibers. This makes it easier to spin on machines. Currently many countries are trying to cultivate this variety of cotton.

**Gossypium barbadense** is one of the American series of cottons. These species were cultivated from the West Indies to Peru and Mexico to Brazil at the time of the discovery of America. These plants grow between 0 and 34 degrees of latitude where the temperate climate ranges from 68 degrees to 82 degrees F. The cotton growing close to the sea seems to be of higher quality.

**Gossypium Herbaceum, Linn.** includes several varieties, all collectively known as the Herbaceum or Asiatic series of cotton. Its original home may have been in the North-West of India, (i.e. the Sindh region, now in Pakistan, and part of Punjab in India.) This plant is perennial and bushy and it grows in warmer areas.
The journey of cotton starts in expansive fields of black soil.
Although different varieties of cotton plants grew wild in various parts of the world, it was in India that it was first cultivated.
The soft white balls, hidden in the field, blow delicately in the air, waiting to be looked upon... waiting to be picked by warm human hands.
Cotton Plant Cycle

Plant Seed

1 week - Seedling

2-4 weeks - True Leaves

5-7 weeks - Bud

8-10 weeks - Blossom

10 weeks - Boll

18-20 weeks - Boll opens

25 weeks - Harvest

25 weeks - Harvest
Once picked, the fibers in the cotton seed ball yield to flicking hands, carefully picked out from superfluous seeds, leaves and dirt. If not hands, the velvety balls are welcomed by the Cotton Gin which rolls the fibers through to prepare them for the oncoming spell of machines and processes.
Finally received by the “Spinners”, the slivers now embark on a swift adventure. Pulled and twisted, the mass of slivers yield, and spindles of freshly spun cotton yarn emerge.
Traveling through a whirlwind of processes from Picking to Spinning, the cotton is finally ready to give wings to human imagination.
On the Southern Indian peninsula, cotton weaving reached unparalleled finesse. The mal cotton from Tamil Nadu is renowned for its comfortable softness. It is said that the Chola kings (a royal dynasty ruling Tamil Nadu in medieval times) wore nothing but cotton.
In India, cotton was widely available in countless colors and designs, and it made up most of the daily wear of the people. Unsewn garments were connected with the notion of purity.
Cotton that Inspired Human Creativity
Weaving, dyeing, and printing are all art.
Cotton dyeing and printing is the art of precision and printers have, for centuries, preserved through their art, the inspiration from their ancestors and the aspirations of the younger generations.
Cotton dyeing has developed into an intricate art that requires patience, immense talent and the involvement of several other arts - be it the fine carving of the block maker (for block printing) or the keen eye of the dye maker.
Patterned cotton and richly embroidered textiles have been used as symbols of social etiquette in many cultures. They have been used as declarations of status, presented as honorary gifts and prominently displayed at life cycle ceremonies.
The art of Weaving contains its own intricacies. A respite from the drone of daily activities, weaving allows the artist to capture his or her fluttering thoughts; the weaver’s perceptions on life and death, nature, Mother Earth and the cosmic mysteries of the universe. Weaving on the loom, with the meticulous, rhythmic crossing of the warp and weft is like the music of meditation for the weaver.
As cotton cultivation flourished in many corners of the world spanning eras of time, it simultaneously inspired the weavers and printers who threaded their imagination in forms of graphic motif and textures. Soft and pliable or starched and stiff, sumptuously luxurious for some, yet utterly simple for others, cotton inspired fashion and altered according to the perception of the wearer.
In Central Asia and the Middle East, cotton was the vessel of life for the nomadic tribes. They not only carried all their worldly possessions in thick fabric bags, but they also clothed themselves in colorfully dyed cotton robes. Cotton was preferred to silk because it had a more natural feel.
In Rajasthan and Gujarat, Western India, printers explored with dyes and a cheerful color palette. One of the most exquisite forms of resist dyeing called Ajrakh originated here. Full of depth, and almost everlasting in deep hues of red and blue, Ajrakh is a master’s art, combining creativity, patience and diligence.

Colorful block printed turbans were the preferred headgear for men. These were also printed using many resist dyeing techniques such as tie and dye, etc. The cotton turban was an important accessory, indicating the status of its wearer. At marriages, brides’ families were distinguished by their pink turbans.
The women embroidered their clothes and quilts of thick cotton, giving wings to their imagination, and taking inspiration from scenes of everyday village life as well as traditional motifs. Many of them were embellishing their bridal ensembles, rich in color and shimmering with gold trimmings.

In the forests of East India, unassuming tribal clans dyed their cotton shades of deep rich maroon with the madder tree roots, which were said to be medicinal.
In the Southern areas, cotton became a canvas for stories, and the art of Kalamkari flourished under deft artistic hands.
In India, fashion evolved using draped, unstitched fabrics, including the Dhoti, the Lungi and the Sari. This style is connected with the concept of purity.
Resist dyeing, in all its numerous interpretations, has been a consistent favorite of the cotton printer. This form of printing dispersed and developed in South East Asia – Indonesia, the Philippines and their surrounding areas.

The famous Javanese Batik (wax resist dyeing) reached artistic heights; it became renowned in Europe for its unique motifs and luxurious cotton. Traditionally, these batik printed cottons were found in deep shades of indigo and rich hues of brown, cream and gold.
On the African continent, the cotton producing areas are located in the warmer regions, including Ethiopia, Egypt, Nigeria, Mali, Ghana, and others.

Tribes from each region developed indigenous methods of weaving and printing. Cotton has a long history in Africa and it is believed that people were weaving cotton on looms around the time of the first millennium.

Cotton has always been hand spun in Africa, creating a type of fabric that has a unique, natural feel. Hand spun and hand woven cloth was believed to have spiritual significance. Certain fabrics with special imagery could release positive powers or absorb negative ones. Special cotton fabrics were also used to denote rank and status among clan members. Women would indicate their martial status with their style of draping. Cotton was imbied into the rituals and spiritual aspects of life in Africa.

Deep blue indigo dyed cotton was prized in Africa, as it signified wealth, abundance and fertility.
Conjuring visions of the traditional formal kimono is the **Japanese Yukata** – a summery informal kimono made of pure cotton and printed in numerous colors and patterns. Originally, it was used as a linen bathrobe. This comfortable attire was soon adopted by Japanese warriors for informal occasions, and later it became a favorite with the public when the Japanese public bath gained popularity. Its light and airy feel has endured until modern times, and today one might glimpse the Yukata worn at Japanese summer festivals.
Well into the 21st century, cotton has woven its way into every conceivable aspect of modern life. Cool cottons of today rule fashion driven consumer choices.

Cotton now comes in various textures and counts, sometimes mixed with other fibers to achieve better durability and comfort. It has been manifested in unlimited ways by 21st century designers.
Perhaps there is no example more remarkable than the sudden development of cotton in the entire history of economic products.

Once introduced to a country, it rapidly started replacing the traditional bast fibers of that country to a great extent. Presently, cotton fibers hold enormous importance in agriculture, trade, manufacture and the daily requirements of the whole world!
The Cotton Industry
Data on the Cotton Industry:

Total international cotton trade is worth $12 billion.

The U.S. and Africa are the world’s two leading exporters of raw cotton, accounting for more than half of the $12 billion market worldwide. Other top exporters include Uzbekistan, Australia and India.

Cotton accounts for 25% of the world’s insecticide market and 10% of global pesticides sales.

The World Health Organization estimates that at least three million people are poisoned by pesticides every year.

It is estimated that these chemicals unintentionally kill millions of birds each year.
The beauty of cotton has forever captured the fancy of the discerning eye. The exquisite intricacy of special cottons, woven and printed in Asia and Africa, was enthralling and caused a stir wherever it went.

Pliny’s famous complaint was that the economy of Rome had been ruined in the first century due to the import of expensive Indian cloth, which the Romans were forced to purchase with their limited supply of gold and silver.

This is also how the story unfolds in the era of industrialization. Wherever there is great demand, commerce and industry will follow.
One of the main contributing factors to the 20th century Industrial Revolution was cotton. An ever increasing demand in the West for printed cottons at inexpensive prices, led to the invention of industrial machines to boost the manufacture of cotton. Machines that are commonplace in any cotton producing mills today – the spinning machine, the cotton gin and so on, were introduced during this period.

Cotton production centers also relocated at this time. The main cotton producing countries, such as India and Africa used labor intensive methods and were slow and expensive. They were unable to meet the voracious demands of the market. Shipping was also expensive.

Industries started buying cotton from South America, which had acres of plantations and slaves from Africa and Asia providing cheap or unpaid labor. Thus, colonialism grew in many parts of the world to satisfy the hunger of a growing number of cotton consumers, who all wanted the comfortable, clean and fashionable look of cotton.

In modern times, that hunger is yet to be satiated and if anything, it has grown. In this era of manufactured fibers, cotton together with polyester accounts for over 80% of the global market in textiles. Cotton alone accounts for about 40% of the total world fiber production. While about 80 countries are involved in the production of cotton, China (24%), USA (20%) and India (16%) account for half the world’s production.

The total area used for cotton cultivation has stayed relatively unchanged in the last 80 years, yet the output has more or less tripled in that time. It is hard to imagine the number of chemicals that must have been used to achieve this output.
The problem with large scale cultivation of any crop is that vast tracts of land are being used to grow a single species of plant, which leads to depletion of the required nutrients in the soil. Spread of diseases and pests also becomes commonplace, as it is easy for them to contaminate considerable amounts of crops planted together. The modern solution to these problems has been the extensive use of fertilizers, insecticides and pesticides. Pesticides account for more than 50% of the total cost of cotton production in most of the areas where it is cultivated. Several of the most widely used insecticides have been classified as ‘moderately hazardous’, while some used in developing countries are ‘highly hazardous’. The latter are generally acutely poisonous and can contaminate ground water.

There are many difficulties associated with such massive cultivation. Cotton can be a very water intensive crop and has been known to adversely affect the water balance in many cotton growing areas. An infamous example of this is the Aral Sea in Kazakhstan, which dried up after water was diverted from two feeder rivers to irrigate cotton plants. Excessive use of pesticides and fertilizers also affect water supply, as the runoff from the fields lead to water contamination.

Such extensive cotton cultivation has a serious impact on the environment. This has been researched and well documented. The environmental damage includes: reduced soil fertility, loss of biodiversity, water pollution, and pesticide related problems, including increased hardiness of the pests and severe health problems for humans.
However, modern greed has taken this era of excessiveness into the industrial processes. Chemical dyes, are polluting our natural water resources, where the industrial waste is dumped. Farmers are suffering from poor soil quality, because chemical runoff mixes into the earth.
Indeed, there is a huge market for cotton today; it is larger than ever. Yet, the consumer cycles are shorter. Production cycles are large and consequently there are growing mounds of waste. We are satiating our wants and desires at breakneck speed, but what price will we pay?
Gandhi and Cotton
Perhaps it was the first time in human history that cotton cloth was used in the fight for freedom of a country.

Khadi cloth was prominent in Mahatma Gandhi’s non-violent fight against British rule. In India’s freedom fight, Gandhiji’s guns were spinning wheels and Khadi was his ammunition. Gandhiji’s strategy in the freedom struggle was *Swadeshi* or Self Reliance. *Swadeshi* requires independence for basic needs: namely food, clothing and shelter. The Khadi movement was launched to stimulate the home production of clothes for India. Khadi was fraught with political consequences, although it was conceived as a religious and economic necessity.

Gandhi urged people to spin their own yarn and weave their own cloth, to free themselves from exploitation and control. Thread after thread of cotton, spun and woven by untiring hands, created Gandhi’s “sacred cloth”.
For Gandhi, spinning was a spiritual act. He found peace of mind in spinning and said, “The music of the wheel will be balm to your soul.” He chose spinning as “Visible outward expression of the inner feeling for humanity. It is a symbol of love of mankind”.
“Khadi represents a spiritual and sustainable way of life ... and it also leads us to simplicity... To live more simply, voluntarily, is to live more deliberately, intentionally and purposefully... Simple living also leads to ecological living.”

Gandhi always saw Khadi as a political tool. “People that are starving for want of occupation can have no political consciousness. The political importance in India is derived from her peculiar condition in that it needs cloth, it exploits no other country, and its millions have nothing to do for eight months in a year, though they are starving.”
Producing Khadi was an indispensable part of the economy in a vast agricultural country like India, and it was the most natural manner of utilizing idle time, and eliminating unemployment.
In the beginning, Khadi was for self consumption in village homes. It was not for sale. However, Gandhi soon realized that not everyone could spin and weave. He also realized that Khadi needed to be an economically viable exercise. He therefore permitted the sale of Khadi so that it became available to all and mill cloth could be totally avoided. But Khadi production was never intended to be a commercial activity. Maximization of profit did not apply to Khadi.
Khadi

...an undying tradition of the finest cotton spinning and weaving in the world.
Cotton Khadi is a product of ultimate luxury and uniqueness – its distinctive character being the process of hand spinning. The hand spun cotton yarns create a cloth that is durable and comfortable.
Cotton that Inspired our Consciousness
Cotton is the most intensively sprayed field crop in the world accounting for more than 10% of the pesticides and 25% of the insecticides. The negative impact of massive cotton cultivation cannot be stressed strongly enough. The combined pollution caused by the various chemicals needed to sustain this enormous cash crop ensure that it will take decades or even centuries to clean up the environment.
The current reality of farmers going bankrupt due to the pressure of using more and more chemicals has made their situation worse, even leading to suicide.
In the organic system of cultivating cotton, the use of artificial or synthetic pesticides and fertilizers is avoided and replaced with natural methods of controlling pests, weeds and diseases. This reduces the burden of chemicals dumped in our natural environment, helping the farmers and the eco system.
In Tamil Nadu, South India, Bestseller has funded a project to help 300 cotton growing farmers to go organic with the collaboration of CCD (Covenant Centre for Development) and Upasana from Auroville.

This project is an attempt to infuse fresh life into the cotton production cycle by growing cotton in an organic manner in tune with the ecology and economy of the farmers. It also meets their need for a crop that is commercially viable. The underlying philosophy is also to be able to give these farmers, who have been carrying on their trade for generations, an opportunity to continue doing so in a dignified manner.
Let us all support
the organic cotton movement;
let us all support our unique planet.
These scarves created from a hundred percent Organic Cotton are a contemporary example. They are coloured using natural dyes and woven on cottage looms in Tamil Nadu.
Credits

Concept & Execution
Upasana, Auroville
www.upasana.in

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Photograph Captions

Pg. 8: Cotton buds
Photo: Vimal Bhojraj

Pg. 15: Cotton Tree sketch
as imagined by John Mandeville in the
fourteenth century

Pages 21 to 38: photos by Vimal Bhojraj

Cotton field soil

Cotton field

Cotton flower

Woman hand picking cotton boll at harvest time

Cotton bolls in the field

Cotton wool

Hand spinning cotton threads

Cotton yarn

Pg. 39: Brahmin boys in Tamil Nadu wearing
traditional white cotton dhotis(wrap)
Photo: Briana Blasko

Pages 43 to 48: photos by Vimal Bhojraj

Traditional wooden blocks used for printing on
cloth

Cotton yarns being dyed indigo

Pg. 49: Indigo print on cotton by
Padmini Tolat Balaram

Pg. 51: Weaver’s loom
Photo: Briana Blasko

Pages 53 to 60: photos by Vimal Bhojraj

Weaver’s loom

Tribal man in Rajasthan with his camel

Tribal woman in Rajasthan doing traditional
embroidery

Pg. 61: A dancer with a traditional Kalamkari textile
Photo: Briana Blasko
Pg. 63: Women wearing south Indian cotton saris
Photo: Vimal Bhojraj

Pg. 65: Indonesian women preparing for a traditional ceremony wearing resist dyed fabrics
Copyright: Ryan KC Wong, courtesy I Stock Photos

Pg. 68: Masai warrior in Kenya wearing traditional fabrics
Copyright: Andrejs Jegorovs, courtesy I Stock Photos

Pg. 70: A traditional Japanese play
Photo: Padmini Tolat Balaram

Pg. 71: Modern cotton clothing as seen on the streets of Berlin
Photo: Vimal Bhojraj

Pg. 73: Young boy in playground
Photo: Vimal Bhojraj

Pg. 77: Cotton field
Copyright: David Sucsy, courtesy I Stock Photos

Pg. 79: Cotton ginning
Photo: courtesy Chetna Organic

Pages 83 to 94: photos by Vimal Bhojraj

Bales of cotton in a factory
Cotton being spun
Cotton being wound onto reels
Different thicknesses of cotton threads being wound onto reels
Industrial power looms
Colored cotton textiles in a shop
Pg. 98: Khadi cloth
Photo: Vimal Bhojraj

Pg. 99: Illustration of Mahatma Gandhi on the spinning wheel
Image made available by S. Balaram

Pg. 101: Gandhi before embarking for England in 1931
Copyright: Vithalbhai Jhaveri/GandhiServe

Pg. 103: Woman hand spinning cotton
Photo: Vimal Bhojraj

Pg. 105: Woman spinning cotton
Photo: Vimal Bhojraj

Pg. 107: Weaving Khadi
Photo: Vimal Bhojraj