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THE INDUS CIVILIZATION[1]

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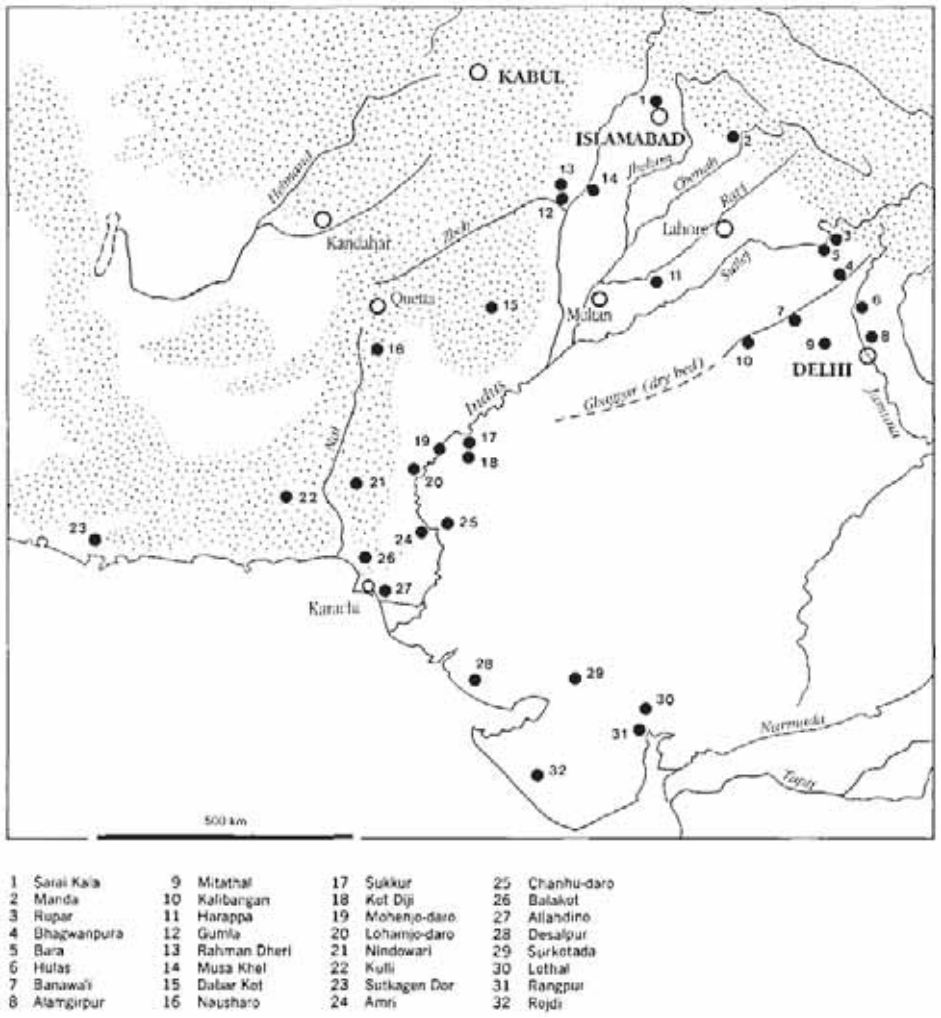
Contents

THE Indus Civilization represents the earliest manifestation of urban development in the plains of the Indus valley and its extension along the Arabian sea-coast. The four principal settlements so far excavated provide the material to reconstruct the cultural content of the civilization. Two lie in Pakistan: Harappa, [2]usually identified with Hariyupiya[3] of the Rigveda, is situated on an old bed (*sukbrawa*) of the river Ravi in Sahiwal District of Punjab, and Mohenjo-daro[4] (literally 'mound of the dead') is on the right bank of the Indus river in Larkana District of Sind. The other two sites are in western India; Lothal[5] is situated on the Sabarmati river at the head of the gulf of Cambay on the west coast of India, and Kalibangan[6] (literally 'black bangles') lies some 310 km north-west of Delhi along the left bank of the now-dry Ghaggar (old Sarasvati) river in northern Rajasthan.

The antecedents of this urban civilization have been described earlier, in Chapter 11 but it is not clear how and under what conditions a transition of the urban development took place. Trade through land connections across Afghanistan with eastern Iran and

[1] See Map 9
[2] Vats, 1940.
[3] Dani, 1950.
[4] Marshall, 1931.
[5] Rao, 1973.
[6] Thapar, B. K., 1975.



Map 9 Distribution of India Cililization.

Turkmenistan was noted in the previous cultures. The Indus Civilization, for the first time, also established overseas trade. The advantaged gained through new mechanics of trade may have enabled an adventurous community to make a bid for the mastery of their resources and lay the foundation of a political system that imposed their supremacy over the entire Indus zone. Such is the case from the available evidence at Harappa, where a new citadel complex[7] had been imposed on an earlier village settlement. The Kalibangan[8] evidence again shows a new pattern of urban planning on an earlier fortified settlement. Such a sudden change is also noticed at Amri, [9]Balakot[10] and Kot Diji.[11]It is the Kot

[7] Wheeler, 1947.
[8] Thapar, B. K., 1975.
[9] Casal, 1964.
[10] Dales, 1981.
[11] Khan, 1965.

Diji cultural type that is widely spread as evidenced by the excavations at Sarai Kala, [12]Gumla,[13] Rahman Dheri, [14] on the Indus plain, near Dera Ismail Khan, and several other places in the Punjab.[15]It is only Mohenjo-daro[16] which still holds the mystery, as its earlier levels have not yet been excavated because of the rise of the water table in the present century. These levels are likely to reveal a Kot Dijian cultural complex, or an admixture with other early cultural elements known in Sind and Baluchistan. Yet the new urban development shows a basic difference in its cultural features, which, though based on local geography and ecology, needed a motivational inspiration not evidenced in the archaeological data so far recovered. Hence the origin of the Indus Civilization yet remains unknown and is a matter of several theoretical speculations.[17]

While the earlier phases of the Bronze Age cultural complex show varying patterns in the different geographical regions of Pakistan and western India, the Indus Civilization imposes a certain uniformity in its basic cultural manifestation and hence there is little difficulty in identifying the urban pattern associated with it. This pattern is confined to a restricted geographical area and adheres mainly to the alluvial plains of the Indus, east of the Jhelum river. Hence it belongs to the Indus system, and therefore the name Indus Civilization is appropriate, but it also extends along a wide coastal stretch from the mouths of the Narmada and Tapti rivers in the east to Sutkagen Dor[18] in the west. The last-named is one of the four major port sites, the other three being Balakot[19] and Sotkakoh in Baluchistan, and Lothal[20] in Gujarat. The discovery of six mounds in the vicinity of Shortugai[21] in the Kunduz province of north-eastern Afghanistan appears to be a case of an isolated colonial settlement probably acting as a trading depot. The northern limit of the Indus zone has been extended to Manda, [22]Akhnor, located on the right bank of the Chenab, about 28 km north-west of Jammu, while the easternmost site being Alamgirpur on the banks of the Hindan, a tributary of the Jamuna, is about 45 km north-east of Delhi. Whereas the western hilly regions continued with their own older cultural variations and survived side by side

[12] Halim, 1972*a*1972*b*.
[13] Dani, 1970/71.
[14] Durrani, 1981.
[15] Mughal, 1981.
[16] Dales, 1965.
[17] Fairservis, 1961.
[18] Dales, 1962.
[19] Dales, 1981.
[20] Rao, 1973.
[21] Francfort and Pottier, 1978.
[22] Thapar, B. K., 1981.

with the new urban development sites such as Kulli[23] and Dabar Kot[24] in Baluchistan and Gumla and Hishamdheri in the Gomal plain have shown the impact of the Indus Civilization. On the other hand a far-off place like Daimabad[25] on the Godavari has produced late Harappan material. In brief, among all civilizations of the ancient world that of the Indus spread over the widest territorial limit.

This vast territorial region of the Indus Civilization remains unnamed because of the failure to decipher the contemporary writings on the Indus seals. However, Mesopotamian contact, direct or indirect, has produced some relevant evidence. The contemporary documents there speak of ships coming from Dil-mun, Makan and Meluha or Melukhkha;[26]Sargon the Great boasts:

> The ships from Meluha
>
> The ships from Makan
>
> The ships from Dilmun
>
> He made tie up up alongside the quay of Agade.

Dilmun or Tilmun, which is usually identified with the island of Bahrain, [27]is supposed to be the clearing-house for goods bound for Sumer from the east. From Makan and Meluha the ships brought copper ingots and implements in huge quantities – carnelian, ivory, shell, lapis lazuli, pearls, spices, etc. – materials specific to the Indus Civilization. On these grounds Makan and Meluha have been taken to mean 'Indus country'. Particularly Meluha or Melukhkha, which suggestively resembles the much later Prakrit 'Milakkha' or Sanskrit 'Mlechchha'[28] – a name meaning 'a stranger of ill-pronounced speech', and applied to foreigners in Sanskrit literature – has the strongest possibility to be the oldest name of the Indus country. Makan could be a western coastal region, which still bears the name of Makran.

The Indus country, or the ancient Meluha, lies within 25 ° and 35 ° N. latitude – a range which also covers the oldest civilizations of Mesopotamia and Egypt, the areas which today have almost desert climatic conditions and which would have been complete deserts but for the great rivers that bring seasonal floods to revivify the parched lands that have themselves been built up by silt deposits. These areas are supposed to have been subjected to severe

[23] Piggott, 1950, pp. 98–116.
[24] Fairservis, 1975, p. 153.
[25] Thapar, B. K., 1981.
[26] Kramer, 1964; Thapar, R., 1975.
[27] Possibility of its identification with the Oman coast cannot be ruled out as M. Tosi's excavations at Ra's al-Junayz have been very significant, producing also Indus writing on potsherds. (Personal communication.)
[28] Parpola and Parpola, 1975.

Post-Pleistocene desiccation. However, recent studies present a different postulate: 'that the degraded environment in these regions is more probably due to man's over- exploitation than to variation in rainfall and temperature regimes'.[29]On the other hand pollen analysis from Rajasthan lakes carried out by Gurdip Singh[30]and meteorological considerations by C. Ramaswamy[31] have enabled them to reconfirm the earlier opinion of Sir John Marshall, and suggest that there was a period of somewhat higher rainfall in Pakistan and western India between 3000 and 2000 B.C., although Ramaswamy would like to bring the date of the wet period down to 500 B.C. There is little doubt that some of the rivers, such as the Sarasvati and Drishadvati, known to the Rigvedic Aryans, are now dried up and are represented by the Ghaggar of Hakra. This drying process may be the result of less and less precipitation in the post- Indus period. R. L. Raikes and others have, however, explained this drying process by supposing some tectonic activity in the northern Punjab, which bifurcated the water of the Himalayas from the western drainage system of the Indus to the eastern drainage system of the Ganges. Under these conflicting opinions it is difficult to be dogmatic on the actual climatic conditions. However, animals like the elephant, rhinoceros and tiger, which during the last few centuries have become extinct in the region, were known to the Indus people. They took measures to protect the exposed walls by baked bricks, and were also extremely punctilious in providing drains and conduits in their cities for easy flow of excess water. The Indus valley does receive a moderate rainfall from 125 to 625 mm a year. The precipitation in the northern hills is much higher resulting in the forested belt of the hilly regions. The hill slopes have grass lands which support sheep, g oats and cattle. The flooded plains have produced various kind of wheat, barley and oats. While sheep and goats dominate in the old civilizations of western Asia, cattle are the hallmark of the Indus. The Indus valley has a character of its own that is derived from the build of the Himalayan chains which throw their off-shoots towards the Arabian Sea, thus providing a cultural context south of the Hindu Kush and between the deserts of Iran and India. Such a wide cultural zone shows variations in climate from extreme cold winters in the north to more mild temperatures along the sea-coast.

The urban development in the Indus valley introduced the pattern of the earliest urbanization in this part. Two things are clear: the first is the surplus food-production in the fertile soil of the river-irrigated plains, mainly yielding wheat and barley and cotton as the cash crop. The surplus was stored in granaries, two of which have been exposed, one at Mohenjo-daro and another at Harappa. Whether there was any centralized

[29] Raikes and Dyson, 1961.
[30] Singh, 1971.
[31] Ramaswamy, 1968.

cotton-manufacturing industry or handlooms were used in the villages is difficult to say. In any case cotton fabrics, including those of printed designs, appear to have been produced. The second aspect of urban life was craft specialization and industrialization of the cities. Copper, which was available from Baluchistan and neighbouring Rajasthan, was the basic metal for industrial and commercial development. There is little doubt that timber, probably from the *deodar* tree was obtained in the northern hills, as in the excavations at Mohenjo-daro[32] timber beams are known to have been used in brick masonry. Carpenter's tools are evidence of skill in carpentry. These three items – copper, cotton and timber – appear to have been the mainstay of urban prosperity. For luxury goods, shell, ivory, lapis lazuli, carnelian and other precious stones as well as gold and silver were obtained to manufacture articles of common taste. A bead-making craft was well established. The painted pottery tradition speaks of another specialized craft. Two kinds of stones were profusely used: steatite probably from the neighbourhood of Tepe-Yahya[33] in eastern Iran was used for making seals, and alabaster for cups and vessels. Limestone statues, musical instruments, dancing figures tell of the development of fine arts in the cities. Except for the last few items, others were already in use in the pre- Indus cultures but in this period there is an acceleration and standardization of these products. The source of surplus food is not clear, as no information is available on irrigation. Mining, exploitation of forests and import of raw materials from distant places indicate an intensification of trade. The sea provided an outlet to overseas markets. There is nothing in this economic exploitation that needed foreign influence. Material evolution from indigenous sources is well documented.

It is only when we turn to the other aspects of culture that the Indus Civilization shows no precedents, but they are again so individualistic and rooted in the local fauna and flora that, as far as material content is concerned, it wholly derives from the local elements. However, an extremely interesting development is the production of steatite seals which have no earlier precedents, but depict local art and writing. The purpose of these seals is not at all clear. However, if they were meant as signet seals for stamping on commercial goods, pots[34] and other objects, they may have had administrative significance.[35]On the other hand, the standardization of goods, enforcement of a definite system of weights and measures, and above all formulation and execution of municipal rules in the cities, speak of the emergence of a political system that must be credited to a determined community of people whose main support lay in the surplus of the Indus plain, but whose prosperity depended on the growth of the industrial urban centres and a peaceful atmosphere for

[32] Dales, 1965.
[33] Lamberg-Karlowsky, 1972.
[34] Wheeler, 1968, Plate XXXIV, B.
[35] Fairservis, 1976.

overseas trade and commerce. Such an enterprising people must have felt the need to develop a system of writing to meet their commercial and administrative requirements. As will be explained below, there is no earlier beginning of writing except for some symbols found at random on potsherds.[36]On the other hand, the seals themselves provide us with many animal figures and human scenes that apparently had religious and myth-ological significance. There is little doubt that some pedestalled emblems and actual figures were objects of worship. Such a use of religious symbols in connection with commercial transactions suggests a religion-oriented society, though little evidence has been recovered for institutionalized religion in the architectural remains of the city. Our option for the western Asian model of a temple-dominated social structure has so far been unproved in the Indus Civilization. Some of the features of the religion can be derived from the earlier rural-based social system. In the vast expanse of the Indus system that practice was likely to persist and even influence new urban beliefs and rituals. In other words, the rural Indus had a major role to play in the make-up of the Indus Civilization. On the other hand, the urban centres must have sprung up as cultural foci to serve administrative purposes for the convenience of a determined group of people who laid the foundation of new cities unparalleled in the ancient Orient.

These cities show a twin-settlement pattern – a 'citadel' and a 'lower town', as can be seen in the excavated remains of sites in Pakistan at Mohenjo-daro, Harappa and Sutkagen Dor. Although Thapar[37] seeks the origin of the citadel or high mound from the 'ziggurat' model of Mesopotamia, the two formations are entirely different in concept. In the case of Kalibangan this higher citadel ground is due to an earlier occupation below. But in the case of Harappa and Sutkagen Dor the two sites are deliberately divided. At Mohenjo-daro they are separated by a wide gap between the two, the gap at one time being certainly flooded and hence R. E. M. Wheeler conceives of a canal[38] or a branch of the Indus in between them. It is possible that the two sites were simultaneously occupied on either side of a channel. It is principally at the citadel mound that a mud-brick platform has been traced. Out of seven successive phases excavated at Mohenjo-daro, Marshall located the platform between the lower sixth and seventh – an interval of 6 m built almost entirely by crude brick and alluvial mud. The same platform was identified by Wheeler in his 1950 excavation, underlying a huge granary contemporary with it, and he assigns it to the 'intermediate period' of Marshall's chronology. Still below lie older buildings and phases to an unexplored depth. These unexcavated phases continue to a depth of 12 m below the

[36] Fairservis, 1975 p. 281.
[37] Thapar, B. K., 1970;Jansen, 1979.
[38] Wheeler, 1968 p. 47.

plain. Wheeler believed that the building of the citadel corresponded with no break in the cultural sequence, yet the material of the lower levels remains to be salvaged, analysed and properly studied. The exposed structures on this high mound are all later than the granary and hence appear on a higher level than the 'lower town'. The purpose of this high mound is not at all clear, as main buildings still remain unrelated. On the other hand, several adjacent areas of the eastern 'lower mounds' have been partly excavated. All through this lower mound a wide, straight street has been traced running north and south. A second possible north-south street has also been located at some distance. The long cross streets as shown by Wheeler, [39]still remain hypothetical because the suggested lines follow only the contour of the mound but they remain to be proved by excavation. It is therefore not at all clear whether the two settlement sites were planned on one grid pattern, as is generally assumed. The grid system has not been proved in any of these I ndus Civilization sites. If this grid presumption is set aside, the growth of the city plan of Mohenjo-daro can be reached with reasonable understanding on the basis of an earlier continued occupation of the two sites on either side of a small channel – an experience that led to the Indus concept of twin settlements – a 'citadel' and a 'lower town' as we like to call them. B. B. Lal[40] has attributed religious significance to at least half the portion of the citadel mound at Kalibangan but so far no such idea has been proposed for the other city sites.

The Indus cities are unique in their conception. The north–south alignment of long thoroughfares at such an early period is unparalleled in history. The only other site where such a planning appears to have been preceded is surmised from the aerial photograph of Rahman Dheri.[41]Such planning was followed by a straight alignment of house walls along the streets, and of still greater significance are the long covered public drains built through the middle of the wide streets, with manholes in between for the ultimate removal of rubbish. Such drains were properly connected with private drains and water chutes coming from private houses which had a highly developed system of brick-on-edge flooring in the bathrooms. The long thoroughfares appear to have been dictated by wind direction. The street patterning was designed to catch the fresh breeze by those who were familiar with the local climate and environment and, probably for the same purpose, the house ventilations were opened on the side of the main streets. This arrangement and the high sense of sanitation and strict observance of the rules of regularity suggest a community of people who were certainly disciplinary and punctilious in their behaviour patterns at least during the mature phase of the Indus Civilization.

[39] Wheeler, 1968 FIG. 1.
[40] Lal, 1981.
[41] Dani, 1970/71 Plate IVb.

Mohenjo-daro

The two cities of Mohenjo-daro and Harappa(Fig. 1) are preserved disproportionately. The ruins of the former city present a grand view from the riverside, the Indus river of today being at a remove of 5 km. A brick-built embankment, [42] apparently old, protects the city. From a distance the round stupa of the later Buddhists appears crowning the older protohistoric ruins of the citadel mound. What is buried beneath the stupa yet remains to be excavated. A lane west of the stupa has been named 'Divinity Street' from associated religious antiques. From this street five doorways lead onto a massive structure on the west, which measures 70 × 23 m. Its nucleus consists of an open court of 10 m^2 with verandas on three sides facing rooms behind. Many of the rooms are carefully faced with bricks, and there are at least two staircases. It is an imposing building of unusual importance and generally referred to as an educational institution. But the most unique building, farther to the west, beyond another lane, is the Great Bath (Fig. 2), consisting of a tank, 12 m long north to south, 7 m broad and 2.5m deep, with steps leading down to the floor from two sides, built of fine bricks rubbed and carefully made watertight by using gypsum mortar. Furthermore, precaution has been taken by putting a 2.5-cm-thick damp-proof course of bitumen held by a further wall of brick and retained by mud-bricks. All around the tank is a corridor which opens through ranges of brick pier or jambs. Behind them on one side there are other rooms, one of which contains a large well which apparently supplied water to the tank. Near the south-western corner an outlet, a corbel-arched drain about a man's height, was provided. Farther away to the north is a block containing eight smaller bathrooms, each about 3 × 2 m, carefully and solidly built, with finely jointed brick floors, and disposed, on either side of a passage, in a fashion ensuring that none of the doors opened opposite any other. These bathrooms appear to have an upper storey, supposed to have been residential in nature. This whole complex of the Great Bath and smaller bathrooms has a meaning beyond proper comprehension at present. Its public character can be easily guessed but the attribution of any other concept may well be premature.

Immediately to the west of the Great Bath is the Granary, standing on a massive brick-work podium with a loading platform on its northern side. As the corbelled drain of the Great Bath cuts the eastern end of this platform the original granary is earlier in date than the bath. The Granary consists of a series of brick plinths, rectangular or square in plan, each separated by air passages. It is on these plinths that granary stores were built, some with wooden supports. A later addition to the Granary on the south was made contemporarily and in line with the Great Bath, and both of them opened on to a southern lane. On

[42] Wheeler, 1968 p. 37.

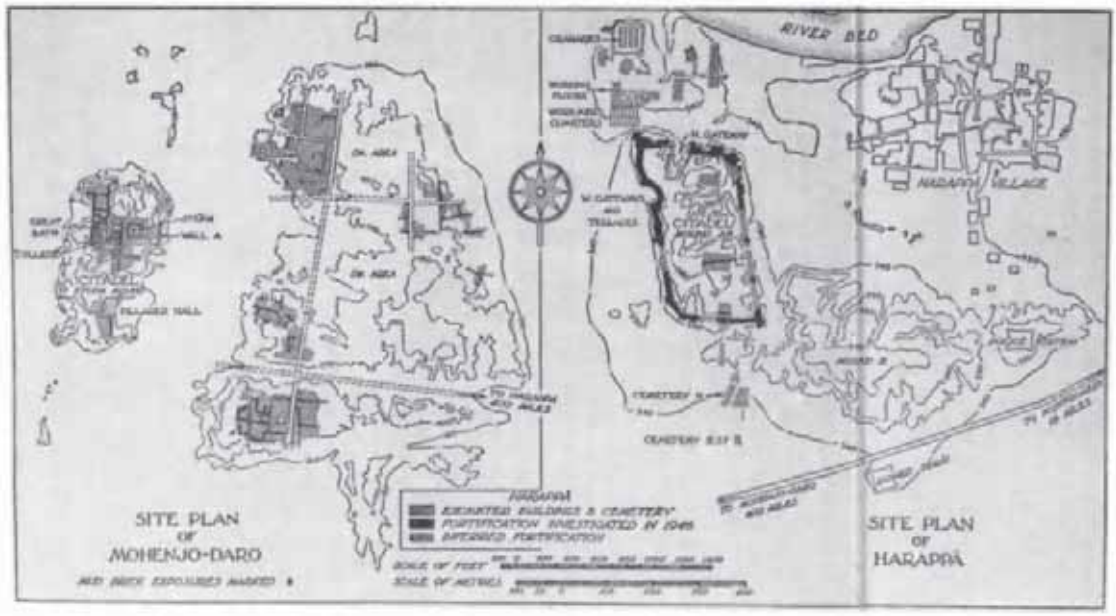


FIG. 1 Site plans of Mohenjo-daro and Harapa.

FIG. 2 Mohenjo-daro: the Great Bath.

this side Wheeler further identified a grand staircase leading from the level of the plain to the top of the platform, where stood a small bathroom. It is the battered walls of the outer

side of the high podium of the Granary that led to the idea of a citadel at Mohenjo-daro. But strictly speaking, Mohenjo-daro has not as yet produced evidence of any continuous city wall around this high mound, which is almost a parallelogram in shape. However, the south-west corner does show a salient that looks as though it is concealing a tower. A series of towers were actually found in the south-east corner of the 1950 excavations. These square towers, which are of solid brick, except the earliest which showed slots for timber beams, were meant to strengthen this corner. But the walls on the north and the west do not continue to any great length. What was taken to be a 'parapet wall' by Wheeler may be a curtain wall between two towers. Further to the north the later floods penetrated deep into the mound and partly separated the northern half from the southern. In the southern half one important building has been exposed. It consists of a pillared hall with a platform on the southern side corresponding to a later Iranian type of *apadana*.

Harappa

The buildings of the citadel mound of Mohenjo-daro can be compared with what remains at the citadel of Harappa, where the fortification walls were traced in the 1946 excavation.[43] Unfortunately the structures within the citadel are poorly preserved but outside to the north three types of buildings were found. The first is a granary consisting of a series of six storerooms in two rows on either side of a corridor. To its south is another group of circular platforms meant for threshing corn. Still further is a series of two-roomed houses of utilitarian type and hence taken to be workmen's quarters. These buildings at Harappa make a different setting from what we have seen at Mohenjo-daro.

As far as the 'lower town' is concerned, Mohenjo-daro presents a good example, where S. Piggott built up a pattern of a series of blocks of houses arranged in a grid-iron system. The idea of such blocks can be easily conceived from the system of housing units, which have a central open courtyard with living rooms along the sides in the oriental style, the main door opening on to a lane with a wall provided near the door. The houses, which are simple and plastered with mud, also had second storeys. Some had latrines with seats on the ground floor. Attempts have been made to recognize in the structure some temple, palace, inn and industrial quarters. But except for the potter's area of a later period, recognition of quarters for specialized crafts has so far not been successful.

Social stratification has been difficult to determine even on the basis of burials discovered at Harappa, Kalibangan and Lothal. The material from cemetery R–37 at Harappa enabled Wheeler to speak of one single system of inhumation practised by the Indus

[43] Wheeler, 1947.

people, though other sites have produced other types as well. The Harappan burials are all of humble folk and do not show any great variation. Here the skeletons lie extended in the north–south direction accompanied by grave furniture consisting of some fifteen to twenty pots, personal ornaments like shell bangles, necklaces and anklets of steatite or paste beads as well as toilet objects such as a copper mirror, mother-of-pearl shells, an antimony rod and a shell spoon. Only two graves show some special features; one was outlined internally with mud-bricks, suggesting a structural coffin, and the other was buried in a wooden coffin, the wood being *deodar*.

From burial practices we may go on to examine religious rituals and beliefs and seek to understand the pattern of the Indus society. Although no structural evidence for a temple can be definitely cited, other objects suggest a multiplicity of religious ideas. While J. Marshall has tried to trace many of the later Indian practices to these ideas, others prefer to confine themselves to building the great religious tradition of the Indus people with which the little traditions of various communities became integrated. On this consideration the Great Tradition could be attributed to the nature of the urban set-up and the Little Traditions may appertain to the mass of the village population who must have subsisted side by side with their own humble beliefs.

For an agricultural society of this type the concept of the fertility cult must have exerted a great influence. The discoveries of a large number of terracotta figurines of an almost nude female has suggested the idea of a village mother goddess. With them are associated terracotta figurines of pregnant women with children. There is a remarkable scene (Fig. 3a) depicted on a seal from Harappa that shows a birth scene. The seal bears an inscription of six characters not yet deciphered. On one side two genii are standing, on the other a male is standing with a cutting instrument in his right hand. Before him is a seated lady with her hands raised up and hair dishevelled in distraught mood. The top scene apparently shows the same female upside down with something emerging from her female organ – obviously a representation of childbirth. What the idea is behind such a scene cannot be exactly stated but here certainly some fertility idea has attracted the attention and found expression in this remarkable sealing. Marshall would also like to attribute his recognition of the phallus (lingam) and ringstones to similar beliefs. The second great element in the popular beliefs is seen in the many animals represented on the seals. Some of the animals are multi-headed and some multi-bodied, and some are no doubt mythological in so far as they combine in a single figure the attributes of several animals. Among these animals the bull certainly predominates. The appearance of the unicorn on a large number of seals still remains enigmatic. Even if these animals were not actually worshipped, an animal spirit

Fig. 3 (a) Harappa: a seal showing a birth scene; (b) Mohenjo-daro: a seal showing a tree with two chimerical heads; (c) Mohenjo-daro: a seal showing a tree deity and other figures; (d) Mohenjo-daro: a seal showing a horned deity in a yogic posture.

appears to have been a component part of religious beliefs and may be seen in the figure of many horned deities.

Another popular idea can be traced in the depiction of trees or tree-trunks on the seals. A tree within a railing is a common feature. These by themselves may not be of any great significance, but combined with the appearance of a pipal leaf motif, noted on several painted pots or carved on seals, they begin to acquire some meaning. One seal (Fig. 3b) actually shows two heads coming out of a tree suggesting an idea of a living spirit of

the tree. The concept of a tree deity is obtained from other seals where a horned figure stands within a tree motif (Fig. 3c). Here the humble tradition of village folk has become integrated in a ceremonious performance that speaks of urban sophistication.

The tree deity, who is horned and has a pigtail hanging down to one side, stands within a leafy pedestalled bowl. Before her a horned personage kneels down in a supplicating mood and appears to invoke the deity through the intermediary of a mythological animal standing behind. On the lower row stand seven plumed and pig-tailed figures probably awaiting their own chance. Whether these secondary figures are meant for worship or for sacrifice is difficult to say. But the whole scene is a remarkable representation of an intensely emotional ceremony. Such tree deities are also depicted alone. In another example the kneeling man, with a sharp-edged knife in his hand, is pushing a deer before the deity as if in the act of sacrifice. Many of the seals depict a 'standard' below the mouth of the unicorn. The emblematic nature of this object is clear from another seal where it is carried in combination with a bull on an altar in the middle with a fluttering flag in front. From Harappa comes another seal,[44] which shows two scenes besides some writing. The lower one has a horned bull to the left with a standing man in between facing a structure, probably wooden, a square in two storeys with pinnacle tops and a vestibule in front. The upper row depicts two growling tigers on either side of a remarkable human figure sitting on a high-legged seat on his heels, with his toes touching the seat and his knees doubled; his bangled hands rest on his knees, and his head, which is not very distinct, is apparently horned. In another seal the same horned man in a similar pose is being worshipped with folded hands by two men, one on each side. These worshippers have cobra hoods behind them, recalling *naga devas* (serpent deities) of a later period. The pose of the seated deity is more simple. Marshall proposed to see in it a *yogic* posture. The deity has a remarkable history and can be traced back to the horned deities seen in the painted sherds of the pre- Indus period. The iconography of the figure reveals the various composite elements. On a clay tablet from Kalibangan the figure is crowned by a simple tree. On a seal from Mohenjo-daro the crown is horned. But a more stylized figure appears on another seal (Fig. 3d). Here the seated deity has an erect male organ and is multifaced, the horned crown has a stylized stump in the middle and a series of torques around the neck. Below the seat are two ibexes. Four animals are round the seated figure who appears to be motionless in a trance. Out of the four animals the elephant is receding while a tiger, a rhinoceros and a bull are in an aggressive mood. Marshall sees in him a 'prototype of Śiva' a concept which is biased towards modern Indian beliefs. On the other hand, the different component elements are already there

[44] Vats, 1940 Plate XCIII No. 303.

in contemporary beliefs. The representation here is an integrated concept of a sophisticated type that must have evolved in the urban setting of the Indus Civilization.

There are some extraneous elements, like the figures of Gilgamesh and Enkidu, also appearing in Indus seals. But the religious repertoire would not be complete without mentioning the limestone statues. In one example there is a bearded figure with half-closed eyes. In a second example the man is seated in a half-kneeling position with his hands on his knees and a *shawl* over the body with the right shoulder bare. The third is a highly sophisticated bust of a man (Fig. 4), with his beard trimmed, upper lip shaven, half-closed eyes looking at the tip of a sharp nose, hair combed and held by a gold fillet, ears imitating a shell design, a ring armlet on his right arm, and a *shawl* over his body except for the right shoulder. The *shawl* is decorated with the trefoil design. It is this statue that has been taken to be a 'priest king' though we have no evidence of any priestly dominance in the Indus Civilization.

The statuettes, seals, terracotta figurines and several other decorative objects also reveal the artistic trends of the time. A total number of eleven stone statuettes have been recovered at Mohenjo-daro, nine of which are human or parts of human figures and two are animals. One human is made of steatite, two humans are of alabaster and the remainder are of limestone. One animal is clearly a ram but another is a composite animal with ram's horns and an elephant's trunk. These figures are all drawn in a conventional style and show a tendency that leaves very little choice for freedom. In physical depictions they have an individuality of their own though it is possible to detect some correspondence with Mesopotamian figures, for example, in the shaven upper lip, sturdy neck, trefoil design on the *shawl* and the use of inlay for the eyes. All the figures are modelled and belong to a tradition hieratic in origin. On the other hand, there are two other statuettes found at Harappa which belong to an entirely different school.

The first is a young *danseuse* in grey stone, who is headless with parts of her legs broken, showing remarkable movement as reconstructed by Marshall. The second figure, which is also headless with its arms and legs missing, is modelled in red sandstone and shows the use of tubular drills for the attachment of arms. The muscles are depicted in a superb and naturalistic fashion. Such a naturalistic representation is seen in the case of animals and seals. Particularly, the drawing of the two-horned bull shows a power of keen observation. It is here that Indus art is seen to be far removed from the general run of Indian art, which is generally stylized and over-burdened with iconographic details. The Indus art, as seen in the seals, is steeped in naturalism and the scenes represented on the sealings are derived from the usual activities of man. Unfortunately the sculptures are confined to small figurines. There is nothing to compare with the huge statues of the Egyptian civilization.

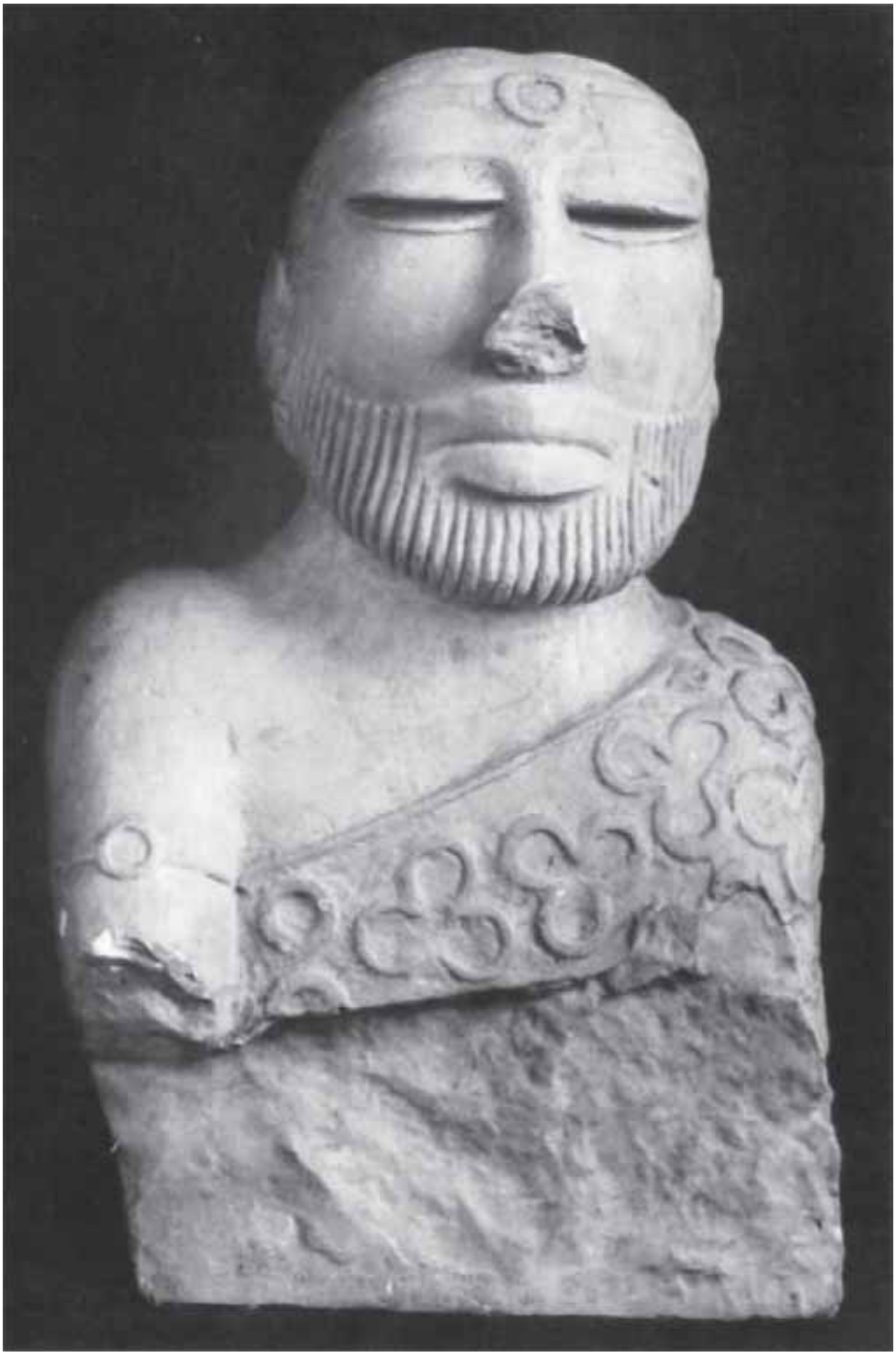


FIG. 4 Mohenjo-daro: stone bust of a ‘priest-king’.

A remarkable figure in the round is of a bronze dancing girl (Fig. 5a) which is highly emotional. Although her feet are broken, her remaining bent leg still speaks of the free

movement associated with dancers. Her bangled left hand appears to produce a ringing musical sound when striking her wrist on her thigh, while her lips, which are thick and protruding, are open to a soft tune of a song. The figure, which is totally nude, has its hair drawn stylistically to one side. It has been compared to the temple girls of a later period. In physiognomy it is different from other figures but in the free movement of its limbs it carries the agile spirit of the time.

The terracotta figurines, both human and animal, represent the folk art of the time. Among them cattle are preponderant, generally humped bulls, but short-horned ones and buffalo also occur. The cow is not depicted at all. Other animals include dogs, sheep, elephants, rhinoceros, pigs, monkeys, turtles and birds. The human figurines are mostly females in different activities or postures. The standing female figurines (Fig. 5b) are very common, with a loincloth held by a girdle, a series of beaded necklaces, ear paniers and a fan-shaped head-dress. All these figurines are hand-modelled with appliqué technique used for attachments. Some are very appealing, suggesting that they are more than ordinary toys. However, there was no scarcity of toys, which included bird whistles, wheeled carts (Fig. 6) and animals with holed legs to be drawn by children. Terracotta was the poor man's medium of expression. This was also used for utilitarian objects like feeder bottles, rattles, bangles for ladies, cubical or tabular discs, spoons, mousetraps, flesh rubbers, etc. The most abundant are the carrot-shaped cones of plain terracotta, terracotta cakes of triangular shape and rounded missiles. The cones look like carrots and are assumed to be used as styli and the cakes as oven stands or for toilet purposes.

Faience is another material used for modelling animals or for making other objects like bracelets, finger rings, studs, buttons and inlays for caskets and furniture. The faience was composed of crushed steatite pressed and modelled to produce the object desired. It was then coated with a glaze and fused in a kiln. The colour as seen today is light blue or green. Faience materials are normally small, yielding tiny figurines of sheep, monkeys, dogs and squirrels.

Faience was also used for making beads, barrel-shaped or convex-bicone, and they were carved with a trefoil design cut with a drill. The bead-making craft was highly developed in the Indus Civilization. Besides faience, other materials include gold, silver, copper, steatite, semi-precious stones, shell and pottery. E. J. Mackay[45] gives the detail of a bead-maker's shop from his excavations at Chanhu-daro, where the processes of sawing, flaking, grinding and boring the stone beads are well illustrated. A series of gold beads was included in a hoard of jewellery found at Mohenjo-daro. The silver beads are mostly globular or barrel-shaped. Another significant type of faience is the segmented bead. Decorated carnelian and

[45] Mackay, 1943 pp. 180, 210.

FIG. 5 Mohenjo-daro: bronze figurine of a dancing girl; (b) Mohenjo-daro: terracotta female figurine.

etched beads are well known. The trefoil design seen on the beads is the same as that seen in the *shawl*. At Harappa a great mass of jewellery of gold and semi-precious stones was found underneath the workmen's quarters. There were nearly 500 pieces of gold, ranging from armlets to beads and many complete necklaces made up of multiple strings of beads and metal.

Two other materials used by the Indus people for preparing decorated designs are lapis lazuli and shell. The lapis, which was imported from Badakh-shan, was sparingly used, but shell was plentifully available on the sea-coast. It was used for making various types

FIG. 6 Mohenjo-daro: terracotta toy-cart.

of bangles, studs, cones and cut into different designs for decorative purposes. The shell industry was highly developed.

The metal industry of the Indus people shows many curious and interesting features. S. Piggot[46] has commented that the metalsmiths were manufacturing objects in copper, either crude or refined, in bronze (copper with approximately 10 per cent of tin deliberately or accidently added); and in copper-arsenic alloy, almost certainly accidental but one which gave an added hardness to the metal. The commonest techniques used in metallurgy included casting and forging. Casting was done by pouring molten metal into a mould. As this process required special care to avoid bubbles, by the addition of a small percentage of tin or arsenic, it appears to have been used very sparingly. However, the lost-wax method must have given good results. It is by this method that the dancing girl statuette was made. But other tools of copper or bronze were cast by the simple technique. These included simple flat-type axes, tanged spearheads, barbed harpoons, arrowheads, razors, knives, handled mirrors and, occasionally, shaft-hole axes. Copper or bronze was abundantly used for making metal pots, pans, bowls, cups, dishes and small bottles. The find of spindle-whorls and many cloth impressions in the Indus cities is evidence of the growth of textile manufacture out of the good-quality cotton produced in the Indus plains.

[46] Piggott, 1950 p. 196.

For means of transport the Indus people used carts with solid wheels that were tied to the axle and which turned round along with the axle, a type of small cart that is still in use in the villages of Sind. Two types of river-going ships have been noted. One depicted on a seal shows the high prow, central cabin and double steering oar. Before the cabin are poles apparently to hold the standard. At Lothal other terracotta ship models have also been found.

Although a few stone vessels have been found, pottery was the basic manufacture. Potter's kilns, about six in number, have been found in the latest phase of Mohenjo-daro. They are circular, with a stokehole and furnace beneath a perforated floor originally covered by a domed roof. The pottery from the Indus is for the most part plain, mass produced for utilitarian purposes. The vessels, which have thick sides, are well baked and produce a ringing sound when beaten with the fingers. The commonest type is an offering stand with narrow tapering base, probably a development of the pedestalled bowls of the earlier period. Other types include beakers, pointed-base goblets, handled cups, jar stands, perforated cylindrical vessels and varieties of vases, pans and plates. Specialized types are knobbed-ware pottery and perforated vessels. The great bulk of material is wheel-turned, but some hand-made vessels have been recovered from lower levels. Goblets with pointed bottoms and scored exteriors are found in great numbers in the later levels. Some of them bear a short stamped inscription. Most of the pottery is of pinkish ware made of alluvial river-clay mixed with other ingredients. It is coated with bright red slip. The decorated pottery has designs painted in black on a red background. The designs are equally divided between geometric and naturalistic with trees, birds, fish and animals.

The Indus pottery is heavy, well made and sharply contrasts with the delicate vessels of the pre-Indus cultures. Among the distinctive patterns the intersecting circle motif, the pipal leaf, the chequer design and the kidney-shaped motif occur in a mass of foliage and tendrils. Among birds the peacock takes its place. Some of the painted sherds also show human figures. A painted sherd from Harappa shows a fisherman, carrying two nets suspended from a pole across his shoulders with a fish and turtle near his feet. Another sherd shows a doe suckling her kid, with two birds, a fish and a star in the upper part of the panel and secondly a man with one hand raised and the other touching his head, and a child with upraised arms along with fishes and a cock in the field. Wheeler noted that painted decoration is of better quality in the lower levels so far explored at Mohenjo-daro.

Such a diverse paraphernalia of urban civilization could hardly be controlled without a system of writing. It is therefore not surprising that the Indus people adopted a system of writing to suit their purposes. However, this written system has been found in a fully developed form as seen in the many steatite seals and sealings, copper tablets and some

stamped on pots and other objects. In the absence of its earlier evolutionary process the beginning of the writing remains unknown, though we have been able to trace some pot marks[47] which bear some resemblance to symbols used in the Indus writing. The inscriptions so far discovered are limited to a few signs on the seals and there is a lack of longer inscriptions with the result that great difficulty is faced in the structural analysis of the writing. However, attempts have been made to make a full list of the inscriptions, [48]draw up a comparative chart and to break the sign lists into suffixes, main stem, accent marks and numerals.[49]There have also been attempts to decipher[50]them on the basis of analogies and on the supposed basis of the language being some form of proto-Dravidian or some other language. Failing in these deciphering attempts, some scholars[51] have tried to interpret them directly on the basis of their own understanding of the cultural pattern. But in the absence of bilingual inscriptions there is no check to the phonetic value given to different symbols. So far the Indus writing has remained undeciphered as it is written in an unknown script and an unknown language. The system of writing is neither pictographic nor alphabetic. It is in the intermediate stage, referred to as logographic or logosyllabic,[52] and it appears to have been limited to a class of literati who managed the professional control concerned primarily with the urban set-up. As the writing started full blown in the Indus Civilization, it did not leave behind any trace of the post-urban scene that developed in this part after its decline.

This literate urban civilization of the Indus valley, although rooted in the maximum exploitation of the fertility of the Indus alluvium on the basis of the available knowledge of technology, flourished at a time when there was the greatest amount of sea-faring activity in the Arabian Sea, between the older civilizations of Mesopotamia and the Indus region and along the littoral of Makran and southern Iran. In terms of the Mesopotamia chronology[53]it coincides with the old Akkadian and Ur III phases. The decline of this sea-trading activity coincides favourably with the latter part of the Mesopotamian Isin-Larsa period. In terms of CI4 dates the beginning of the mature phase of the Indus Civilization cannot be placed earlier than 2500 B.C. in round figures and the end should be placed somewhat about 1900 B.C.

In the last phase the city of Mohenjo-daro shows a slackness in the observance of rules regarding the alignment of walls, which are now found to intrude into the streets. Some

47 Fairservis, 1975.
48 Koskenniemi and Parpola, 1973; Mahadevan, 1977.
49 Ross, 1938.
50 Pande, 1969.
51 Meriggi, 1934.
52 Zide, 1970.
53 Dales, 197.

more squat type of loose construction using older bricks was also noted by Wheeler in his excavations at Mohenjo-daro and Harappa. The old urban set-up appears to have collapsed in a way that has not left sufficient evidence for proper analysis. The Mesopotamian evidence does show that there was a break in the overseas trade and this break must have deeply affected the economic base of the state. On the other hand, the Indus floods, which were recurring phenomena, must have created further difficulties by the over deposit of silt and mud. Whatever may be the reason, this urban pattern crashed to a degree that did not leave behind those distinguishing features that characterized the urban nature of the civilization, and what remained later was a continuity in the rural survival of the older life.

The above description of the Indus Civilization is derived mainly from the sites in the Indus valley. But now the geographical horizon of this civilization is greatly widened.

Within about four years of the partition of the subcontinent, planned surveys were undertaken in India to locate more Indus Civilization sites in the regions contiguous to the frontiers of Pakistan – in Rajasthan and Punjab for an eastward extension and in Gujarat for the southward. The exploration of the Ghaggar valley, conducted in 1951/52, resulted in the discovery of as many as twenty-five Harappan sites within the present-day borders of India in the region beginning right from the Pakistan border (eastwards) up to midway between Hanumangarh and Suratgarh in the Sarasvati valley and about 22 km east of Bhadra in the Drishadvati valley.[54]Noteworthy among these sites was also Kalibangan, which has been subjected to large-scale excavation the findings of which remain still to be fully published. During 1952–55, excavation was undertaken at Rupar, not very far from Kotla Nihang Khan, where the Harappan remains were found for the first time stratified between the deposit yielding the painted grey ware and the natural soil.[55]Three years later a similar sequence was identified at Alamgirpur, some 45 km north of Delhi on the Hindan, a tributary of the Jamuna, and recently again at Hulas across the Jamuna. Further explorations in Rajasthan, Haryana, Punjab, Jammu and Kashmir and in Meerut and Saharanpur districts of Uttar Pradesh added more Harappan and late Harappan sites in this (eastern) region. With these discoveries the eastern limit of the Indus Civilization now extends to Alamgirpur, across the Indo-Gangetic divide, and the northern limit to Manda, located on the right bank of the Chenab in the foothills of the Pir Panjal range, 28 km west of Jammu.

As regards the distribution pattern, no mature Harappan sites have so far been located in the present-day valleys of the Sutlej and Beas with the singular exception of Kotla Nihang Khan and Rupar situated on the left bank of the Sutlej in the foothills of the Siwaliks. On

[54] Gosh, 1952; Anon., 1955; Sankalia and Deo, 1979; Pandya, 19581959; Deshpande, 1959; Sali, 1981; Soundara Rajan, 1967; Joshi, 1979, 1980; Dikshit, 1981.
[55] Sharma, 1956.

the other hand, there is a chain of pre-Harappan and Harappan sites in the valleys of various streams like Sirhind Nadi Sarasvati, Markanda, Patialvi, including Chautang (ancient Drishadvati), all contributing to the Ghaggar (ancient Sarasvati) system. Late Harappan settlements are, however, found both in the Ghaggar-Sarasvati system and in the Sutlej basin. Among the excavated sites in this region, Rupar and Manda, located in the foothills, represent the limit of the ecological zone which the pre-Harappans or Harappans could exploit, besides being important centres for supplying teak to the settlements in the valleys below. Similarly, Alamgirpur and Hulas located across the divide of the Indus and Jamuna systems, mark the eastern limit of the ecological zone, beyond which lay the real Indian monsoon-fed jungle which the Indus people found difficult to civilize without an ample supply of metal (perhaps iron).

On the southern side, excavations were resumed at Rangpur in 1947[56]and again in 1953.[57]Thereafter large areas in Gujarat, including Kutch and Kathiawad, were extensively explored, resulting in the location of several Harappan and late Harappan sites, the southernmost being situated on the estuary of the Kim.[58]Recent excavations at Daimabad, located on the Pravara, a tributary of the Godavari, has now extended the limit of the Indus Civilization further south up to almost the latitude of Bombay in the Ahmadnagar District of Maharashtra.

As regards the distribution pattern, we find that the spread of the Indus Civilization was not uniform in this southern region, being conditioned by areas of attraction, namely coastal flats, fertile river valleys, estuarine plains, routes of communication, etc. No mature Harappan sites have so far been located in the narrow corridor connecting the Kutch and Kathiawad peninsula with the mainland. The Harappan expansion to Gujarat may perhaps be explained by the urge to search for raw materials (timber, ivory, carnelian) and ports. Among the excavated sites in this region Lothal, Prabhas Patan and Bhagatrav were located on the coast, indicating coastal movement of the Harappans, and Surkotada on the possible land route connecting Lower Sind with Kutch and the estuarine plains of north-western parts of Gujarat. We may now turn to the principal sites *seriatim*.

Kalibangan and other eastern sites

Kalibangan, a site of considerable importance in the Ghaggar valley with a twofold culture sequence, has already been referred to in Chapter 11 wherein the characteristics of its

[56] Dikshit, 1950.
[57] Rao, 1962/63, 1973, 1978*a*.
[58] Rao, 1963; Possehl, 1979*a*; Raikes, 1968.

pre-Indus and early Indus occupations were discussed.[59] The Harappan metropolis at this site consisted of two principal parts: the citadel on the west, represented by a smaller mound (KLB I); and the lower city towards the east, represented by a fairly extensive mound (KLB 2). The former was situated atop the remains of the preceding occupation to gain an eminence over the lower city which was laid out towards the east, leaving a gap of over 40m.

The citadel complex is roughly a parallelogram, some 240 m from north to south and 120 m from east to west consisting of two almost equal but separately patterned parts, rhomboid on plan, with a bipartite wall in between and reinforced at intervals with rectangular bastions (Fig. 7). The fortifications were built throughout of mud-bricks of two sizes (40 X 20 X 10 cm and 30 X 15 X 7.5 cm) representing two principal phases of construction, the larger one in the earlier phase and the smaller one in the later. On the north and west, the fortification wall overlies that of the preceding period, while on the east and south including the bipartite portion, it was built on the ruins of the earlier occupation, obviously to achieve the proportion of 1:2.

The southern half of the citadel was more heavily fortified not only with corner bastions but also with rectangular salients along the southern and northern (bipartite wall) sides, the latter projecting imposingly into the areas of the northern half, indicating thereby that the southern half formed the main part of the citadel complex. The enclosed area contained some five to six massive platforms of mud and mud-bricks. Of these, the complete outline of one (50 X 25 m) and sizeable portions of four have so far been exposed. Access to the working floors of platforms was by means of steps which rose from the passage. Of the buildings that stood upon these platforms, no intelligible plans are available being obscured by the depredations of brick-robbers. Nevertheless the available remains do indicate that these might have been used for religious or ritual purposes of a public character. On the only one with a surviving complete plan, besides a well and a fire altar, a rectangular pit (1.24 X 1 m) was built with baked bricks and contained bovine bones and antler representing perhaps a sacrifice; on top of another was noticed a row of seven rectangular fire-altars aligned in north-south axis. A short distance away on the same platform was a well with some bath-pavements. Baked brick drains ran through the passages carrying ablution water.

The entrances to this part of the citadel were located on the south and north. The southern one was situated between the central salient and the northwestern corner bastion. The passage, which has been extensively ransacked for bricks, seems to have been a stepped one fronting the fortification wall. The northern entrance comprised a mud-brick stairway,

[59] Thapar, B. K., 1973*a*, 1973*b*, 1975, 1978, 1981, 1982; Vats, 1937.

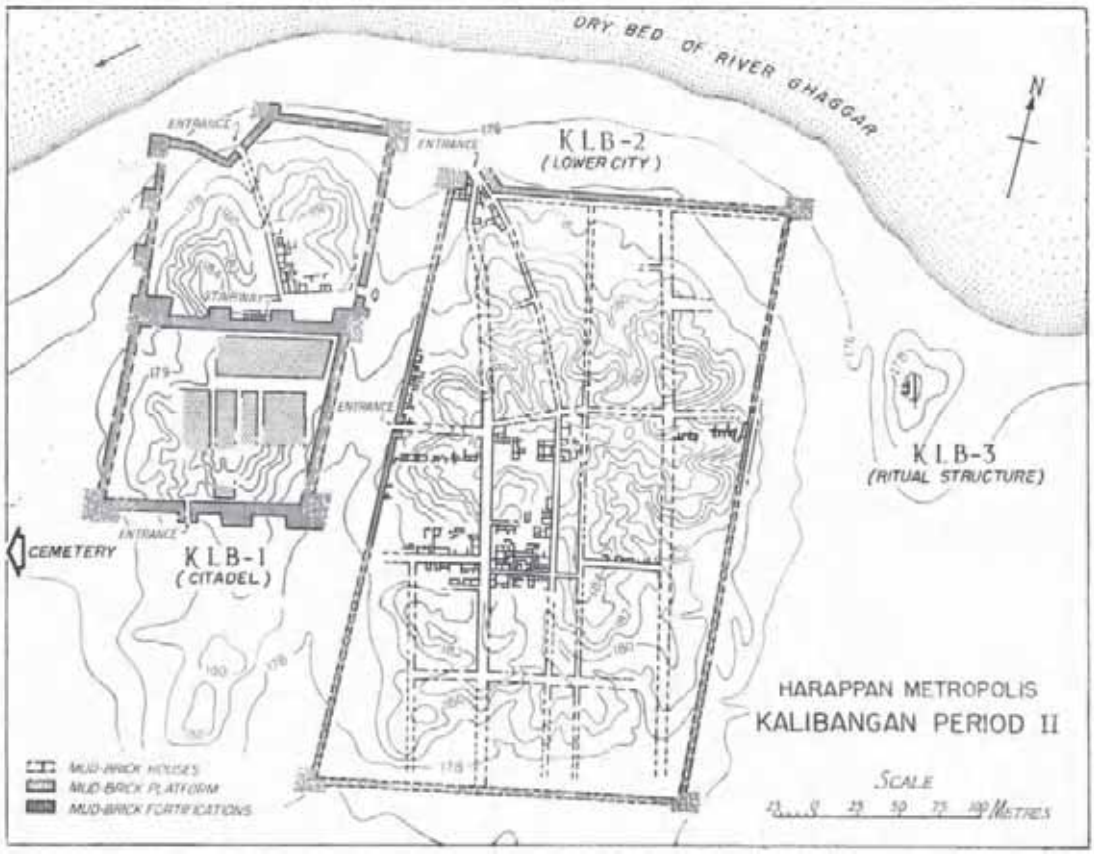


FIG. 7 Plan of Kalibangan.

which running along the outer face of the bipartite fortification wall, between the two centrally located salients, led up to the required height at which passage across the fortification wall was provided. From the locations of the entrances it is surmised that the southern may have been the main one intended for the general public from the 'lower city' and the northern that for the dwellers in the residential annexe (i.e. the northern half) of the citadel. The structural features of both these entrances precluded the possibility of any vehicular traffic within the southern half of the citadel.

The northern half, which was also fortified, contained residential buildings, perhaps of the élite, including the priestly class. A complete street plan of this part of the citadel has not been exposed. Meanwhile, a thoroughfare running north-south has been partially explored (Fig. 8). Starting from the easterly of the two salients of the partition fortification wall it ran obliquely in the direction of the entrance on the north. There were three entrances to this part of the citadel on the eastern, northern and western sides, none of which were of the ramp or stairway type.

FIG. 8 Kalibangan: excavated street in the northern part of the citadel.

The ‘lower city’ was also a parallelogram, some 240 m from east to west and 360 m from north to south and lay to the east beyond a broad space of 40 m. It was also found to be enclosed by a fortification wall. Within it there was a gridiron or irregular net plan of streets running north to south and east to west, dividing the area into blocks. The existence of four arterial thoroughfares running north to south and three (with an indication for the fourth in the northern part) running east to west was established by excavation. Besides, there were quite a few lanes that served only one or two blocks. The streets do not seem to lead to any important building or open public space. The width of the thoroughfares seems to have been maintained throughout the occupation, the only structural encroa chments into the thoroughfares being rectangular platforms immediately outside some of the houses which may have represented semi-public spaces serving as bazars or for sitting and gossiping. The streets, except in the late phase were unmetalled. No evidence of regular street-drains has so far been encountered: house-drains discharged themselves into soakage jars buried under street floors.

Two entrances to the walled area were exposed by excavation. Of these, one was located on the west and the other in the north-western angle. From the location of these two entrances, it could be inferred that the western one was used by the city-dwellers for

communicating with the citadel and the northern one for the city's commercial river traffic. It is likely that there may have been other entrances particularly on the east and south. From the very beginning of the occupation, the houses were built of mud-bricks (30 × 15 × 17.5 cm), the use of baked bricks (both of the same size and of wedge-shaped type) being confined mostly to drains, wells, sills and bathing-pavements. Some of the houses had a 'fire altar' in one of the rooms, intended for private ritual.

Besides the above two principal parts of the metropolis, there was also a third one, namely a modest structure situated upwards of 80 m east of the lower city. The structure, of which the complete outline could not be recovered, consisted of an impressive wall enclosing a room containing four to five 'fire altars' located individually. The absence of any normal occupation on this mound suggests that the lonely structure with the fire altars was used for ritual purposes.

The cemetery of the Harappans was located upwards of 300 m west-southwest of the citadel. Three types of burials were attested: (a) extended inhumation in rectangular or oval graves along with pottery and other funerary objects; (b) pot-burials in a circular pit; and (c) rectangular or oval graves containing only funerary furnishings. The latter two methods were unassociated with any skeletal remains.

The finds including pottery obtained from the occupation of this period were all characteristic of the Indus Civilization. Among these the following deserve special mention: (a) a cylinder seal; (b) a terracotta cake incised on the obverse with a horned human figurine and on the reverse with a human figure pulling an obscure object (perhaps an animal); (c) a terracotta human head; (d) a copper bull showing the dynamic mood of the animal; (e) a terracotta graduated scale; and (f) an ivory comb.

Environmental studies have indicated that one of the compelling reasons for the abandonment of Kalibangan was the drying up of the Ghaggar river.

Banawali is situated along the ancient bank of the Sarasvati river (now merely a storm-water drain known as Rangoi), some 220 km north-west of Delhi. A threefold sequence of cultures has been identified at this site, of which the upper one belongs to the late Harappan, the middle one to the Harappan and the lower one to the pre-Harappan occupation. During the Harappan occupation, the settlement was fortified, showing two subjoined parts, with a bipartite wall, the south-western quarters perhaps used as a citadel and the remaining part as a residential annexe. The former, as at Kalibangan, was located on top of the pre-Harappan occupational strata to gain an eminence. An intercommunicating entrance reinforced by a massive square salient seems to have been provided in the mid-portion of the partition wall. No structures within the citadel have so far been exposed. The residential part was found, however, to be subdivided into an irregular plan, and not a complete

chessboard. The houses were made of mud-bricks of average size, 30 × 15 × 7.5 cm. As at Kalibangan, larger-sized bricks of average size 40 × 20 × 10 cm were used for the fortification walls. The typical finds recovered from the deposits of this period include cubical weights, seals bearing the Indus script, long chert blades, copper or bronze arrow- and spearheads, fish hooks, bangles, a double spiral-headed pin, gold beads, including one of copper with a gold foil and painted pottery. Noteworthy among these finds, however, are two examples of terracotta mother-goddess figurines with characteristic head-dress. It may be recalled that this type, though commonly found at Harappa and Mohenjo-daro, is completely absent in the southern and eastern regions, even at the extensively excavated sites of Kalibangan and Lothal.

The late Harappan occupation, the remains of which were found outside the walled town on the east, was attested by a number of pits containing pottery which was different alike in fabric and decoration from the Harappan.

Mitathal lies some 118 km north-west of Delhi along the dried-up former course of the Jamuna.[60]The site attracted the attention of archaeologists through chance finds, while ploughing, of two copper harpoons and, through canal digging, of thirteen copper rings. Excavation revealed a twofold sequence of cultures of which the latter was further divided into two sub-periods, labelled Period I, Sub-period IIA and Sub-period IIB. Of these, Period I represented a stage when both the pre-Harappans and Harappans lived together, though with a larger bias towards the former, as indicated by the pottery. The structures were built of mud-bricks 30 X 20 X 10 cm in size as prevalent at Kalibangan in Period I. Sub-period IIA is characterized by the typical Indus equipment including pottery, household objects and architecture. The pre-Harappan element (labelled here as Siswal B), continued in a lesser degree. The houses were made of mud-bricks 40 × 20 × 10 or 36 × 18 × 9 cm in size. Cubical agate weights, a few long blades also of chert, triangular terracotta cakes and toy-cart wheels, faience and terracotta bangles and pottery confirm the Harappan affiliation of the site. Sub-period IIB is distinguished by a general deterioration and impoverishment of the material culture of the Harappans. The pottery shows degeneration in treatment and decoration apart from introduction of new forms. The surface find of the harpoons in all likelihood may have belonged to this phase.

Manda is situated 28 km west of Jammu on the right bank of the Chenab river, in the foothills of the Pir Panjal range.[61].The excavation revealed a 9-m-thick occupation deposit, a threefold sequence of cultures with two sub-periods in the earliest. Sub-period IA is marked by the occupation of the Harappans. Besides the typical Harappan pottery

[60] Suraj Bhan, 1975, 1976..
[61] Joshi and Bala, 1982; see *IAR*, 1978–80.

and terracotta cakes, sherds of pre-Harappan fabric were also found in the deposits belonging to this sub-period. Perforated jars were conspicuously absent in this assemblage. A noteworthy find, however, was a double spiral-headed pin of copper. Sub-period IB shows two distinct ceramic traditions, namely Harappan red ware and the plain grey ware, usually associated with the well-known painted grey ware. Periods II and III belong to the historical period.

Hulas is situated some 140 km north-east of Delhi across the Jamuna river in Saharanpur District. The excavation[62] yielded a fivefold sequence of cultures of which the earliest belonged to the Harappan culture and the remaining to the historical. A seal bearing Indus characteristics confirms the Harappan affiliation of the site.

Bara lies some 8 km south of Rupar. The excavation[63] revealed an occupation of over 4 m thick, in which such typical forms as Indus goblets or terracotta cakes were rare, confined to the lower levels. The antecedents of this culture are traceable to a pre-Harappan tradition. Harappan elements are also represented in this assemblage albeit in a transformed manner.

Bhagwanpura is situated on the right bank of the Sarasvati. The excavations[64] revealed, in a 2.7-m-thick occupation stratum, a twofold sequence of cultures of which the earlier was represented by the late Harappan and the later, which was found interlocked with the preceding one, by the painted grey ware culture. This evidence purports to fill the earlier gap between the two cultures. A noteworthy find from the overlapped phase was a terracotta seal, bearing incised Indus characters. An identical culture sequence was also observed at Dadheri in the Sutlej valley.

Lothal and other southern sites

Lothal is situated on the coastal flats at the head of the Gulf of Cambay[65] 80 km south-west of Ahmedabad. Being located only 16 km north-west of the junction of Sabarmati and Bhogawo rivers it was subjected to frequent floods. At the same time it had the advantage of commanding the navigable estuaries of both these rivers. The settlement, therefore, had to be reinforced with mud and mud-bricks against flooding on more than one occasion. The excavations revealed five phases of continuous occupation, of which the first four labelled Lothal A, are Harappan and the fifth, labelled Lothal B, variant or sub-Indus, representing a late or degenerate phase. While the ceramics belonging to Lothal A show all the essential elements of the Indus Civilization in the substantive sense, there are two which are not

[62] Sali, 1981.
[63] Sharma, 1976.
[64] Joshi, 1979.
[65] Rao, 1979.

met with on the sites in the Indus valley proper and the eastern region and as such require our attention: the micaceous red ware and the black-and-red ware, both showing painted decoration.[66]The former was represented by round-bottomed bulbous jars and bowls, the type fossil being the convex-sided bowl with stud handle. This type was also adopted by the Harappans. A pre-Harappan horizon yielding the above-mentioned ceramics has, however, not been recorded at the site, though it would be reasonable to argue for the existence of a settlement near by using these ceramics. Among the other noteworthy ceramics of Lothal A is the reserved slip ware which indicates its connections with Mohenjo-daro. The painted decorations on the Harappan pottery include, besides the typical patterns like the pipal leaf, intersecting circles, fish-scale, peacocks, etc., free-style painting of cranes and fish-eating storks as well as depictions of caprids etc., which indicate a provincial style. Other finds were characteristically Indus, like the seals, cubical weights, chert blades, disc beads, copper fish-hooks, etc. Coming to the settlement plan (Fig. 9), we find that Lothal was a fortified settlement oriented to cardinal directions some 300 m from north to south and 225 m from east to west, a trapezoidal south-eastern part of which was intended to serve as a citadel or acropolis, being separated from the remaining part of the city by high plinths made of mud, and a mud-brick platform. The prominent structures located on the acropolis included what the excavator terms the 'ruler's residence', the regimented series of rooms each with a brick-paved bath, a remarkable system of underground drains and a warehouse. On the eastern flank of the settlement was an oblong enclosure (Fig. 10) measuring some 225 m in length (north–south) and some 36 m in width (east–west) and perhaps 4.15 m in depth (the extant height of the embankment in the south-west corner of the basin being 3.3 m, with forty-two extant courses of bricks), claimed to have been a dock for shipping; this interpretation, however, is disputed by some scholars.[67]Both the dock and warehouse coupled with the discovery of a Persian Gulf style seal[68] at the site are indicative of the maritime trade of this coastal site. To the west of the city lay the cemetery, where as many as sixteen graves were excavated. Of these, thirteen contained one skeleton each and three, two. While extended inhumation along with funerary objects seems to have been the normal burial practice, simultaneous inhumation of two bodies has not been met with at any other Harappan site except at Damb Buthi.[69]

The Lothal B Phase was marked by certain changes in ceramics; the goblet beaker and perforated jars became scarcer; the dish-on-stand became squattish; concave-sided bowls became concavo-convex in profile; the complicated crisp geometrical designs were

[66] Ibid., 1979, pp. 28–33.
[67] Ratnagar, 1981.
[68] Rao, 1963.
[69] Majumdar, 1934.

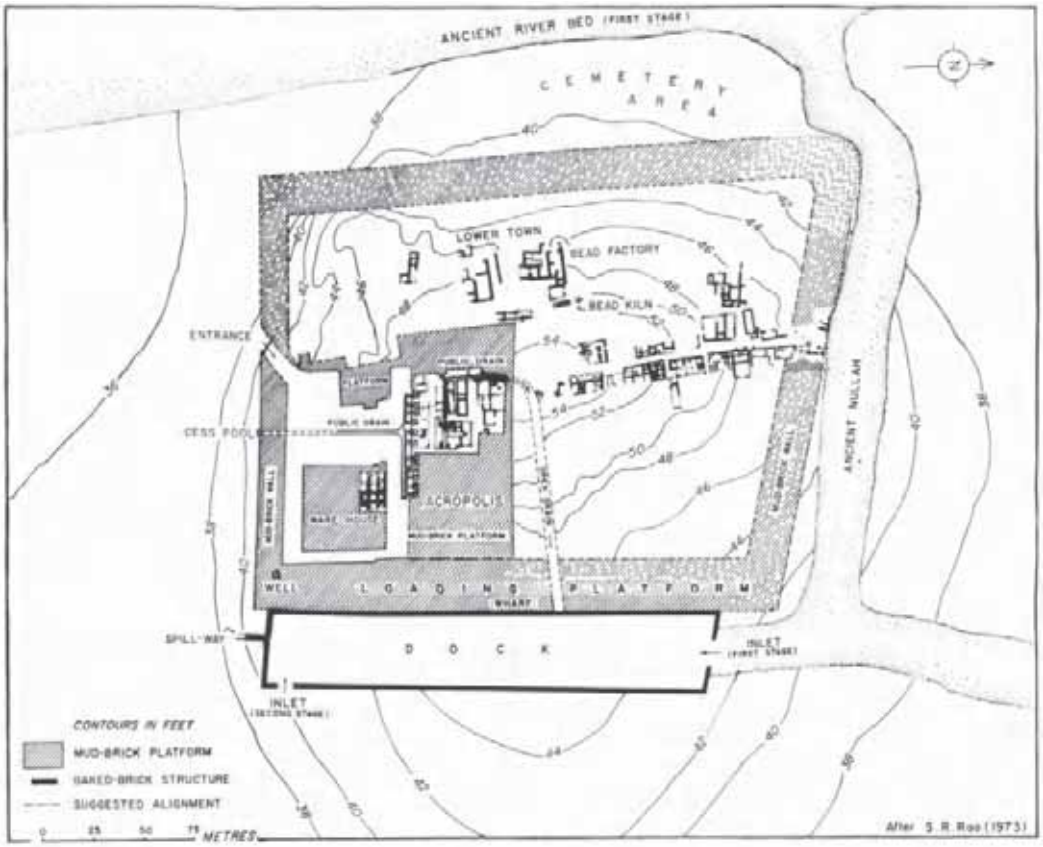


FIG. 9 Plan of Lothal.

FIG. 10 Lothal: Brick structure, known as a dockyard, with a spillway in the foreground.

replaced by groups of horizontal and wavy lines, loops, fronds, triangles, volutes, panels, stylized peacocks and birds drawn in a free style on a limited surface of the pot; terracotta bangles were completely replaced by those of conch shell, cubicle chert weights by spheroid-shaped ones of schist and sandstone and long ribbon flakes by the short blades. A significant change in the seals was the absence of the animal motifs and other pictures.

Rangpur, long recognized as the southern outpost of the Indus Civilization, is situated on the river Sukha Bhadar, a sluggish stream which disappears in the salty waste farther down the ancient site. The excavation revealed a threefold sequence of cultures, the earliest of which was marked by crude microliths of jasper and agate without pottery. The succeeding culture, termed Period II, represents the Harappan occupation showing three phases, IIA, IIB and IIC, denoting respectively the mature, the decadent and the transition stages of the Indus Civilization. In Sub-period IIA, the pottery is impeccably Harappan and also includes the micaceous red ware and the black-and-red ware of Lothal affiliation; in Sub-period IIB the fabric of the pottery becomes coarser, and forms like beakers and goblets, already scarce in the preceding sub-period, were almost discarded. In Sub-period IIC new forms and fabrics were introduced. The last cultural period at the site is marked by the dominant use of the lustrous red ware which in fact began to be made in Sub-period IIC itself. The ware was often painted in black with less ambitious designs and animals like bulls, running deer, rows of birds, etc. Among the noteworthy finds was a terracotta figurine of a horse. Faience and steatite were almost unknown in the period.

Prabhas Patan is situated on the south-western coast of Saurashatra at the mouth of the Haranya river near the port town of Vereval.[70] The excavation revealed a fivefold sequence of cultures of which the earlier three are Chalcolithic. These were marked by the use of what is termed Prabhas ware – a mossy grey-coloured pottery, painted in purple or dark brown with a design ornament usually set in panels or registers. The most predominant shape is a sub-spherical bowl which occurs in all sizes. Among the Harappan forms were the dish-on-stand and the stud-handled bowl. Late Harappan pottery of Rangpur Sub-period IIB was also in use, but there were no beakers, goblets or terracotta cakes. In the later phases, the lustrous red ware also came to be used. They used blades of chalcedony and even imported a few of obsidian. Besides they also used cubical chert weights and segmented faience beads. A unique seal amulet of steatite, obtained from levels ascribable to the later half of the second millennium B.C. and engraved on one side with seven stylized deer and on the other with five, deserves special mention.

[70] Pandya, 1957.

Rojdi is situated on the left bank of the Bhadar river about 55 km south of Rajkot.[71] The ancient site is thought to have been girt with a fortification wall built with large boulders. The excavations provided a sequence of two phases, of which the earlier was Harappan and the latter showed links with Prabhas, Rangpur IIB and IIC. An important evidence of the Harappan connection was the discovery of a convex-sided bowl inscribed with four Indus characters.

Desalpur is located on the northern bank of the one depredatory stream Bamu-chels in Kutch.[72] The excavation revealed a 3-m-deep cultural deposit, of which the upper 75 cm belonged to the early historic period and the remaining 2.25 m to the Chalcolithic, further divided into Sub-period IA as mature Harappan and Sub-period IB as late Harappan. The Harappan settlement, measuring 130 × 100 m, was contained by a fortification wall built of partially dressed stones and reinforced with rectangular salients. A partially exposed structure in the central part of the settlement may have served as a partition wall separating the citadel part from the residential area. In Sub-period IA, besides the typical Harappan pottery and other finds, sherds of the so-called reserved slip ware were also found. In Sub-period IB the white-painted black-and-red ware of the Ahar genre and cream-slipped bichrome ware were introduced. The excavation confirmed the Harappan affiliation of the site by the find of two script-bearing seals (Fig. 11), one in steatite and the other in copper, and a lettered terracotta sealing and segmented beads of faience.

Surkotada, situated some 160 km north-east of Bhuj in Kutch[73] provides much useful evidence relating to the diffusion of the Indus Civilization from the lower Indus valley to Gujarat by the land route. The excavation brought light to a sequence of three cultural phases of the Harappa culture. From the very beginning of the occupation (Sub-period IA) the settlement was fortified on a rectangular plan (approximately 130 × 65 m, with east–west as the larger axis) divided into two parts: the western half was used as a citadel while the eastern half was residential. The fortification wall was made of mud with a veneer of rubble masonry. Some of the structures were made of mud-bricks (size 40 × 20 × 10 cm). The finds obtained from the deposits of this sub-period included a typical steatite seal, sherds bearing painted Indus characters, long chert blades, etc. Besides the characteristic Harappan pottery a cream-slipped bichrome ware showing painted designs in brown and purplish red or black and the so-called reserved slip ware were also found. The cemetery area lay to the north-west of the settlement. The people practised urn-burial as one of the modes of the disposal of the dead. In Sub-period IB, the Indus elements become less

[71] Pandya, 1958.
[72] Soundara Rajan, 1967.
[73] Joshi, 1972,1973,1974

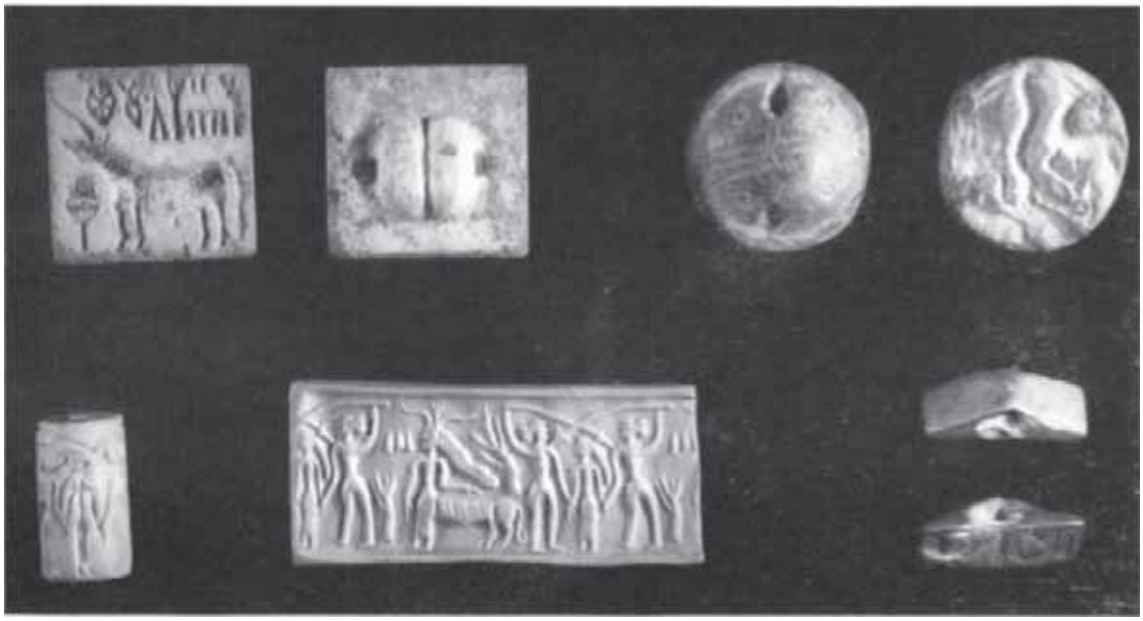


FIG. 11 Seals from Surkodata, Lothal, Kalibangan and Desalpur.

pronounced with the appearance of a new ceramic tradition of coarse red ware. The upper levels yielded sherds of white-painted black and red ware. In Sub-period IC the Harappan pottery tradition had further waned, the dominant ceramic being the white-painted black-and-red ware. The fortifications were reconstructed in rubble masonry. Noteworthy finds included a terracotta seal bearing signs in the Indus script, chert weights, etc. The presence of the horse is indicated by the discovery of horse bones in deposits of this sub-period.

Daimabad is situated on the Pravara, a tributary of the Godavari in Ahmadnagar District, Maharashtra. The site had attracted the attention of the archaeologists through the find of a cache of four solid bronze objects; an elephant, a rhinoceros, a buffalo and a chariot yoked to a pair of bulls and driven by a standing human figure, all weighing 65 kg. A closely observed excavation[74] at the site revealed a fivefold sequence of cultures labelled as: Period I – Sawalda culture; Period II – late Harappan culture; Period III – buff- and cream-ware culture; Period IV – Malwa culture; and Period V – Jorwe culture. Of these, the Sawalda culture takes its name from the site of the Tapti valley where it was first encountered and is characterized by a wheel-made painted pottery of medium-to-coarse fabric. The thick slip coat on this pottery often shows crazing and has turned red, pink, greyish brown or chocolate in colour and is painted in black or red, or in both colours. The types represented include the dish-on-stand, high-necked jar, basin, etc. Along with this ware burnished grey and thick coarse wares were also in use. Period II is distinguished by a sturdy red ware of

[74] Rao, 1978

late Harappan tradition, painted with simple designs like cross-hatched triangles, groups of vertical or wavy lines, chains, loops sometimes interlaced, etc. The types represented in this ware are the dish-on-stand vase with collared rim, dish and bowl. Associated with this was also a bichrome ware. Other objects included copper/bronze celt, small-sized blades and microliths. The burial practice of the people was evidenced by the discovery of a grave (within the habitation area itself), showing an extended articulated inhumation with the head towards the north, the body being covered with fibrous material like hemp, the sides of the grave being lined with mud-bricks 32 × 16 × 8 and 28 × 14 × 7 cm in size. The continuing sequence in Periods II, IV and V ties up the site with the Chalcolithic culture of central India and provides the Indus Civilization with a rational sequel.

The problem of the chronology of the wide territories of the Indus Civilization requires some measure of circumspection. Within its widely distributed area, the spread of the civilization from the nuclear to the peripheral regions was obviously conditioned by the urge to seek out familiar environments and to search for resource material and trading ports. The spread would thus show a sloping horizon for the civilization in terms of time and space. The evidence at present available both from the eastern and the southern regions indicates that such was indeed the fact.

It has already been postulated that the nuclear cities of the Indus Civilization were founded some time before 2400 B.C. and that they endured in some shape to the eighteenth century B.C. [75](These and all other data mentioned in the remainder of this chapter are without MASCA calibration.) In the eastern region five sites, namely Kalibangan, Banawali, Mitathal, Sanghol and Bara have been radiocarbon dated. Among these, Kalibangan, which is located nearest to the nuclear region of the civilization, was sampled very extensively (six from the early, nine from the middle and nine from the late levels), showing an inclusive time-bracket of 2300–1700 B.C. (or, with MASCA calibration, 2850–2060 B.C.) for the Harappan occupation with a margin on the earlier side. Banawali, which lies some 120 km east of Kalibangan on the same river, namely Sarasvati, seems to have been occupied by the Harappans around 2250 B.C., middle levels of the occupation being radiocarbon dated to *circa* 1950 B.C. (MASCA calibrated 2200 B.C.). Mitathal, which is situated some 110 km farther south-east of Banawali along the dried up course of the Jamuna, shows a still later beginning of the Harappan occupation at the site as indicated by the radiocarbon dates (around 1800 B.C.) for the middle levels of the occupation. However, it is likely that sites like Rupar and Manda, due to their proximity to the source of timber, which was an essential requirement, would have been occupied by the Harappans not much later than Kalibangan. Of these Harappan sites, Banawali and Mitathal also show late Harappan

[75] Wheeler, 1968 pp. 110–26.

occupations, for which no absolute dates are available. However, from Sanghol, located along the ancient bed of the Sutlej, where a distinct late Harappan occupation was attested with cultural equipment comparable to that of Banawali and Mitathal, five radiocarbon dates have been obtained. Of these, excepting the one aberrant determination, the remaining four indicate a range of 1750–1500 B. C. (MASCA calibrated 2110–1690 B.C.). The late Harappan occupation at Bhagwanpura, which shares some of the characteristics of those of Mitathal and Sanghol, also falls broadly within the same range, with perhaps a margin on the younger side as shown by the scatter of thermoluminescence dates obtained from the samples of pottery. Bara which lies close to Rupar did not have any Harappan occupation in a substantive sense, but instead shows an effete culture with some of its antecedents traceable to the pre-Harappan tradition, and having limited contacts with the Harappans. The four radiocarbon dates obtained from this site indicate a time-bracket of *circa* 1900–1000 B.C. (MASCA calibrated 2180–1100 B.C.), which responds consistently to the current evidence discussed above.

Turning to the southern region we find that the picture is somewhat different; unlike the eastern region the spread of the civilization did not follow a single directional course. Four sites, namely Lothal, Surkotada, Prabhas Patan and Rojdi have been radiocarbon dated. Of these, Lothal, which was a port town, is amply, though inadequately, sampled, on the basis of which, as also of other factors, Phase A (mature Harappan) may be dated to 2300–1900 B.C. (MASCA calibrated 2850–2180 B.C. and Phase B (sub- or late Harappan) to 1900–1600 B.C. (MASCA calibrated 2180–1800 B.C.). Surkotada which was on the land route connecting southern Sind with northern Gujarat, was founded almost at the same time as Lothal, if not somewhat earlier. Rojdi which was located inland north of Lothal was occupied by the Harappans a century or so later, resulting from the movement of people from flood-prone Lothal. The C14 dates for Period IB (1970 $\pm$ 115 and 1745 $\pm$ 105 B.C.) (MASCA calibrated 2190 B.C. and 2110 B.C.) fully support this premise. Prabhas Patan, with its individualistic pottery was in the main contemporary with Rojdi, notwithstanding the two early dates around 2400 B.C. which seem to be inconsistent with the general chronology of the region. The so-called late Harappan phase in this region is represented, besides the sites discussed above, at Rangpur (Period III), Daimabad (Period II) and Desalpur (Period II) and carries the sequence to the middle of the second millennium B.C. or a little later.

From the foregoing it would be seen that in the two regions the spread of the civilization varied both in pattern and content. In the eastern region, the settlements had an advantage of the alluvial plains, while in the southern regions, the settlements conform to areas of attraction namely coastal flats, routes of migration, fertile hinterland plains, etc.

There is thus an apparent uniformity in the cultural manifestation in the former region and regional diversities in the latter. The diverging trends are more prominent in the later phase of the Indus Civilization. At Kathiawad, Prabhas and the lustrous red ware are the two distinct ceramic industries which overtake the Indus Civilization; at Kutch it is the white-painted black-and-red ware of Ahar genre; and at other sites in Gujarat it is the sturdy red ware painted with elementary designs. As compared with this the late Harappan phase in the eastern region is represented by an amalgam, consisting of distant traditions of pre-Harappan, Harappan and Bara cultures resulting from interaction and communication of these cultures over a long period when the former cultures were becoming impoverished. Thus in the southern region it was a case of transmutation while in the eastern it was one of cultural fragmentation.