



# Unraveling the Threads of the Indus Valley Civilization: A Study of Textiles and Their Chronology

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## Abstract

*Textiles, composed of interlocked fibers of yarn or thread, are crafted from a range of materials such as cotton, wool, linen, jute, and silk, sourced from natural origins such as animals, plants, minerals, and synthetic sources. The earliest traces of textiles in South Asia date back to the Neolithic period at Mehrgarh, Pakistan, around the 6th-5th millennium BCE. Subsequently, archaeological and palaeobotanical evidence from the Indus Valley Civilization, notably from Kunal, Harappa, and Mohenjodaro, further illustrates the development of the ancient textile industry. This paper delves into the archaeological evidence of textiles from the Indus Valley civilization, shedding light on the diverse materials, and probable chronology of textile production in this period.*

Keywords: Textiles, Indus Valley Civilization, archaeological evidence, diverse material, probable chronology.

## Introduction

The Indus Valley Civilization (IVC), also known as the Harappan Civilization, is one of the oldest civilizations in the world. It flourished in the Indus and adjoining river valleys during the second half of the third millennium BCE. The beginning of studies on the Indus Valley Civilization can be traced back to 1829 when Charles Masson identified and described the ruinous mound of Harappa, identifying it as the ancient Sangala of Arrian. However, no proper chronology was identified for the IVC during that period. Alexander Cunningham carried out minor excavations at the site of Harappa, made the first site plan, and designated the principal mounds at the site. After the excavation of Harappa and Mohenjo-Daro (1920-24), during the time of Marshall, the findings of the excavations were published in the Illustrated London News on 20 September 1924. The news drew the attention of several scholars and Sayce identified the similarities and close resemblance of objects with those of the antiquities found in Mesopotamia. Especially the seals of Harappa, Mohenjo-Daro, and Mesopotamia were found identical. A clear chronological framework emerged for the newly christened Indus Valley Civilization then only. Approximately 3000 sites of the Indus Valley Civilization have been identified so far. Sutkagen-dor (Pakistan -

Iran Border) in the west, Shortugai (Afghanistan) in the north, Alamgirpur (U.P, India) in the east, and Diamabad in the South are considered as the extent of Indus Valley Civilization (Prabhakar, 2013,1-8).

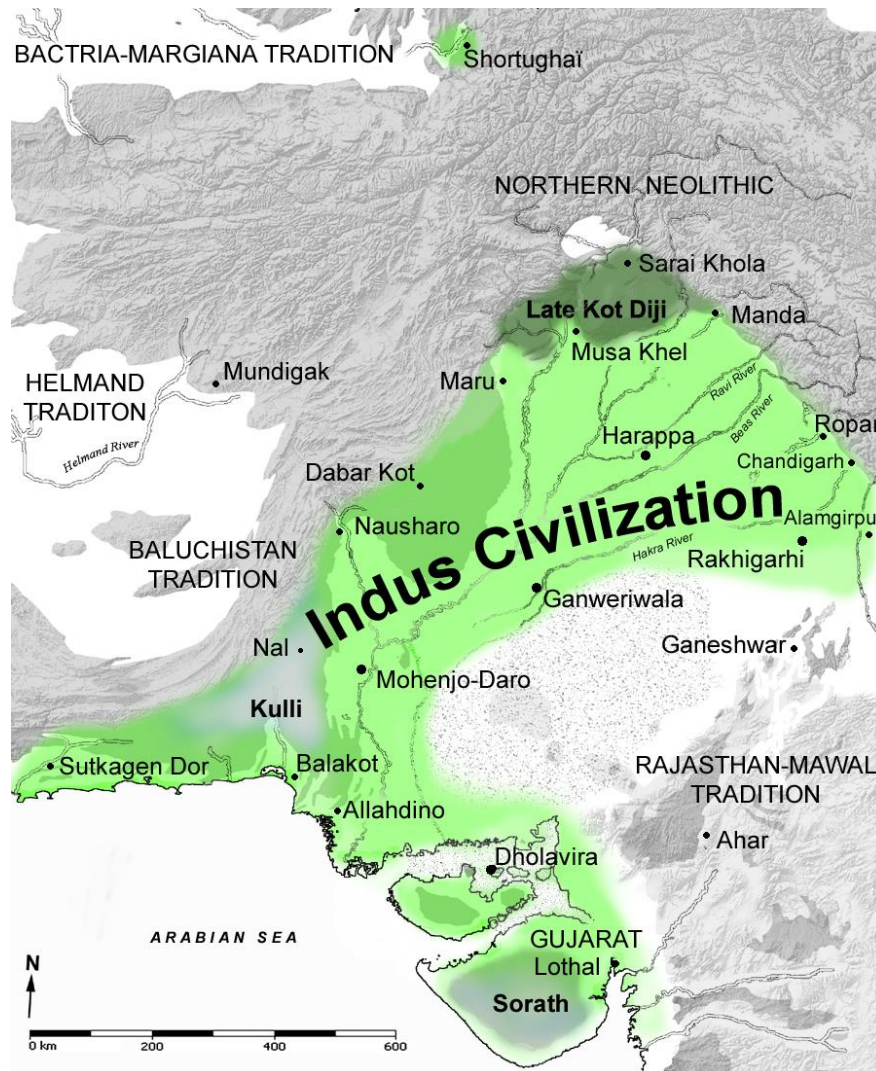


Figure 1: Indus Valley Civilization and some other contemporary material cultures (Photo Courtesy: Law, 2009)

All kinds of development can be noticed during the Indus Valley period, including advancements in town planning, standardization of pottery, bricks, weights, and measures, seals and sealing, Jewellery, tools, and weapons, art, religion, and disposal of the dead, trade and commerce, writing systems, and more. Similarly, the textile industry was also highly prominent during this period, as evidenced by archaeological findings from various sites.

The word “textile” is derived from the Latin adjective “textilis,” which means 'woven'. "Fabric, cloth, and material" are also used in textile assembly trades as synonyms for textiles. The earliest archaeological evidence of textiles dates back to the discovery of dyed flax fibers in a series of Upper Paleolithic layers at Dzudzuana cave, located in the foothills of the Caucasus in the Republic of Georgia, dated to 30,000 BCE. This evidence suggests that textile-like materials have been crafted since prehistoric times onwards (Kvavadze et al., 2009). Evidence of textiles has been reported from archaeological excavations across different parts of the world such as direct evidence like cloth and thread, and palaeobotanical evidence like seeds, cloth impressions, pseudomorphs, and decorations in terracotta figurines and other objects. Several literary works in the later period also mention the textiles of ancient textiles. According to the literature, the four major types of textile fibers mentioned are Balka, Phala, Kauseya, and Rankava. Balka is identified as bark fiber (flax/linen, Jute, etc.), Phala is seed fiber (cotton),

Kauseya is a fiber made from the cocoon (silk), and Rankava is mostly made from animal hair (wool) (Singh, 1994).

### Materials and their chronology

Cotton, silk, wool, Jute, and flax/linen are the major types of textiles reported from various Indus Valley sites so far. As mentioned earlier, the earliest evidence of textiles in South Asia is cotton reported from the Neolithic period of Mehrgarh, in Pakistan. Cotton fibers from a burial (Moulherat. et.al.,2002) and copper seeds from a mud-brick platform (6th-5th millennium BCE) have been reported from the site (Kenoyer, 2004) Other sites are, cotton seeds reported from Harappa, Pakistan dated to a period of 2600-1900 BCE (Nath, 2019). Cotton thread from a corroded silver Jar (Kenoyer,2004.4) and cotton cloth were reported from Mohenjo-Daro, Pakistan dated to 2600-2000 BCE as well (Nath, 2019).

In the Indian context, Dholavira in Gujarat has reported finding a cotton thread within a copper bead (Bisht, 2015). Similarly, impressions of reeds of cotton plant woven cloth were discovered in a terracotta sealing from Lothal, Gujarat, while cotton cloth impressions were found in potsherds, seals, and fissures from Kalibangan in Rajasthan (Lal, B.B. et al., 2015). Additionally, cotton seeds have been unearthed from Kunal in Haryana, dated to 2600-2500 BCE, and from Banawali in Haryana, dated to 2200-1900 BCE. Charred remains of cotton cloth, dated to 2500-2000 BCE, were found in Rakhigarhi, Haryana, and cotton seeds were discovered in Sanghol, Punjab, dated to 1900-1400 BCE (Nath, 2019).



Figure 1. Rakhigarhi: Black-on-Red ware vase fragment showing remains of textiles (Photo Courtesy: Nath, 2019)

The earliest evidence of silk reported so far is silk protein found in three tombs at Jiahu in China. Chemical analysis revealed evidence of silk proteins in two of the three tombs, one of which dates back 8,500 years (Choi, 2017).



Harappa and Chanhudaro in Pakistan, and Shikarpur, Gujarat in India are the sites where silk has been reported thus far.

Silk pseudomorphs or actual extant textiles have been found in bronze artifacts such as razors and bowls, along with silk threads (*A. Assamensis*) in microbeads (fused clusters of microbeads from a bronze bowl) dated to the mid-3rd millennium BCE, identified from Chanhudaro in Pakistan. Three specimens of silk were identified from the Harappa area: two silk thread fibers and an intact silk thread fragment. The first specimen of silk thread fiber (*A. Assamensis*) was found in a copper bead dated to 2200 BCE, and specimen number two is the intact fragment (*A. Assamensis*) collected from inside the copper bead, also dated to 2200 BCE. Specimen number three is a silk thread (*A. Mylitta*), dated to 2450 BCE and collected from inside the copper wire ornament (Good et al., 2009). A copper knife specimen, appearing to be either fine seed hair or possibly silk, has been identified from the excavation at Shikarpur, Kutch (Costa et al., 2013).

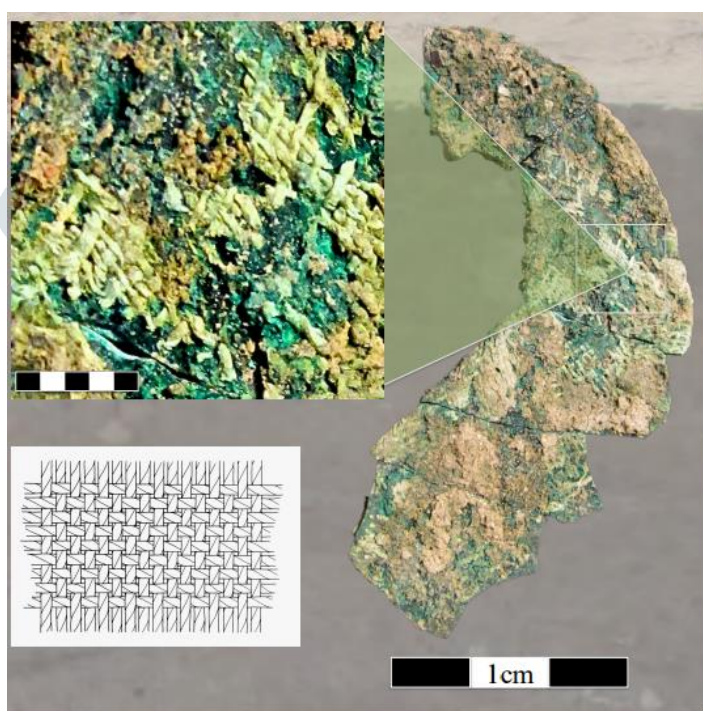


Figure 2. Copper knife with the impression of textile, fine seed hair, or possibly silk  
(Photo Courtesy: Costa. et al.,2013)

The earliest evidence of jute is noted as an impression on a ceramic shred (Dish on stand) at Harappa in Pakistan, dated to 2200-1900 BCE (Wright et.al., 2012). Dholavira and Rojdi in Gujarat are the two sites in India where jute has been reported so far. Jute pseudomorphs in pottery have been identified in Gujarat (Bisht, 2015), and seeds have been reported from Rojdi (Fuller, 2008).

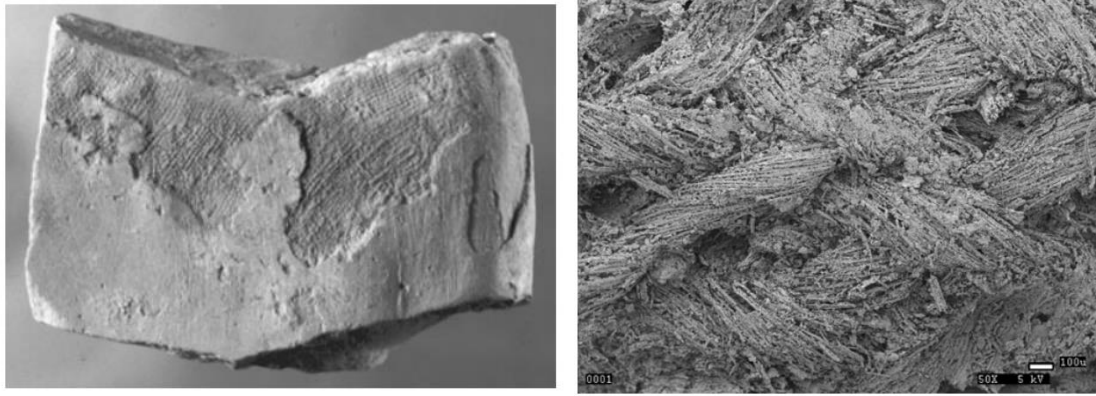


Figure 3 A & B :Harappa: A. Ceramic Shred with Textile Impression and B. Scanning electron micrograph of jute textile feature at low magnification (Photo Courtesy: Wright. et al.,2012)

Wool is reported from Harappa in Pakistan in a copper razor (Kenoyer 2004.5)

Linseed/flax seeds are reported from various Indus Valley sites. The earliest evidence is from Kunal in Haryana, dated to 2850 BCE (Nath, 2019). Rojdi in Gujarat (Nath, 2019), Balathal in Rajasthan (Kajale, 1996), Nausharo in Balochistan dated to 2500-2000 BCE (Fuller, 2008), late Harappan sites such as Pirak in Balochistan dated to 1950-1550 BCE (Fuller, 2008), and Babar Kot in Saurashtra dated to 2000-1700 BCE (Reddy, 1994; Fuller, 2008), along with other Chalcolithic sites like Ojjiyana in Rajasthan dated to 2500-2000 BCE (Pokharia & Saraswat, 2004; Fuller, 2008), Diamabad (Vishnu Mittre, 1961; Fuller, 2008), and Navdatoli in Maharashtra (Jorwe Phase) dated to 1500-1200 BCE (Fuller, 2008) are the other sites where linseed/flax seeds have been reported thus far.

### Concluding Remarks

Apart from the direct evidence from IVC sites, several indirect pieces of evidence such as textile decorations on terracotta figurines, impressions in potsherds, and artifact remains like copper needles, adzes, and spindle whorls provide valuable clues for reconstructing the textile industry. Apart from that Mesopotamian texts narrate the imports of textile products from Meluhha as well (Nath, 2019).

The information discussed above provides general insights into the textile industry of the Indus Valley Civilization, including evidence of diverse materials and chronology. Cotton, silk, jute, wool, and linen are the diverse materials found at various sites. Linseed/flax seed, reported from Kunal, Haryana, dated to 2850 BCE, represents the earliest palaeobotanical evidence available in this region.

The cultivation of cotton and the breeding of sheep and goats in various Indus Valley regions might have been early sources of development for cotton and wool products in this region. The earliest evidence of cotton dates back to 2600 BCE from Harappa, and Mohenjodaro. The evidence of the earliest silk reported from Harappa and Chanhudaro, both are dated to 2450 BCE. The earliest evidence of Jute dates back to 2200 BCE from Harappa. Both artefactual and palaeobotanical evidence provide clues to the manufacturing process, including cultivation, spinning, weaving, stitching, and decoration on terracotta figurines, shedding light on the final product.

## Acknowledgment

The author wishes to express heartfelt thanks and gratitude to Dr. Ambily C.S., Assistant Archaeologist at the Archaeological Survey of India, for valuable guidance and suggestions on this paper.

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