

OCCASIONAL PUBLICATION 48

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Harappans and their Mesopotamian Contacts

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The Occasional Publication series is published for the India International Centre by Cmde. (Retd.) R. Datta.

Designed and produced by FACET Design. Tel.: 91-11-24616720, 24624336.

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Introduction

The Harappan culture flourished in the Indus and adjoining river valleys during the second half of the third millennium BCE. The research carried out in this field for nearly a century has harnessed an enormous amount of data which has been helpful in understanding the formative stages through the maturity, deurbanisation, and the ultimate transformation to rural cultures through investigations by various scholars like Cunningham (1875: 105-108), Marshall (1930), Mackay (1938), Wheeler (1968), Joshi (1993), Lal (1978: 65-97), Thapar (1973: 85-104), Bisht (1987; 1991: 71-82), Possehl (1999), Kenoyer (1991), to name a few. Ever since the concept of the 'Indus Civilisation' was understood in the 1920s, more and more sites were added to the corpus of Harappan sites, and the site count today stands at 477 for early Harappan; 1,022 for mature Harappan, and 1,281 for post-urban Harappan cultures (Possehl 1999: 1-33). The recent excavations at places like Harappa (Kenoyer et al. 1991: 331-75), Dholavira (Bisht 1976: 16-22; 1987; 1991: 71-82; 1993: 35-38; 1994: 23-31), Rakhigarhi (Nath 1997-98: 39-45), etc., have enabled us to understand the dynamism in the evolution, maturity and ultimate decline of this civilisation.

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*Lecture delivered at the India International Centre on March 1, 2013 by V. N. Prabhakar

Charles Mason gave a description of what he saw of the great ruinous mound of Harappa in 1826, when he identified the mound to be of ancient Sangala of Arrian. The next account of a Harappan site is of Amri by Alexander Burnes, who made a voyage up the Indus river in 1831.

Burnes also visited Harappa in 1831, five years after Mason, and described it as an extensive mound nearly three miles in circumference. The first Director General of the Archaeological Survey of India (ASI), Alexander Cunningham, was the next visitor to Harappa on three occasions, 1853, 1856 and 1875. In his report in 1875, Cunningham (1875: 105) noted 'the ruins of Harappa are the most extensive of all the old sites along the banks of the Ravi'.

The size of Harappa was given as 2.5 miles (4 km) in circuit and the height varying from 12 to 18 m. Cunningham also noted with regret that extensive damage had been caused to the site due to the removal of bricks from this site for use as brick ballast by railway contractors, most probably for the Lahore–Multan railway line. Cunningham also carried out a minor excavation at the site, but could not assign any satisfactory chronology to the ruins. He has the credit of making the first site plan and designated the principal mounds at Harappa as A-B, C, D and E, which are still in use today. Cunningham described the find of a single seal as a most curious one, which was made of smooth black stone without polish (Cunningham 1878: 108). He also described stone implements, pottery and a ring stone.

Sir John Marshall also published two more Harappan seals in 1922, prior to the understanding of the Indus civilisation. He described the legends to be in pictographic script, which is yet to be deciphered. Meanwhile, some other sites of the Harappan civilisation were being discovered, albeit on a random basis, and without understanding their real significance. One such site was Sutkagen-dor located in the Dasht valley of Makran, which was first noticed by Major E. Mockler in 1875 (Possehl 1999: 53). Sutkagen-dor was the western most Harappan site, and Mockler also did a minor excavation in 1876 to reveal houses built of burnt bricks, stone knives, bone, pieces of copper, pottery, etc. The site was later investigated by Sir Aurel Stein who brought to light several evidences related to habitation, disposal of dead, etc.

Dr. Fritz Noetling, a palaeontologist of the Geological Survey of India (GSI), first recognised the importance of the large mound at Dabarkot as an archaeological site

in 1898 (Possehl 1999: 55). Noetling also visited sites like Periano Ghundai (1897) and Rana Ghundai (1898), made collections and published small reports. Sir Aurel Stein (1904) visited Dabarkot, where he later conducted a small excavation in 1927. The site of Kalibangan was described as an ancient site as early as 1829 as 'Kali-bang' by Lt. Col. Tod. Luigi Pio Tessitori again visited the site in April 1917, and undertook a small excavation in 1918. Tessitori also calls Kalibangan 'Kali Vangu' and 'Kali Banga' (Luigi 1918-19: 22-23). D.R. Bhandarkar discovered the great site of Mohenjo-daro in 1911-12, and described the ancient mound spreading over three-fourths of a mile, and near whose western edge a tower rises to a height of nearly 70 feet from the surrounding ground level. Later, R.D. Banerji visited the site in 1919-20 and gave a vivid description of the site and its remains, describing it as an important site.

The arrival of Sir John Marshall as the Director General of ASI in 1902 revived interest in the further investigation of the three reported seals which were preserved in the British Museum at that time. Two assessments of the mound of Harappa were made, the first one by Pandit Hira Nanda Sastri in 1909, and the second by Harold Hargreaves in 1914. Later, the site of Harappa was put into excavation under Rai Bahadur Daya Ram Sahni, the Superintending Archaeologist of the Northern Circle of ASI in the winter of 1920-21. One of the earliest conclusions was that, '...the Harappa seals and their curious pictographic legends belong to the pre-Mauryan epoch; and it is to be remembered that the digging to date has pierced only the topmost levels' (Possehl 1999: 59). R.D. Banerji started excavation at Mohenjo-daro almost simultaneously in 1921-22, and the discoveries made here were seen in the light of the material coming from Harappa. By 1923-24, Banerji suggested that there was a definite relationship in the material coming from both these sites. However, Marshall himself made the final assessment in 1924 when he brought the materials from both Harappa and Mohenjo-daro together and compared them directly. Marshall could deduce that the finds of these sites belonged to the same stage of culture, were approximately of the same age, and that they were totally distinct from anything previously known in India (Marshall 1923-24: 48).

The findings were published in the *Illustrated London News* on 20 September 1924 and were widely publicised. The news item drew the attention of scholars and immediately Sayce responded by pointing out the similarities and close resemblance in some of the objects of the Indus Valley with those of antiquities found from Mesopotamia (Sayce

The creation of India and Pakistan in 1947 placed almost all but two known Harappan sites in Pakistan, leaving Kalibangan and Rangpur in India. The renewed exploration on both sides brought to light a large number of sites belonging to early, mature and late Harappan phases.

1924: 566). Mackay also pointed out some of the similarities in ceramics and a seal found from Kish and Mohenjo-daro. The seal was identical to those found in Harappa and Mohenjo-daro and from the debris beneath a temple from Hammurabi's time (Marshall 1923-24: 48). Several other examples of Harappan antiquities found in Mesopotamia are known to us since then. Thus, a clear chronological framework emerged for dating the newly christened Indus Valley Civilisation or Harappan Civilisation (which is more prevalent now). A timeframe of 4th–3rd millennium BCE was now possible for dating the earliest culture of the Indian sub-continent. The presence of Harappan antiquities in Mesopotamia clearly indicated the relationship between these two cultures and opened a new chapter in inter-regional contacts and trade relations since the third millennium BCE.

The excavations at Harappa and Mohenjo-daro continued well into the latter half of the 1930s. During this period, various parts of both these sites were excavated. The first cemetery site at Harappa, christened Cemetery H, was discovered by K.N. Sastri in 1927 after a heavy downpour during the monsoon season and was subsequently excavated. Cemetery H belonged to the late Harappan phase of the Harappan culture and it had parallels with the material coming from Jhukar in Sindh, which was discovered by Majumdar (Possehl 1999: 90). K.N. Sastri was also credited with the discovery of another cemetery site at Harappa, Cemetery R37. This cemetery belonged to the mature Harappan phase and was the largest cemetery dated to this period. At Mohenjo-daro, no cemetery remains could be found; however, sporadic occurrences of skeletal remains and post-cremation urns from the habitation area were brought to light. The other Harappan sites excavated during this period were Rangpur by M.S. Vats (1934) and Chanhudaro by E.J.H. Mackay (1935-1936). Chanhudaro yielded the stratigraphic relationship between the mature and late Harappan phases. It also yielded evidence on the bead and seal-making facilities at this site. Wheeler made a brief excavation in 1946 at Harappa of the defenses and cemetery area. He established the stratigraphic relationship between Cemetery R37 and H, and proved that the latter is younger than the former. Cemetery R37 was again put into excavation by M.R. Mughal in 1966 and by the project initiated by G.F. Dales, which helped to define the various phases in the cemeteries at Harappa.

The creation of India and Pakistan in 1947 placed almost all but two known Harappan sites in Pakistan, leaving Kalibangan and Rangpur in India. The renewed exploration on both sides brought to light a large number of sites belonging to early, mature and late Harappan phases. Many sites were also excavated, the major among them being Rangpur and Lothal (Rao 1979; 1985), Kot Diji (Khan 1965: 11-85), Kalibangan (Thapar 1973: 85-104; 1975: 19-32; Lal 1979: 65-97)—which was excavated for nine field seasons from 1960-61 to 1968-69; Dholavira (Bisht 1991: 72-81), renewed excavations at Harappa (Kenoyer 1994: 71-80), Rakhigarhi (Nath 1997-98: 39-45), to name a few. The excavation at Mehrgarh opened a new chapter in the history and archaeology of the Indian sub-continent in terms of transformation from food gathering to food producing stages (Jarrige et al. 1995).

Several other sites were also excavated during this period which include Balakot, Banawali, Rojdi, Surkotada, Kuntasi, Bagasra, Nageshwar, Shortugai, Bhagwanpura, Mitathal, Ropar, Hulas, Alamgirpur, Allahdino, Kili Gul Muhammad, Miri Qalat, Gumla, Rahman Dheri, Baror, Bhirrana, Tarkhanawala Dhera and Juni Kuran, which have helped us to understand the various stages through which Harappan culture has evolved, transformed, reached its zenith and ultimately dissipated into several regional cultures. As mentioned above, the various explorations and excavations have enabled us to better understand the spatial distribution of the sites in terms of the geography and changing environments. The most prominent among the exploratory surveys are the Cholistan survey by Mughal and the Ghaggar-Drisadvati survey by Ghosh, which brought to light a large number of sites of early, mature and late Harappan phases.

Terminology and Chronology

Ever since the identification of the Indus Valley Civilisation by Marshall in 1924, and a relative chronology emerged based on the identification of Harappan antiquities from datable levels in Mesopotamian sites, the various stages, phases and chronology of the Harappan culture have undergone many revisions and corrections. The advent of radiocarbon dating also greatly helped in understanding the chronology of the Harappan civilisation. The initial suggestions in the 1920s were that the mature Harappan phase might be as old as ca. 3000 BCE and the civilisation itself could have lasted for 1,000 years (Possehl 1999: 17). Later, Wheeler suggested a time period of

2500–1500 BCE for the Harappan civilisation, while Walter Fairservis, based on the evidence emerging from the pinpointing of Harappan antiquities from Mesopotamia into a clear chronological framework, suggested only a 500-year duration for the Harappan Civilisation, from 2500–2000 BC. Now it has been clearly understood that the Harappan Civilisation was a contemporary of the Egyptian, Mesopotamian and Chinese civilisations.

The advent of radiocarbon dating technology and the dating of several archaeological sites through this method enabled archaeologists to arrive at a proper chronological framework. In 1964, Agrawal demonstrated that the dates suggested by Fairservis of a shorter chronology might be supported by the radiocarbon data set. The method of calibration of radiocarbon dates further helped in determining the reasonable time bracket for the Harappan Civilisation and the presence of a large number of radiocarbon dates available through the various excavated sites have also enabled in fixing the proper chronology. The results of various excavations have also helped archaeologists in understanding the various phenomena and stages through which Harappan culture as a whole is represented.

There were several developmental phases before which the mature Harappan culture actually emerged and it encompassed a large area. These developmental phases were being identified from various sites like Amri, Kalibangan, Harappa, Mehrgarh, Kot Diji, and a host of others. The archaeologists used various terminologies like 'pre-Harappan', 'early Harappan' for the culture that immediately preceded Harappan culture. The evidence from Mehrgarh and its neighbouring sites like Nausharo, Pirak and Sibri brought to light an excellent and continuous evolution of cultures starting from the Neolithic culture onwards to the beginning of the Iron Age, through the Chalcolithic and Bronze Ages. The evidence from Mehrgarh is from the food gathering to the food producing stages and the gradual evolution and development into the settled and urban characters of the culture. The evidence from Mehrgarh is also supplemented from sites like Kili Ghul Muhammad and hence enabled archaeologists to define several phases / stages, starting from the food gathering to the Iron Age. Based on the cultural strata at Kot Diji, Rafique Mughal proposed that Harappan culture evolved from the cultural traits that immediately preceded it, and hence named it 'early Harappan period'. The terminology 'early Harappan period / culture' is more predominant while describing the culture that preceded the mature Harappan period / culture.

Similarly, the terminology of 'post-Harappan' and 'late-Harappan' is used to address the culture that immediately succeeded the Harappan culture and had some cultural traits continuing in them. However, some archaeologists like Possehl use the terminology 'post-urban' to the cultures that succeeded the Harappan culture, mainly on the basis of the urban and non-urban characters that differentiate these cultures. The 'post-urban' phase also included the ochre coloured pottery ware culture and painted grey ware culture which have been argued to represent the continuities of Harappan culture. Scholars like Possehl and Kenoyer have revised the chronology of the Harappan Civilisation based on the radiocarbon dates available from several excavated sites, and now there is a general agreement over the time period c. 2600–1900 BCE.

Almost contemporary to the Harappan and late Harappan cultures were other cultures like Ahar-Banas in Rajasthan; Kayatha; Malwa; Jorwe; North Indian Neolithic in Kashmir and Gangetic Plains; and some of the south Indian Neolithic sites. The chronology of these cultures has been redefined several times recently and they flourished during the second half of the third millennium BCE to the second millennium BCE. Hence, the Harappan and late Harappan cultures were not flourishing in isolation, and every chance of their interaction with some or many of the above-mentioned regional cultures of India cannot be ignored.

Further, the explorations carried out in various parts of India and Pakistan for over a hundred years have brought to light a large number of sites of the Harappan cultures and those preceding and succeeding it.

These are spread across various spatio-temporal circumstances. Of all the sites known to us, only five sites can in real terms be classified as cities, all of which measure in area above 60 ha. They are Harappa, Mohenjo-daro, Rakhigarhi, Ganweriwala and Dholavira. Nearly 90 per cent of the sites measure less than 5 ha and they can be termed as rural or town or village settlements. Thus, the settlement pattern clearly indicates that the larger settlements supplemented and complemented medium sized and smaller settlements. The map gives a fair idea of the distribution pattern of the

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Harappan sites. It shows the areas under occupation and expansion during the early, mature and later / post-urban phases of the Harappan culture. The gradual shifting of sites towards the eastern direction in the modern states of India like Haryana, western Uttar Pradesh, and Punjab also coincides with the drying up of river Sarasvati, which is marked by the present day dry riverbed of river Ghaggar, active during the monsoon season.

Features of the Harappan Civilisation

Several common features characterise all the sites of the Harappan Civilisation spread over nearly 1.5 million sq km. Sutkagen-dor in the west on the Pakistan–Iran border; in the north by Shortugai (Afghanistan); Alamgirpur (UP, India); and Daimabad (Maharashtra, India) mark the extent of the Harappan Civilisation. The recent researches have also raised a question on the extent of the Harappan Civilisation into Maharashtra based merely on a few elements. Some scholars like Law (2011) have preferred to limit the extent of Harappan Civilisation up to the Kachchh area in Gujarat. The sites located in the Saurashtra area of Gujarat have been placed under a

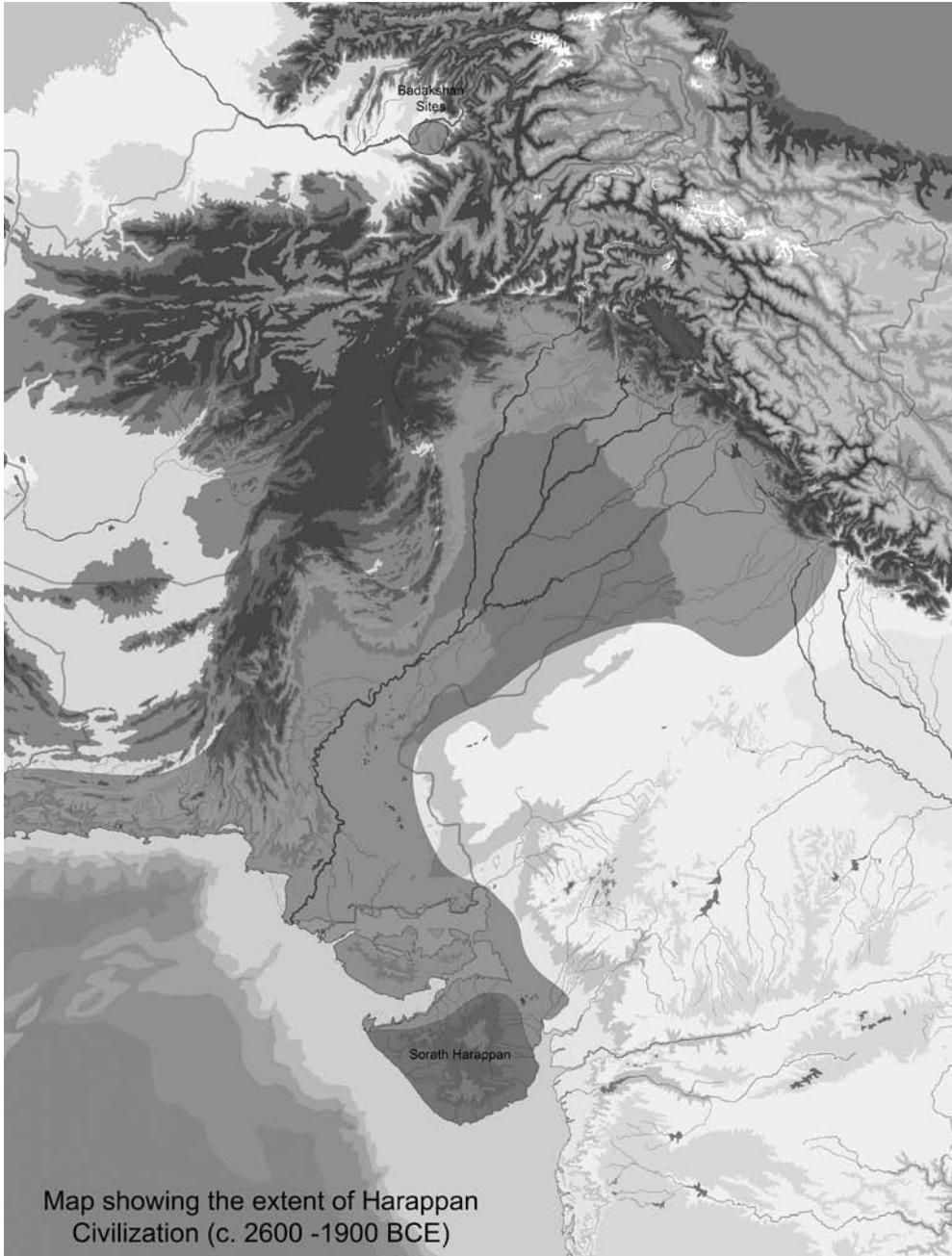
The cities and towns were also well planned in terms of layout of streets, lanes and by-lanes, often crossing each other in 90 degrees. Provisions for drainage of waste water away from the habitation areas were also noted.

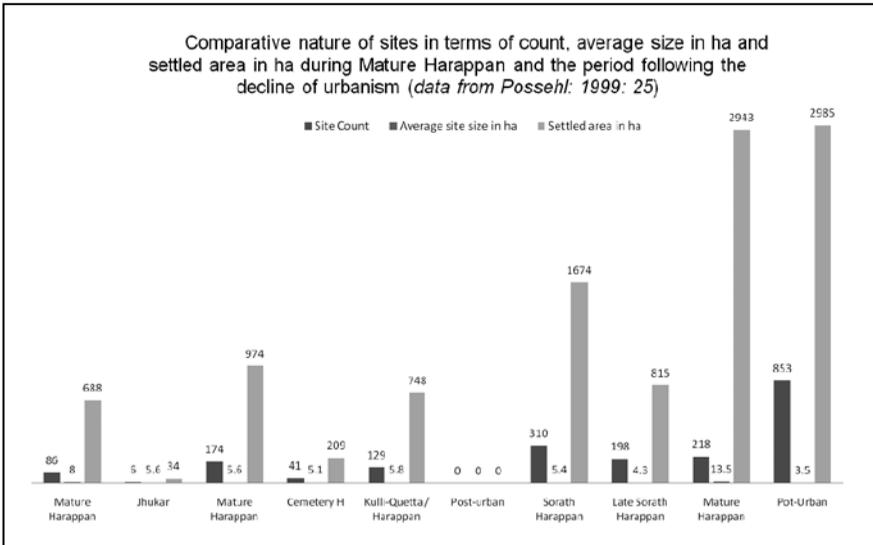
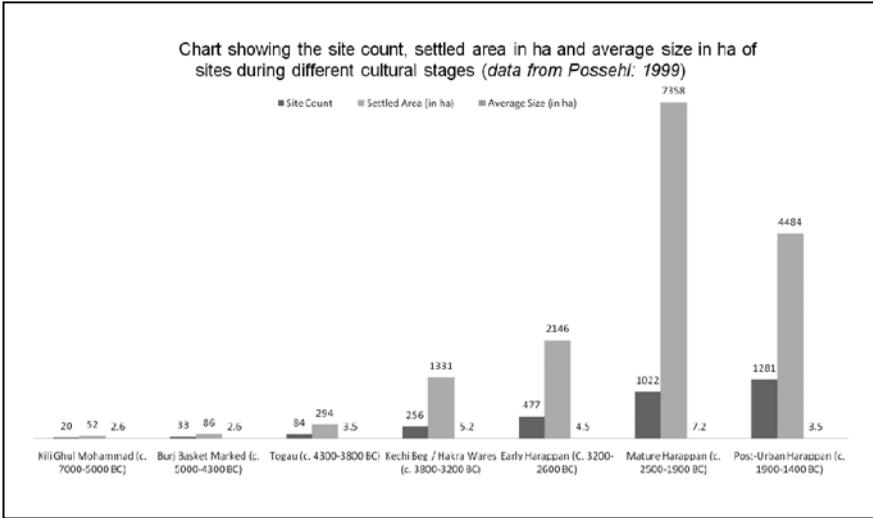
separate category of Sorath Harappans. The main features that define Harappan Civilisation have been dealt with briefly here.

Planning

As already mentioned, the major Harappan cities like Harappa, Mohenjo-daro and Dholavira have brought to light excellent evidence of a specific planning in the layout of habitation areas. Similar planning was evidenced from sites like Kalibangan, Lothal, Banawali and Surkotada. The habitation areas were often circumvallated by a periphery or a boundary wall, preferably termed fortification by several scholars. Often, individual divisions within the city were also found to be surrounded by fortification walls.

Examples of this can be cited from sites like Harappa, Dholavira, Kalibangan, etc. The cities and towns were also well planned in terms of layout of streets, lanes and by-lanes, often crossing each other in 90 degrees. Provisions for drainage of waste water away from the habitation areas were also noted in the form of underground drains all along the streets. Further, evidence for soakage jars and other means for disposal





of waste water were also found. This evidence indicated the presence of a civic authority to monitor and regulate the public amenities for the overall cleanliness of the city or town.

Standardisation of Items

The Harappan Civilisation was also marked by standardisation of several items like pottery, bricks, weights and measures, seals and sealings.

Pottery

The Harappan culture was characterised by plain pottery as well as red slip and black painted motifs. The pottery was of several shapes like dish-on-stands, storage jars, perforated jars, goblets, S-shaped jars, plates, dishes, bowls, pots, etc. The painted motifs generally seen on the pottery were pipal leaf, fish-scales, intersecting circles, zigzag lines, horizontal bands, geometrical motifs, floral and faunal patterns, etc.

Bricks

The Harappans used various building materials for their construction. They consisted of baked and unbaked bricks, stones (both dressed and undressed), etc. The most prominent aspect was the ratio of 1:2:4 maintained in the manufacture of bricks, both baked and unbaked. The various brick sizes noted are 7 x 14 x 28 cm; 8 x 16 x 32 cm; 10 x 20 x 40 cm. The ratio of bricks seen during the Harappans is also different from that of the early Harappan period, which was 1:2:3.

Weights and Measures

Another important aspect related to commerce and trade during the Harappan times was the usage of weights and measures. The cubical chert weights were conspicuous items from any Harappan site. The weights were based on a binary system, which doubled as they increased in the ratio of 1:2:4:8:16:32, etc., with the 16th ratio amounting to 13.63 gm, which was the basic reference system. Any weight found from the Harappan sites was a multiple or a fraction of 13.63 gm. The weights following this ratio were found in various materials like chert, chalcedony, ivory, shell, copper and terracotta. Another weighing system along with the cubical ones was also found from the Harappan sites. The shape of these weights was truncated spherical. The presence of different weighing patterns from the same sites indicated that the Harappans might have adopted two or more weighing standards, for both inland as

well as export trading. It is also interesting to mention here that an Isin - Larsa period (ca. 1900–1800 BCE) text from Ur (modern Iraq) mentioned that 13,100 mana of Dilmun (modern Bahrain) was equivalent to 611 gin $6 \frac{2}{3}$ mana of Ur standard, by which the equivalent of Dilmun mana could be calculated as 1,371.5 to 1,376.8 gm. This was equivalent to multiples of hundred in the Harappan weighing systems. This clearly indicated the adoption of the Harappan weighing system in distant lands to facilitate the trading mechanism.

Seals and Sealings

The seals from various mediums like steatite, copper, terracotta and ivory were a most prominent item of the Harappans. The seals might have served as an important trade symbol facilitating approval and passing of commercial items. The impression of the seals was also found from many Harappan sites, which indicated the differential patterns of usage of Harappan seals. Further, studies carried out by Dennys Frenez on the Lothal sealings have also indicated the medium on which they were fixed. The prominent type of seal was the typical square seal with a pronounced boss on the reverse with a hole for inserting a thread to hold it. The front face of the seal normally consisted of an upper and lower portion. The lower portion contained an image of an animal, while the upper portion generally had a text, in single or multiple lines. The text was in the Harappan script, which is yet to be deciphered.

So far, over 5,000 texts have been found from various Harappan sites, both from excavation, explorations and chance discoveries. The text was in over a dozen media—steatite, faience and metal seals; clay seal impressions; pots and potsherds; copper plates; incised shells; ivory cones and rods; stone and metal bangles; copper weapons; and stones. The longest inscription so far found had 17 symbols. The total number of symbols from the Harappan script was an estimated 400. The inscriptions indicated that they were written from right to left, while other types are also found, e.g., boustrophedon. A large inscription consisting of 10 Harappan signs from the western chamber of the North Gate, Dholavira, is the largest inscription found so far. According to R.S. Bisht, the excavator of this site, this inscription might have been a signboard of the city, fixed on a wooden board and placed somewhere near the North Gate.

Tools and Weapons

The tools and weapons from the Harappan period are of various mediums. The tool repertoire consisted of chert blades, bone and ivory points, and points, chisels, needles, fishhooks, razors, weighing pans, mirror, antimony rods of copper. The chert blades fashioned from Rohri chert is a prominent item of the Harappans. The uniform presence of Rohri chert blades as well as cubical weights from most of the Harappan sites spread over a wide area indicated long distance trade and preference for such items. While the cubical chert weights were an essential item of trade and commerce, the presence of chert blades which served as multi-purpose tools for various activities from many sites was also interesting. The weapons normally noticed from Harappan sites were of either copper or bronze. The weapon repertoire consisted of arrowheads, spearhead, celt, axe, etc. These items, once hafted with a proper medium, should have served the purpose of effective weapons for defence as well as offence.

Jewellery

Items of jewellery from the Harappan Civilisation served as an important component of trade, within the limits of civilisation as well as with distant and foreign countries. The jewellery items were in various mediums like gold, silver, copper, stones and minerals, faience, terracotta and stoneware. It had been recorded by Law that during the mature Harappan phase at Harappa, nearly 40 different* kinds of rocks and minerals were exploited by the Harappans from different geographic zones. The presence of bead-working areas in several sites in Gujarat like Dholavira, Shikarpur, Nagwada, Lothal and Khirsara clearly indicated that the specialised manufacturing of such crafts as the raw material sources of agate-carnelian were in abundance in this region.

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Almandine Garnet, Basalt, Calcite, Cerussite, Chalcocite, Dolerite, Ernestite (aluminium silicate and mullite-cristobalite), Fluorite, Fossils, Gabbro, Galena-Antimony, Gneiss, Goethite, Gold, Granite, Gypsum (var. alabaster, selenite), Hematite*, Lapis Lazuli*, Limestone*, Malachite, Massicot Litharge, Microcline* (var. amazonite), Microcrystalline silicates* (var. agate, chert, jasper), Prehnite, Quartz crystals, Quartzite*, Rhyolite, Rock Crystal, Sandstone*, Schist*, Serpentine (var. lizardite), Siltstone, Slate*, Steatite*, Sulfur, Tourmaline, Tremolite, Turquoise, Vesuvianite-Grossular, Wulfenite. (*)marked varieties were noticed both in early and mature Harappan periods at Harappa.

Further, the Harappans specialised in the drilling process of high- hardness materials like agate-carnelian. The presence of stone drills, tentatively named 'erdestite' in the absence of proper identification of the mineral, from sites in Gujarat was also an indicator of their specialisation. This clearly indicates the expertise of the Harappans in identifying and exploiting the various sources of raw materials from different eco-zones. Among the items of jewellery, the most important are the agate-carnelian beads consisting of long-barrel cylindrical varieties, etched carnelian in terms of export items to the Mesopotamian world.

Faience was another interesting medium of manufacture, which was largely exploited by the Harappans. Various items like bangles, beads, buttons, small containers, seals, etc., were produced using faience. Faience is an artificial material which is a partly vitrified quartz, produced by heating reground frit, <30 micron grain size, fired at 940° C high to low porosity and different degrees of vitrification.

The manufacture of stoneware bangles was another highly specialised craft which disappeared with the Harappans. The evidence from Mohenjo-daro indicated that the manufacture of such bangles was restricted to a particular area and under highly controlled supervision, as seal impression was noticed on the containers used for manufacture. Often, the stoneware bangles contained graffiti on the surface, indicating the high value it carried.

Toys

The Harappan period was also characterised by a wide variety of toys and amusement items made largely of terracotta. They consisted of toy carts, rattles, wheels, tops, marbles, hopscotch, etc. The toy carts along with the various representations of bulls indicated the mode of transport of the Harappans and the style of manufacture.

Art

The artistic expressions of the Harappans are reflected in a host of figurines, both human and animal, largely made of terracotta. Examples of other mediums like stone and metal were also noticed. The most prominent examples are the so-called 'Priest King' of steatite, dancing girl of copper (both from Mohenjo-daro), stone sculptures from Harappa, Mohenjo-daro and Dholavira.

Religion and Disposal of Dead

The religious beliefs of the Harappans can be deduced from several depictions of narrative scenes from the seals, which indicate their preference for nature worship. The pipal tree attained wide acceptance and was depicted in various mediums indicating its prominence. The pipal tree was shown as being worshipped in a seal from Mohenjo-daro. Several narrative scenes on terracotta and seals also indicated the act of nature worship. Scholars like B.B. Lal have also written that the Harappans worshipped fire. He cites the evidence of fire altars from Kalibangan to indicate such a practice.

The Harappans had various modes of disposing of the dead. Evidence of cremation, post-cremation urns, burials of various kinds have been reported from several Harappan sites. The presence of post-cremation urns from sites like Mohenjo-daro, Chanhudaro and Harappa indicated that the bodies were cremated and burials erected after collecting the remains. Elaborate burials were also found from sites like Harappa, Kalibangan, Farmana, Rupnagar and Lothal, indicating extended inhumations in a north-south orientation. The skeletons were interred either in a simple burial pit, or inside a mud-brick lined pit and in wooden coffins. Evidence of pot burials alongside the normal burial modes was also found from sites like Kalibangan. The burials were accompanied by elaborate burial goods in the form of pottery of various types. In addition, personal belongings like bangles, necklaces, beads, mirrors, kohl jars, etc., were also found, indicating a belief in the afterlife.

Contacts with the Mesopotamians

The contacts that Harappans had with Mesopotamia were ascertained as early as 1924 when Sir John Marshall announced the discovery of the Indus Civilisation (Marshall 1924: 538). The publication of a number of Harappan seals and other objects from Harappa and Mohenjo-daro paved the way to the identification of similar finds from sites in Mesopotamia and Susa, thus establishing a link between these two great civilisations (Sayce 1924: 566; Gadd and Smith 1924: 614-16). Some of the earliest finds that were compared with Harappan antiquities came from Kish and included a typical unicorn seal with Harappan signs, long-barrel cylindrical beads of carnelian, and etched carnelian beads (Mackay 1925: 697-99). These findings also helped in

The pipal tree was shown as being worshipped in a seal from Mohenjo-daro. Several narrative scenes on terracotta and seals also indicated the act of nature worship.

placing the hitherto unknown Indus Civilisation in a proper chronological horizon. The subsequent excavation at Chanhu-daro by Mackay brought to light a large number of unfinished carnelian beads known to us as 'long barrel cylindrical beads'. Mackay wrote: '...Chanhu-daro numbers of unfinished beads were unearthed...not only large numbers of incomplete beads but also the raw material from which they were made, and, still more interesting, the actual stone drills by which they were bored, Chanhu-daro has proved to have been a great centre of bead-making...' (Mackay 1937: 2).

This was an important discovery which proved beyond doubt that similar finds from Mesopotamia were actually manufactured in the Indus Valley and exported by the Harappans. Harappan Civilisation is also identified with 'Meluhha' of the cuneiform records of Mesopotamia. The mention of 'Meluhha' is made for the first time in the cuneiform inscriptions of the Early Dynastic Period of the mid third millennium BCE (Possehl 1996:133-208). There is a reference by Sargon of Agade (2334–2279 BCE) that the ships of Meluhha, Magan and Dilmun were coming up to Akkad (Agade):

*'the ships from Meluhha,
the ships from Magan,
the ships from Dilmun,
He made tie-up alongside quay of Akkad.'*

Categories	References
Stone and pearls	Carnelian: 8 attestations Lapis Lazuli: 1 Pearls: 1
Woods and Plants	Gis-ab-ba-me-luh-ha: 12 Mesu wood: 7 Fresh dates: 1
Animals	A bird: 8, but 5 as figurines A dog of Meluhha: 1 A cat of Meluhha: 1
Metal	Copper: 2 Gold: 1
Meluhhan style objects	Ships of Meluhhan style: 2 Meluhhan style furniture: 3 Figurines of Meluhhan birds: 5

Scholars identified Dilmun with the Island of Bahrain and the near shores of the Arabian Peninsula, Magan with Oman, and perhaps part of the Iranian coast around the Straits of Hormuz, and Meluhha with the Greater Indus region including the Harappan Civilisation. Possehl (1996: 133-208) has compiled the reference to Meluhha and items of trade from which we learn that there are 76 citations of Meluhha. Meluhha is mentioned on the inscriptions as a region located beyond Magan. The following is the list of citations to items of import from Meluhha during the Early Dynastic Period (c. 2500 BCE) to Isin–Larsa Period (ca. 1900–1800 BCE):

The external trade that the Harappans had with Mesopotamia has been dealt with widely by scholars working in this area (Ratnagar 1981; Tosi 1982: 9-14; Rao 1979: 228-38; and Possehl 1994: 185; 1996: 133-38; 1997: 87-90; 2002: 337). Ratnagar gives an object-wise analysis of the Harappan materials found in the Indus valley vis-à-vis the Mesopotamian region. The contacts Harappans established with the Mesopotamian world are further strengthened by the presence of Harappan pottery, seals, ornaments like ivory combs, etched carnelian beads, segmented silver beads, etc., from sites in Oman (Mery 1996: 171). The famous find is of course from Ras-al-Jinz in the Oman peninsula, where typical Harappan pottery was found along with a four-letter Harappan graffiti on one black-slipped jar sherd (Tosi 1982: 2-4). The black-slipped jars are stated to be the most common Harappan pottery found in Oman which is clearly placed in the second half of the third millennium BC (Mery 1996: 170).

Among the items exported from the Indus Valley, the important ones are long barrel cylindrical beads and etched carnelian beads. The former were well defined by Possehl (1996: 159) as 'long and slender, in excess of 5 cm, sometimes with a slight thickening at the centre'. They were manufactured in a variety of materials; the most beautiful was of carnelian and banded agate, the latter after heat treatment attained the typical reddish colour of carnelian. The other materials in which these kinds of beads were made include jasper and terracotta. Mackay states that from Mohenjodaro, 'some no less than 4.85' long and made of the finest translucent carnelian that it was possible to obtain' were found and it was a favourite item worn by the people of Harappan culture (Mackay 1937: 2). Initially, the long barrel cylindrical beads were reported from Harappa, Mohenjodaro and Chanhudaro based only on the excavations from these sites. However, subsequent researches and excavations

The manufacturing techniques involved in the preparation of these kinds of beads were also discussed extensively by Mackay, who made a comparative study of contemporary bead-making from Baroach and Sindh.

conducted from a host of sites have also brought to light these kinds of beads in various materials from sites like Dholavira, Banawali (NHK 2000: 109), Kalibangan, Surkotada (NHK 2000: 109), Baror (personal communication) in India, and Allahdino (NHK 2000: 101) in Pakistan.

The manufacturing techniques involved in the preparation of these kinds of beads were also discussed extensively by Mackay, who made a comparative study of contemporary bead-making from Baroach and Sindh (Mackay 1937: 3-4, 8). The long and slender drill bits from many sites like Dholavira suggest the drilling mechanism of the long-barrel cylindrical beads (NHK 2000: 107). Subsequent researches extensively documented the various stages involved in the procurement, sorting, heat treatment, chipping, polishing, drilling, and final treatment of similar beads from Cambay (Possehl 1981: 42-46; Kenoyer et al. 1991: 49-55).

The long barrel cylindrical beads are reported from sites like Ur (NHK 2000: 160), Kish from Mesopotamia (Mackay 1925: 698; 1931; Possehl 1996: 160), and from Susa, Jalalabad, Marlik from Iran (Possehl 1996: 160). Possehl gives a complete list of references to Meluhha that is identified with the Indus region which also included eight citations directly mentioning carnelian from Meluhha (Possehl 1996: 139-44, 145). Out of these citations one clearly spoke of pure or bright Meluhhan carnelian (Gudea Cylinder B, Column 14.13: Possehl 1996: 140). This citation indicated that there should have been different grades of carnelian from Meluhha, and observing the different kinds of raw materials used for the manufacture of beads; the typical reddish orange with brilliant translucence could have been referred to as pure Meluhhan carnelian by the Mesopotamians.

The various studies conducted on the contemporary manufacture of beads also indicate that agate was heated to achieve the typical colour of carnelian during the production stages. This also indicated that there was a high demand for the reddish orange, translucent variety of carnelian, and this demand was reflected in the production of such beads in the archaeological record of Harappan culture. Several such agate

beads with the typical colour of carnelian were noted, thereby reflecting the efforts made by the Harappans to meet the market demand. This demand could be both internal as well as external. That the carnelian was in high demand is indicated by the number of citations so far discovered in the Mesopotamian records: carnelian stands only next to references to wooden materials coming from Meluhha. These citations do not mention the exact finished product and broadly speak only of carnelian.

The long barrel cylindrical beads were also popular among the people of the Harappan culture. This was indicated by the presence of what could be seen as imitations in terracotta of these original beads, evidences coming from Harappa, Mohenjo-daro, Banawali (NHK 2000: 109) and Surkotada; the one from the latter site was also of terracotta and a red slip to imitate the original beads (NHK 2000: 109). The beads from Banawali are also of terracotta but they could be termed as biconical or barrel-shaped ones, even though it seemed that they could have been imitations of long-barrel cylindrical beads (NHK 2000: 109).

The evidence from Harappa and Mohenjo-daro also indicated the manufacture of beads of this shape in faience. The popularity of the long barrel cylindrical beads also continued during the post-urban Harappan period. This was clearly seen from similar beads found in the late Harappan site of Sanauli (Sharma et al. 2007: 166-79). Two beads, very similar to the long barrel cylindrical beads, albeit with some minor variations, could be discerned in a burial from this site. Evidence indicates that these two beads formed part of a necklace, and it was found in situ around the neck of an individual. These two beads were also of the banded agate variety which is not available locally. This evidence also reminds us of the surviving internal trade network even during post-urban Harappan times. Further investigations on these beads could enable us to pinpoint the exact source of the raw material so that the trade network theory during the late Harappan times may be substantiated further.

The discovery of long barrel cylindrical beads from some of the sites in Mesopotamia and Iran attested to their popularity in these regions as well. The references in the Akkadian records to the ships of Dilmun, Magan and Meluhha tied up in the quay of Akkad (Possehl 1996: 133) showed that the Harappans had their reach directly in this region. Further, the cylindrical seal depicting a Meluhhan interpreter of the Old Akkadian period further substantiated the possibility of Harappan settlements or

It has become imperative now to sift through the enormous quantity of archaeological data from the Mesopotamian sites by Harappan archaeologists to segregate the Harappan material present if any.

colonies in the Mesopotamian land to further their trade-related activities. The necessity for an interpreter could be for multifarious purposes. An interpreter was needed if delegations or important dignitaries visited a foreign land with an unfamiliar language and culture. Hence there was a strong possibility that Harappan settlements or groups of Harappan merchants were actually present in Mesopotamia. They could have carried along with them large quantities of native pottery and products, apart from the items of trade.

This was reflected by the findings of typical Harappan pottery from sites in Oman. If Harappan pottery could be found at sites in Oman, and, if Harappan trade items and seals could be found at sites in Mesopotamia and Iran, there was every possibility to find evidence related to a Harappan settlement or colony or a temporary occupation from the sites they could have actually visited. This possibility, along with the evidence of a Meluhhan interpreter, fully strengthened the possibility of the presence of a bilingual inscription from this region as strongly felt by Possehl (1996: 138). It has become imperative now to sift through the enormous quantity of archaeological data from the Mesopotamian sites by Harappan archaeologists to segregate the Harappan material present if any.

Western India was a known source of minerals like agate, jasper, carnelian, onyx, quartz, amethyst and opal. These minerals were often developed as secondary minerals in the Deccan traps, either as fillings in the amygdular cavities or as products of alteration and replacement (Krishnan 2003: 410). Rajpipla and Cambay were also two well-known centres of mineral procurement and production of beads. It is stated that the supply of minerals for Cambay came from a tertiary conglomerate, the pebbles of which were derived from the traps (ibid.: 419-20).

The excavation at Mari was carried out under the direction of Andre Parrot from 1933-34 and continued until 1974, with a gap during World War II. The earliest occupation at Mari dated to the beginning of the third millennium BC and continued until its destruction at the hands of Hammurabi of Babylon in 1761 BC. Sargon of Agade (Akkad) was also known to have destroyed Mari during his conquests in mid-2400 BC. Mari was an important city-state of the third- second millennium BC that served

as one of the outposts of the Sumerian civilisation, and during the beginning of the second millennium BC, became the capital of a kingdom extending over 350 km along the river (Saggs 1965: 17).

The excavations at Mari brought to light a hoard in 1965, termed 'treasure jar', under the courtyard of a temple belonging to the pre-Sargonic palace. The antiquities were found in a pottery jar containing 52 objects. The hoard consisted of a large number of carnelian beads, some bicone in shape and others of the typical long barrel cylindrical variety. The latter beads from this hoard were undoubtedly of Harappan origin and shape and conformed to those found in many Harappan sites. These kinds of beads, along with the etched carnelian beads, were the hallmarks of Harappan culture.

Decline

Investigations at several Harappan sites indicated that around 1900 BCE, the urban fabric of the culture slowly started disintegrating due to several reasons like climatic changes, drying of river Ghaggar (Sarasvati), collapse in trade with Mesopotamia, etc. The distribution pattern of sites of the mature and late / post-urban Harappan culture clearly indicated an eastern and southern shift of sites beyond the Indus Valley. This also clearly indicated the drying of a major river presently marked by the course of rivers Ghaggar in India and Hakra in Pakistan. The Harappan culture slowly transformed into several regional cultures like Cemetery H, Jhukar / Jhangar, Bara, with an absence of all urban features and characteristics.

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