

Development of Urbanization in the Mewar Region of Rajasthan, India in the Middle of Third Millennium BC

Shweta Sinha Deshpande* and Vasant Shinde*

Abstract

The Indian Subcontinent witnessed its first urbanization in the middle of the third millennium BC as a result of continued cultural development that started around the beginning of seventh millennium BC at Mehrgarh on the Kachi Plains. Extensive research in other parts of India, revealed the presence of contemporary early farming cultures, with characteristic rural features. The recent archaeological evidence from Bagor, Balathal and Gilund (Mewar, Rajasthan) suggests independent origin of a settled life style around the middle of 4th millennium BC contemporary with the Pre/Early Harappan cultures of western Indian subcontinent. These sites have brought to light traces of infant urbanization or proto-urbanisation associated with the Ahar culture of Mewar. Available evidence demonstrates the influence of Harappan urbanization on Chalcolithic sites, though on a much smaller scale as a result of interactions and trade contacts between the two by the middle of the 3rd millennium BC.

Introduction

The Indian Subcontinent witnessed its first urbanization in the middle of the third millennium BC as a result of continued cultural development that started around the beginning of seventh millennium BC at Mehrgarh on the Kachi Plains (Jarrige, 1984; Jarrige *et al.*, 1995) and Killi Ghul Mohammad in the Quetta Valley (Fairservis, 1956). Extensive and intensive research carried out until the mid-nineties, in other parts of India, revealed the presence of contemporary early farming cultures, termed either Neolithic (in case of South India and east India) or Chalcolithic (in case of Central and Deccan regions). All these cultures, though contemporary with the Harappans had characteristic rural features, but our own research (Misra *et al.*, 1995, 1997; Shinde *et al.*, 2004; Sinha 2003) in the Banas-Berach basin from the mid-nineties have brought to light traces of infant urbanization or proto-urbanisation associated with the Ahar culture of Mewar. Evidence in this respect comes from

*Deccan College, Post-Graduate and Research Institute, Pune, India

two important sites namely Balathal (Udaipur District) and Gilund (Rajsamand District) both in the southeast or Mewar region of Rajasthan. Available evidence demonstrates the influence of Harappan urbanization on Chalcolithic sites, though on a much smaller scale as a result of interactions and trade contacts between the two by the middle of the 3rd millennium BC. This paper discusses the evidence from these sites specifically Balathal and Gilund and an attempt is made to analyse the degree of urbanisation. The site of Balathal was extensively excavated from 1993-94 to 1999-2000, and Gilund was excavated jointly by the Deccan College, Post-Graduate and Research Institute, Pune and the University of Pennsylvania Museum, USA between 1999-2000 to 2003-2004.

Sites and the environment

Balathal and Gilund are two of about 90 Chalcolithic sites (Fig.1) belonging to the Ahar tradition discovered during the last forty years in the Mewar region of Rajasthan. The mound of Balathal (24 43' N; 73 59' E) is located around 40 km northeast of Udaipur city on the eastern margin of the modern village of Balathal and covers an area of less than two hectare (Misra *et al.*, 1995). It has a habitation deposit of about 7 m of which the upper 1.5 m belongs to the Early Historic while the rest of it is Chalcolithic in nature. The site is away from the main river Banas but is close to the large depression spread over an area of 1 sq. km, which may have acted as a lake as today and supported the water requirements of the settlement in the past. Interestingly the ariel photographs (Fig.2) of the site also show the presence of a dry water channel on the eastern edge of the mound which could have been active and possibly dammed by the people in the Chalcolithic times and served as the source of water for the inhabitants.

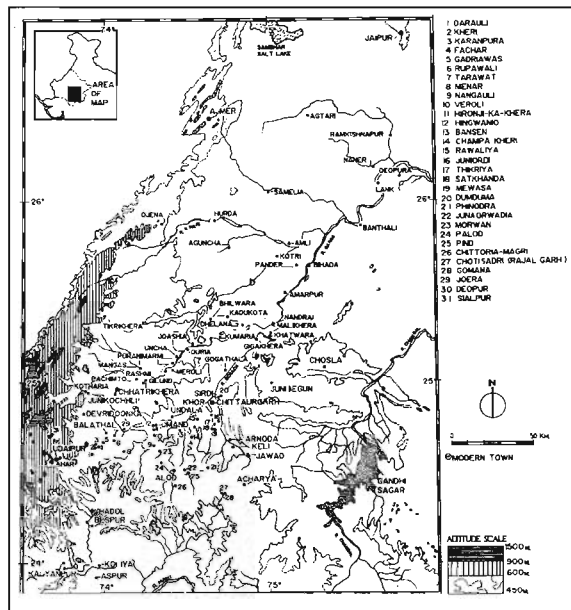


Fig. 1. The Ahar culture sites in Mewar, Rajasthan, (after Misra *et al.*, 1995)

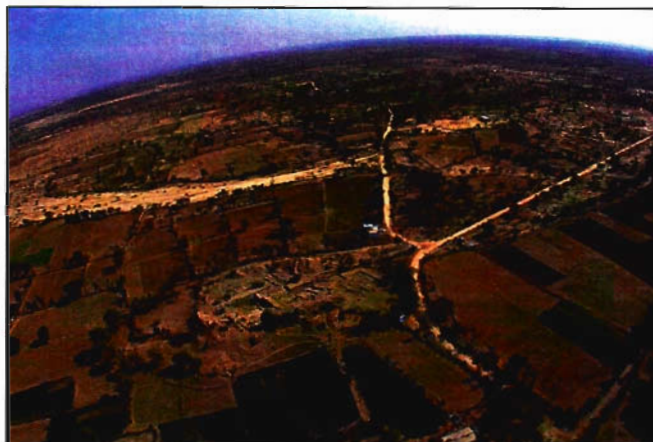


Fig. 2. Ariel Photograph of the mound of Balathal and the ancient water channel

Gilund is a large village (7415'E; 2501'N) in the Rajsamand District of Rajasthan roughly 100 km northeast of Udaipur City. The ancient site is represented by two mounds (Coordinates: 74 15' 45" N 25 01' 56" E as recorded on a GPS from the long (western mound), 1.5 km northeast (57 degree) of the present village. The ancient site is located on the right (east) bank of the river Banas, 1.20 km away from the banks of the river as the area in between is low lying and within the range of normal floodwater. The habitation mound called *Modiya Magari* (meaning the bald habitation mound) is 485 m above sea level (as per the survey map). The eastern mound, GLD-1 is the high mound (15 m high from the surrounding contour) and GLD-2 on the west is the long mound (8 m high from the surrounding contour). Both the mounds are oriented roughly northeast-southwest with a gap between them.

The Mewar region (see fig.1) of Rajasthan is drained by the two main rivers Banas and Berach, and their main tributaries Gambhiri, Kothari, Khari and their sub-tributaries. Ecologically this region is characterized by fertile black cotton soil and a semi-arid climate. The annual average rainfall is about 700 mm mostly during the unpredictable summer monsoon. The important crops grown in this region include wheat, sugarcane, mustard, millet and maize. The semi-arid region supports the typical vegetation such as a variety of grasses, thorny bushes like *ker* (*Capparis decidua*) and trees like *khejdi* (*Prosopis spicigera*) and *babul* (*Acacia arabica*). There is also abundance of pastureland around most of the sites in this region. Thus, the most important factors, which appear to have attracted the early farmers, were the proximity of a perennial source of water, fertile soil and abundant pasture.

The presence of fertile "Black Cotton Soil" contributed to the development of varied cultural processes in this region. Distribution of the Chalcolithic settlements in central India and the Mewar region clearly demonstrates that the major concentration was in the proximity to black cotton soils. The British agriculturist Wallace towards the end of nineteenth century had noted the high water/moisture retentive qualities of the black cotton soil and stated that "the black cotton soil ploughs itself". Wallace (1888) had observed that the soil develops deep and wide cracks in the summer and swells due to water in the rainy season and as a result of this process of expansion in the summer and inflation in the rainy season the soil becomes

considerably loose and even wooden Dutch hoes are sufficient to plough it. Considering the above observation it can safely be presumed that the Chalcolithic people fully exploited this fertile soil for their benefit by using the minimal available resources.

Palaeoclimate

A number of attempts have been made towards the reconstruction of the palaeo-climatic sequence, with pioneering work being done by the much quoted Singh et al in 1971 in the saline lakes of Didwana, Lunkarnasar and Sambhar in Rajasthan (Singh *et al.*, 1971 & 1990). Significant contributions were also made by Krishnamurty et al., (1981) who worked on the sand dunes in Rajasthan, Enzels work on the Lunkarnasar (Enzel *et. al*, 1999) and Shindes recent work in the Sambhar lake (Shinde *et al.*, 2001).

Since Singhs (1971) work was done prior to the discovery that C-14 amounts actually varied during different times and the subsequent development of calibration charts, many conclusions based on these uncalibrated dates are actually off by significant lengths of time (Sinha 2003, Shinde *et al.*, 2004). The calibrated results from Possehl (1994) are put forth in the following chart (Fig. 3) and indicate that in contrast to the earlier belief the period from the 4th millennium BC onwards shows low winter precipitation (Enzel *et. al*, 1999) leading to gradual dessication from wetter conditions towards the modern climatic pattern. Singhs (1971) and Enzels (1999) climatic data completely negates the idea that improved climatic conditions led to the rise of Indus Civilization/other contemporary Chalcolithic cultures to gradual dessication from wetter conditions towards the modern climatic pattern. Singhs (1971) and Enzels (1999) climatic data completely negates the idea that improved climatic conditions led to the rise of Indus Civilization/other contemporary Chalcolithic cultures such as the Ahar culture, as it was during a dry and semi-arid environment that the culture flourished in India and Pakistan. Further Enzel et al (1999) move on to say that it was not the summer monsoon that was responsible for the increase in lake levels during the wetter phase but a higher winter precipitation, which could be the potential source for changed hydrological conditions in the middle Holocene period.

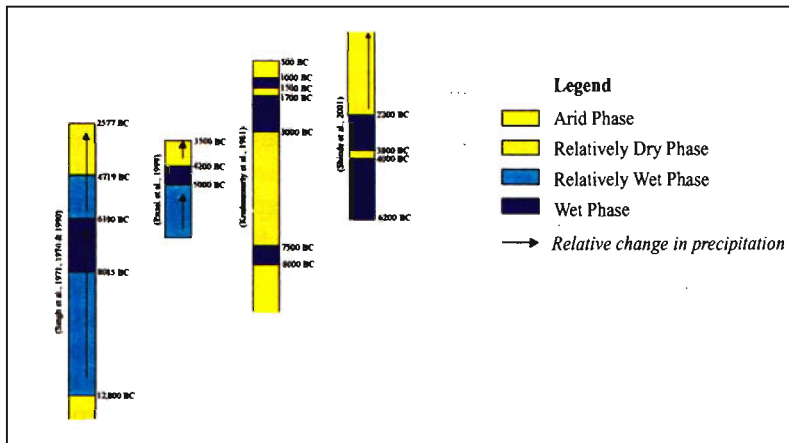


Fig. 3. Chart showing the palaeo-climatic data

To understand the climatic data and its relation to origin of agriculture and settled lifestyle, the actual archaeological evidences should be taken into account.

“Due to an abundance of food supply around 10,000 BP as a result of congenial climate there was an explosive increase in human population with an increase in the number of Mesolithic sites in the subcontinent (Dhavalikar, 1988). The climate enabled them to flourish but the relative change towards dryer conditions around the middle Holocene forced both humans and animals to settle down around congenial environments which led to the rise of domestication of plants and animals or the Neolithic Revolution as suggested by Childe (1936), but not only in the west but in several such favourable ecological niches (Clark, 1972). It has been suggested by scholars that the hunting nomadic population even today would prefer their existing lifestyle than shift to an agricultural mode of life as the labour input and the acquired result in the former is proportional to their requirements (Cohen, 1977) and hence the Mesolithic population was forced into food production” (Shinde *et al.*, 2004:387).

Origins of village life and the beginning of cultural processes

The recent archaeological evidence from both Balathal and Gilund suggests that village life emerged independently in this region around the middle of 4th millennium BC as the radiocarbon dates from the site of Balathal indicate (Shinde, 2000). This Early Chalcolithic phase in Mewar, contemporary with or even earlier than the Pre/Early Harappan cultures of western Rajasthan and Gujarat, evolved as a result of internal development within the Mesolithic lifestyle of the region as is evident from sites like Bagor (see Fig. 1) also in Mewar (Shinde *et al* 2004, Sinha, 2003).

The earliest 'Oasis theory' propounded by Childe for the rise of domestication today seems more and more plausible, though based on the available evidence from the region of our study it was not in one nuclear region of the middle-east but in several such zones which provided congenial environment for the development and evolution of complex cultures (Shinde *et al* 2004). Recent studies carried out by scholars in the Middle east and north east Africa (Hassan, 2002) also suggest the rise of domestication as an answer to a spell of droughts between 7500-6000 years BP and its spread is attributed to cultural interaction.

This climatic sequence discussed above can be applicable to the larger semi-arid region that makes up Western India and these climatic fluctuations were responsible, to a certain extent, for the origin of early farming communities and for cultural changes. Though it is universally acclaimed by scholars that domestication of plants and animals and its spread to the major parts of western India started from the site of Mehrgarh, recently the region of southeastern Rajasthan has produced evidence of local transition from hunting-gathering to origin of domestication of plants and animals. As mentioned above the climate of western India to a large extent was affected by the winter monsoons (Enzel *et al.*, 1999) as is the case today the changing uncongenial climate and dessication must have forced the people to settle down in congenial environments with domestication of both plants and animals (Shinde, *et al* 2004).

The beginnings: The Mesolithic site of Bagor (74°23'E & 25°25'N) (Fig. 4) located on the left bank of Kothari river falls in the semi-arid environmental zone located on the fringe of a small chain of mountainous land on the eastern and southeastern side and an alluvium plain to the north and west; quartz, the primary raw material used for their tools is available on the opposite bank of the river from the ancient site. The site is thus located on the junction of arable and pastureland providing an ideal location for a community practicing incipient agriculture and pastoral livelihood and it seems that the area provided the Mesolithic population with the wild cultigens of the cultivable grass which they collected and utilized for their food requirements and slowly observed the seasonal changes and innovated the process of domesticating these wild cultigens and settled in the region as permanent communities with incipient cultivation and herding besides some amount of food collection (Shinde *et al.*, 2004)



Fig. 4. Bagor mound

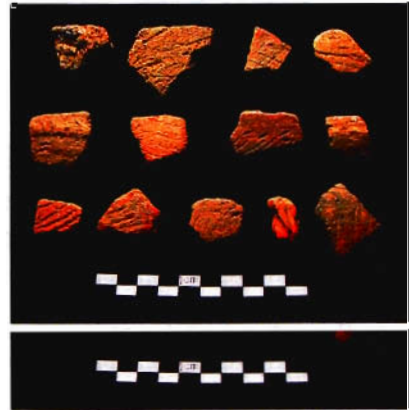


Fig. 5. Mesolithic pottery from Bagor

The earlier excavation had revealed the presence of Mesolithic, Chalcolithic and Early Historic sequence (Misra, 1973) while the recent excavations brought to light the remains of only the Mesolithic period, which has been subdivided into two phases- Aceramic and Ceramic. The earlier *Aceramic phase* is represented by the earliest dwelling structure circular in shape with a hard and compact surface intentionally made and the remnants of one post-hole indicating the presence of a superstructure. Cultural activity is associated with tool manufacture in the form of debitage and few tools and rubber stones indicating the primary nature of the site from the beginning. The *Ceramic Mesolithic* phase indicates the continuation of the blade industry and structural activity without any drastic change except the appearance of potsherds. It is, therefore, quite likely that the ceramic production at the site was introduced sometimes in the middle phase of the Mesolithic period. This phase dated by AMS is around 4500 BC, and hence its pottery is the earliest in this region. It is coarse, red, brittle and handmade, has grass and sand tempering, is ill-fired and in some instances is decorated with deep incised 'criss-cross' patterns (Fig. 5). This is the beginning of the incised decorated ceramic in this region, which is different from the known Chalcolithic ceramics of the region. The Chalcolithic Incised ware of the Ahar people appears to have been derived from this. In accordance with this evidence the site of Gilund has also revealed a Mesolithic phase at the bottom most layers above which is the Chalcolithic deposit showing the beginnings of a village life with agriculture and ceramic including the Incised Red ware, Grey ware and the Black-and-Red ware (Shinde *et al.*, 2004).

The evidence of flimsy structures, coarse pottery, few food processing equipment and the tools suggests that the Mesolithic people had a semi-sedentary life, where they occupied the site for a considerably lengthy period but probably moved to another place for a certain period in their annual cycle (Shinde, *et al*, 2004).

Early Village life: The recent evidence from North Gujarat, Saurashtra and Balathal in Mewar region of Rajasthan suggests that the Chalcolithic village community came into being much before the Harappan period and in fact are contemporary with the Pre/Early Harappan culture of Northern and Western Rajasthan, Sind and northwestern Indian Subcontinent (Shinde, *et al*, 2004)

The excavations at Balathal have produced evidence in respect to the origin of the early farming community of central India (Misra *et al.*, 1997; Misra and Mohanty, 2001). The evidence from this site is particularly interesting as the pottery is unique both the incised ware and the Black-and-Red ware, with an earlier date for the former from the site of Bagor (Shinde *et al.*, 2004). A considerable thick deposit at the base of the settlement (Phase A) at Balathal (around 1 meter) has produced evidence of the origin of the Chalcolithic culture and a gradual development of the village community in the ascending order. Excavation to the natural level in a limited area has demonstrated a gradual growth of the settlement from the modest beginning at the site.

The Early village phase is characterized by the presence of simple mud and wattle-and-daub structures, circular or rectangular in shape with floors made of alternate layers of brown silt and black clay rammed hard. The remains of a circular hut (2 m diameter) were found in one of the index trenches (HX2) at Balathal on the western extent of the site while the center and the eastern part of the site had evidence of rectangular structure, in the form of stone foundations or rectangular patches of floors. They contained circular clay domestic hearths and storage pits, plastered with cow dung and lined with grass.

The use of food processing equipments such as heavily worn saddle querns, mullers and rubber stones of locally available granite is common from the beginning of the settlement. Unfortunately, it was not possible to recover botanical remains from the lowermost levels at Balathal and therefore we are unable to make any inference regarding their agricultural activities though the presence of food processing equipments and storage facilities do suggest the presence of agricultural activities along with pastoralism, hunting and gathering. Also based on the botanical data from the mature phase which has evidence of wheat, barley, lentils and carthamus and a winter cropping pattern very similar to the, modern times it can be presumed that it was quite similar in the early phase as well. Animals such as cattle, buffalo, sheep and goat formed part of the mixed economy practiced by these first farmers of Mewar.

Based on the above data, the belief that the west was responsible for the origin of the Ahar tradition seems very implausible, also as movement from the west (Indus basin) would have incorporated their basic ceramic types the Black-painted Red ware and the Black-painted Buff ware, which is completely absent in the Mewar region.

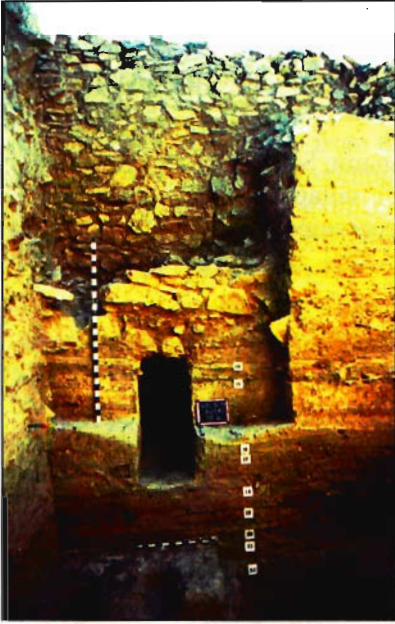


Fig. 6. The early Chalcolithic deposit at Balathal visible in the lower 1m deposit

The first settlers at Balathal from the very beginning used and locally produced earthen wares (Fig. 6) including the thick and thin Red ware and Grey ware often with incised decorations; Black-and-Red ware with paintings in white etc. The technology in the beginning was incipient (handmade) and used inferior quality of raw material and firing technique. Most of the pots are coarse, thick in section, inadequately fired and handmade. Shapes such as wide-mouthed deep carinated bowls, small narrow-mouthed jars and storage jars with beaded rim, the fossil types of the Chalcolithic phase in this region, are present right from the beginning. The Reserve-slipped ware, earlier thought to be the handiwork of the Harappans, was also introduced by the pioneering settlers of Mewar. Since the earliest known occurrence of this ware in India is at Balathal, it may be inferred that the technique of its production developed here locally and was later borrowed by the early Harappans of Gujarat and the Harappans (Sinha, 2003).

Discovery of a few copper fragments, beads of steatite and semi-precious stones such as carnelian and agate point to the probable presence of their manufacturing techniques from the beginning of the settlement. However, since their frequency is very small and not much has been found in respect to the local manufacture, it is more likely that these items were the result of exchange activities with the surrounding regions of north Rajasthan including the Ganeshwar-Jodhpura traditions and other Chalcolithic communities, pre/early Harappans of Gujarat (Sinha, 2003) and the hunting-gathering groups through nomadic pastoralists as none of the raw materials required and used is native to the region.

It thus appears that the local Ahar Chalcolithic tradition had its indigenous beginnings as a result of development within the local Mesolithic population and had established interaction networks with the neighbouring communities from the very beginning. With increasing prosperity, demographic pressure and technological advancement, there was spread of the ideology and demographic movement and fusion with existing hunting gathering groups of the region to establish almost all over central India, including Malwa, Mewar and the Chambal valley. The excavations carried out at other Central Indian sites like Navdatoli (Sankalia *et al*, 1959), Kayatha (Dhavalikar, 1970), Eran (Singh, 1962, 1967) and Nagda (Banerjee, 1986) suggested that all them were occupied during the Mature Chalcolithic phase dated between 2500-2000/1900 BC, which is the most prosperous phase of the Chalcolithic culture and were influenced by the Black-and-Red ware using people. The lower levels of Ahar (Udaipur District), 40 km southwest are also likely to produce evidence of early phase as the earlier excavators (Sankalia *et al*, 1969) have not studied these levels carefully.

Mature Chalcolithic; development and the emergence of urban elements

The term culture as defined by archaeologists and anthropologists is 'an extra somatic means of adaptation' (White, 1959). Since it is not an inborn trait but a cultivated aspect of human life, that did not emerge at any singular point of time and space but was a gradual and arduous long drawn process, both the Harappans and Early Framing Communities are a product of a long process of cultural adaptations and interactions involving a large territory and a long time span. The rise of new cultural features reflect human response to social and natural environments, cultural stability and rapid culture change, interactions and the day-to-day adjustments needed to survive.

'Interaction' or 'exchange' is also a form of adaptation where societies, communities and cultures try and acquire artifacts, systems and behaviour patterns which are not typical or native to their region or culture through exchange, borrowing or emulation. Thus it is a form of adaptation, a mode for acquiring what is needed but not available within one's own system. The movement of goods occur in a social context where material transaction is usually a momentary episode in a continuous social relation thus introducing new social, cultural and religious systems to a great extent leading to cultural and not just economic interaction. Thus interaction systems affect not only the requirements of raw materials and finished products but also the complete culture system including society, politics and religion (Sinha, 2003).

The excavations at Balathal and Gilund have demonstrated a gradual development and prosperity in the material culture of the Chalcolithic community of Ahar from 3000 BC and by 2500 BC there is visible economic prosperity and shift towards a proto-urban lifestyle visible in the large structures for storage, fortification, planned settlement pattern along the Harappan grid plan, relatively larger number of luxury goods and better ceramic assemblage. There is evidence for a gradual development of technology, economic prosperity and organisation of craft specialisation with well-developed trade mechanism and external contact and the beginnings of a proto-urban veneer (Shinde *et al.*, 2004; Sinha, 2003; Shinde, 2002). The cause for this change/development is both internal development as a result of agricultural maximisation and external influence of the Harappans who were in constant contact with the Chalcolithic people for their requirements of varied raw materials (Sinha, 2003). This contact resulted in several shared cultural characteristics especially visible in the Chalcolithic cultural pattern and reflect not a single cultural developmental continuum, but interaction and influence with diffusion of ideas.

Architecture: By about 2500 BC there is rapid transformation at Balathal and Gilund, and they become well-planned settlements. At Balathal structural complexes of stone and mud-brick are organized along a central road and subsidiary lanes (Fig. 8); Gilund gives the impression of a citadel and lower town plan with outer fortifications, public structures and large residential complexes indicating a socially stratified and politically organised society. The circular huts are replaced by rectangular dwellings of mud or occasionally mud bricks with multiple rooms within one structural unit.

A unique structural feature identified as a *Fortified Enclosure* was unearthed in the mature/middle Chalcolithic phase at Balathal (Fig. 9). It was built over a 70 cm high platform

made of clay, silt, brickbats and bricks. This model of construction was first introduced by the Harappans for constructing citadels as a towering/imposing and separate unit of the settlement. This domineering fortified rectangular enclosure (500 sq. m) complete with bastions and a gate proves the existence of a strong authority and a large economic surplus enabling the maintenance and organization of labour and funds for such public buildings. The structure was constructed on a unique pink lime floor absent elsewhere. This finely worked floor level, was repaired and plastered with cowdung and clay repeatedly (Sinha, 1999).



Fig. 7. The structures with the lanes and bylanes at Balathal during the Mature Chalcolithic

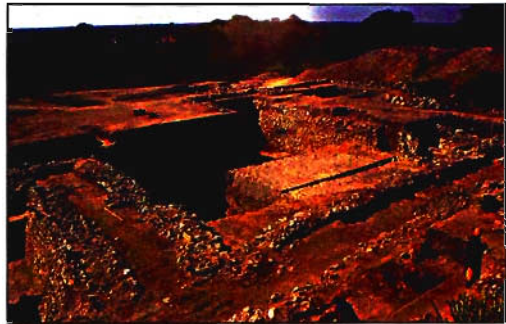


Fig. 8. The fortified enclosure at Balathal, Mature Chalcolithic

The exact function of the structure is yet to be identified, although most scholars have

The exact function of the structure is yet to be identified, although most scholars have identified it as the residence of the chief with a higher socio-political status exerting his authority from this vantage point. It is also possible that a number of families were living together within the structure and had an equal say in the administration of the settlement like the present Panchayati system where a number of influential individuals enjoy an important status in the society. Nothing can be said with surety regarding the people or the number of families who occupied the structure but it is a confirmed fact that the enclosure played an influential role in the administration of the settlement (Sinha, 1999). It is also possible that as agriculture was the major source of livelihood and wealth, this structure protected the threshing floors or stored surplus grain along with the structures identified as granaries (Sinha, 1999).

The walls of the structure are very thick and wide and suggest that they were built for protection and could have served as a safety refuge for the population during enemy attacks or other emergencies. This does not seem improbable as offensive and defensive weapons like copper knives, sling balls and arrowheads have been found here. Based on this, the medieval concept of 'garhis' or fortresses can be traced to the Chalcolithic Period. The fortified enclosure of Balathal thus could have fulfilled a number of functions including the protection and housing of the chief, the people in times of need and storage of surplus. All these factors show the existence of the strong ruling personality with a high economic and social status capable of organizing the impressive amount of labour, finance and time required to build such a structure (Sinha, 1999).

A set of five parallel mud-brick walls (1 m thick) each about 20 meters in length running in the north-south direction with a distance of 75 cm between two walls and two east-west running walls with the same general features of construction probably form the *public storage area or the granary at Gilund* (Fig. 9). One of these across-walls is probably the southern limit of the foundations while the other is ca. 12 m to its north. All of these walls are built of very hard, well made reddish mud bricks with yellow mortar in between. They were laid using a rather haphazard pattern. It appears that both the across walls were built first, followed by the north-south running walls. The exterior of these walls seem to be plastered, and there is hard, compact, stratified fill between them. Some working surfaces in the form of compact floors have been found between the parallel walls including a large clay bin or a storage bin with clay sealings inside it. Interestingly one of the sealings depict a parallel wall structure similar to the one described as the granary (Fig. 10). It appears that the small area between walls may have been used for storage purposes like that of a warehouse. There is a formal similarity between the 'parallel walls' of Gilund and the granary at Harappa, which was originally called the "area of the parallel walls" on Mound F (Shinde and Possehl, 2005a, 2005b). Also rooms 10C, 10D and 10E outside the fortified enclosure at Balathal are identified as granaries (Misra *et al.*, 1997).

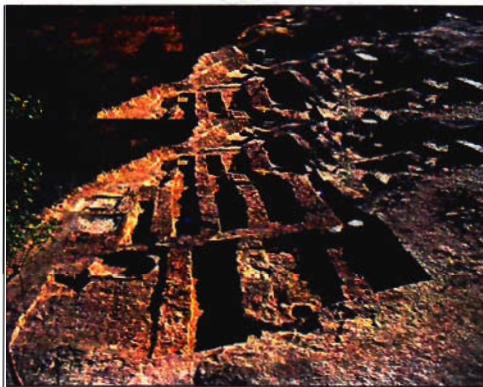


Fig. 9. The Granary at Gilund, Mature Chalcolithic



Fig. 10. A sealing from a storage jar, Mature Chalcolithic

One of the most important features of a chiefdom is the centralized authority over agricultural surplus and the chief with his religious and divine powers along with the political and economic authority has the right to collect surplus/taxes from the people in form of grains or other products to be used for public works or as a buffer in time of emergency. This public fund can also be used for the upkeep of the chief and the maintenance of an armed force to protect the settlement from external forces (Sinha, 1999).

The evidence of *outer fortifications* at Balathal (Fig. 11) and Gilund clearly shows an attempt to make the site completely secure from outside elements and the presence of a centralized authority and public funds that have been used for this public safety structure.

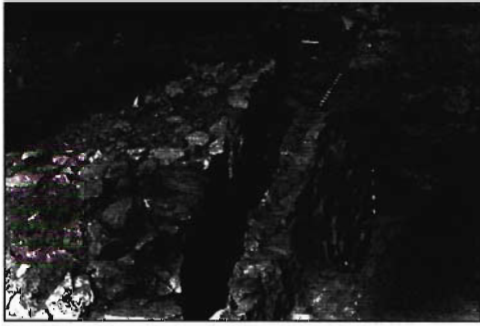


Fig. 11. Outer fortification at Balathal, Mature Chalcolithic



Fig. 12. Outer fortification at Balathal, Mature Chalcolithic ...

As can be discerned from the public structures of the mature Ahar phase at Balathal and Gilund there is an obvious transformation at the sites towards a planned macro and micro settlement pattern similar to the Harappan style with a rudimentary grid plan as at Balathal organized along a central road and subsidiary lanes, the citadel and the lower town at Gilund with individual fortifications indicating architectural elaboration and “public” construction (Shinde and Possehl, 2005a, 2005b).

Besides the public buildings both the sites have a large number of *residential structures and workshops* showing various phases of construction and reconstruction indicating lengthy and probably hereditary occupation as can be seen from the potters house at Balathal

Besides the public buildings both the sites have a large number of *residential structures and workshops* showing various phases of construction and reconstruction indicating lengthy and probably hereditary occupation as can be seen from the potters house at Balathal (structure phase VII & VIII) where the kiln (Fig. 12) shows at least two phases of reconstruction. Of the eight structural phases at Balathal, VI and VII are relatively well represented and phase VI seems to be the most prosperous at Balathal with possible trade contacts and interaction with the Harappans of Gujarat. This phase demonstrates a modicum of planning and three structure complexes of stone and mud bricks have been exposed, of which two lie on either side of the main street running in north-south direction and the third complex, close to the southern periphery of the settlement, is separated from the second complex by a small lane. The main street is 4.80 m wide, three times wider than the lane (1.60 m) (Misra *et al.*, 1997; Sinha, 1999).

Structure Complex 1 (see Fig. 7) at Balathal consists of large number of rooms (10A-K), believed to have belonged to a single family. One of the rooms with a hearth, has been identified as a copper workshop for repairing copper items while the others include storage facilities, cooking and working areas with well made floors. The unplanned construction evident here, shows that it was built and then expanded as the family grew and needed more space. Based on its dimensions and location, it can be surmised that the house belonged to a wealthy and influential family. Room 10I, seems to be the courtyard around which all other rooms for storage, cooking and dwelling are constructed. On the basis of the available evidence from room 10A, the structure has been interpreted as the residence and workshop of a coppersmith. The flourishing household seems to be the result of a high economic and social advantage enjoyed by the family as important craftsmen (Sinha, 1998, 1999).

However, on the basis of the ethnographic parallel of the present pattern of building in the village of Balathal and other villages it has been suggested that the complex is a cluster of a number of separate living complexes with continuous repairing and addition of rooms belonging to different extended families sharing various common walls (Sinha, 1998; 1999). Rooms 10 G, F, and H, on the basis of large number of steatite beads and a hearth showing long duration of burning activity has been identified as the house and workshop of the lapider.

Complex II and III are residential in purpose with storage pits and cooking facilities like hearths and saddle querns.

At Gilund part of a large rectangular mud brick structure (Structure complex II, Fig. 13) was uncovered southwest of the “parallel walls”. Successive floors indicate a relatively long period of occupation with a domestic hearth, lime plastered silo and seven storage pits. A number of other residential complexes have been identified and one of the most interesting evidences include the presence of a tandoor (open hearth) on GLD 1, the second example of community cooking, the earlier being at Kalibangan.



Fig. 13. Residential Structure with storage facility at Gilund, mature Chalcolithic

Impressive architectural remains of stone found at Balathal point towards it being a small regional “ceremonial centre” housing the chief or leader while Gilund, roughly eight times larger than Balathal with its impressive mud brick architecture both public and private in nature is identified as a “population centre” (Shinde and Possehl, in press) participating in trade and external exchange.

Ceramic assemblage: The ceramic assemblage is predominantly wheel-made categorized into (1) fine, and (2) coarse varieties based on the degree of purity of clay, surface treatment, nature of firing, vessel forms and decoration. In this phase the quality of the raw material used is comparatively better than the early and the late phase.

The fine variety which includes the Thin red ware decorated by a single row of punctured or incised designs and occasionally by single or double ridges in low relief on the shoulder; Tan ware and white painted Black-and-Red ware in small quantities is made of refined and well levigated clay. It has highly burnished slip on one or both surfaces and is baked at a very high temperature resulting in a sturdy pottery producing a metallic sound with a reddish core, and constituting the deluxe wares. The vessel forms in this variety comprise of small

globular pots with slightly averted rims, globular or carinated bowls, convex-sided deep bowls of various sizes and occasionally small globular vessels with averted rim, narrow mouth and high neck bowls with a rim base. The Tan ware which has affinities with the Harappan sturdy red ware in terms of finess, black painted decorations and shapes is not very common at Gilund as compared to Balathal where it is found in a larger quantity indicating a special status of that site. The shapes include dish, dish-on-stand and bowl-on-stand with considerable variations in size.

A number of sherds of the Reserve-slipped ware have been found in the Chalcolithic levels at Balathal and Gilund and include the imported Grey with white and locally made Red with cream. The light wash or slip is applied first over which the red or the grey slip is applied and while the later slip was wet various patterns were executed by scooping out the second slip possibly by a comb-like instrument in sets or groups. The shapes in this variety cannot be discerned as only body sherds have been found with patterns including a set of eight zigzag lines, set of running loops below a horizontal line, double horizontal bands below which is a pattern resembling a serrated edge, and horizontal lines at regular intervals filled in with dots (Shinde *et al.*, 2002). The Reserve-slip ware was first manufactured by the Ahar people as the local variety is available at the lower levels in Balathal and Gilund. This technique was probably borrowed by the Gujarat Harappans who perfected the technique to form the grey variety.

The coarse wares are made of unrefined clay, is poorly fired, has a grey or black core and the vessel forms in this variety mainly comprise of large globular pots with wide or narrow mouth, basins in various sizes used for storage and cooking along with large storage jars. The ceramic types include regular every day use Red and Grey ware slipped and burnished with incised decorations on the shoulder. The decorative patterns include parallel ridges and a variety of incised designs like multiple wavy lines, chevrons, herring-bone patterns, criss-crosses and triangular incisions and the bottom is rusticated in most cases.

The Black-and-Red ware is manufactured using the inverted firing technique and both surfaces in most cases are treated with a slip and burnish and is painted in white pigment with groups of straight or wavy lines, spirals, dots and circles either on the exterior or interior surface. The shapes in this ware mostly include wide-mouthed, convex-sided bowls of varying size and also large pots and jars in this ware decorated with incised patterns have been found at Gilund (Shinde *et al.*, 2002).

Interestingly the Ahar tradition ceramics seem to be all indigenous in origin going back to the Ceramic phase at Bagor especially the incised decorated red and grey wares. The distinctive white painted Black-and-Red ware also has its earliest dates from Balathal and is found, at times in considerable quantity, at Mature Harappan sites in Kutch, and Sorath Harappan settlements. The Tan ware is stylistically reminiscent of the Sorath Harappan (Possehl and Raval, 1989), and there is evidence of one Harappan painted motif (Misra *et al.*, 1997: Figure 11, No. 42) on the local ware and a number of perforated jar sherds at Balathal while Gilund has yielded black painted buff ware sherds and Harappan shapes like the constricted neck jars and polychrome painted decorations on red ware sherds from the early mature layers. All these evidences make a good cause for Harappan and Chalcolithic

connections especially between Gujarat and the region of Mewar and probably the Sothi region of north Rajasthan (Sinha, 2003).

Technology and trade: In the past five decades the excavations and study of the Chalcolithic cultures have revealed interesting data regarding the existence of interaction networks among various groups of people. Exchange/trade or interaction is the basic factor for movement of goods and ideas, it is the need for goods and ideas including environmental constraints that force people into moving from one region to the other which bring them in contact with other groups leading to transfer of technology, goods and ideas. In the Indian context the periods between 3rd and 2nd millennium BC witnessed the settlements of Mesolithic, Chalcolithic and Harappans occupying varied terrains including fertile river valleys, hilly slopes, coastal and desert regions with their wide-ranging interaction networks that helped in the development and economic prosperity of all.

Scholars like Renfrew (1986) study the concepts of interaction and exchange and rise of new cultural systems as 'peer polity interactions' which designates the full range of interchanges taking place including imitation, competition, warfare and the exchange of material goods and information between autonomous self governing and in a sense politically independent socio-political units which are situated beside or close to each other within a single geographical region or in some cases more widely. They are effectively autonomous in terms of their power relations yet they do not exist in isolation as they have many neighbours often sharing many common traits.

The overall development from Early to Mature Chalcolithic especially in the Ahar culture is attributed to close trading contacts between the Chalcolithic and urban Harappans of Gujarat from around 2500 BC, and possibly the region of north Rajasthan via the Ganeshwar Jodhpura culture (Sinha, 2003). The Harappans had developed very strong international trade relations with the Mesopotamian, Egyptian Civilisations and the Persian Gulf region and to fulfil their requirements of raw materials and probably some amount of finished products they established strong trading ties with the Chalcolithic communities and the latter thrived through this trading network.

There is definite evidence of contact between the Ahar people and the Harappans of Gujarat in terms of inflow of marine products like the conch shell, semiprecious stones and beads of carnelian into the Ahar region and the Black-and-Red ware and copper objects and ingots from the Ganeshwar region into Gujarat via the Ahar region with the hunting-gathering and nomadic pastoral elements acting as intermediaries in the trade. It was believed by earlier scholars (Sankalia *et al.*, 1969) that the Harappans of Gujarat could have developed contacts with the Ahar people to obtain copper ores as some of the sites are very close to the thick deposits of copper; or even imported finished copper goods from sites like Ahar, which is identified as one of the centres of copper smelting and working (Sankalia *et al.*, 1969). However in light of recent research the presence of copper ore close to Ahar in the Aravalli region is not plausible and the closest viable copper deposit is in the Khetri belt and thus the Ahar people were more trade intermediaries between the Gujarat Harappans and the Ganeshwar people in the copper exchange network. However, their role as manufacturers of copper objects from the imported copper ingots cannot be ruled out in light of evidence from

Ahar and the presence of furnaces at Balathal and Gilund for working copper has suggested by the excavator; that copper was worked, possibly smelted, at the site (Misra *et al.*, 1997: 267). Besides, there must have been exchange network for food products or essentials like grains, probably dairy products, timber and luxury and expensive items like semi-precious stones, shell, copper etc. The other features that indicate the Harappan influence is the presence of turquoise bead at Gilund, lapis lazuli beads at Balathal and Ahar and a large number of steatite beads which could be locally manufactured but the technology was definitely borrowed. Interestingly the presence of an ibex (mountain goat) figurine at Gilund also indicates outside influence as it is native to the hills of Afghanistan and Kashmir. By the end of the mature Ahar tradition there is also presence of the Malwa ware from sites in the Malwa region.

Rise of urban or proto-urban features

The study of trade and interactions is characterised by urban and 'proto-urban' (Whitehouse, 1973:601) features with large cities, towns and villages all participating in complex economic and cultural interactions. During the Chalcolithic phase many sites though small in area (>1 hectare) can be regarded as towns rather than villages as this categorisation is based on the presence of an economy with specialised manufacture and trade, and a hierarchical social organisation with central authority. Food requirements are fulfilled internally or by nearby small satellite settlements in exchange of industrial products. Though such sites cannot be described as urban centres there is no restriction in identifying them as 'proto-urban' as they reveal incipient traits of Urbanism. Towns or the proto-urban centres can also arise through commerce with existing urban cultures, tapping enough of the wealth of the urban communities to allow them to develop an 'urban-like' economy themselves. These sites to a great extent also contribute to the formation of large urban centres and many of the urban features they represent are the result of an emulation of the urban centres they had economic and cultural relations with.

Whitehouse (1973), identified four features that could be used for distinguishing urban and proto-urban sites:

1. Trade
2. Economic specialization
3. Wealth
4. Fortifications

There is evidence of proto-urban features at these Chalcolithic sites seen: in the *long distance trade* with the Gujarat Harappans, North Rajasthan, Deccan and South India; *craft specialization* as present in the number of specialized industries as copper at Ahar and Gilund, ceramics at Balathal and Gilund, bead manufacture at Balathal etc; *wealth* in the form of granaries, prosperity visible in the structural activity especially the large and spacious residential structures complete with large storage facilities; and public architecture such as *fortifications*, granary etc.

Urban settlements are thought to initially arise either through independent development within the economy due to trade benefits, industrial growth or agricultural maximization or

due to contact with urban areas. In the Indian context they were the result of a combination of increasing populations, intensified food production, industrial development and the import and export of materials through trade within and beyond the local regions, which led to the development of a rigidly stratified society and power and wealth concentrated in the hands of a few. Sites like Balathal and Gilund indicate towards the presence of a stratified society with a head or a group of people demanding and commanding the fellowship of other members of the society along with agricultural surplus for trade and craft specialization (Sinha, 1998 & 1999).

Based on the above model there is a strong case for the development of urban features and probably proto-urbanisation in the Ahar tradition. There is a close contact between the early farming community of Mewar and the Harappans of Gujarat and north Rajasthan. The architectural features such as the outer fortification at Balathal and Gilund, fortified enclosure at Balathal in the central part and well laid settlement with multi-roomed complexes on either side of the street and the construction method bear a lot of similarity with the Harappan architecture and technology. The Harappan Citadels were built over mud-brick platforms and their fortification walls broaden towards the base. The same technique is applied for the construction of fortified enclosure and the outer fortification by the Chalcolithic people at Balathal and Gilund. The presence of a granary, and public structures, a modicum of planning with main streets and lanes and structures on either side of them could have been borrowed from the urban Harappan settlements as no other contemporary culture in Indian subcontinent had reached to this degree of development. All these features are completely absent in the earlier phase at both the Ahar sites but become very prominent with the next phase and this can be attributed to cultural emulation due to trade contacts with the Harappans in Gujarat and north Rajasthan as can be seen from the exchange of various luxury items like shell objects, semi-precious stones objects, pottery traditions etc.

The most interesting example suggesting Harappan influence is the presence of classical Tan Ware, similar to Harappan Red ware in Gujarat at the Ahar sites. The Tan ware resembles the Harappan Red ware in terms of technique of manufacture, fabric, firing and also in forms with the black painted decorations. However any possibility of this ware being imported seems quite unlikely as the potters of Ahar culture were capable of making this ceramic at home with borrowed ideas and the available technology. Gogte (1996), had put forth the idea that this ware was made locally with imported clay on the basis of XRD analysis which showed that the clay used for Tan ware did not match the local clay. However, it seems that he has forgotten to take into account the factor that the catchment area for an agricultural society extends to a radius of approximately 5 km i. e. 78.5 km sq. The mineral content of clay varies every few meters and hence before putting forth the idea of import we should actually test the soil sample from the above-mentioned area. Also a survey carried out at both the sites Balathal and Gilund has brought to light a number of satellite settlements that were established for exploiting the resources like arable land, quartz outcrops, clay for making pottery etc.

Numerous copper objects such as razor blades, knives, chisels, arrowheads and spearheads, axes etc recovered from a number of these sites are typologically similar to those

found in the Harappan levels in Sind and Gujarat. There is also the graffiti signs on potsherds which resemble the Harappan letters and the symbols on votive tanks the most important being the ploughshare. All these factors indicate towards the vigorous commercial exchange, which led to the introduction of various cultural idioms, financial security and a readiness to introduce and accept change helping in the rise of proto-urban makeup of the Ahar culture.

Conclusion

The origin of the Ahar culture although was independent of the Harappans as the evidence from Bagor, Gilund and Balathal suggests they flourished due to their close contacts with the Harappans via the trade network. The 'urban-like' features such as the monumental and complex buildings, craft specialisation, social stratification, the presence of Tan ware and Harappan like copper objects may have been the result of such a contact. There is evidence of Proto-urban features at these Chalcolithic sites seen in the long distance trade with the Gujarat Harappans, North Rajasthan, Deccan and South India; craft specialization as present in the number of specialised industries as copper at Ahar, ceramics at Balathal etc; wealth in the form of granaries, prosperity visible in the structural activity especially the large and spacious residential structures complete with storage; and the public architecture such as fortifications at Balathal and Gilund etc. The presence of these features indicate the presence of urbanisation or proto-urban features in the Ahar culture between 2500-2000 BC.

Also the absence of the above features in the later phase clearly demonstrate the decline in lifestyle and the proto-urban makeup which did not evolve into a full fledged urban society probably as a result of decline of the Harappan influence and extensive trade contacts. Also the fluctuating climatic conditions after 1600 BC may have been responsible to a certain extent, for the decline of the Chalcolithic culture. In spite of the Chalcolithic culture of Western India being the best studied, we are still looking forward to evidence for certain problems like exact reasons for their decline and disappearance around 1000 BC and what happened to the Chalcolithic people?

References

- Banerjee, N. R. 1986. *Nagda 1955-57*, Memoirs of the Archaeological Survey of India: no. 85, ASI, Govt. of India Press, New Delhi.
- Childe, V.G. 1936. *Man Makes Himself*, Watts, London.
- Clarke, D.L. 1972. *Models in Archaeology*, Methuen, London
- Cohen, M.N. 1977. *The Food Crisis in Prehistory: Over Population and the Origins of Agriculture*, New Haven, London.
- Dhavalikar, M.K., 1970 Kayatha: A New Chalcolithic culture, in *Indica*, Vol 7- No 2, 1970: 85-93.
- Dhavalikar, M.K. 1988. *First Farmers of the Deccan*, Ravisfi Publishers, Pune.
- Enzel, Y., L.L. Ely, S. Misra, R. Ramesh, R. Amit, B. Lazar, S.N. Rajguru, V.R. Baker and A. Sandler. 1999. High- Resolution Holocene environmental changes in the Thar Desert, Northwestern India, *Science* 284, pp:125-128.

- Faiservis, W. A. Jr. 1956. *Excavations in the Quetta Valley, West Pakistan*, Anthropological Papers of the American Museum of Natural History 45(2), New York, pp: 169-402.
- Gogte, V. D. 1996. Chalcolithic Balathal: a trading center as revealed by the XRD study of the pottery, *Man and Environment*, XXI (1) pp. 98-100.
- Hassan, F. 2002. Holocene environmental changes and the transition to agriculture in south-west Asia and north-east Africa in *Origins and Pottery and Agriculture*, Y. Yasuda (ed.), Roli Books and Lustre Press, Singapore
- Jarrige, J. F. 1984. Chronology of the Earliest Periods of the Greater Indus as Seen from Mehargarh, Pakistan, in B. Allchin ed. *South Asian Archaeology 1981*, Cambridge University Press, Cambridge, pp. 21-29.
- Jarrige, C., J.F. Jarrige, R. Meadow and G. Quivron. 1995. *Mehargarh: Field Reports 1974-85- From Neolithic Times to the Indus Civilization*, Department of Culture and Tourism of Sindh, Pakistan and Department of Archaeology and Museum, French Ministry of Foreign Affairs, Karachi.
- Krishnamurty, R. V., D.P. Agrawal, V.N. Misra and S.N. Rajaguru. 1981. Palaeoclimatic Influences from the behaviour of Radio-Carbon Dates of Carbonates from sand dunes of Rajasthan, *Proceedings of the Indian Academy of Sciences (Earth Planet Science)* 90, pp: 155-60.
- Misra, V.N. 1973. Bagor- A Late Mesolithic settlement in North-west India, *World Archaeology* V(1), pp:92-100.
- Misra, V.N. and R.K. Mohanty. 2001. A pottery cache from Balathal, Rajasthan, *Man and Environment* XXVI (2), pp:67-74.
- Misra, V.N., V. Shinde, R.K. Mohanty, K. Dalal, A. Mishra, L. Pandey and J. Kharakwal. 1995. The excavations at Balathal: their contribution to the Chalcolithic and Iron Age cultures of Mewar, Rajasthan, *Man and Environment* XX(1), pp: 57-80.
- Misra, V.N., V. Shinde, R.K. Mohanty, L. Pandey and J. Kharakwal. 1997. Excavations at Balathal, Udaipur District, Rajasthan (1995-97), with special reference to Chalcolithic architecture, *Man and Environment* XXII (2), pp:35-59.
- Pandey, S.K. 1976. Eran: A reassessment of the Chalcolithic and Iron Age, *Prachya Pratibha* IV(2), pp:54-61
- Possehl, G. L. 1994. *Radiometric Dates for South Asian Archaeology*
- Possehl, G. L. and M. H. Raval. 1989. *Harappan Civilization and Rojdi*, Oxford & IBH and the American Institute of Indian Studies, New Delhi.
- Renfrew, C. 1986. *Peer Polity Interaction*, University Press Cambridge, Cambridge
- Sankalia H.D. 1959. *The Excavations at Maheshwar and Navdatoli, 1952-53*, Deccan College Post Graduate and Research Institute, Pune.
- Sankalia, H.D., S.B. Deo and Z.D. Ansari. 1969. *Excavations at Ahar*, Deccan College Post Graduate and Research Institute, Pune.
- Shinde, V. 2000. The Origin and Development of the Chalcolithic in Central India, *Indo Pacific Prehistory Association Bulletin* 19, (Maleka Papers, Vol 3).
- Shinde, V.S. 2002 Emergence, development and spread of agricultural communities in South Asia, in Y. Yasuda ed., *Origins of Pottery and Agriculture*, Roli Books and Lustre Press, Singapore.
- Shinde, V.S., Y. Yasuda, and G. Possehl. 2001. Climatic conditions and the rise and fall of Harappan Civilization of South Asia, *Monsoon and Civilization Conference Abstracts*, pp: 92-94
- Shinde, V.S. and G.L. Possehl. (2005a). A Report on the Excavations At Gilund, 1999-2001. *South Asian Archaeology 2001*, Vol. 1, eds Catherine Jarrige and Vincent Lefvre, Paris: 293-309.
- Shinde, V.S. and G.L. Possehl. (2005b). Excavations At Gilund, 2001-2003: The seal impressions and other finds. *South Asian Archaeology 2003*, eds Ute-Franke-Vogt and Hans-Joachim Weisshaar. Leiden: Softverlage: Aachen: 159-169.
- Shinde, V.S., S. Deshpande and G.L. Possehl 2002. The ceramic assemblage in Protohistoric Mewar (Rajasthan) with special reference to Gilund and Balathal, *Puratattva* 32, pp:5-24
- Shinde, V.S, S. Deshpande and Y. Yasuda. 2004. Human response to Holocene climatic changes- A case study of Western India between 5th and 3rd millennium BC, in Y. Yasuda and V. Shinde eds. *Monsoon and Civilization*, Roli Books and Lustre Press, Singapore
- Singh, G., R.J. Wasson and D.P. Agrawal. 1990. Vegetational and seasonal climate changes since last full glacial in the Thar Desert, *Review of Palaeobotany and Palynology* 64, pp : 351-358.
- Singh, G. 1971, The Indus Valley culture seen in context of post-glacial climatic and ecological studies in north-west India, *Archaeology and Physical Anthropology in Oceania* 6(2), pp:177-189

- Singh, U.V. 1962. Excavations at Eran, *Journal of the Madhya Pradesh Itihas Parishad* IV, pp: 41-44
- Singh, U.V. 1967. Further Excavations at Eran, *Journal of Madhya Pradesh Itihas Parishad* V.
- Sinha Deshpande, S. 1999. Chalcolithic Social organization in Central India: A case study of Balathal, *Puratattva* 29, pp:50-59.
- Sinha, S. 1998. *Study of Chalcolithic social organization in Central India with special reference to Balathal*, Unpublished M.A. Dissertation, Deccan College Postgraduate Research Institute, Pune
- Sinha, S. 2003. *A study of cultural Interactions in Central and Western India During the Third and Second millennium BC*, Unpublished Ph.D Thesis, Deccan College Postgraduate Research Institute, Pune
- Wallace, R. 1888. *India in 1887*, Oliver and Boyd, Edinburgh.
- White, L.A. 1959. *The Evolution of Culture*, McGraw Hill Book Company, New York.
- Whitehouse, R.D. 1973. The earliest towns in peninsular Italy in C. Renfrew ed. *The Explanations of Culture Change*, Gerald Duckworth and Co. Ltd., pp:617-624