Chapter – V

DISCUSSION AND CONCLUSION

A lot of us would like to move mountains,
But few of us are willing to practice on small hills.
(Anonymous)

Introduction

This chapter discusses the data put forth in the previous chapters with an aim to resolve the objectives of research mentioned in the introductory chapter. In other words, this chapter deals with fixing of chronology and regional stratigraphy, identifying regional elements and defining Chalcolithic cultures/traditions.

Regional Cultures/Traditions in Gujarat

The archaeological researches till date have brought various regional Chalcolithic cultures/traditions and the ceramic types in Gujarat under three chronological phases viz. Pre Urban Harappan, Urban Harappan and Post Urban Harappan datable between c.3700-1000 BC. The regional cultures/traditions of Pre-Urban Harappan Phase are primarily marked by the Anarta Ceramic Tradition, Padri Ware and Pre-Prabhas Assemblage. In various sites they were found associated with Pre Urban Harappan Sindh related pottery, Black and Red Ware and Reserved Slip Ware. Other ceramic types such as Micaceous Red Ware, ceramics of Anarta tradition, Padri Ware and Prabhas Ware have a distribution over cultural periods. Sorath Harappan Ceramics, which show a regional typology include stud handled bowls, convex sided bowls, concave sided bowls are not present in the typology of Classical Harappans. Therefore it may be proposed as all the above traditions represent phase of Harappan culture in Gujarat, some confining to contemporary Harappan while others spread through various stages of Chalcolithic development in Gujarat. Micaceous Red Ware, Ceramics of Anarta tradition, Padri Ware, ceramics of the Sorath Harappan and Prabhas Ware may be
considered as the ceramic tradition of the Chacolithic Gujarat during Urban Harappan Period of which Classical Harappan also forms a part. In many sites, various regional traditions/cultures that were found together or found in association with Classical Harappan artefacts are Black and Red Ware and Reserved Slip Ware. Post Urban Harappan Phase was marked by small quantities of Micaceous Red Ware, Late Sorath Harappan Culture and Lustrous Red Ware. In this phase Malwa Ware and Jorwe Ware are also available in limited quantities from a few sites.

Origin of Regional Cultures/Traditions
There are different views among the scholars working in Gujarat regarding the origin of Pre Urban Harappan regional Chalcolithic cultures/traditions of Gujarat. Due to certain similarities in vessel types or decorative patterns, few researchers connected them with the cultures/traditions found outside Gujarat (Bhan 2010; Shinde 2010); few researchers discussed the similarities they shared with other contemporary cultures (Shinde 1998; Ajithprasad 2002; Shirvalkar 2008) and some researchers proposed the concept of indigenous origin and changes over time (Shirvalkar 2008). But there are no clear cut evidences to support either the indigenous or outside origin theories.

The earliest probable agricultural or food processing people of Gujarat may have been the Mesolithic/Microliths using communities. The Mesolithic/Microliths yielding sites in Gujarat are more than 700 in number and many of the sites in Gujarat were found not suitable to explain the linear model of cultural change. Certain sites showed the independent existence of microliths using people. In few sites of Gujarat, Mesolithic period which precedes the Chalcolithic period is dated between 7000 BC to 3500 BC. In some sites, Microliths are found associated with various phases of Harappan culture and few sites showed the presence of Microliths even in the Early Historic period. Sites like Loteshwar, Moti Pipili, Datrana IV, Rangpur and Jaidak showed the independent existence of Microlithic
using communities prior to the Chalcolithic level/occupation and the archaeological remains collected from the sites include microliths, broken sandstone grinding stones and faunal remains from the Mesolithic levels. Many sites showed an unclear gap between the Mesolithic and the Chalcolithic occupations. At Loteshwar, the blades collected from the Mesolithic and Chalcolithic levels were devoid of crested ridge guiding technique (Brahmbhatt 2000). Similarly, crested ridge blades were not reported from the Mesolithic levels of any of the excavated sites in Gujarat. The earliest evidence for the crested ridge blades in the Chalcolithic context of Gujarat occurs in Datrana IV (c. 3200-2800 BC) where it was found occurring along with Pre-Prabhas ceramics, Anarta ceramics, Pre Urban Harappan Sindh Type pottery and Rohri Chert blades. Similar kinds of blades were also reported from Somnath along with Pre-Prabhas ceramics and Harappan like pottery (probably the Pre Urban Harappan Sindh Type) (Dhavalikar and Possehl 1992). Hence, from the available data one can infer that introduction of crested guided ridge blade technique in Gujarat is the result of the contact between Pre Urban Harappans in Sindh and regional Chalcolithic cultures/traditions in Gujarat.

The Pre Urban Harappan Sindh type ceramics collected from various parts of Gujarat were made using fast wheel. At the same time, the vessels of regional Chalcolithic traditions/cultures like Anarta, Pre Prabhas and Padri were made using hand or slow wheel/turn table. This reveals the differences in technological knowhow of Pre Urban Sindh Harappans and Regional cultures/traditions in Gujarat. Similarly, ceramics collected from the excavations at Datrana IV is crudely made in comparison to other regional Chalcolithic types and constitutes as the most fragile ceramic type from Chalcolithic Gujarat. The vessel shapes of the same are also very different from those in Sindh region or reported from any other parts of the Indian subcontinent. The Chalcolithic population of Datrana IV had their own technique of bead making and it appears to be different from that of the Sindh region.
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All the available data till date suggest that the contacts between the Pre Urban Harappans of Sindh and Regional Chalcolithic cultures/traditions in Gujarat began approximately around c. 3200–2800 BC (Majumdar 1999; Ajithprasad 2002). At the same time, the chronometric dates obtained from the Pre Urban Harappan levels at Loteshwar (Ajithprasad 2002; Patel 2008) and Padri (Shinde 1998; Ajithprasad 2002) goes back to 3700 BC or earlier. These dates make one propose that the existence of regional cultures/traditions in Gujarat is datable to nearly 500 years before the beginning of their cultural contacts with Pre Urban Harappans of Sindh region. Probably, Pre Urban Harappan Chalcolithic population at Loteshwar had no contact or very minimal contact with the Pre Urban Harappans of Sindh region and this can be inferred from the material evidences from the site. The site has not yielded a single Pre Urban Harappan Sindh type ceramic.

Due to the presence of very flimsy deposit at many of the Chalcolithic sites in North Gujarat, they are termed as seasonal encampments of pastoral communities (Bhan 1994, 2009; Patel 2009). At the same time there is no evidence to prove the arrival of these people from anywhere else in Gujarat or other parts of Greater Indus region. If the pastoral nomads were to arrive from some other region, similar artefacts should have been reported from other places in the Greater Indus region in good quantities. Similarly, the moving communities have all the chances of developing contacts with other cultural communities so easily that it could have lead to the diversity in material culture within the particular site. If one keenly observes the material remains from Loteshwar, it become obvious that the material remains of the site has not changed over a period of 1500 years of occupation.

Based on the AMS and conventional c14 dates from Loteshwar, Patel (2008, 2009) suggest a probable gap of nearly 1500 years. The studies of Patel (2008, 2009) indicate that the Mesolithic/Microliths using communities and the Chalcolithic population at the site are two different groups. If one goes through the dates and
the context (mainly pits) of dated material, it becomes very clear that the samples were not collected systematically from regular intervals; instead they are randomly collected from various contexts and depths. Therefore, in the flimsy deposit which represent approximately 5000 years of human habitation, even small gaps in the sampling for chronometric dates can create errors of hundreds or thousands of years.

Based on the analysis of faunal remains from Loteshwar, Patel (2009) suggests the possibilities of the appearance of domesticated cattle during the Chalcolithic period contrary to the remains of wild cattle in the aceramic Mesolithic period. Due to the availability of small sized cattle bones similar to those from the Late Neolithic and Chalcolithic levels at Mehrgarh along with large wild cattle bones at Loteshwar by the first half of the fourth millennium BC and difficulties in identifying the direct cultural interaction between Mehrgarh region and North Gujarat, Patel (2009) suggest the necessity to explore the possibility of Loteshwar being a local cattle domestication centre. According to Patel (2009), wild sheep and goat are completely absent in Mesolithic and Chalcolithic levels and its domestic varieties are available at the site in later Chalcolithic levels and it may have been brought to the site probably from areas to the Northwest. It implies that the domestication of animals and the introduction of ceramics are the distinguishing features of Chalcolithic period at Loteshwar where local tradition of stone tool production, food processing and food habits continue from the Mesolithic period with some addition. The introduction of domesticated sheep and goat at the site during the later levels of Chalcolithic period may indicate the beginnings of cultural contacts in later period between the regional Cultures and Classical Harappans.

On the basis of aforesaid archaeological data it is logical to propose that the regional Chalcolithic people within the Gujarat region may have evolved from the Mesolithic/Microliths using people settled here approximately by the beginning of
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4th millennium BC. These Chalcolithic people produced pottery in their own style and domesticated animals. It is very likely that after a long period of existence in isolation they may have came into contact with the Pre Urban or Urban Harappans.

Beginning of Cultural Contact

The evidences for the beginning of cultural contacts between the Chalcolithic communities and Mesolithic communities of Gujarat with that of their contemporary cultural tradition in Sindh region are available towards the end of 4th millennium BC approximately. In the beginning, the regional Chalcolithic cultures/tradition that evolved from the Mesolithic communities of Gujarat around c. 4000 BC, probably had an independent existence and had some contacts with the Mesolithic/Microliths using communities within the nearby areas, although, the evidence for these contacts are scanty. Similarly, ceramic types from Santhli (Majumdar 1999) and Mathutra (Majumdar 1999) suggest an evidence of an earlier contact with the Sindh region (Pre Urban Harappan). By c. 3200 BC, there are clear evidences for the contacts between different regional cultures and cultures of Sindh region. The initial stage of Datrana reveals cultural materials of Pre Prabhas regional Chalcolithic tradition of Gujarat (Ajithprasad 2002). Whereas at Santhli and Mathutra only Pre Urban Harappan Sindh type ceramics are found (Majumdar 1999). The final phase of Datrana has a mixture of both regional and Pre Urban Harappan materials (Ajithprasad 2002). Absence of chronometric dates from these sites blocks its further interpretation. It is possible that major contacts and cultural integration between the Gujarat region and Indus region occurred at a later stage. However, Gujarat region had Chalcolithic communities prior to the arrival of people from Indus region. This is supported by the presence of settlements dating prior to 3200 BC like Loteshwar (Patel 2008, 2009). Padri showed evidences for cultural contact between the Padri Ware using communities and Sorath Harappans from the earlier levels dated to c. 3700 BC (Shinde 1998;
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Bhagat 2001) but due to certain discrepancies in the chronology and stratigraphy of the site, these results have to be used with a certain degree of caution. The Padri Ware also showed similarities to ceramics of Anarta tradition from Loteshwar (Shinde 1998; Bhagat 2001; Shirvalkar 2008). At the upper levels of Chalcolithic period at Datrana, the Pre Prabhas pottery is found associated with the Pre Urban Harappan Sindh type ceramics and Anarta ceramics (Ajithprasad 2002). At Moti Pipli, Anarta ceramics are found associated with the Pre Urban Harappan artefacts (Majumdar and Sonawane 1996-97). At Dholavira, there was a fortified settlement during this period (Bisht 2000) and probably both regional Chalcolithic and Pre Urban Harappan ceramics are present in the ceramic collection (Shinde 1998). At Somnath, the Pre Prabhas ceramics were found along with ceramics similar to Pre Urban Harappan Sindh Type (Dhavalikar and Possehl 1992). The evidences from the explored sites around Somnath (Ajithprasad et al. 2011) indicate the probabilities of the presence of Pre Urban Harappan ceramics at Somnath. Pre Urban Harappan ceramics were also unearthed from the sites like Surkotada (Joshi 1990) and Kanmer (Kharakwal et al. 2011). Apart from this many of the sites showed the presence of Black and Red Ware and Reserved Slip Ware. From the above discussion it appears that the beginnings of cultural contacts between the regional Chalcolithic cultures of Gujarat and Sindh type ceramic within them maybe dated to the close of fourth millennium BC.

Need for Contact

The probable reasons which led to the cultural contacts between Pre Urban Harappans and Region Chalcolithic communities may be many including the movement of people in search of pastoral lands, search for raw material resources, understanding arts and crafts, new markets for finished products, agricultural lands, to acquiring private property (?), religious beliefs and rituals (?), expansion of territory, bride/groom and workers. The evidences for many of the aforesaid parameters are unclear. Gujarat is well known for its grasslands majority of which
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are located in arid zones North Gujarat and Kachchh. Apart from the green grass, availability of fresh water from inter dunal depressions may have attracted the pastoral nomads within and outside of Gujarat. Similarly, the fertile black cotton soil in the Saurashtra and other parts of Gujarat may have attracted the agricultural communities and the people in search of agricultural fields and private properties. Gujarat coast is famous for the marine shell and probably was a source for this raw material. Gujarat is also known for the mines of semi-precious stones which were used to produce beads. The availability of different raw materials and finished products like shell bangles, beads and various ceramics of different cultures and traditions from various sites within and outside Gujarat clearly show that regional cultures/traditions in Gujarat, during the Pre Urban Harappan period, had interaction networks with one another as well as with cultures in the Indus Valley proper (Kenoyer 1997; Kenoyer and Meadow 2000; Bhan 1994; Ajithprasad 2002; Possehl 2002).

Impact of Contact

The probable impacts of contact with the Pre Urban Harappans of Sindh region led to the introduction of crested ridge blade making technique and the use of fast wheel for pottery production. Another result of these contacts may be the integration of various regional cultures/traditions of different parts of Gujarat into the Harappan cultural sphere.

Towards Integration

Towards the end of Pre Urban Harappan Phase i.e. c. 2600 BC, the regional Chalcolithic Anarta Tradition and Padri Culture integrated into the Classical Harappans whose predecessors started the cultural contacts with the indigenous communities of Gujarat by the end of fourth millennium BC. During this period the material evidences for the cultural contacts becomes clearer. The Pre Prabhas assemblage which existed in the Pre Urban Harappan Phase at Datrana IV and Somnath did not continue during the Urban Harappan phase and the reasons for
their decline is not clear. The Reserved Slip Ware and Black and Red Ware technique continued during the Urban Harappan Phase. The evidence for the integration can be inferred from the data recovered from the excavations at Loteshwar (Ajithprasad 2002, Yadav 2005), Bagasra (Sonawane et al. 2003; Bhan et al. 2004; Chase 2010), Shikarpur (Bhan and Ajithprasad 2009), Padri (Shinde 1998; Bhagat 2001; Shirvalkar 2008), and Nagwada (Hegde et al. 1988). The earliest evidence from Loteshwar (c. 3700 BC) in North Gujarat (Patel 2008) show the independent existence of Anarta tradition at the site for about 500 years. Around 3200-3000 BC the Anarta ceramics are found along with the Pre Prabhas Assemblage and Pre Urban Harappan Sindh Type ceramics at Datrana IV (Ajithprasad 2002) and Pre Urban Harappan Sindh Type ceramics at Moti Pipli (Majumdar and Sonawane 1996-97; Majumdar 1999), Nagwada (Hegde et al. 1988) and Mathutra (Majumdar 1999) which perhaps continued up to the beginning of Urban Harappan period. In the beginning of Urban Harappan phase, Anarta pottery is the dominant ceramic type at Bagasra (Sonawane et al. 2003) and in the next phase Classical Harappan ceramics became prominent while at Shikarpur (Bhan and Ajithprasad 2009) though Anarta ceramics appears in the first phase it is lesser in quantity compared to Classical Harappans. At Nagwada (Hegde et al. 1988), which is dated to the late phase of Urban Harappan period, Anarta ceramics are the dominant variety (around 85%) (Bhan 1994) while other Classical Harappan artefacts are also present. Some of the sites of this period also showed the presence of Black and Red Ware and Reserved Slip Ware ('glazed' and 'unglazed'). While considering the Padri Ware, which was found associated with the Sorath Harappan ceramics at Pre Urban Harappan levels at Padri continues during the Urban Harappan period.

Emergence of New Cultures/Traditions/Wares

The Urban Harappan Period in Gujarat (2600-1900 BC) is noted for the continuation of old cultures/traditions and beginning of new cultures/traditions/
wares. The first regional Chalcolithic tradition/ceramic type emerged during this period was the Micaceous Red Ware, whose quantities were found to increase in the lower levels at Lothal (Rao 1979, 1985). It occurred along with Classical and Sorath Harappan ceramics at Lothal (Rao 1979, 1985), Rangpur (Rao 1963), Rojdi (Possehl and Rawal 1989), Vagad (Sonawane and Mehta 1985), Kanewal (Mehta et al. 1980) and Desalpur (Soundararajan 1984). Another regional culture of this period is Sorath Harappan which is widely distributed all over Gujarat. It can be divided into two phases i.e Sorath Harappan and Late Sorath Harappan. The Sorath Harappan ceramics were reported along with Padri Ware at Pre Urban Harappan levels (Shinde and Kar 1992; Bhagat 2001) but the evidences from the site are doubtful to support its early origin. The middle of Urban Harappan period witnessed the origin of another regional ceramic type known as Prabhas Ware. This was also found along with Classical Harappan and Sorath Harappan artefacts. The Chalcolithic cultures of this period had some cultural contacts with the Mesolithic population which existed during this period. This is indicated by the occurrence of Chalcolithic artefacts like copper objects and ceramics at Langhnaj. All the regional cultures/traditions of this period except Sorath Harappan are identified based on the ceramics originated in Saurashtra region and they are found associated with other cultures/traditions.

Transformation of Cultures

Towards the end of Urban Harappan phase around c. 2000/1900 BC, the Anarta Tradition underwent a complete transformation due to which its identifiable parameters changed and the reasons for the same are not sure. Similarly the Reserved Slip Ware, which originated in Pre Urban Harappan period also came to an end. The Sorath Harappan also underwent changes and continued in the next phase as Late Sorath Harappan. According to the excavator, the Padri Ware became extinct at Padri by the end of Urban Harappan period and the site was deserted till Early Historic period (Shinde 1998; Shirvalkar 2008). But the
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The reanalysis of ceramics from Padri by the researcher shows its continuation till the end of Post Urban Harappan period.

Towards Extinction

The Post Urban Harappan period in Gujarat (1900-1000 BC) is noted for the emergence of new traditions and extinction of certain Chalcolithic traditions which existed in the earlier phases. The Micaceous Red Ware which emerged during the beginning of Urban Harappan period continued up to 1700/1600 BC (Herman and Krishnan 1994). The Prabhas Ware which came into existence in 2200 BC became extinct in 1700 BC. The Sorath Harappan ceramics evolved into new shapes and were called as Late Sorath Harappan culture (c. 1900-1700 BC). The new ceramic type which emerged during this period is the Lustrous Red Ware and it continued from 1900 BC to 1400 BC or little later (Rao 1963; Rissman and Chitalwala 1990). The Malwa Ware which was common in the Deccan region also appeared in very few sites in the time period between 1700-1500 BC (Mehta et al. 1975). The Jorwe Ware also showed its presence in very few sites in South Gujarat and it is dated in between 1500-900 BC (Mehta et al. 1971). The Black and Red Ware which appeared in the beginning of Pre Urban Harappan phase continued to the Early Historic period. The shapes of the Black and Red Ware vessels varied in different periods and the manufacturing technique probably remained the same.

Features of Regional Chalcolithic Cultures

The analysis of artefacts and other data regarding various Chalcolithic sites in Gujarat highlighted different features of Pre Urban Harappan Regional Chalcolithic cultures/traditions in Gujarat like Anarta Tradition, Padri Culture and Pre-Prabhas Assemblage. The results include insights about spatial and temporal distribution of various cultures/traditions, its cultural contacts, various features of the artefacts and its similarities with cultures/traditions of other regions, architectural elements, burial practices, craft activities and beautification of body and validity of titles like culture/tradition/assemblage/ceramic type.
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Anarta Tradition: History of Discovery

The Anarta ceramics were encountered during the excavations of Lothal in 1955-62 (Rao 1979, 1985) and Surkotada in 1970-72 (Joshi 1990) and at Lothal it remained unnoticed for a long time while at Surkotada though not in the name of Anarta, its presence was noticed by the excavator. These ceramics were also present at Zekhda in North Gujarat (Momin 1983). The Anarta ceramics were first recognized as a regional Chalcolithic ceramic type in 1985 during the excavations at Nagwada where it was found along with the Urban Harappan artefacts (Hegde et al. 1988). Its independent existence was noticed at Loteshwar (Khari no Timbo) in 1990-91 by The Maharaja Sayajirao University of Baroda (Mahida 1992; Sonawane and Ajithprasad 1994). Later excavations in various sites like Moti Pipli (Majumdar and Sonawane 1996-97; Majumdar 1999), Datrana (Ajithprasad 2002), Shikarpur (Bhan and Ajithprasad 2009), Kanmer (Kharakwal et al. 2011), Dholavira (Bisht 2000; Shinde 1998) and Bagasra (Sonawane et al. 2003) showed its presence. The explorations in various parts of Gujarat showed its presence in 68 sites (Ajithprasad and Sonawane 1993; Majumdar 1999).

Anarta Tradition from Loteshwar

At Loteshwar the Chalcolithic period which succeeds the Mesolithic period is marked by the presence of ceramics, copper and terracotta objects. The site is notable for the absence of structures belonging to this period while few clay lumps with reed impressions may indicate that wattle and daub structures existed. Large number of grinding stones and hammer stones collected from both the Mesolithic and Chalcolithic levels may indicate the similar kind of food processing techniques or food grains during both the periods at the site. There are similarities in the stone tools of both the periods which include blades, blade blanks, fluted cores, lunates and points of chert, chalcedony and agate. The absence of crested ridge blades and crested ridge cores during the Mesolithic and Chalcolithic period is one of the main features of the site (Brahmbhatt 2000). The ceramics of Anarta
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tradition recovered from the excavations at Loteshwar include Gritty Red Ware, Fine Red Ware, Coarse Red Ware, Burnished Red Ware, Burnished Black/Gray Ware, Black and Red Ware, Harppan Red Ware (1 or 2 sherds) and Reserved Slip Ware (Ajithprasad 2002; Yadav 2005). The vessel shapes from the site include pots, basins, dishes, lids and dish on stands. Majority of the vessels are hand/turn table made and are slipped and burnished on both the surfaces. The designs on the sherds include prefiring incisions and painted designs. Large blunt carinated basins; sharp carinated bowls; bowls with incurved rims; small and medium sized pots with flaring out rim constricted neck, globular body and round bottom and matt surfaced pots are certain characteristic vessels belonging to this tradition. The other artefacts from the site include shell beads and bangles, steatite beads, semi precious stone beads, terracotta beads, spindle whorls, pottery discs, bone points, copper wires and nails, animal figurine and probably a human figurine (Madella and Ajithprasad: Personal Communication).

Similarities and Differences

According to Ajithprasad (2002) the use of white and cream pigment either as a background for painting decorative patterns in shades of red and black or use of white as pigment directly over black as well as red is a widely spread Pre urban Harappan tradition in decorating pottery in many sites in the Indus valley and Rajasthan. Ajithprasad (2002, 2011 – in press) points out that some of the Anarta vessels in form and the scheme and style of painted decorations share common features with the Pre Urban Harappan ceramics from Jalilpur (Mughal 1974), Ravi Phase ceramics from Harappa (Kenoyer and Meadow 2000; Meadow and Kenoyer 2008), Pre Urban Harappan levels at Kalibangan (Thapar 1975; Lal 1979), Bhirana (Rao et al. 2006), Girhawad (Shinde et al. 2008) and Baror (Urmila et al. 2005). Bhan (2010) also suggested some similarities in decorations and vessel shapes of Anarta tradition and ceramics of Rehman Dheri (Durrani 1981), Siah II (de Cardi 1965), Karela-1 (Dangi 2009) and Kheima Kheri-2 (Dangi 2009). Similarly some
similarities are noticeable in the Anarta ceramics and Padri Ware in certain shapes and decorative patterns (Shinde and Kar 1992; Sonawane and Ajithprasad 1994; Shinde 1998; Bhagat 2001; Ajithprasad 2002; Shirvalkar 2008). Though there are similarities in certain vessel shapes and decorative patterns, differences also exist between the two. At Padri, majority of the Anarta vessel shapes are absent and surface treatment of most of the vessels are also different. Though some ceramics from Ghaggar basin look similar in shape to Anarta ceramics, many a times fabric and surface treatment of the same is different (Dangi: Personal Communication). As majority of the comparisons are based on the published drawings and descriptions there are chances of misinterpretations. Hence a detailed comparative study of ceramics from various sites in Gujarat, Sindh region and Ghaggar basin is essential.

Faunal remains

Faunal remains from the Chalcolithic period of Loteshwar are represented by both wild and domestic animals (Patel 2008, 2009). The domestic varieties of animals from the site are represented by zebu and sheep. Based on the observations made from the animal bones and chronometric dates from Loteshwar, Patel (2009) suggests the possibility of the local domestication of cattle in North Gujarat by the beginning of fourth millennium BC. As per Patel (2009), wild sheep and goat are completely absent in Mesolithic and Chalcolithic levels at Loteshwar and its domestic varieties are available at the site in later Chalcolithic levels and it may have brought into the site probably from areas to the Northwest. The faunal remains from Nagwada, where majority of the ceramic collection is represented by Anarta tradition, reveals the presence of domestic animals like cattle and goat/sheep during Pre Urban Harappan and Urban Harappan periods (Patel 1989; 2009) (Chart 5.1). Thus, this evidence shows that the domesticated varieties of sheep/goat were present in North Gujarat at least from the beginning of 3rd millennium BC.
Structural remains

No structural remains apart from some clay lumps with reed impressions were unearthed from the excavations at Loteshwar. The site is noted for the presence of big pits filled with bones, ashes and ceramics, the purpose of these pits are however not clear. At sites like Shikarpur (Bhan and Ajithprasad 2009), Bagasra (Sonawane et al. 2003), Surkotada (Joshi 1990) and Kanmer (Kharakwal et al. 2011), these ceramics were found associated with fortification walls, residential structures and Classical Harappan artefacts. At Nagwada (Hegde et al. 1988) these ceramics were found associated with residential structures and Classical Harappan artefacts. These evidence suggests the possibilities of the use of some structures in these sites by the Anarta ceramics using communities.

Anarta Burial

One burial found during the excavations at Loteshwar unassociated with burial goods appears to be the earliest Chalcolithic burial in Gujarat (Ajithprasad 2009).
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Burials from various sites in Gujarat datable to the Pre Urban Harappan Period have Sindh type ceramics as part of the burial goods (Majumdar 1999; Ajithprasad 2011 – in press). The absence of burial goods along with the skeleton at Loteshwar indicates that they were probably culturally different from the Pre Urban Harappans of Sindh region or the cultural relations between the two communities was nil at the time of the burial. The burial also indicates that the regional Chalcolithic people disposed their dead within the habitation area.

Spatial Distribution

Excavations and explorations in various parts of Gujarat showed the presence of Anarta ceramics in North Gujarat (61 sites), Saurashtra (3 sites) and Kachchh (4 sites) sub-regions (Map 7). At North Gujarat, these sites are distributed in Surendranagar, Patan, Mehsana and Banaskantha districts while in Saurashtra these are in Bhavnagar, Rajkot and Ahmedabad districts. While observing the distribution pattern of the Anarta sites in Gujarat, it is seen that South Gujarat is completely devoid of this tradition and the reasons for the same needs to be explored further.

Cultural Contacts

The Anarta Tradition named after the traditional name of North Gujarat (Ajithprasad and Sonawane 1993) probably evolved from the indigenous Mesolithic population in Gujarat. They may have maintained some cultural contacts with the contemporary Mesolithic communities in the nearby areas but in the absence of clear cut evidences the nature of this contact cannot be traced. The earliest evidences of their cultural contacts with the contemporary Chalcolithic communities are available from Datrana IV around 3200 BC where Anarta ceramics were found associated with the Pre-Prabhas assemblage and Pre Urban Harappan ceramics (Ajithprasad 2002). In the period between 3200-2600 BC it is found associated with Pre Urban Harappan Sindh type ceramics at
Dholavira (Bisht 2000), Moti Pipli (Majumdar 1999) and Nagwada (Hegde et al. 1988). In the beginning of Urban Harappan period it is found associated with Classical Harappan and Sorath Harappan artifacts at Bagasra (Sonawane et al. 2003), Shikarpur (Bhan and Ajithprasad 2009), Surkotada (Joshi 1990), Lothal (Rao 1979, 1985), Kanmer (Kharakwal et al. 2011), Nagwada (Hegde et al. 1988) and Zekhda (Momin 1983). It is also found associated with Micaceous Red Ware at Lothal (Rao 1973; 1979, 1985).

Proposition of Seasonal Encampments

In the absence of permanent structures and due to the presence of flimsy deposits, many of the regional Chalcolithic sites in North Gujarat including Loteshwar are interpreted as the seasonal encampments of the pastoral communities (Bhan 1994, 2009; Patel 2008, 2009). But the c14 dates from the pits of Loteshwar suggests that the occupants of the sites were using the pits for thousands of years. The major questions that arise against the proposition of seasonal encampment theory are; did the pastoralists continuously used the same pits for thousands of years? If it was a seasonal encampment where were they coming from? If they were moving communities there are all possibilities of coming into contact with other cultures and traditions and if so why was there no change in the ceramic or artefacts assemblage at the site? The ongoing researches in the area under the North Gujarat Archaeological Project and interregional researches can give some answers to these questions.

Chronology

As per the chronometric dates from Loteshwar (Ajithprasad 2002; Patel 2008, 2009), Bagasra (Sonawane et al. 2003; Chase 2007), Surkotada (Joshi 1990), Kanmer (Kharakwal et al. 2011), Lothal (Rao 1979, 1985) and Nagwada (Hegde et al. 1988), Anarta tradition can be dated in between c. 3700 BC to 2000 BC. The combination of relative dates from sites like Shikarpur (Bhan and Ajithprasad 2009), Moti Pipli (Majumdar 1999) and Zekhda (Momin 1983) also suggest these dates. None of the
excavated sites in Gujarat showed its presence in Post Urban Harappan period while in twenty explored sites Anarta ceramics are found along with Post Urban Harappan ceramics (Mahida 1992, 1995). In the absence of its presence in the Post Urban Harappan period in excavated sites it cannot be dated beyond 2000 BC.

**Anarta Tradition/Anarta Culture/Ceramic Type**

The Anarta tradition which probably evolved from the Mesolithic communities has limited spatial distribution and wider temporal distribution in Gujarat and based on definitions given by various scholars (Haury 1956; Willey and Phillips 1958; Deetz 1967 and Eddy 1984) it can be called as a tradition. The terminology Anarta tradition (named after the traditional name of North Gujarat) perfectly fits into the same as its earliest origin and major concentration are in North Gujarat. Being the first Chalcolithic community in Gujarat who probably evolved from the Mesolithic communities, started the process of domestication of animals, production of ceramics, use of semiprecious stone beads and copper objects in Gujarat, Anarta Tradition has distinctive traits to be treated as a 'Culture'. They remained in isolation during the beginning of Pre Urban Harappan period and later came into contact with other regional cultures/traditions and Pre Urban Harappans of Sindh region. Gradually in the beginning of the Urban Harappan period, they integrated into the Urban Harappans and continued the ceramic type approximately till c.2000 BC. Hence, instead of calling it as a ceramic type or Anarta Culture, the term 'Anarta Ceramic Tradition' is more appropriate in this context.

**Padri Culture**

The Padri Culture identified in 1990s from the excavations at Kerala no Dhoro in Padri Gohilini village includes the ceramic types like Padri Ware (thick and thin variety), Pink Slipped Painted Ware, White Lustrous Ware, Bichrome Ware, Red Painted Ware, Plain Handmade Ware and White Painted Ware. Based on chronometric and relative dates, the site is dated between c. 3700–1900 BC. While
analysing the pottery it was observed that the Padri Ware also occurs in the Post Urban Harappan phase at the site and hence it can be roughly dated between c. 3700-1700 BC. In the earlier reports there was mention about Pre Urban Harappan, Urban Harappan, Post Urban Harappan and Early Historic periods at the site (Shinde 1992b) while in later publications (Shinde 1998; Shirvalkar 2008), the Post Urban Harappan period is missing.

**Padri Ware vs. Sorath Harappan Ceramics**

During the analysis, four basic wares were identified at Padri and they are Red Ware, Buff Ware, Gray Ware and Black and Red Ware. Among this, few of the Red Ware and Gray Ware sherds represents Padri Ware. The colour of these sherds as per the Munsell Soil Colour Chart (1954) includes variants of red, black, gray, yellow, pink and white. The diameter of the rims of the vessels showed the presence of miniature vessels to big pots/jars at the site. The vessel shapes collected from the site include pots, basins, bowls, stud handle bowls, dishes, dish on stands, lids, perforated jars and lamps. Among this stud handle bowls, lids, perforated jars, and lamps occurs exclusively in Sorath Harappan ceramics while basins are rare in Padri Ware. Some of the vessel shapes like pots, bowls and basins have carination. Various ceramic production techniques were noticed in the Padri collection. All the sherds belonging to the Padri Ware reveals hand/slow wheel making techniques irrespective of cultural period of its occurrence. Many of the Padri Ware vessels retain beating and paddling marks on them. Many of the vessels from the site have even, uneven, eroded and calcium encrusted surfaces. Contrary to this all the Sorath Harappan ceramics from the site are fast wheel made and multiple techniques may also have been used during its production. Slip is applied on all vessels and bichrome slip is present on some Sorath Harappan vessels. Padri Ware has thick dark red slip and which has a tendency to peel or crack. Few of the Padri vessels have white or pink slip on it. Many of the vessels were burnished irrespective of it belonging to either Padri Ware or Sorath Harappan. The surface
feel of both Sorath Harappan and Padri Ware varies from smooth to rough. The decorations on the vessels can be divided into two i.e. painted and incised. The incised decorations are completely absent in Padri Ware. The designs are geometric and non geometric in nature. The paintings on Padri Ware include broad and thin horizontal bands, vertical bands, slanting vertical strokes, wavy lines, curvy lines, criss cross pattern and different combinations of them. Sometimes the paintings were executed over white back ground using various shades of black colour on different parts of the body and in some vessels, decorations were present on the internal surface too. The brush strokes of Padri Ware are not so regular/straight compared to those in Sorath Harappan pottery. Paintings on Sorath Harappan sherds include thick and thin horizontal bands and hanging loops. The incised decorations include vertical strokes. The texture of the ceramics was divided using sand paper chart into fine, medium and coarse and vessels of both Sorath Harappan and Padri Ware have all the varieties. Core of the maximum amount of sherds belonging to Padri Ware are deoxidized while Sorath Harappan have more oxidized core. Pre firing and post firing graffiti is present on few Red Ware and Buff Ware vessels from the site. Majority of the graffiti are on Sorath Harappan ceramics and very few sherds belonging to Padri Ware have graffiti. Maximum amount of soot marks are present on Black and Red Ware sherds from the site. Fractures of majority of Padri Ware are irregular compared to Sorath Harappan. Majority of Padri Ware have impurity imprints in them. Some of the Sorath Harappan ceramics were reworked and probably used as pottery discs while none belonging to Padri Ware were reworked.

**Similarities**

Shinde and Kar (1992) and Sonawane and Ajithprasad (1994) found some similarities in the painted ceramics of Anarta Tradition found in Loteshwar in North Gujarat and Padri Ware. Shinde (1998) based on the observations of Padri Ware made by Bisht mentions some resemblance between Bichrome Ware at
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Padri and ceramics found in the Pre Urban Harappan levels at Dholavira. Shinde (1998) based on the similarities in surface treatment, painted motifs and vessel types of painted ware (Red Ware?) of Urban Harappan culture in Gujarat and Padri Ware suggest the possibility of the derivation of the painted ware from Pre Urban Harappan Padri Ware. Shinde (1998) suggests the similarities between the stud handle bowls of Pre Urban Harappan phase of Padri and Sorath Harappan, dish on stands of Pre Urban Harappan levels of Padri and Baluchistan and Sindh and Perforated jars of Padri and Classical Harappan sites. Shirvalkar (2008) found similarities in the making technique, painted decorations, paint colour, and vessel shapes like bowls, basins and globular pots of Padri Ware and Anarta ceramics. Thus various studies show that there are certain similarities in the vessels types of various contemporary cultures and Padri Ware.

Differences

Some vessels types of Anarta tradition show similarities to Padri Ware in certain vessel shapes like medium size pots with flaring rim and constricted neck, hand/turn table making, painted decorations and paint colour. At the same time lot of differences are also present. The Anarta vessels like Red Ware pots with mat surface, blunt carinated basins and sharp carinated bowls are absent in Padri Ware. Incised decorations are present on Anarta ceramics while they are completely absent in the Padri Ware and the incised pottery present at Padri belong to Sorath Harappans. The absence of fast wheel made pottery is the another feature of Anarta tradition while many of the ceramics from Padri which looks similar to Anarta ceramics are wheel made and there are differences from the Sorath Harappan ceramics in the surface treatment and decorative pattern on these vessels. The application of very thick red slip on ceramics is the characteristic feature of Padri Ware and this kind of slip is absent in Anarta ceramics. The Painted Red Ware stud handle bowls, dish on stands and perforated jars of thick variety of Padri Ware are representing the Sorath Harappan ceramics
which is technologically at par with the Classical Harappan ceramics and not the Padri Ware. Due to this reason the ceramics looks similar to Sorath Harappan/Classical Harappan. Thus the study clearly reveals that the comparisons of artefacts of various cultures/traditions should be done with careful observation of minute features to avoid further confusion.

Other Artefacts
Micro steatite beads (180 nos.), globular carnelian bead, beads of semi-precious stones, bead polisher, short blades of chert, copper fish hooks, copper razor, saddle quern and grinding stones were recovered from the site (Shinde 1998). These objects indicate the importance they gave for beautification of body, their food habits, use of various tools, knowledge of metals and probable craft activities that existed during the period.

Organic Remains
Study of the faunal remains from the site show that during Pre Urban and Urban Harappan period the inhabitants of the site preferred more domestic animals compared to wild animals. At the same time, the site marked an increase in the preference of wild animals during Urban Harappan period (Joglekar 1996-97). The only one type of floral remains reported from the site is Coix lachryma-jobi seeds (Shinde 1998) and some of them may have used as beads.

Structural Remains
At Dholavira, there is a mention about the existence of a fortified settlement at Pre Urban Harappan Phase (Bisht 2000) and other details regarding the same are unknown. Apart from the same, Padri is the only site from where structural remains of Pre Urban Harappan period are reported. This structure is made out of mud bricks and clay having nine rectangular rooms measuring 12.5x12.5m in size. Another structure from the site belonging to Urban Harappan period is a rammed earth floor having post holes on its sides (Shinde et al in Press).
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Proposition of Salt Manufacturing Centre

According to Shinde et al. (in press) as Padri is located in the coastal area of Saurashtra region, its natural setting is beneficial for salt production and the geomorphological work carried out at the site showed that it is rested on an ancient fluvi-marine surface which is 0.5 m below the present mean sea level and an inlet of the Gulf of Cambay was much closer to the site. Shinde et al. (in press) also mentions that the structures of Pre Urban Harappan and Post Urban Harappan period at Padri have yielded evidence of being used as storage rooms and dwelling places and it indicates the function of the structures related to salt manufacturing. In the absence of specific evidences for salt manufacturing and storage this view cannot be supported.

Chronology of Padri Culture

According to Shinde (1998), the layers 11 to 8 of Padri represent Pre Urban Harappan Padri Culture datable from c. 3700 BC; layer 7 correspond to the transitional phase between preceding Pre Urban Harappan Padri Culture and succeeding Urban Harappan period; layers 6 to 4 corresponds to the Urban Harappan period and layers 4 to 1 characterize the Early Historic period while Shirvalkar (2008) based on his observation of ceramics from the site called layers 9 to 11 as Early Cultural Phase i.e. Pre Urban Harappan and layer 8 as Transitional from Early Cultural Phase to Urban Harappan.

The reanalysis of the ceramics from Padri by the researcher clearly shows the presence of Urban Harappan and Post Urban Harappan levels at Padri instead of the proposals supporting the presence of Pre Urban and Urban Harappan levels. The ceramics from the so called Pre Urban Harappan phase datable from c. 3700 BC is represented by hand/slow wheel made Padri Ware and fast wheel made Sorath Harappan ceramics comparable to Rangpur IIB and Rojdi B phases. The introduction of fast wheel technique in Gujarat took place only by the beginning of Urban Harappan phase i.e. 2600 BC or little later as evident from the available
archaeological remains. Convex sided bowls, perforated jars, dishes, pots and dish on stands represents the Sorath Harappan ceramics of the period. The so called 'transition phase' from Pre Urban to Urban Harappan at the site is marked by the continuous occurrence of Padri Ware and the Late Sorath Harappan ceramics comparable to Rangpur IIC and Rojdi C phases. This phase is notable for the concave sided bowls and lamps. According to Shinde (1998) the vessel shapes which occur in thick variety of Padri Ware is convex sided bowls, basins, globular pots, perforated jars, dish on stands and convex sided bowls with stud handle. But majority of the thick vessel types like convex sided bowls with stud handle, dish on stands, perforated jars and basins are essentially Sorath Harappan in nature.

Shirvalkar (2008) suggests the gradual evolution of Sorath Harappan ceramics at Padri from the Padri Ware during Pre Urban Harappan phase and Shinde (1998) mentions the possibilities of derivation of painted ware of the Urban Harappan period from the Padri Ware based on similarities in surface treatment, painted motifs and types. However, the present analysis revealed that there is no similarity in manufacturing technique, decorative pattern and even in majority of the vessel shapes with one can establish or even propose that the Harappan ceramics from the site has its ancestry in the Padri Ware. Therefore, considering the Sorath Harappan ceramics at Padri as evolved from the Padri Ware/Pre Urban Harappan ware needs reconsideration. Apart from this, the Sorath Harappan vessel types are occurring in all the Sorath Harappan sites of Gujarat in the Urban Harappan period. They also have a great resemblance with the Sorath Harappan ceramics at Padri. These ceramics can be compared to those from Rangpur IIB, Rojdi B and Jaidak IIA. All the evidence strongly supports the above view to reconsider the observations made by Shirvalkar (2008) and Shinde (1998).

Chronometric Dates vs. Relative Dates from Padri

Based on the chronometric dates from various sites, Pre Urban Harappan Phase in Gujarat can be dated between c. 3700-2600 BC. The radiocarbon dates from the
Pre Urban Harappan levels at Padri goes back to c. 3700 BC and at that level both Padri Ware and Sorath Harappan ceramics are occurring from the very beginning and the same continues to the Urban Harappan period without any evolution in its forms. In the transitional period between Pre Urban to Urban Harappan (c. 2600-2500 BC), the Padri Ware is found occurring along with Late Sorath Harappan ceramic types like concave sided bowls and lamps. Thus chronology of Padri suggests that Sorath Harappan at the site can be dated between c. 3700-2600 BC and Late Sorath Harappan between c. 2600-2000 BC.

**Chronologically Placing the Sorath Harppan**

Possehl and Herman (1990) defined Sorath Harappan as the regional manifestation of Urban Harappan phase in Saurashtra based on the systematic excavations at Rojdi, typological analysis of various artefacts and seriation of ceramics, series of radio carbon dates from the site, relative dates and data gathered from explorations carried out in various parts of Gujarat, particularly in Saurashtra. If one considers the Pre Urban Harappan phase at Padri as the beginning phase of Sorath Harappan culture in Gujarat, it contradicts the definition of Sorath Harappan given by Possehl and Herman (1990). However, if one considers Possehl and Herman (1990) to be right then the relative dates suggested for different periods of require a reappraisal. These problems necessitated a relook into data available from the nearby explored sites.

**Data from Explored Sites**

The Padri Ware was also found occurring in eleven explored sites in Bhavnagar district (Paul et al. 1997; Shirvalkar 2008) and most of them were called as Pre Urban Harappan sites (Paul et al. 1997) due to the occurrence of Padri Ware, without even noticing the absence of Pre Urban Harappan ceramics and its presence along with Sorath and Late Sorath Harappan ceramics comparable to Rangpur IIB, IIC, Rojdi B and C and Jaidak IIA and IIB.
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Resolving the Problem

Thus from the study it becomes clear that the scholars who previously analysed the data from Padri and nearby explored sites failed to consider the large number of Sorath Harappan sites in Gujarat, its relative and chronometric dates and different ceramic types available from various excavated sites. The probable reason for the discrepancies in the data may be the mixed nature of artefacts within the site or the mixing while transporting. The possibilities of errors during the collection of the samples for dating cannot be ruled out as well. All these drawbacks in the material collection from Padri suggest the necessity to have a systematic re-excavation at the site. It is also important to collect a series of samples for chronometric dates from regular intervals at the site.

Padri Ware vs. Padri Culture vs. Padri/Anarta Cultural Complex

In the initial years of excavation, the Regional Chalcolithic ceramic types identified at Padri were termed as Padri Ware based on vessel shapes and manufacturing technique and its differences from other wares/traditions/cultures (Shinde 1992; Shinde and Bhagat-Kar 1992). In the later publication (Shinde 1998), the excavator defined it as Padri Culture as amongst a variety of different painted wares, Padri Ware is the predominant one amounting roughly to 95% of the total ceramic assemblage. Shirvalkar (2008) based on similarities in certain vessel shapes, manufacturing techniques, painted designs, colour of paints and wider geographical distribution suggested the term Padri/Anarta cultural complex.

The term Padri Culture (Shinde 1998) appears to be inappropriate as except from certain ceramics, the site did not reveal either a different artifact inventory or any other cultural attributed with which it can be considered as a separate culture. Though it is reported from 11 explored sites in Bhavnagar district none of the sites showed its independent existence. As per the current understanding, apart from certain similarities to Anarta tradition, it does not have a wider geographical distribution. The term Padri/Anarta Cultural complex is also not free from
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limitations as the similarities of ceramics between Padri Ware and those of Anarta tradition is very meagre compared to the differences. The reanalysis of the ceramics from Padri showed that the Pre Urban and Urban Harappan ceramics at Padri are not clearly identified or defined. Among the two varieties (thick and thin) of Padri Ware (Shinde 1992; Shinde and Kar 1992) identified at Padri, the thick variety of ceramics are Sorath Harappan and Late Sorath Harappan in nature. At the same time the hand/turn table/slow wheel made ceramics at Padri are different from the Sorath Harappan and Late Sorath Harappan ceramics. While considering all the above discussed terminologies, the ceramic type being reported from Padri for the first time, the term Padri Ware appears more correct and suitable and the use of Padri culture and Padri/Anarta Cultural complex appears to be improper.

Pre-Prabhas Assemblage from Somnath

The Pre-Prabhas pottery first unearthed in 1956-57 excavation at Prabhas Patan (Somnath) in Junagadh district (Subbarao 1958) represent another Pre Urban Harappan regional Chalcolithic tradition in Gujarat. Period I at Prabhas Patan dated to 3000-2800 BC was characterised by the occurrence of corrugated or broadly incised ware along with a blade industry of agate, chalcedony with crested ridges and Harappan like ceramics probably representing Pre Urban Harappan ceramics of Sindh region (IAR 1956-57; Subbarao 1958, Dhavalikar and Possehl 1992). This level also yielded beads of faience (some are segmented) and steatite and a wall plaster with reed impressions indicating simple wattle and daub architecture (Dhavalikar and Possehl 1992). Though a clear Pre-Prabhas level was identified at Somnath during 1970s re-excavations, the details of this ceramic type were published only in the beginning of 1990s (Dhavalikar and Possehl 1992). The ceramics of this assemblage is characterised by handmade pottery including Red Ware, Incised Red Ware, Black and Red Ware and Gray Ware and vessel shapes in
the same include wide mouthed jars, deep/shallow basins, flat bottomed basin with flaring sides and incised rims (IAR 1971-72; Dhavalikar and Possehl 1992).

**Pre-Prabhas Assemblage from Datrana IV**

The excavations in 1993-94 and 1994-95 at Datrana in Banaskantha district of North Gujarat also revealed Pre-Prabhas ceramics (first identified by Possehl in the collection of The Maharaja Sayajirao University of Baroda) in association with Anarta pottery, Pre Urban Harappan Sindh Type Pottery, stone tools including crested ridge blades, beads of semiprecious stones and copper punch (Ajithprasad 2002). The Pre-Prabhas ceramics from Datrana IV include three Wares viz. Red Ware, Gray Ware and Black and Red Ware. All the analysed ceramics were very small in size and fragile in nature. It is the texturally most inferior pottery ever reported from the Chalcolithic context of Gujarat probably indicating incipient stages of ceramic production. The vessel shapes identified were rims, bases (mainly ring bases), neck and shoulder portions and body sherds of basins, dishes, bowls, pots and pots/basins. The diameter of the rims of the vessels from the site indicated the presence of medium sized vessels in the site. Miniature and big vessels are completely absent there. All the ceramics were made using hand/turn table/slow wheel. Beating/paddling marks, uneven surfaces, irregular striations, finger marks etc indicate that a multiple technique was involved in the ceramic production. Some ceramics have even, abraded and calcium encrusted surfaces also. Only four sherds from the site showed the presence of one pre-firing perforation on each of them. Some ceramics of all the wares from the site have carinations and corrugations. Majority of the vessels from the site are slipped on both the surfaces and burnishing is also visible on both the surfaces of many vessels. The presence of more sherds having smooth external surface compared to the internal surface indicates the deliberate finishing of the external surface by the potter. The decorations on the ceramics are pre-firing geometric and natural incisions and impressions. These decorations are confined to the external surface.
of the ceramics and noteworthy feature of the assemblage is the complete absence of painted decorations. Majority of the vessels have fine texture followed by coarse textured ceramics. Majority of the ceramics have deoxidized core indicating deficiencies in the heating technique or indicating a short duration of firing. Colour of the ceramics as per the Munsell Soil Chart (1954) are the variants of black, gray, brown, red, pink and white. Pre-firing and post-firing graffiti marks are present on very few ceramics and they are geometric and non-geometric in nature. Some of the ceramics from the site have soot marks/smoke clouding on them and majority of them are of Black and Red Ware. A number of ceramics from the site have impurity imprints, white organic/inorganic particles, mica, small and large sand particles in it and this may be deliberately added. Very few sherds from the site were reworked to make pottery discs which may have been used as play objects.

![Chart 5.2: Animal Remains from Somnath (Expressed in Percentage)](chart)

(Adapted: Thomas 1979)

**Faunal Remains**

There are similarities in the animal remains from Datrana IV and Prabhas Patan. Various animals identified at Prabhas Patan are domesticated animals like Bos *indicus*, Bubalus *bubalis*, Capra/Ovis, and wild varieties like Sus *scrofa*, Gazella...
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gazelle, Cervus duvauceli, and Axis axis and aquatic animals like fish, tortoise, crab and mollusc (Chart 5.2) and according to Thomas (1979), the economy of Period I at Somnath was based on a combination of hunting and stock-raising. The preliminary analysis of animal remains from Datrana IV showed the presence of large quantities of split animal bones, antlers and teeth of the animals like cattle, sheep/goat, antelope and pig (IAR 1993-94).

Similarities

Apart from Somnath/Prabhas Patan and Datrana IV, none of the excavated/explored Chalcolithic sites in Gujarat revealed the presence of Pre-Prabhas ceramics, which are totally different from the ceramics of other Chalcolithic cultures/traditions. Ceramics having certain similarities to the incised Red Ware in fabric and incised decorations are reported from Bagor (Ajithprasad: Personal Communication). At Bagor, the ceramics are reported from Phase B i.e. ceramic Mesolithic phase (Misra 1973; Shinde et al. 2004) and calibrated AMS dates for this phase is c. 3360-2465 BC (Patel 2008) and the relative dates suggested for this period is c. 2800-600 BC (Misra 1973). According to Shinde et al. (2004) this coarse red ill fired ceramic (figs. 4.49 and 4.50) is brittle and handmade or made on turn table. In this pottery, grass and sand were used as tempering material and in few instances it is decorated with criss-cross patterns and as per Shinde et al. (2004) the incised decorations on these ceramics may represent the beginning of this decorative tradition in Western Indian region. The close observation of nondiagnostic ceramics from both the sites located in two distant geographical sub-regions shows obvious similarities. Nevertheless, due to the absence of comparable diagnostic sherds from Bagor, the similarities/dissimilarities of vessel shapes from both the sites cannot be ascertained.

Distribution of Pre-Prabhas Assemblage

The archaeological data available till date from various sub-regions of Gujarat
shows the presence of Pre-Prabhas Assemblage only in two sites namely Datrana IV in North Gujarat and Somnath/Prabhas Patan in Saurashtra. At sub period IA at Rojdi, (IAR 1957-58) the presence of crude corrugated ware of the type is found in Period IA (Pre Prabhas level) at Somnath along with Sorath Harappan ceramics. The coarse corrugated ware of the Rojdi-Prabhas Patan type was also reported from Old Alatala, Mahadevayo, Ranigam, Makavana, Khandero, Jivani, Lakhan Timbo, Tarana, Gadhada I, Gadhada III and Khakhara Bela I (IAR 1960-61). But the archaeological data from later excavations at Rojdi (Possehl and Raval 1989) and re-explorations of these sites clearly show that the crude corrugated ware from these sites is that of Sorath Harappan type.

**Occurrence of Pre-Prabhas Assemblage in North Gujarat and Saurashtra: An Explanation**

The reasons for the availability of Pre-Prabhas Assemblage only in two sites located at a distance of 400 km needs to be explored further. The occurrence of similar kinds of artefacts in two different sub-regions of Gujarat in the same period does not necessarily show that they were originated independently in two different places. Instead, the availability of these similar materials (ceramics and crested ridge blades of chalcedony) may be the result of movement of people from one place to another. There may have existed some more settlements having these cultural traits in between these two sites which still remain unreported. According to Ajithprasad (2011- in press) “it is quite possible that some of the sites along the travel routes connecting the two regions may incorporate the Pre-Prabhas probably with the Anarta and the Pre Urban Harappan pottery as well, reflecting the interaction that existed between the two regions”.

While considering the ceramics and other material relics from both the sites, Datrana has more vessel forms and a greater concentration of artefacts. An antecedent Mesolithic cultural deposit is also present at Datrana which is marked by the absence of long blades, crested ridge blades and cores and pottery (IAR
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1993-94, 1994-95). The material relics from this period include micro blade cores, palette stones of sandstone, backed tools like lunates, trapezes and points. The overlying Chalcolithic deposit was marked by the presence of long blades, crested ridge blades and cores of chalcedony, agate, jasper and chert, backed blades, points, truncated blades, crescents, burins, long simple blades, copper punch points, grinding stones, hammer stones, stone beads and ceramics. There is no stratigraphic break noticed between the Chalcolithic and Mesolithic occupation and it may indicate the origin of Pre-Prabhas ceramic using communities from the Mesolithic communities at Datrana IV. The ceramics of the Chalcolithic occupation is marked by Pre Prabhas Assemblage, Anarta ceramics and Pre Urban Harappan Sindh Type pottery (Ajithprasad 2002). The two types of ceramics last mentioned are found occurring only from the mid level of Chalcolithic phase in limited quantities. Large number of grinding stones and hammer stones from both the Mesolithic and Chalcolithic periods at the site perhaps suggests similar food processing techniques existed in both the periods. The material remains from the site suggest it to be a blade manufacturing centre and the inhabitants were also practicing stone bead production.

At Somnath, no antecedent culture of Pre-Prabhas Assemblage was noticed. The material remains of this phase is marked by few crested ridge blades, faience beads, Pre Prabhas ceramics and few pottery having similarities to the Pre Urban Harappan Sindh type. Clay lump with reed impressions probably indicating wattle and daub structures was also unearthed from this level. Compared to Datrana IV, not much evidence is available from the site for the production of beads and stone tools.

Thus from the archaeological data it is very clear that the Chalcolithic occupants at Datrana probably evolved from the Mesolithic community who inhabited there earlier. At Datrana, Pre-Prabhas pottery, Anarta ceramics and Pre Urban Harappan Sindh type pottery are found together only from the middle of the
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Chalcolithic level (Ajithprasad 2002). While at Somnath, the probable Pre Urban Harappan Sindh type ceramic (Dhavalikar and Possehl 1992) was found along with the Pre-Prabhas assemblage and it implies that at Somnath, at the very beginning of the settlement the inhabitants were in touch with Pre Urban Harappans of Sindh region. If the Chalcolithic community at Datrana IV are believed to have evolved from the Mesolithic community, the Pre-Prabhas assemblage at the site is older than the same in Somnath/Prabhas Patan. The inhabitants from the site may have moved to Saurashtra after coming in touch with the Pre Urban Harappans of Sindh region. These movements may be due to pastoral activities, finding raw material sources or in search of more fertile land for agricultural activities.

Cultural Contacts

The relation the Pre-Prabhas ceramics using community maintained with the contemporary Mesolithic/microliths using communities in the nearby settlements is still unclear. The Pre-Prabhas ceramics using people at Datrana IV who evolved from the Mesolithic community may have lived in isolation for a short period and later came into contact with the Anarta Tradition and Pre Urban Harappan Sindh Type Pottery using community as indicated by various ceramics and stone tools. The artifacts from the site suggest that they are the first Chalcolithic community in Gujarat who were exposed to the crested ridge blade manufacturing technique and fast wheel made ceramics.

Economy

The nature of the economy at the Pre Prabhas level of Somnath is not very clear. Thomas (1979) based on the analysis of faunal remains from the site suggested that the economy of Period I was based on a combination of hunting and stock-raising. While at Datrana, due to the absence of structures and presence of flimsy deposit, many scholars consider the site as the seasonal habitation/camp site of the pastoral nomads (Bhan 2009). But the evidences suggests stone tool production at the site and an economy not entirely dependant on pastoral activities. They even produced...
bears from core rejuvenation flakes. The thousands of stone tools, cores and lithic 
debitage collected from the site clearly indicate that it was the biggest Chalcolithic 
stone tool production centre of the Pre Urban Harappan phase in Gujarat or even 
in the entire Indian subcontinent. The excavations in 2010 at the site under the 
North Gujarat Archaeological Project (Madella and Ajithprasad: Personal 
Communication) and the on going research on the material from the site will 
throw much more light into this direction. Within the above context, it is possible 
to say that the status of a full time settlement can be attributed to Datrana which 
specialized in stone tool production.

Chronology
The exact time period of the origin of the Pre Prabhas Assemblage in Gujarat is 
not clear and the calibrated c14 dates from Somnath for this phase is in the range 
of 3019-2625 BC. No chronometric date is available from Datrana and the Pre-
Prabhas Assemblage appears to have originated from Mesolithic community. 
Based on the relative dates of Pre Urban Harappan Sindh type ceramics and 
ceramics of Anarta Tradition, the Pre-Prabhas Assemblage at Datrana can be 
roughly dated between c. 3200-2600 BC or little later. Till date, there is no 
evidence for the continuation of this Assemblage in succeeding Urban Harappan 
phase.

Micaceous Red Ware: History of Discovery
Micaceous Red Ware is one of the regional Chalcolithic traditions in Gujarat 
which occurs mainly in Bhal region with limited availability in Kachchh, North 
Gujarat and other parts of Saurashtra. This ceramic type was first reported from 
Rangpur as Red Ware and the stud handled bowls of this Ware were wrongly 
interpreted as handled sauce-pans (Dikshit 1950: 3-55). One photograph of some 
sherds of this ceramic group from Lothal was published in IAR 1954-55 (1955) 
under the title 'painted sherds'. Illustration of a stud handled bowl of this Ware 
from Rojdi was also published in IAR 1957-58 (1958) under the title
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‘miscellaneous pottery’. Though, Micaceous Red Ware was unearthed during the excavations at Rangpur in 1930s-1950s and Lothal in 1950's, it was first reported in its name in Lalit Kala (c.f. Herman and Krishnan 1994) followed by Ancient India 18 and 19 (Rao 1963), IAR 1961-62 (1964) and Lothal Excavation Reports (Rao 1979; 1985).

In the excavation reports of Rangpur, Kanewal and Rojdi no separate group was allotted for Micaceous Red Ware. At excavated sites like Rangpur (Rao 1963), Kanewal (Mehta et al. 1980) and Ratanpura (IAR 1984-85) it is described along with Harappan Red Ware. Micaceous Red Ware from the excavations at Rojdi (Phase A) in 1962-63 were called Micaceous Pink Ware (IAR 1962-63; Rao 1973). In the Rojdi report it is described as Smooth Red Ware (Possehl and Raval 1989). Though Micaceous Red Ware was reported from the exploration at Nageshwar (Bhan and Kenoyer 1984), no sherd of the same is reported from the excavation (Hegde et al. 1990). Like wise, in many explored sites like Hanuman No Timbo (Gadhada), Kahnderio II and Kerlavlo (Possehl 1980), it is described along with Red Ware. In the similar way, the sherds representing the Micaceous Red Ware tradition recovered from many of the explored sites may have become Harappan/Sorath Harappan Red Ware. Hence, at this juncture it is very difficult to understand the distribution pattern of this Ware in Gujarat. Till date, twenty three sites belonging to the Micaceous Red Ware tradition is reported from various sub-regions of Gujarat and researcher’s exploration in the Bhal region also revealed its existence in five sites. Among the total of twenty eight sites, eleven are excavated and they are located in various sub-regions of Gujarat.

Features of Micaceous Red Ware

The name of the ceramic type is misleading as Red Ware pottery having more visible mica particles than Micaceous Red Ware are available in both Harappan and Early Historic periods. According to Herman and Krishnan (1994) the Micaceous Red Ware vessels of Chalcolithic period are entirely slipped and
burnished. Colour of the glossy slip ranges from pink to red to light brown-gray. The surface of this pottery is very smooth and often looks as dusted with tiny mica particles and while looking from certain angles, mica is visible in them.

The surface of these vessels do not show any striations except the rim of a jar from Vagad (Herman and Krishnan 1994). The absence of striations makes it difficult to understand the manufacturing technique. Almost all the vessels of this ware are round bottomed (Herman and Krishnan 1994) with rare occurrence of flat bottomed specimens (Rao 1985). According to Herman and Krishnan (1994), round bottom of the vessels cannot be directly obtained from fast wheel throwing. To get the round bottom, the potter has to use a mould or shape the base by paddle after the fast wheel throwing or one should use a slow wheel. Irregularities in the walls of the vessels are interpreted either as the result of scraping, shaping the vessels with paddle and anvil or luting of the handmade stud handle.

Major shapes identified in this category are convex sided bowl, shallow dish basin, basin, lamp, jar, bottle and perforated jar and its variants (Herman and Krishnan 1994). Convex sided bowls and stud handled bowls are the most prominent shapes followed by the jars. The availability of shapes like Bottle and perforated jars in this vessel group are considered as the result of adoption of Harappan technique (Herman and Krishnan 1994). Most number of the vessel forms and its variants are available during the Urban Harappan period and in the Post Urban Harappan period, there is a general decrease in the same.

Some of the sherds were painted only on the external surface and others have painting on both the surfaces. Mostly the colour of the paint ranges from gray to black and the pigment was produced by using magniferous earth (Herman and Krishnan 1994). Rare use of white pigment was also noticed at some bowls from Lothal (Rao 1985). The designs on the ceramics ranged from simple geometric forms to complex floral and non-geometric motifs. Single or multiple hatched
diamonds, triangles, fish net designs with hooks, floral motifs, horizontal and vertical lines, wavy lines, loops and zig zag lines, groups of dots and strokes represented the painted designs. Use of triangle, dot, square, rectangular or diamond design on one place or all quadrants on the external or internal surface near the rim of the bowls is an interesting feature of this tradition.

**Scientific Studies**

Lal (1985) based on his chemical analyses suggests the addition of chopped straw or vegetable fibers as tempering material at Lothal while no vegetable matter were identified in the Micaceous Red Ware from Vagad (Krishnan and Hegde 1987). Thin section studies and textural analysis of this ceramic group from Vagad (Krishnan and Hegde 1987) showed that the clay paste is not characterised by mere presence of Mica, but clay paste preparation was done by a process of elutriation, a repeated sifting of which enhanced the quantity of mica in the clay pot. Grain size analysis of the ceramics from the site (Krishnan and Hegde 1987) also showed that non-plastic inclusions in the ceramics were not deliberately added.

**Occurrence in Burials**

Many of the published burial pottery from Lothal are of Micaceous Red Ware and in some of the burials both Urban Harappan ceramics and Micaceous Red Ware are found together (Rao 1985). Micaceous Red Ware ceramics mainly occurs in the burials of Period A Phase III and IV and the major shapes of the same include water pot with flaring rim and round bottom, bowl with convex sides and round base decorated with black horizontal bands on the shoulder and suspended loops on the rim, stud handle bowl painted on the exterior of the rim with black bands and jar with flaring rim and ovoid body having painted black horizontal bands and loops at the rim and horizontal bands at the shoulder. Based on the observations made at the burials from Lothal, Ajithprasad (2009) points out that the occurrence of both Urban Harappan and Micaceous Red Ware together in the burials might
suggest the level of integration that existed between both the folks. He further argues (2009) that it is an indication of heterogeneity of the Harappan society and its divergent roots.

**Similarities and Differences**

If one looks broadly into the Micaceous Red Ware, there are lot of similarities between them and other regional Chalcolithic and Classical Harappan ceramics (Bhan 2010) and if one looks closely there are lot of differences too. According to Rao (1985) there is close identity in shape of Micaceous Red and Black and Red Ware vessels in Kathiawar. Rao (1985) further notices the similarities in Micaceous Red Ware Jar with out turned rim, rounded base and black paintings of thick bands and oblique lines and few jars from Pre Harappan levels at Kalibangan. According to Bhan (2010) Micaceous Red Ware shares certain similarities with the ceramics of Anarta tradition in shapes like pots and bowls. Micaceous Red Ware vessels and Anarta globular pots shares commonality in their round bases which may be due to the similarities in production techniques. Bhan (2010) also suggests that the use of white painting in three bowls from Lothal as the continuation of the Pre Urban Harappan tradition of Sindh region which was adopted by the regional Chalcolithic traditions of Gujarat. Perforated jar and bottle in the Micaceous Red Ware are similar to those of the Classical Harappans and these vessel shapes may have been adopted by the indigenous folk (Rao 1979). The stud handled bowls of the same also shares similarities with the Sorath Harappan bowls in the shape of the stud and certain decorative paintings.

The major difference of Micaceous Red Ware from other ceramics is the presence of a thick glossy slip with colour ranging from pink to red. It has a smooth surface and is rich in mica. Most of the painted designs are different from other cultures or traditions. Though, ceramics of regional Chalcolithic cultures/traditions of Gujarat and Sindh region shares certain commonalities with Micaceous Red Ware, there are differences in surface treatment, shapes, texture, feel and decorative patterns.
Discussion and Conclusion

The similarities of Micaceous Red Ware and various Chalcolithic traditions and cultures of Gujarat might have occurred due to their Integration into the Harappan culture. The thin section studies of the Micaceous Red Ware in comparison to Urban Harappan ceramics from Vagad also show differences in clay paste preparation, fabric, inclusions and making technique (Krishnan and Hegde 1987).

Spatial Distribution: Within Gujarat

Main concentration of the Micaceous Red Ware tradition is in the area around Gulf of Khambhat commonly known as Bhal region. These ceramics are also reported from Kachchh, North Gujarat and other parts of Saurashtra. Till date, none of the sites in South Gujarat revealed this pottery type. In Kachchh, it is reported from Desalpur (Soundararajan 1984) and in North Gujarat it came from Ratanpura (IAR 1984-85), Datrana II (Ajithprasad and Sonawane in press), Nagwada (Hegde et al. 1988) and Suneth (Mata no Thumdo) (Ajithprasad and Sonawane in press). Micaceous Red Ware sites in Saurashtra are Vagad (Sonawane and Mehta 1985), Nageshwar (Hegde et al. 1990), Kanewal (Mehta et al. 1990), Rojdi (Possehl and Rawh 1989), Rangpur (IAR 1963), Lothal (Rao 1979, 1985), Koth (Rao 1963), Gadhada (Hanuman no Timbo) (Possehl 1980), Khandarion II (Possehl 1980), Kerlavlo (IAR 1960-61), Bhimnath I (Jewalia) (IAR 1978-79), Chandarwa (IAR 1957-58), Devgana (Krishnan and Dimri 2005), Malanpur (Krishnan and Dimri 2005), Unchadi (Krishnan and Dimri 2005), Vejalka II (Krishnan and Dimri 2005), Bhimnath II (Kharsalia) (Dimri 1999), Kharad I (Dimri 1999), Kharad II (Dimri 1999), Kotadiy a(Dimri 1999), Padana (Mirchandani 1981), Vadgam (Joshi et al. 1984) and Bagasra (Sonawane et al. 2003). Among this, eleven sites are excavated and seventeen are explored. In the sites in North Gujarat, Kachchh and area outside the Bhal region in Saurashtra this Ware was reported in limited quantity and variety. Till date, none of the sites in core or peripheral regions of its presence showed its independent existence. Its occurrence
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in limited quantity in peripheral sites might be due to the intersite relations and 
the inhabitants of respective peripheral sites might have brought these ceramics 
from the Bhal region. These relations might be political, social or economical. The 
possibility of the limited manufacturing of this ware in the peripheral sites cannot 
be ruled out as well. A detailed typological study and scientific study of the 
samples of this ware from different sites and near by clay sources can throw clear 
light into right direction.

Spatial Distribution: Outside Gujarat

One painted stud handled bowl similar to the Micaceous Red Ware from Lothal 
and Rangpur was recovered from Lohumjo-Daro (Mughal 1992) situated between 
Dadu and Larkana in Pakistan (Flam 1981). Based on this evidence and some other 
pottery paintings from Lothal and Rangpur, Mughal (1992) argues the presence of 
Jhukar phase pottery style (1900-1700 BC) in Gujarat, emphasizing close and long 
interrelationship between the Late Harappan populations of Sindh and Gujarat 
(Mughal 1992). As the earliest date of Micaceous Red Ware goes back to 2600 BC 
in Gujarat and no other regions in Greater Indus so far reported the same kind of 
pottery, it can be argued that this tradition may have originated in Gujarat and 
reached Lohumjo-Daro due to interregional trade relations or moving 
communities like pastoral nomads and artisans.

A Micaceous Orange-Red jar decorated with black painted bands from Shimal 
(2000-1300 BC) in United Arab Emirates has been compared with ceramics from 
Lothal and Rangpur (de Cardi 1988; Gogte 2000). On the basis of this evidence de 
Cardi (1988) and Gogte (2000) suggests the interaction with the people of Lothal 
and Arabia. The researcher has not seen the original ceramics from Lohumjo-Daro 
and Shimal and the description given in the thesis is purely based on the published 
works. As the evidences from both the sites are very scanty, it cannot be 
considered as the result of major inter-regional trade relations of Micaceous Red 
Ware using community.
Indigenous vs. Foreign Origin

As per the current knowledge, the Micaceous Red Ware appears to have originated in Gujarat and there are various evidences to support this view. The earliest chronometric and relative dates of Micaceous Red Ware is available from Lothal and Rojdi in Gujarat. It is absent (one sherd in Lohumjo-Daro) in other parts of Greater Indus region and if it is a Classical Harappan ceramic type it should occur in various sites in different parts of Indian subcontinent. The Micaceous Red Ware yielding sites are distributed in different sub-regions of Gujarat with its maximum concentration in Gulf of Khambhat area. Being the major area of occurrence, maximum number of shapes and variants of this ware are also from the area around the Gulf of Khambhat. The chronometric and relative dates of these ceramics from various parts of Gujarat suggest the temporal distribution of the same around 1000 years.

Relative Abundance in Excavated and Explored/Revisited Sites

Though the exact quantity of this ware in majority of excavated sites in Gujarat are not clear, it is not a dominant ware in any of the sites. At Lothal (Rao 1979 1985), Rangpur (Rao 1963) and Kanewal (Mehta et al. 1980), though the real quantity of the same is not mentioned in the excavation reports, they seem to be present in good quantity. At Rojdi (Possehl and Rawal 1989), Bagasra (Sonawane et al. 2003), Datrana II (Ajithprasad and Sonawane in press), Ratanpura (IAR 1984-85) and Nagwada (Hegde et al. 1988) it is very less in quantity. At Nageshwar (Bhan and Kenoyer 1984) and Desalpur (Soundararajan 1984), one sherd each of this ware is reported while at Vagad 117 sherds of the ware (Dimri 1994) is present. The relative abundance of Micaceous Red Ware in explored/revisited sites in Gujarat by the researcher also showed that it is not the dominant ware in any of the sites. Among the explored/revisited sited Kotadiya showed its maximum presence (Chart 5.3).
Micaceous Red Ware: Observations

As Micaceous Red Ware is available in different shapes like stud handled bowl, bowls without handle, dish, basin, lamp, jar, bottle and perforated jar the possibility of its use for different purposes are very clear. Various shapes of the same may have been used for different purposes like serving, storing and ornamentation. The decorated vessels must have been used for storing and serving purposes rather than cooking. At Vagad, broken Micaceous Red Ware ceramics were reworked and used as spindle whorl/pottery disc. Its availability in distant places like Lohumjo-Daro in Sindh and Shimal in United Arab Emirates can be viewed as its importance as a luxurious ceramic type as most of the ceramics necessary for the inhabitants of the sites are produced within the site or procured from the nearby areas. But its presence in these distant sites cannot be considered as the result of major inter-regional trade relations as the evidences from both the sites are very scanty. Its importance can also be assumed from the use of the same for burial purposes. At Lothal, both Micaceous Red Ware and Harappan ceramics were found together in burials (Rao 1979, 1985; Ajithprasad 2009) and it might be an indication of the equal status they (Harappans and Micaceous Red Ware using community) enjoyed at the site. It also throws light to the probability that the
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Micaceous Red Ware using community who were leading a village life in Lothal during the beginning of Urban Harappan period came into contact with the Classical and Sorath Harappans and gradually integrated into the Harappan Culture. Though they integrated into Harappan culture, they still continued the distinct tradition of pottery making and shared the vessels with the Harappans and managed a harmonious life. The possibility of the adoption of the regional pottery production technique by the Harappans, who probably traded the vessels to distant parts of the world, also cannot be ruled out.

Temporal Distribution

As per the current knowledge, it is very difficult to trace the exact time period of its origin. Whether it originated from the indigenous Mesolithic community or evolved from the Regional Chalcolithic traditions of Gujarat of Pre Urban Harappan period or from the cultures of Sindh region is a matter of debate. Earliest evidence for the existence of Micaceous Red Ware tradition is available from Lothal where its quantities were found to increase towards the lower levels (Rao 1985). As the excavator failed to reach the natural soil due to water logging the earliest date assignable to the same is the beginning of Urban Harappan period i.e. 2600 BC. Apart from Lothal, during the Urban Harappan period (2600-1900 BC), it was in existence at the sites like Vagad (Dimri 1994), Nageshwar (Bhan and Kenoyer 1984), Desalpur (Soundararajan 1984), Rojdi (Possehl and Rawal 1989), Rangpur (Rao 1983), Lothal (Rao 1979, 1985), Koth (Rao 1963), Gadhada (Possehl 1980), Khandeher II (Possehl 1980), Kerlavlo (IAR 1960-61), Bhimnath I (IAR 1978-79), Devgana (Krishnan and Dimri 2005), Unchadi (Krishnan and Dimri 2005), Vejalka II (Krishnan and Dimri 2005), Suneth (Ajithprasad and Sonawane in press), Kharad I (Dimri 1999), Kharad II (Dimri 1999), Kotadiya (Dimri 1999), Padana (Mirchandani 1981), Vadgam (Joshi et al. 1984), Bagasra (Sonawane et al. 2003), Datrana II (Ajithprasad and Sonawane in press) and Nagwada (Hegde et al. 1988). The lower limit of this ceramic tradition is the end of the Localization Era.
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i.e. 1900-1600 BC. The sites of Post Urban Harappan period are Kanewal, Ratanpura, Vagad, Rojdi, Gadhada, Khandero II, Kerlavlo, Chandarwa, Malanpur, Bhimnath II, Kharad I (Dimri 1999), Kharad II (Dimri 1999), Kotadiya (Dimri 1999), Padana (Mirchandani 1981) and Vadgam (Joshi et al. 1984). The reasons for the abrupt end of this tradition which existed almost 1000 years without much change along with the Classical Harappan, Anarta Tradition, Sorath Harappan and Late Sorath Harappan needs further investigation.

Micaceous Red Ware: Ceramic Type/Culture/Tradition

The available data till date from various parts of Gujarat suggests that Micaceous Red Ware is a regional Chalcolithic ceramic tradition rather than a culture or Classical Harappan ceramic type. If it is a Classical Harappan ceramic type it should be abundant in Sindh region and available in various Classical Harappan sites in Indian subcontinent. Micaceous Red Ware cannot be treated as a distinct culture because none of the excavated/explored sites in Gujarat showed its independent existence and it is not the prominent ceramic type in any of the reported sites. Though Micaceous Red Ware can be distinguished from ceramics of other cultures/traditions, the artefacts associated with the Micaceous Red Ware at various sites cannot be classified under specific tradition/culture. At the same time, various definitions of tradition fit very well with Micaceous Red Ware. According to Haury (1956) a tradition is an archaeological unit concept that persists in time but limited in space. As per Willey and Phillips (1958: 35) a tradition comprises a line or a number of lines of pottery development through time within the confines of a certain technique or decorative constant. According to Deetz (1967) tradition is marked by a long temporal duration with relatively little spatial extent while Eddy (1984: 92) defined tradition as a configuration of traits which has a very long life. If one analyses the feature of Micaceous Red Ware based on these definitions, it has very limited spatial distribution (major concentration in the area around Gulf of Khmabhat) high temporal distribution (around 1000 years) and is
distinguishable from other ceramics in shape, surface treatment and decoration. Though Micaceous Red Ware can be classified under a tradition, the subjectivity of the terms culture and tradition poses a question; what is the basic difference between a tradition and a culture?

**Regional Distribution of Chalcolithic Cultures/Traditions**

While observing the distribution pattern of various cultures/traditions, major concentration of Anarta Tradition is in North Gujarat with limited availability in Kachchh and Saurashtra, Padri Ware is in Bhavnagar district of Saurashtra, Pre Urban Harappan Sindh type ceramics are in North Gujarat, Kachchh and Saurashtra, Pre Prabhas in North Gujarat and Saurashtra, Micaceous Red Ware in Bhal region around Gulf of Khambhat, Kachchh and North Gujarat, Prabhas Ware in South-Western Saurashtra and Kachchh, Jorwe Ware and Malwa Ware in South Gujarat and Reserved Slip Ware, Black and Red Ware, Classical/Sorath Harappan, Late Sorath Harappan and Lustrous Red Ware in all the sub-regions of Gujarat. The distribution pattern shows that all the regional Chalcolithic traditions have a core area of distribution (Maps 7, 8, 10, 11, 12, 13, 14, 15, 17, 18 and 19). The availability of the artefacts of various cultures/traditions in peripheral areas other than their core area of distribution may be due to the cultural contacts and movement of the people.

**Chronological Synopsis of Chalcolithic Cultures/Traditions**

Based on the chronometric and relative dates of artefacts from various excavated and explored Chalcolithic sites in Gujarat, the Chalcolithic phase in the region can be dated between c. 3700-900 BC. At North Gujarat sub-region the Chalcolithic occupation was preceded by Mesolithic period datable from c. 7300 BC and the Mesolithic people continued to exist along with Chalcolithic population at many sites. In Saurashtra the Mesolithic period can be relatively dated to the beginning of 3000 BC or earlier. Though microliths are present in the Chalcolithic levels of
sites in Kachchh and South Gujarat no preceding Mesolithic level was identified. At North Gujarat and Saurashtra the Chalcolithic period is datable from c. 3700-1400 BC, at Kachchh between 3200-1400 BC and at South Gujarat between 2500-900 BC. The presence of the Mesolithic level prior to the Chalcolithic occupation and its coexistence with the Chalcolithic communities in many sites in North Gujarat and Saurashtra probably indicates the evolution of Chalcolithic cultures/traditions from Mesolithic communities. South Gujarat and Kachchh does not show such evolution for the same and suggest the possible occupation of these areas by the Chalcolithic communities at a later date. The occurrence of Chalcolithic remains towards the end of second millennium BC in the South Gujarat sub-region may be due to the cultural contacts of Chalcolithic communities of South Gujarat with the Deccan Chalcolithic people.

**Results of Explorations In and Around Padri**

Explorations in the area around Padri in Saurashtra by the investigator have brought to light regional Chalcolithic, Urban Harappan, Post Urban Harappan, Early Historic and Medieval settlements. Among these six Chalcolithic settlements (Vejodhari, Khandera, Sultanpur I, Hamirpara, Borla and Talli) are newly explored by the researcher and other Chalcolithic sites like Datravad/Dantred (IAR 1960-61; Paul et al. 1997), Padri (Shinde 1992a; 1992b), Lilivav (Shirvalkar 2008), Sakhavadar (Shirvalkar 2008), Sultanpur II (Paul et al. 1997) and Bhalar (Paul et al. 1997) are reported by various scholars. Majority of these settlements except Padri have flimsy deposit and in certain sites ceramics are scattered over a wide area. The revisit of the previously reported Padri Ware yielding sites did not yield any sherds similar to Padri Ware or Pre Urban Harappan ceramics. Royal, earlier reported as Bandi Rohil (Paul et al. 1997) did not reveal any Chalcolithic ceramics and the pottery from the site is Early Historic and Late Medieval in nature. Based on the available evidence from the explored sites, none of the sites can be relatively dated prior to c. 2500 BC. Except at Padri, in all other sites, the previous
researchers failed to identify the Sorath Harappan and Late Sorath Harappan characters of artifacts and they described the sites as Pre Urban Harappan and Urban Harappan (reported as Early and Mature Harappan respectively). All these explored Chalcolithic sites located on fertile black cotton soil are in the proximity of water bodies. The basic ceramic types identified at the sites are Sorath and Late Sorath Harappan Red Ware, Buff Ware, Gray Ware and Black and Red Ware. The decorative patterns of the ceramics from explored sites are also different from those of other regional Chalcolithic cultures/traditions. Only one explored site except Padri i.e. Talli revealed stone structures. Based on the ceramics from the site these structures can be attributed to Sorath Harappan people. Like majority of the reported Sorath Harappan sites, these sites revealed shell bangles and debitage, pottery discs, perforated pottery discs/spindle whorls, terracotta ear studs and grinding stones. These artefacts reflects the practice of beautification of body, shell bangle production (probably in very small scale), use of play objects and child care, food processing activities and probably the spinning of cotton or wool. The results of the exploration of the researcher show that all these sites either belong to Sorath Harappan (Rangpur IIA and IIB, Rojdi A and B and Kuntasi I) or Late Sorath Harappan (Rangpur IIC, Rojdi C and Kuntasi II) or both the periods.

Results of Exploration In and Around Lothal

The explorations carried out in and around Lothal to understand the distribution, nature and relative abundance of Micaceous Red Ware by the researcher revealed evidences for the existence of Urban and Post Urban Harappan artifacts indicating Classical/Sorath Harappan, Late Sorath Harappan and Early Historic cultures/traditions apart from Micaceous Red Ware and Lustrous Red Ware. Among these Vadgam II, Jalampar, Rojka, Balgamada and Kharad I are newly explored by the researcher and sites like Lothal (Rao 1973, 1979, 1985), Vadgam I (IAR 1964-65, 1972-73, 1974-75), Koth (Rao 1963), Panasina (Rao 1963), Padana (IAR 1995-96; Dimri 1999); Kharad II (IAR 1995-96; Dimri 1999), Kotadiya (IAR 1995-96; Dimri 1999).
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1999) and Rangpur (Vats 1935; Ghurye 1939; Dikshit 1950; Rao 1963) were reported by various scholars. All the explored sites in the study area are located on close proximities of water bodies and fertile black cotton soil yielded Sorath Harappan artifacts and few have the presence of Classical Harappan artefacts. The result of the macroscopic analysis of the ceramics from various sites showed that Micaceous Red is not the dominant ceramic type in any of the sites. Except Lothal (Rao 1979, 1985) and Rangpur (Rao 1963), majority of the sites have flimsy deposit and the size of the archaeological mounds varies from 0.4 ha to 20.2 ha. The ceramics collected from the study area include various wares like Red Ware, Buff Ware, Gray Ware, Black and Red Ware, Micaceous Red Ware and Lustrous Red Ware. At eight sites Micaceous Red Ware was found associated with shell bangles, beads, shell debitage, perforated pottery discs/spindle whorls, ear studs, grinding stones, pestle stones, hubbed wheel and unidentified copper objects. These artefacts reflect the craft activities, food practices and importance given to beautification of body. Chalcolithic sites in the study area can be chronologically classified into two i.e. Urban Harappan Phase (2500-1900 BC) and Post Urban Harappan Phase (1900-1600 BC).

Sorath Harappan

Various features identified in the Sorath Harappan, the regional manifestation of the Urban Harappan culture in Gujarat (Possehl and Herman 1990) include distinctive architecture, mixed economy of agriculture dominated by millet cultivation and pastoralism and participation in an internal exchange network with that of the Classical Harappan sites (Sen 2009). The Late Sorath Harappans of Gujarat had also maintained interregional exchange network with the Early Dilman period site of Saar and it is indicated by the Pre Urban Sorath Harappan ceramics recovered from Saar (Carter 2001). In many sites, Sorath Harappan artefacts are found associated with Classical Harappan artefacts, Anarta ceramics, Micaceous Red Ware, Prabhas Ware, Black and Red Ware, Reserved Slip Ware and Lustrous Red Ware in various phases of occupation. The average size of the
Sorath Harappan settlements is estimated to 5.3 hectares (Possehl 1980) and they are devoid of elaborate architecture showing proper plan and layout (Ajithprasad 2008). In Sorath Harappan, the vessel shapes are much alike the Harappans in the Sindh region while the classic black on red painting style is absent on them (Possehl 1992). Though there are no seals and little writing, there are weights and measures, etched carnelian beads and copper implements of Harappan type (Possehl 1992). Terracotta objects like ear studs, pottery discs and perforated pottery discs/spindle whorls are the most common artifacts in many of the sites. Like the Classical Harapan settlements, some of the Sorath Harappan settlements are fortified and bipartite division is also present in some of them (Ajithprasad 2008). According to Ajithprasad (2008) thickness of Sorath Harappan fortification walls are much lesser in comparison to the Classical Harappans and curvilinear and polygonal structures seem to be not the norm in Classical Urban Harappan sites. The Sorath Harappan artefacts are available in majority of the Urban and Post Urban Harappan sites in Saurashtra, Kachchh, North Gujarat and South Gujarat sub-regions in Gujarat. Till the beginning of 1990s Sorath Harappan sites were considered as Late Harappan or Post Urban Harappan, and they were classified to Period IIB-C or III of Rangpur Sequence. Possehl divided the Rangpur IIB sites as Sorath Harappan, IIC as Late Sorath Harappan and III as Lustrous Red Ware sites (Possehl 1999). Based on the absolute dates from Rojdi (Possehl and Rawal 1989), Vagad (Sonawane and Mehta 1985) and Jaidak (Ajithprasad 2008; Sen 2009) Sorath Harappan can be placed between 2600-1600 BC.

Conclusion

Regional Chalcolithic cultures/traditions of Gujarat were mainly understood through the ceramic data generated from explorations and excavations carried out at different parts of Gujarat. However, a complete picture of these cultures could not be re-constructed as the identification and discussions of the previous researchers pertaining to regional Chalcolithic Cultures were primarily confined
to one artifact type i.e. ceramics. With the changing perception and the recent trends in Chalcolithic research in Gujarat, it was necessary to carry out a systematic study to test the earlier propositions for verifying the identity of regional Chalcolithic Cultures in Gujarat. This made the investigator to carry out fresh explorations in various parts of Gujarat, re-analyse the artifacts, followed by the compilation of all available data towards constructing the cultural mechanism resulting in the regional distribution pattern and finally arrive at a chronological synopsis. This study thus brought to light various interesting results and also identified issues regarding the genesis, evolution and decline of regional Chalcolithic cultures. This conclusion is primarily a summary of the results derived from the analysis of data and its discussions given in previous chapters. In order to avoid repetition the investigator lists out the major identifiable trends with regard to the regional Chalcolithic cultures of Gujarat.

1. As of today the earliest agricultural or food processing communities of Gujarat are the Mesolithic communities or the microliths using communities. This is well proved through the excavations at the north Gujarat sites.

2. The aforesaid Mesolithic communities or microlith using communities formed the base for the development of indigenous Chalcolithic traditions in Gujarat towards the beginning of the fourth millennium BC.

3. The earliest dated regional Chalcolithic culture/tradition in Gujarat is the Anarta Tradition and chronometric date for the initial stages of this tradition is 3700 BC.

4. The chronometric dates from the Pre Urban Harappan levels at Padri (Padri Ware) also go back to c. 3700 BC, however, there is no evidence for its antecedent culture within the site or its neighbourhood indicating an evolutionary pattern.
Discussion and Conclusion

5. It appears that at its beginning the 'Anarta tradition' did not have any contact with other Chalcolithic cultures for a long time (approximately 500 years as evident from its assemblage). This isolation needs to be addressed in detail to explain the factors that led to the same.

6. Based on archaeological data and due to the discrepancies in c14 dates, the proposition of stratigraphical break between Mesolithic and Chalcolithic communities at Loteshwar needs revision.

7. While observing the distribution pattern of the Anarta sites in Gujarat, it is seen that South Gujarat is completely devoid of this tradition and the reasons for the same needs to be explored further.

8. Some of the Anarta vessels in form and the scheme and style of painted decorations share common features with the Pre Urban Harappan ceramics from Sindh region and Ghaggar basin.

9. One burial found during the excavations at Loteshwar without burial goods appears to be the earliest Chalcolithic burial in Gujarat. From the limited evidence available it appears that the Anarta people disposed their dead within the habitation area. This also calls for further detailed investigation.

10. Another regional Chalcolithic tradition which appears to have originated from the Mesolithic communities during the Pre Urban Harappan period is Pre Prabhas ceramics using communities of Datrana IV. The ceramics from the site appears to be texturally inferior in its quality, indicating an incipient stage of pottery production.

11. The Pre Prabhas ceramics using communities appears to have started cultural contacts with the Pre Urban Harappans of Sindh region and Anarta ceramics using community around 3200 BC or little later.
12. If the Chalcolithic community at Datrana IV appears to have evolved from the Mesolithic community. The presence of Pre-Prabhas assemblage at the site, which is older than the same in Somnath/Prabhas Patan is intriguing. The possible explanation for this is that the inhabitants from the site may have moved to Saurashtra after coming in touch with the Pre Urban Harappans of Sindh region. Due to the absence of structures and the nature of deposit, which is flimsy, many researchers consider Datrana as the seasonal habitation/camp site of the pastoral nomads. But the evidences suggest stone tool production at the site and an economy not entirely dependant on pastoral activities. Therefore, it is possible to say that the status of a full time settlement can be attributed to Datrana which specialized in stone tool production.

13. The earliest evidence for the crested ridge blades in the Chalcolithic context of Gujarat occurs in Datrana IV (c. 3200-2800 BC) and Somnath. The Pre Urban Harappan Sindh type ceramics collected from various parts of Gujarat were made using fast wheel. The crested ridge blades and fast wheel made pottery in Gujarat may have been introduced by the Pre Urban Harappans of Sindh region. It must be mentioned here that the Pre Urban Harappan site at Datrana IV is the biggest stone tool production centre so far known during Pre Urban Harappan time.

14. The vessels of regional Chalcolithic traditions/cultures like Anarta tradition, Pre Prabhas Assemblage, Padri Ware and Micaceous Red Ware were made using hand or slow wheel/turn table.

15. A comparative study of ceramics of Anarta tradition and Padri indicate that similarities are very few in shapes and decorations, while differences are pronounced. Therefore the use of 'Padri/Anarta Cultural Complex' is irrelevant and meaningless.
16. The relative dates suggested for different periods of Padri require a reappraisal.

17. Among the Chalcolithic cultures/traditions, Anarta tradition (3700-1700 BC) and Padri ware (3600-2000 BC) show an extensive time span, while the Pre-Prabhas assemblage (3000-2500 BC), Prabhas Ware (2299-1769 BC) and Micaceous Red Ware (2500-1600 BC) have shorter time span. Pre-Prabhas assemblage probably vanished by the Urban Harappan Period.

18. The artefacts those can be clearly labelled as belonging to regional communities and differentiable from Harappans are ceramics. It is almost impossible to classify other artefacts as there are no clear-cut differences from those of Harappans. These artefacts include steatite beads; terracotta materials, i.e, pellets, spindle whorls, perforated discs, beads and pinched cakes; stone blades, rubber stones, grinding stones, querns and hammer stones; and shell beads and bangles.

19. Though, the regional ceramic types show a geographical boundary for their distribution, their influence at a minor level are often seen in areas far away from their core region of occurrence. In a simplistic way this may be explained as due to migrations/moving communities that led to inter site/inter regional relationships.

20. In sites like Bagasra and Lothal, quantity of regional ceramics are much more than Harappan pottery in the initial stages, however at Bagasra and Lothal during later stages and at Shikarpur from the beginning, the Harappan ceramics outnumber the regional types in quantity along with other materials. These may be viewed as an indication of integration of indigenous Chalcolithic communities into Harappan culture.
21. The availability of Micaceous Red Ware in limited quantities at Lohumjo-Daro and Shimal cannot be considered as the result of major inter-regional trade relations as the evidences from both the sites are very scanty.

22. Based on the chronometric and relative dates of artefacts from various excavated and explored Chalcolithic sites in Gujarat, the Chalcolithic phase in the region can be dated between c. 3700-900 BC. At North Gujarat and Saurashtra the Chalcolithic period is datable from c. 3700-1400 BC, at Kachchh between 3200-1400 BC and at South Gujarat between 2500-900 BC.

Future Scope of Research

To begin with, a detailed comparative study of the regional ceramics from various sites in Gujarat, Sindh region and Ghaggar basin is essential. This will include a full coverage survey to understand the distribution pattern of various traditions and cultures. This needs to be followed by a technological study of the ceramic samples of various regional Chalcolithic traditions to understand the similarities and differences in production techniques. A mapping of clay sources can facilitate provenance studies which might resolve various issues pertaining to the ceramic production and distribution pattern of the Indus Civilization. This will further enable one to situate the regional Chalcolithic traditions within the Indus Ceramic traditions.