CHAPTER - II

ARCHAEOLOGICAL BACKGROUND OF THE HARAPPAN AND COPPER HOARD CULTURES

The identification of a site as belonging to a particular culture largely depends on its possessing characteristic features and uniformity in material relics. The purpose of this study is to present new data regarding one aspect of the Harappan and Copper Hoard Culture that is the copper metallurgy, that will help in identifying additional features which can be definitely related to the major traits of the Culture. In this chapter we will briefly look at the major characteristics of these cultures in order to provide a background for the discussion of the metal technology.

UNIT I

THE HARAPPAN CULTURE

The discovery of the great cities of Harappa and Mohenjodaro in the valley of the river Indus, has almost revolutionised our conception of the Indian history. At a single stroke, the antiquity of Indian civilization has been pushed back to 3000 B.C. if not earlier and India now ranks along with Sumer, Akkad, Babylon, Egypt and Assyria as a pioneer in human civilization. As the chief centres of the Harappan civi-
lization were around the river Indus it was styled as the "Indus valley civilization." But later due to the discovery of a large number of sites at far flung places it has been renamed as the "Harappa Culture" after its type site Harappa.

Our present knowledge of the Harappan civilization is based primarily on interpretations of the material culture excavated from major urban and rural settlements in the Indus and its adjacent regions. With the excavation of new sites and the reanalysis of previously excavated materials, significant new interpretations have been put forth. Over the past fifty years our understanding has slowly changed and continues to develop as new questions are being asked. The earlier interpretations provided the basic foundation for much of what is now considered standard knowledge about the general character of this civilization.

It was a common belief that the Harappan civilization emerged and disappeared suddenly. But recent studies indicate that several antecedent cultures contributed to its makeup [Mughal 1970] and its decline came gradually as the urban traditions were replaced with a rural economy. The formative stages of the Harappan Culture are known as the pre-Harappan phase, while the authors of the degenerate phase of this culture are termed as the late Harappans.
The extent of the pre Harappan, mature Harappan, and late Harappan in India, falls boardly into two separate geographical regions divided by the Thar desert [Thapar 1981].

1) The eastern region, covering Rajasthan, Harayana, Punjab, some parts of Jammu and Uttar Pradesh. The river systems being the Ghaggar, Chutang, Saraswati, Sutlej, Beas, Ravi, Chenab and Jamuna.

2) The southern region covering Kutch, Kathiawad, north Gujarat, coastal flats of Gujarat and some areas of hinterland of Maharashtra. The river systems being the Luni, Rupen, Sabarmati, Mahi, Narmada Tapti and Godavari.

Within these two regions over seven hundred sites of pre-Harappan, mature Harappan and late Harappan affiliations have been located [Joshi et al 1984]. The three phases viz the pre Harappan, mature Harappan and the late Harappan have been discussed below in detail, regarding their cultural assemblages and chronology.
a) The Pre Harappan Culture

The pre Harappan Culture is the one which precedes and sometimes also overlaps the Harappa Culture. A striking feature of this phase is that it heralds some uniformity and many new traits leading to the threshold of urbanization.

The study material for the Pre Harappan Culture is obtained from the surface of deserted settlements and excavated sites. Several sites have been excavated in the Indian subcontinent, some important sites are Mundigak in Afghanistan; Kulli Gul Mohammad, Damb Sadat, Dabarkot, Anjira, Siah Damb, Nal and Kulli Mehi in Baluchistan; Amri, Kot Diji, Mohenjodaro and Gumai in Sindh; Harappa in Punjab; Kalibangan in Rajasthan; and Banawali and Mitathal I in Haryana.

The contribution of the pre-Harappans to the make up of the Harappa Culture in the field of agriculture, town planning, transport, stone and metal industries are quite significant. It is scarcely realised that the fortified sites of the pre-Harappan Cultures almost equal to the Harappan ones. The pre-Harappan had fairly permanent settlement in the riverine environment. Some centres had developed adequate organizations, capable of elaborate fortification. The pre-Harappan brick sizes were standardized (3:2:1) and bricks were laid in English bond. The mature Harappan ratio of 1:2:4 for the bricks compared to 1:2:3 of the pre-Harappan indicates only a
preference, the concept of standardization remaining a borrowed one. Terracotta cakes, whatever be its function, is a contribution of the pre-Harappans to the mature Harappans. Even typical Harappan motifs of fish scale patterns and intersecting circles had already been employed by the Kot-Dijian and the Amrian.

The pre-Harappans already employed bullocks carts for trade and communication as the toy cart models indicate.

Many important industries were also developed by the pre-Harappans. Stone blade technology had a uniformity, irrespective of the material used in the whole region. Steatite disc beads were manufactured at Kalibangan I and Pandi Wahi. Lapis lazuli beads were produced at Saraikhola.

The pre-Harappan pottery is pinkish, thinner and not as well baked as the pottery encountered during the mature Harappan phase. In decorations naturalistic motifs dominated the geometric ones; the bull motif became widely popular. The pre-Harappan pottery from Kalibangan has been distinguished into six fabrics. Mithathal, located in the Dristivadi valley in Hissar district of Haryana, has also yielded ceramics similar to Kalibangan I.
Copper metallurgy was also prevalent during the pre-Harappan times. Metal objects have been found at Mundigak, Nal and Mehi. Nal has yielded eighteen copper artefacts including adzes, chisels and saws. From Damb Sadat a few copper fragments and a dagger were recovered. At Kalibangan the use of copper for tools is duly attested to. Of it were found and axe and a parasu, the latter having a very distinctive shape. It has no parallels in the Harappan ensemble, but examples of it have been found at the other places viz. Mitathal, district Hissar, where it occurred in period II B (Suraj Bhan 1972 fig. 14A, 7) and Khurdi in district Nagaur, Rajasthan. The technological skill of the pre-Harappan metallurgy, can be judged from the discovery of a copper mirror from Mehi representing a stylized female figure.

Though the metal is meagre, there is evidence of low tin bronze from Mundigak I and of lead alloying at Nal (Agrawal, 1971).

Therefore, technologically speaking the pre-Harappans were in what may be described as the chalcolithic stage; i.e. using copper along with stone for the preparation of tools (Agrawal 1971). Blades of chalcedony and agate were found in large numbers. Some of them were backed and serrated. It is likely that they were hafted in a row, on a wooden handle and used for cutting and sowing.
Socio economically, the development in metallurgy, the improvement in agriculture, the harnessing of cattle power and trade were bringing the whole area from Afghanistan to Indus to the era of urbanization.

An absolute chronology for the pre-Harappans has not been possible so far. Attempts have been made to date this Culture on the basis of Mesopotamian and Iranian parallels and C 14 dates. Dates based on archaeological evidences for Kot-Diji-I, Mundigak IV, Damb Sadat II, Kulli and Amri II are 2700-2400 B.C. Radio carbon dates place Kot Diji to 2600-2000 B.C. Hence, based on both archaeological and radio carbon dates, the pre-Harappan Cultures can be said to have been in existence around 2400 B.C.

b) The mature Harappan Culture

The mature Harappan Culture, is marked by the cultural uniformity, both throughout the several centuries during which this it flourished, and over the vast area it occupied. The surplus production of raw material and finished goods increased and developed the urban centres. Its authors are known to be excellent townplanners, and their elaborate drainage system was far in advance of anything to be found at the time. They are known to have invented a script. There was a sudden efflorescence in metal because different types of copper and bronze artefacts have been
discovered. Trade and commerce developed and a well regulated system of weights and measures for the first time appears to have come into existence.

The Harappan Culture covered a wide region. The area enclosed by a line joining the outermost sites at which the material culture of this civilization has been discovered is little less than half a million square miles, considerably larger than modern Pakistan. Within this area, over 70 sites are known of which, the great majority lie on the plains of the Indus and its tributaries or on the now dry course of the Hakra or Ghaggar river. These once flowed to the south of the Sutlej, with the Thar desert on its left bank. Outside the Indus system, to the west, a few sites occur on the Makran coast, the farthest being Sutkagen Dor near the modern frontier of Pakistan and Iran (Allchin et al. 1983). These were probably ports or trading posts situated in an otherwise separate culture region. To the east of the Indus, further sites occur on or near the coast beyond the marshes of Kutch, the most impressive being the trading post at Lothal, on the gulf of Cambay. Amongst the recent discoveries, the most remarkable is the Harappan site at Shortughai on the South plain of the Oxus, in north eastern Afghanistan.

Of all the excavated Harappan sites, Mohenjodaro and Harappan, stand out, both on account of their size and of the diversity of the finds that excavations have revealed. The apparent conformity of weights and measures, the common script,
the uniformity of seals, the evidence of extensive trade in almost every class of commodity throughout the Harappan Culture zone and the common elements of art and religion have led many a scholars to think in terms of this Culture as a unified empire.

This uniformity is nowhere clearer than in town planning. The basic layout of the larger settlements whether cities or towns shows a regular orientation. At Harappa, Mohenjodaro and Kalibangan, this consists of two distinct elements. On the west, is a citadel mound built on a high podium of mud brick running north south. To the east is the lower city, consisting of what must have been the main residential areas. The citadel certainly and probably also the lower town was surrounded by a massive brick wall.

There appears to have been a general co-ordination of measurements of the streets, the largest being twice the width of the smaller and three or four times that of the side lanes.

The layout of the settlement at the Lothal was in some respects different, perhaps because of the different role that it played as a Harappan trading station. Along the east side of the settlement was a brick basin 219 by 37 metres in length, with extended brick wall of 4.5 m in height. It is claimed by its excavator as a dockyard
(Rao, 1979). While Leshnik (1968) suggests that it was a tank for the reception of sweet water channelled from higher ground, inland to an area where the local water supplies were saline. The principal living area is divided by streets of 4 to 6 mtrs. in width and narrower lanes of 2 to 3 metres.

The main street ran from north to south. In this area numerous traces of specialists workshops were found, including copper and gold smiths' shops, a bead factory, etc.

The drainage system in the lower city also deserves comment. The streets had brick drains, covered over by bricks into which the house drains flowed, while others led directly into large soak pits or jars.

Regarding the population of these towns, Lambrick (1967) has made a convincing case figures of 35,000 at Mohenjodaro, based upon comparison with the population of a city of comparable area in Sindh. Fairservis suggests a slightly higher figure i.e. 41,000.

This elaborate social structure and the standard of living must have been maintained by a highly developed system of communication and trade. With the inception of the full urbanism of the mature Harappan period the volume of trade and
interaction must have increased in scale and variety compared to pre-Harappan
times.

Common products were distributed throughout. From the limestone hills at Rohri
and Sakhar came nodules of fine flint and finished flint blades, which were worked
at vast factory sites nearby. They were then imported to form a uniform item of
equipment at Harappa, Mohenjodaro, Rangpur, Lothal, Kotdiji and Kalibangan. On
the same way, Balakot, near Las Bela on the coast of the Baluchistan, Chanhu-daro
and Nageswar in Gujarat were centres for shell-working and bangle making;
Lothal, Chanhu-daro, Dholavira and Nagwada were centres for the manufacturing of
beads of carnelian etc. The other specialists products, such as weights, seals,
copper artefacts were also the work of craft groups in the cities, and were dis-
seminated in similar fashion throughout the Harappan state. It is remarkable of the
Harappans that they had evolved a highly standardized system of weights and
measures. Two systems of measures were in vogue; cubits and a long foot. Gradu-
ated scales have been reported from Mohenjodaro, Lothal and Kalibangan. The
weights were made of agate, black stone, etc. and took cubical forms. They fol-
lowed a binary system (1, 2, 4, 8, 16, 32, upto 12800) in the lower denominations.
The unit weighed 13.625 gms. Accuracy of these weights all over the Harappan
territory is remarkable indeed.
Rao (1979) reports a shell object with four slits which was probably used to measure angles from Lothal.

The religious beliefs of the Harappan people can at best be construed on the basis of the seals, mothergodess-figures and naturalistic statues unearthed. A number of seals depict pipal, considered sacred in the later day Hinduism and Buddhism. Emphasis on the depiction of the bulls on seals and terracottas and a scene on a seal where it is carried on the shoulders in a procession can only be explained as being of religious significance.

The mature Harappans buried their dead in unlined pits, head pointing north. Only at Ropar the direction is north west. Pots and pans were put as funerary appendages. Personal ornaments like rings, earrings, necklaces, anklets, bangle and at times copper objects were also found with the burial. The Harappan cemeteries were away from the settlements unlike the Chalcolithic Culture of Deccan, where burials were right below the house floors.

The Harappan script has been an enigma to scholars. The Harappan seals, sealings and pots have legends in pictographic script comprising of four hundred signs. The script does not seem to bear any resemblance either with its contemporary foreign scripts or with the historical scripts of India.
Inspite of the common use of metals, stone was not abandoned. Chert blades were prepared at the settlements from cores which in turn had been exported from great factories like Sukkur. Blade industries in this period were highly professional and the crafts shows an effortless competence, without apparently any desire to produce novel or special results. This is a clear example of the kind of crafts specialization that took place at the beginning of the mature Harappan stage.

The products of the mature Harappan potters must have been mainly local and the uniformity of the forms and painted decoration which they display can not be accounted for by trade.

Mature Harappan pottery represents a blend of the ceramic traditions of Baluchistan on the one hand, and those of India, east of the Indus on the other. Although this mature period pottery shares the wheel, kiln and firing patterns with Baluchistan it developed its own character. Many other show string-cutting marks of their removal from the wheel.

The majority of the pottery is plain but a substantial part is treated with a red slip and black painted decoration. Polychrome pottery is rare. Abstract geometric motifs are comparatively unusual, the nearest approach being fishscale, leaf or
petal designs. Natural motifs, such as birds, fish, animal, plants, trees and pipal leaves, however are not infrequent.

The lapidary's craft was widely practised and its product included the range of steatite - beads and various ornaments and numerous weights. Beads were manufactured from a wide variety of semi precious stones brought to the Indus valley from different regions. In Chanhu-daro, Lothal, Dholavira and Nagwada bead makers shops were discovered with their equipments which included stone borers drills, anvils, grinding stones, furnaces and large number of beads in all stages of completion.

Contrary to the pre-Harappans, the mature Harappan phase witnessed a sudden upsurge in the metal objects, especially copper, in various forms ranging from utilitarian objects to intricate pieces of art and ornamentation. The Harappans were the only people in India who used metal lavishly for vessels, including a variety of vases (Agrawal 1970, 1971). The splendid copper and bronze vessels which are among the outstanding examples of the Harappan metal workers craft were either raised or sunken by hammering over a dome. Most of them seem to have been made in two parts, the bottom and the top and then joined together. For vessel fabrication they used running on and rivetting techniques. In contrast, there is no
evidence of copper being used for vessels in the Chalcolithic or the Copper Hoard Cultures.

Nearly all the basic tool types - flat axes, chisels, knives, spearheads and arrowheads, small saws, etc. could have been made by simple casting and/or chiselling and hammering. Daggers, knives with mid ribs and flat tangs begin to appear in the upper levels of Mohejo/daro.

The dancing girl from the Mohenjodaro and the animal figurines of dog, swan and bull are examples of their skillful casting. There is little doubt that such special objects as the cast bronze figures of people or animals, or the little model carts were the results of specialists workshops in one or other of the cities. These products of the casting of copper and bronze illustrates that the process was well understood throughout the Harappan period. Gold and silver were also exploited and used for ornaments but to a lesser extent.

The dating of the Harappa Culture is based upon some Harappan objects in west Asian archaeological contexts and the Mesopotamian artefacts on the Harappan sites. Wheeler, on the basis of archaeological evidences, proposed a time bracket of 2500 - 1500 B.C for the Harappan time spread. Fair service has brought the bracket down to 2000 - 1500 B.C. The Allchins on the other hand, concluded that
2150 - 1750 B.C. would match the evidence better. Agrawal proposed a bracket of 2300 - 2000 B.C. for the nuclear zone and 2200 - 1700 B.C. for the peripheral zones of the mature Harappan phase.

After this detailed general discussion on the mature Harappan Culture in the Indian subcontinent, a brief survey of the archaeology of the sites from where samples have been utilised in the study may not be out of place.

KUNTASI

Kuntasi (22°53' N, 70°32' E) located in Rajkot district of Gujarat was a tiny Harappan hamlet. The site was excavated by the Deccan College, Pune and the Gujarat State Archaeology Department. The mound of Kuntasi is 7 Kms away from the Gulf of Kutch. So far no reports on the excavations at Kuntasi has been published. Therefore, information on Kuntasi is scanty.

A major find at Kuntasi is a port cum industrial complex during the Harappan period. There are living quarters for the craftsmen producing beads, pottery, copper items like rings, bangles, knives and arrowheads. What makes the quarters really unique is the fact that most of the 50 odd rooms are interconnected, and also that there is only one path.
Another important discovery is a seal made of faience inscribed with rectangular figures, which has so far only been found in Harappa. According to the excavators, the seal could have been a sign of authority of the person in command of the settlement.

The excavators have also found a moon shaped structure in the middle of the living quarters, which may have something to do with Harappan form of worship.

A rich collection of superbly finished, sort of red and white pottery made of fine quality clay has been found at Kuntasi. One structure here has yielded tools like arrowheads and knives made of animal bones and another contained a heap of dry fish.

The other important antiquities found at Kuntasi are four chert weights, square and small in size, beads of steatite, agate, and lapiz lazuli.

The structures at Kuntasi are also noteworthy. The orientation of walls, about 60 cms wide are perfect. The size of the rooms is about 15 feet. A large portion of the structure is vacant. There is a well on the eastern side and a silo with a diameter of 1.5 m nearby.
Copper axes and plenty of broken pieces of ornaments like bangles, rings and pendants have been recovered from the Harappan site of Kuntasi. Of these a few pieces of bangles and a pendant were used for the analysis.

NAGWADA

Nagwada village (23°24'N, 71°41'E) located in the Dasada taluka of Surendranagar district, was excavated for five successive seasons from 1986 to 1990 by the Department of Archaeology and Ancient History, M.S. University, Baroda. The site is one of the 31 Harappan Culture sites discovered in the region around the Rupen estuary (Hegde et al, 1988).

Excavations in the site revealed five distinctive layers and four structural phases. In the upper layer, we come across a series of mud brick and rubble structures belonging to the mature Harappan period.

The habitational deposit of the mature Harappan phase is about a metre thick and consists of four well-built structural phases. The presence of two post-holes in layer (5) marked the earliest structural evidence at the site. Mud bricks and rubble stone was used from layer four itself. The mud bricks measured 32 x 16 x 8 cms and 28 x 14 x 7 cms. Clay was used as mortar in masonary and for paving the floors of the houses.
The various stone artefacts found in the site include long parallel sided chert blades that appear to be Rohri flint, stone blades, cores and waste of local agate, chert and chalcedony. A variety of saddle querns and pestle stones found in the excavations, attesting to the household grinding activities.

A large number of beads of agate, carnelian, amethyst and shell in various stages of manufacture have been excavated. Besides these a large number of steatite, lapis lazuli and faience beads were also found in considerable number. Two small pots full of steatite micro beads buried underneath the house floors may indicate their local production.

The craftsman at Nagwada were also engaged in cutting and polishing of shell ornaments. The other antiquities found from Nagwada are a large number of moulded terracotta triangular cakes, terracotta lumps with two or four finger impressions on them, and a terracotta mother goddess figurine.

The Harappan pottery includes a number of shapes like dish on stand, the dishes without carination, beakers with slightly flaring mouth and shallow dishes. The typical Harappan wares like the sturdy Red Ware, the perforated ware, the 'S' profile jars and the dishes on stand are also found. Among the non-Harappan pottery
the coarse gritty ware and the Black and Red Ware are predominant. A few large pots and pans are of coarse Black and Red Ware.

Nagwada has yielded artefacts of gold, silver and copper. The copper artefacts from the site include four axes and a chisel besides a large number of minor pieces like rings, scroll etc.

The radio carbon dates for the site is $3810 + 80$ BP. On the Masca calibration curves this date is equivalent to $2140 + 80$ BC.

c) The late Harappan Culture

The devolution of the mature Harappan phase, into the late Harappan, involved the reversal of a few necessary criteria laid down for the urbanization. The Harappan deurbanization involved decrease in the settlement size, population, surplus food production, in cessation of construction of monumental buildings, in use of writing and in long distance trade. This deterioration could have resulted due to the weakening of central authority.
The mature Harappan empire was followed by a long phase of cultural fragmentation not totally different from the mature phase, but with lesser exotic elements. With the decline of this civilization the sophisticated Harappan traits were replaced by improvised local cultures until it was reduced to the point of non-existence. It was actually the economic decline, which resulted in the devolution of this Culture.

Thus due to economic decline, the mature phases of the Harappan Culture degenerated into a well defined late phase. The characteristic aspects include the change in settlement pattern, pottery forms, minor workshops of arts, trade contact and disposal of the dead.

The gradual transformation of a Harappan civilization from the mature to the late, is very clear in pottery from Gujarat, Punjab, Haryana and western Uttar Pradesh. The painted Harappan pottery in later stages is replaced by less intricate designs and plain unpainted ware with new pot forms. The metallic ring of the pottery is replaced by a feeble echo.

In the late Harappan pottery shape, which derived its forms and designs from the mature phase indicated a general decadence in fabric potting and treatment of surface.
In Gujarat, there is an increase in the frequency of coarse Red Ware, represented by Lothal A, Phase-IV. The late Harappan phase in Gujarat is represented by Rangpur III, Prabha Patan III and perhaps Rojdi C. It is defined by the increase in frequency of Lustrous Red wares, painted Black and Red Ware and coarse wares.

In north India, the late Harappan phase is characterised by a reduction in the number of classical forms like the dish with a projected rim and carinated shoulder, a globular vessel with a flang around the neck a shallow dish and an incurved rim, perforated pots and jar styles with a concave profile and an increase in new forms such as the dish on stand with drooping rim, jar with a horizontally splayed out rim, a medium sized jar and a ring.

There is a gradual decrease in the number of steatite seals, beads, terracotta figurines and other works of art and crafts. The triangular variety of terracotta cakes found on mature Harappan sites is absent in the later stage. In the late phase, the long parallel sided chert blades are scarce. With the onset of the degeneration, steatite became rare and faience was the main material to be used.

Copper and bronze objects like leaf shaped knives, thin and flat arrow heads, other weapons of war, like axes, spears, daggers and arrows became rare. Objects of lapis lazuli, shell and ivory are also rare and absent.
Trade was a primary factory in the development of the Harappan sites as urban societies. In the late Harappan phase, the trading network collapsed and a cultural void existed. Perhaps trade with west Asia came to a stand still. This must have resulted due to rise of insecurity on the trade routes, thereby suggesting the weakening the central authority or a process of gradual restrictions on the routes which much have checked the development of the commercial enterprises. The change is also evident in the abandonment of the urban centres and decline in civic standards besides use of new plants like red sandal wood, rice and bajra.

The late phase of the Harappan civilization does not have sufficient radio carbon dates for arriving at any definite conclusion.

In Gujarat, the time bracket for this phase is calculated on the basis of radio carbon dates obtained from Lustrous Red Ware bearing deposits at Prabhaspatan. These dates place this phase between 1900 - 1400 B.C.

Bhagwanpura, has provided TL dates of about 2163 B.C. and 1046 B.C. for the late phase. There are no C-14 dates from Haryana and western Uttar Pradesh.
SOMNATH

The ancient site of Prabhaspatan (20° 45' N, 70° 28' E) near Somnath, is situated on the bank of the river Hiranya. It is divided by rain gullies into five mounds, all of which must have formed a continuous habitation site.

Five cultural periods have been distinguished by the excavations. Prabhas I A is a marked by a corrugated or broadly incised Grey Ware which is also burnished. The shapes and incised patterns agree with the shapes and painted patterns on the late Harappan pottery in Gujarat. The sub period was further associated with microlithic blade industry of Chalcolithic phases and segmented faience beads. Period II is noted for the ceramic shapes and painted patterns of two distinct traditions. One representing the late Harappan ceramics of Gujarat consisting of the dish on stand, saucepan handle etc. and ther other by the round bowl with an incurved and bevelled rim. The Prabhas ware is greenish or grey in colour painted in chocolate on a pinkish slip or pink over a brownish slip.

Miliolite rock was used in Period II for their rectangular houses which had a size of 3.8 x 2.4 m. Segmented faience beads continue and micro beads of steatite appear now. They have hardly used any stone blades. Copper axe was also found. It was used for the analysis in the study.
Period III is marked by the advent of the Lustruos Red Ware, though the Prabhas Ware also continues. A curious structure with six double roomed houses was found in Period III. Each large room had a square platform. A noteworthy find of this period is a steatite seal with engravings of sheep, seven on one side and five on the other. A gold cap ornament was also found.

The Prabhas Culture comes to an end without leaving any trace. Period I has been dated by the excavators to 2400 - 1800 B.C; Period II is dateable to 2000 - 1700 B.C. and Period III continues upto 1500 B.C.

PITHAD

The site, locally known as Jaidak Timbo, is situated at about 4 km south of Pithad village (22° 41' N, 70° 35'E) on the eastern bank of the Aji river, in Jodiya taluka of Jamnagar district in Gujarat. The site was excavated by the Department of Archaeology and Ancient History, M.S. University, Baroda. This large site at present is composed of two mounds. The first mound Jaidak I is the larger one measuring about 300 x 150 m and has a height of about 5 m from the surrounding plain. The second mound, Jaidak II probably an extension of the first is at about 50 m and measures 140 x 90 m. Excavations were carried out at Jaidak II.
The excavations have revealed a habitational deposit having five different layers belonging to two distinctive periods. Period I belongs to Mesolithic and Period II belongs to late Harappan Culture.

The Mesolithic deposit has yielded a large number of microlithic implements and other artefacts like pieces of flat sandstone and hammer stone. The industry includes both geometric and non-geometric tool types along with simple blades and flakes and other lithic waste. The collection however, is predominated by non-geometric tool types like a variety of points, backed blades, borers, retouched blades and flakes and a large number of fluted cores. No substantial quantity of faunal remains is found from this deposit. A noteworthy find from the excavation is the discovery of a few ostrich egg shell pieces from a stratified Mesolithic context in Gujarat.

Period II

The late Harappan occupation at the site, lies directly over the Mesolithic deposit. It shows two phases of structural activity. The first phase of structures is represented by long rubble stone wall. Associated with this structure was found a large pot buried underneath the floor level.
Fine Red Ware, Buff Ware, Buff and Cream Slipped Ware and Coarse Grey Ware are the important pottery types recovered from this deposit. The pottery bear similarity with Rojdi B and Rangpur II B and C period pottery. Bowls, pots and jars with various rim and body features, dishes and dishes on stand are the important vessel shapes in pottery.

A few of these vessels were decorated with simple painted lines and strokes in black pigment. The Black and Red Ware so common in the Harappan sites in Saurashtra, is not found at the site. A large number of small terracotta biconical beads and a few beads of chert, agate and carnelian, microlithic blade tools and bits and pieces of copper objects are the other antiquities.

Faunal remains from the period include fragments of bone, horn core, antler and teeth of exploited animals. Besides, the faunal collection incorporated a large number of bivalve shells found heaped in clusters.

The copper bangle utilized in the study was found from the surface of the burial of this period.
MITATHAL

Mitathal (28° 37' N, 76° 12' E), located in Hissar district of Haryana was excavated by Suraj Bhan from January to April 1968. The cultural debris of Mitathal is divisible into two periods namely Period I and Period II. Period II is further subdivided into two phases: Period II A and Period II B.

Period I A

This period is characterized by late Siswal ware. This ware is mainly comprised of Fabric A and C though limited shreds of other fabrics of Kalibangan I are also met with. The ceramic industry of the Period on the whole indicates a late decadent stage. A limited number of Harappan Red Ware represented by fragments of dish, perforated jar, beaker and pointed base of vase also occur in this period.

Structures of this period are made of adobe and mud bricks antiquities of this period included a single truncated biconical terracotta bead, clay bangles painted black, of rounded section and sometimes having multiple tiers, stone ball, stone quern and pestle and a fragmentary copper ring.
A few Harappan shapes are met with, but the bulk of the pottery comprises the late Siswal Ware. The co-occurrence of the Harappan shapes with the late Siswal Ware indicates a transition stage for the period.

Period II A

Period II A is marked by the advent of a full fledged Harappa Culture characterized by typical Harappan pottery, dichotomy of settlements, architecture, objects of household use and ornaments. But the late Siswal Ware and other artefacts survive all through the Period suggesting co-existence of the two people side by side.

Antiquities belonging to this Period include a variety of beads of semi precious stones such as agate and carnelian, faience, steatite and terracotta. Various toys of terracotta like cart wheel, marble and terracotta cakes are found. Stone balls quartzite pebbles used as hammer stones, saddle querns and pestles comprise stone tools of this period. The copper artefacts recovered from this Phase are a ring and a square wire.

Period II B

This period is characterized by a Red Ware, showing a general degeneration in manufacture, treatment and decoration of pots as compared to the ceramic indus-
try of Period II A.

The storage jar with triangular or collared rim, basin with recurved rim and carinated shoulder, shallow dish on stand, bowl like lid with a central knob, vase with high neck are some of the typical evolved shapes of the Period.

This period also shows a general decline in the material culture of the people. This includes their structures, lapidary works stone tools and ornaments.

The arrowhead, small axe and copper knife analysed in the current work are surface collections belonging to this period, according to the excavator.

UNIT II

THE COPPER HOARD CULTURE

The Copper Hoard Culture of India has been an enigma to south Asian archaeologists due to the problems of definition, age, authorship and stages of development. The Copper Hoards are difficult to define. Implements of copper found in various parts of India from Bengal to Haryana and from Rajasthan to the Deccan, singly or in hoards have all been lumped together under the designation "Copper Hoards". The problem of designation is further compounded by the fact that all these finds
are unstratified and they have no association with other artefacts. Eversince the discovery of a copper harpoon at Bithur, in Kanpur district in 1822, several hundred copper objects have been found from different parts of our subcontinent. The number of objects in such finds oscillates between 1 and 47, except in the case of Gungeria where 424 objects were found in a single hoard.

Major parts of these hoards, have always been chance finds, procured while ploughing a field, digging a canal or making a road. Hence no definite cultural horizon could be associated with them.

On the basis of circumstancial evidence, notably at Bahadrabad and Rajpur Parsu, where Copper Hoards have been reported, a ceramic labelled Ochre Coloured Pottery (OCP), first identified at Hastinapur in Uttar Pradesh (Lal 1955), was believed to be associated with the Hoards. This postulate was first confirmed in 1970 when excavation at Saipai in district Etawah, Uttar Pradesh for the first time established that the OCP was associated with the Copper Hoard objects. Prior to excavations at Saipai, copper tools have never been found in a regular excavation.

During the course of this excavation, a harpoon was found in association with some Red Ware. This pottery left an ochre colour on the fingers at the time of handling. This ochre colour which rubs off easily may have resulted from humid
condition of the deposits in which the pottery lay buried. Jars with flaring rims, sometimes with spouts and handles, bowls and basins constitute the main shapes. From some fragments the presence of dish on stand can also be inferred.

Other associated finds include ground stone objects like pounders, querns and pestels, a chert blade, a chalcedony flake, kiln, burnt brick bat, chunks of burnt clay, bearing reed impressions and cattle bones, various terracotta objects, including human figurines, bangles, beads, marbles, toy cart wheels, discs and gamesman, beads of semiprecious stones, stone rubbers and querns, bone points, styli, arrow heads and skin rubbers and a large number of animal bones have also been unearthed.

Earlier, the Copper Hoard problem has been dealt with among other by Vincent. A. Smith (1905 and 1907), R. Heine Geldern (1936, 1956), S. Piggot (1944, 1950), S. P. Gupta (1963, 1965), Y. D. Sharma (1964), D. P. Agrawal (1971), B. B. Lal (1951, 1968) and Makhanial (1983). Authorship, age, typology and technology have been the main areas studied by them. However, no consensus among the scholars regarding any aspect has been reached so far.

A brief summary of the various opinions on the aforesaid aspects is given below:
1. Authorship

The problem of authorship of the Copper Hoards is extremely vexed, since so far no skeletal remains have been found associated with them.

R. Heine Geldern and V.A. Smith equated these Copper Hoards with the Indo-Aryan culture on the basis of typological considerations. They proposed that the trunition axes came from Transcaucasia, the axe adze from Danube and the antenna swords from the Koban region. This theory was first supported by S Piggot (1944), but subsequently the latter proposed that they were perhaps the relics of the Harappan refugees (1950). Bridget and Raymond Allchin (1983), have also advocated Aryan association with the Copper Hoards but without much fresh evidence.

B.B. Lal and S.P. Gupta have pleaded for an indigenous origin of the Copper Hoards. Lal has made three prepositions (1951).

(a) The people responsible for the Hoards were the aboriginals of the Ganga basin belonging to the proto-Australoid group of people.

(b) They are to be identified with the ancestors of the present day tribes of Mundas, Santhals etc. inhabiting the hilly tracts of Bihar and Bengal.
The main area of concentration of the Copper Hoards has been the Gangetic doab covering mainly the states of Bihar, Uttar Pradesh, Orissa, Madhya Pradesh and Rajasthan besides Haryana and Gujarat. But their find spots extends from sites as distant as Shalozan in the north east, Bhagrapir in the east, Kallur in the south and Ganeshwar in the west.

Given below is a detailed list of the find spots with district of the most of the reported Copper Hoards. (Fig 2, After Makhan Lal, 1983).
MAP SHOWING COPPER HOARD SITES IN INDIA

- Sites Mentioned in Table 1
- Other Copper Hoard Sites in India

AFTER MAKKHAN LAL, 1983
<table>
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<th>Sr No.</th>
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Typology

The typology of the Copper Hoard objects takes on a singular importance because besides the objects themselves and to a certain extent the pottery thought to be associated with it, we have very little evidence to rely on, in order to reconstruct the culture of the Copper Hoard people. The Copper objects of the Hoards can be divided generally into eight types namely - (Fig 3)
TYPOLOGY OF COPPER HOARD ARTEFACTS

Fig 3
1) Flat celts (Fig 3.5)
2) Shouldered celts (Fig 3.4)
3) Bar celts (Fig 3.3)
4) Rings (Fig 3.9)
5) Harpoons (Fig 3.6, 7, 8)
6) Antenna swords (Fig 3.2)
7) Anthropomorphic figures (Fig 3.1)
8) Double axes

1) Flat Celts

Flat celts usually have a stocky rectangular form and a splayed edge. There are various forms but these variations do not appear to have much significance. The simplest form is a rather stumpy celt with rounded butt and nearly parallel or very slightly tapering sides. Another type has tapering sides with narrow butt. Flat celts of various sizes have been found from Bartol (21), Bittur (26), Dargama (5), Gun-geria (several), Hami (6), Pondi (5), Rajpur Parsu (4) and few from other districts from Bihar, Uttar Pradesh, Orissa and West Bengal. Some flat celts found from Madnapur, district Hardoi of Uttar Pradesh has bull figurines engraved near the butt ends.
2) Shouldered celts

These shouldered celts have a distinct set back at the points where the curved edge meets the stem of the tool. Most of these celts are well made and sturdy. Agrawal does not find a quantitative difference between the flat and shouldered celts. The flat and shouldered celts were probably used for cutting woods and for hunting animals. Smith (1905) suggested their use as currency. They have mainly been reported from Bithur (7), Dhaka (5) and Gungeria.

3) Bar Celts

Bar celts have generally a flat or slightly concave ventral side and a convex dorsal side. The edge is produced by bevelling the upper side only. They are quite heavy and long. Several specimens have been reported from Hami and Gungeria.

Based on the typological similarities Lal has suggested that these bars have been derived from their stone counterparts.

It has been proposed that these celts were used for mining of the ores, based mainly on their sturdiness and length (Agrawal 1971).
4) Rings

47 rings have been reported from Pondi. Many scholars do not consider the rings as a part of the Copper Hoard repertoire. Lal (1951) has insisted that they form a part of the Copper Hoards. These rings are very similar to the Harappan examples.

Similar rings have been reported during the excavations at Jorve (Sankalia et al, 1955).

Agrawal prepounds that the only criterion for the ring characterising the Copper Hoards could be their standard weight. They could be convenient units of metal weight for the itinerant smiths to carry.

5) Harpoons

Harpoons are like midribbed spearheads with oblique or backward curving barbs, quite often with a hole or a forked hook.

Type 1: They are cut from a thick sheet of copper and hammered. They have 4-6 oblique barbs on each side spaced equally on the two third length of the blade.
**Type 2:** They are cast in double mould and have a long spear blade with generally two, but sometimes three or four pairs of incurved barbs. They have a well-developed midribs and are superb examples of craftsmanship.

The harpoons in all probability were used as spearheads for big game hunting or for killing large fish.

6) **Antenna swords**

This name has been assigned to them because of their antennae like bifurcations of the hilt end. These swords are cast with the antenna as one piece and have long blades with a short hilt. Their length varies from 42-75 cm. and have a sharp median rib. The antenna swords are generally massive.

These may have been used for killing or wounding big game by trapping. The antenna hilt can be fixed securely in narrow clefts made in heavy wooden logs. Such logs with antenna swords projecting out, could be placed in the bottom of big pits. The pits could be camouflaged with leaves and twigs and big game would be stampeded towards the pits. The animal would fall heavily on the projecting swords which would pierce it through without getting buckled or sunk in the ground with the weight.
7) **Anthropomorph**

These are large and massive objects. Forearms are incurved and sharpened on the outer edge and legs are plain. The arms are thinner than the head which was further thickened by beating from the top. Their length varies between 25 to 45 cms. and breadth between 30 and 40cm. In all cases, except one, the length is larger than its breadth. The use of this object is not very clear and hence has been labelled by most scholars as ritualistic object.

Tiny anthropomorphic figurines resembling Hoard specimens are worshipped in the Ganga-Yamuna doab region as shani God by the native tribes. Hence, it may be presumed that the Copper Hoard anthropomorphs were also objects of worship. In north east Asia, anthropomorphic figurines symbolize ancestors who are regarded as defenders of race (Gupta 1965).

However, Agrawal surmises that these were also weapons for hunting especially birds. He explains its working as a boomerang and concludes that the blunted heavy head and the plain legs to hold it while hurding, proves its use as a missile.
The so-called anthropomorphs from Lothal appears very much different from the doab specimens. Contrary to the hammered head of the doab specimen, the Lothal one is plain in section.

8) Double axes

These are made by cutting away almost circular pieces from the sides of an oval sheet. Very few specimens of the double axes have been encountered so far. Ten double axes have been reported from Bhagrapir (Orissa).

Dating

Several views exist on the question of dating the Hoards. V. Smith dates this Culture to about 2000 B.C. based on the preposition that they are obviously the copies of the Neolithic celts of round about that date. Piggot and Sharma associate them with the late Harappans and therefore imply a date between 1750 - 1000 B.C. Lal assigns a date of 1200 B.C. due to the association of the Ochre Coloured Pottery with the Hoards at Hastinapur. Heine Geldern dated them to 1200 B.C. D.H. Gordon (1958) accepted the association of the OCP with the Hoards but dated them to 800 B.C. Sankalia dated them to around 1500 B.C. due to the occurrence of the Hoard type tools in the levels of post-Harappan Chalcolithic Cultures of Deccan and Malwa.