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An Appraisal of Chalcolithic Micaceous Red Ware Tradition (2600 – 1600 BCE) Based on Vagad and Other Sites in Gujarat, India

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Abstract

Chalcolithic Micaceous Red Ware widely distributed in the Bhal region of Gujarat during 2600–1600 BCE was first reported from Rangpur in Surendranagar district. This ceramic type was also reported in limited quantity from other parts of Saurashtra, Kachchh, North Gujarat, and South Gujarat. The ware is primarily defined by its color, texture, surface finish, inclusions, shapes, and decorative pattern. Although it has been reported from twenty-nine sites to date, not much attempt has been made to bring to light and define its other cultural parameters. This paper tries to elucidate the characteristic features of this ceramic type. For this purpose, Micaceous Red Ware from Vagad was chosen for detailed typological studies, and the findings were compared with the data from other excavated and surveyed sites in Gujarat. Further, the available radiocarbon dates from these sites were recalibrated. This paper concludes with a verification of the term Micaceous Red Ware Tradition within the spatio-temporal framework.

Keywords:Bhal Region, Rangpur, Lothal, Urban Harappan Period, Post-Urban Harappan Period.

Article Type: Research Article

Introduction

Harappan/Chalcolithic archaeological studies in Gujarat in the last nine decades have advanced to more heights than many other places of the Greater Indus region thanks to the problem-oriented research carried out by various Indian and foreign Universities, Archaeological Survey of India and Gujarat State Archaeology Department. Yet, due to the undeciphered nature of the Indus script, recent excavations and explorations and the use of divergent research techniques, more questions are evolved than problems resolved. One such unsolved problem is the origin, development and decline of regional Chalcolithic traditions/ cultures in Gujarat. Present paper deals with various features of Micaceous Red Ware (2600 - 1600 BCE), a regional Chalcolithic ceramic tradition that prevailed in Gujarat during the Integration Era (2600-1900 BCE) and Localization Era (1900-1000 BCE) of Indus Age.

Classical Harappan and Regional Chalcolithic Cultures/Traditions in Gujarat

The beginning of studies on the Chalcolithic period in Gujarat was an upshot of the archaeological discoveries made at Harappa and Mohenjo-daro in modern Pakistan during the 1920s. Excavation at Vallabhipur in 1930 by Father Henry Heras marked the beginning of Harappan studies in Gujarat (Heras 1938). Other Harappan and Harappan related Chalcolithic sites excavated before 1947 in Gujarat include Bet Dwarka (Gaur and Sundaresh 2003), Rangpur (Vats 1937; Ghurye 1939; Dikshit 1950; Rao 1963) and Langhnaj (Sankalia 1965). After the partition of India, Harappa and Mohenjo-daro, the urban centers of the Indus Civilization, along with several other sites became part of Pakistan leaving two small excavated Harappan sites (Rangpur and Kotla Nihang Khan) in India (Possehl 2002). This motivated various archaeological departments and institutions to initiate frequent explorations

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along the northwestern parts of the newly formed India to verify if there were more sites/settlements of the contemporary period. This resulted in the discovery of several sites (more than 800 in Gujarat) with Harappan affiliation. As most of these sites in Gujarat had elements of Harappan culture, without any doubt or second thought they were labeled under the same and until the first half of the 1980s all Chalcolithic settlements of Gujarat were synonymous with the Harappan culture. Excavations at Rangpur (Rao 1963), Somnath (Subbarao 1958; Nanavati *et al*. 1971), Jokha (Mehta *et al*. 1971), Dhatwa (Mehta and Chaudhary 1975), Lothal (Rao 1985), Vagad (Sonawane and Mehta 1985), Nagwada (Hegde *et al*. 1988), Rojdi (Possehl and Raval 1989), Surkotada (Joshi 1972a, 1972b, 1990), Loteshwar (Bhan 1994; Sonawane and Ajithprasad 1994), Padri (Shinde 1992 a, 1992 b, 1998; Shinde and Bhagat-Kar 1992), Datrana (Ajithprasad 2002) and Bagasra (Sonawane *et al*. 2003; Bhan *et al.* 2004); surveys in North Gujarat and Saurashtra (Sonawane and Ajithprasad 1994; Paul *et al*. 1997; Paul and Shinde 1998-99; Dimri 1999; Majumdar 1999; Krishnan and Dimri 2005), and re-analysis of ceramics from excavated sites of Saurashtra and North Gujarat (Dhavalikar and Possehl 1992; Herman and Krishnan 1994; Ajithprasad 2002) indicated the existence of regional Chalcolithic cultures/traditions (Table. 1) in Pre-Urban Harappan (3900-2600 BCE), Urban Harappan (2600-1900 BCE) and Post-Urban Harappan (1900-1000 BCE) phases in Gujarat.

Micaceous Red Ware Tradition: A Historical Outline

Micaceous Red Ware occurs mainly in the Bhal region of Saurashtra with limited availability in Kachchh, North Gujarat, South Gujarat and other parts of Saurashtra (Figure. 1). Not a single site has showed its independent existence to date. 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." Micaceous Red Ware was also reported during the excavations at Lothal (IAR 1954, Rao 1979; 1985), where it was found to increase in quantity towards the lower levels (Figure . 2) and due to water logging, the excavator could not reach sterile soil. Published burial pottery from Lothal also shows that majority of them are of Micaceous Red Ware and in some burials both Harappan and Micaceous Red Ware were found together (Rao 1985; Ajithprasad 2009). While Lothal yielded large amounts of Micaceous Red Ware, its stratigraphic context and "cultural identity" could not be established due to limitations

Table. 1: *Harappan and Regional Chalcolithic Cultures/Traditions in Gujarat*

Pottery Tradition	Chronology	References
Anarta Tradition	3900-1700 BCE	Sonawane and Ajithprasad 1994; Ajithprasad 2002, 2011; Rajesh *et al*. 2013
Padri Ware	3800-1700 BCE	Shinde 1992a; Bhagat-Kar 2001; Shirvalkar 2008; Rajesh 2011
Pre-Prabhas Assemblage	3300-2600 BCE	Dhavalikar and Possehl 1992; Ajithprasad 2002; Rajesh *et al*. 2018
Black and Red Ware	3300-1000 BCE	Subbarao 1961; Rao 1963; Shah 2001
Pre Urban Harappan Sindh Type Ceramics	3200-2600 BCE	Majumdar and Sonawane 1997; Majumdar 1999; Ajithprasad 2002, 2018
Reserved Slip Ware	3200-1900 BCE	Mackay 1938; Krishnan *et al*. 2005; Krishnan and Patel 2018
Micaceous Red Ware	2600-1600 BCE	Rao 1963, 1985; Herman and Krishnan 1994; Dimri 1994; Rajesh 2011
Classical Harappan	2600-1900 BCE	Rao 1985; Dales and Kenoyer 1986; Lindstrom 2013
Sorath Harappan	2600-1900 BCE	Herman 1989; Possehl and Herman 1990; Ajithprasad 2008; Sen 2009; Rajesh and Krishnan 2017
Prabhas Ware	2200-1700 BCE	Subbarao 1958; Nanavati *et al*. 1971; Dhavalikar and Possehl 1992; Ajithprasad 2002; Ajithprasad *et al*. 2011
Late Sorath Harappan	1900-1600 BCE	Possehl and Herman 1990; Ajithprasad 2008; Sen 2009
Lustrous Red Ware	1900-1300 BCE	Rao 1963; Rissman and Chitalwala 1990; Bhan 1994
Malwa Ware	1700-1450 BCE	Ansari and Dhavalikar 1971; Mehta *et al*. 1971, 1975
Jorwe Ware	1500-1000 BCE	Dhavalikar 1979; IAR 1961-62, 1966-67; Mehta *et al.* 1971

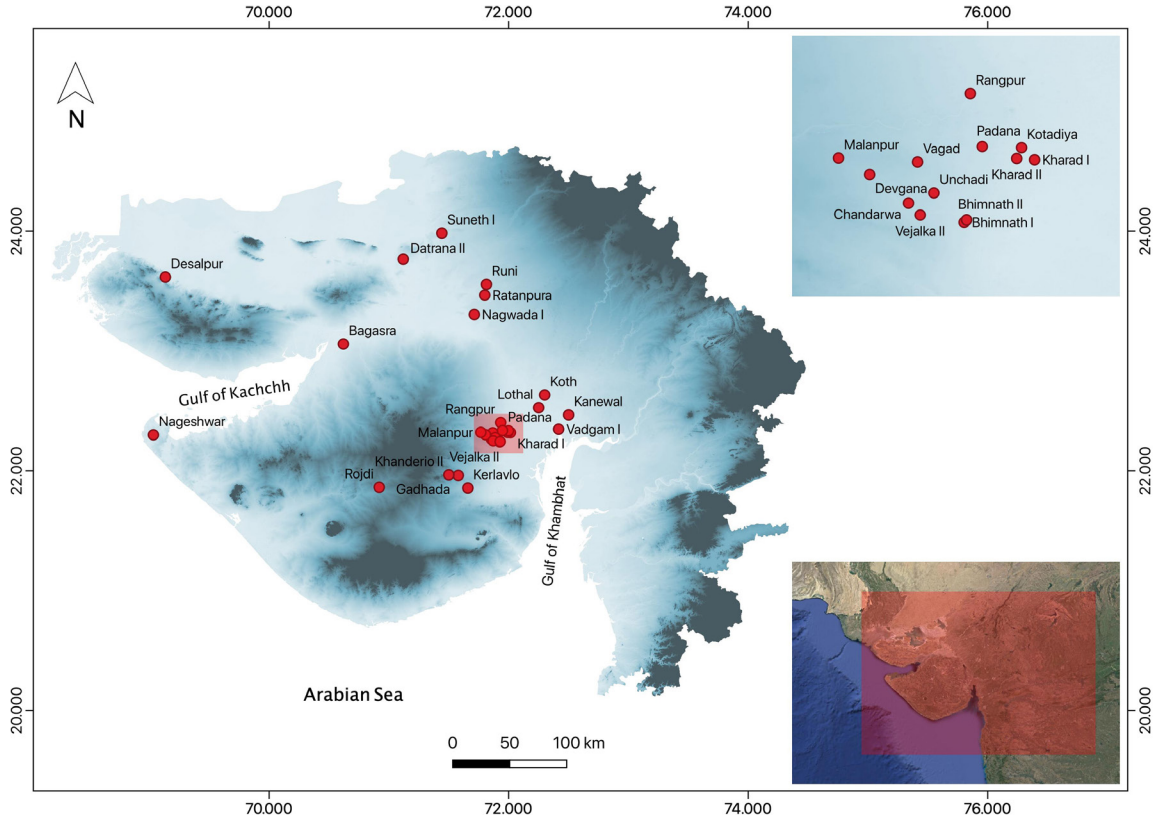


Figure. 1: *Distribution of Micaceous Red Ware Sites in Gujarat*

in excavations (Herman and Krishnan 1994).

Illustration of a stud handled bowl of this Ware from Rojdi was also published in IAR 1957-58 (1958) as "miscellaneous pottery." Though Micaceous Red Ware was unearthed during the excavations at Rangpur in 1930s-1950s and Lothal in 1950s, it was first reported in its name in Lalit Kala (cf. 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 lumped 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 survey of Nageshwar (Bhan and Kenoyer 1984a, 1984b), no such sherd is reported from the excavation (Hegde *et al*. 1990). Likewise, at many surveyed sites like Hanuman No Timbo (Gadhada), Kahnderio II and Kerlavlo (Possehl 1980), it is described along with Red Ware. In a similar way, the sherds representing the Micaceous Red Ware tradition recovered from many of the surveyed sites might in fact be Harappan/Sorath Harappan Red Ware. Hence, at this juncture it is very difficult to understand the distribution pattern of this Ware in Gujarat. To date, 29 sites belonging to the Micaceous Red Ware tradition are reported from various sub-regions of Gujarat and among them twelve are excavated.

"Micaceous Red Ware: a Gujarat Proto-Historic cultural complex or just ceramics?" (Herman and Krishnan 1994) is the first comprehensive study on this tradition. Herman and Krishnan (1994) conducted typo-technoloigcal and spatio- temporal analysis of Micaceous Red Ware and attempted to hypothesize its genesis in the Gulf of Khambhat region in the Regionalization era. Later studies of Dimri (1994, 1999), Krishnan and Dimri (2005) and Rajesh (2011) also support the propositions of Herman and Krishnan (1994).

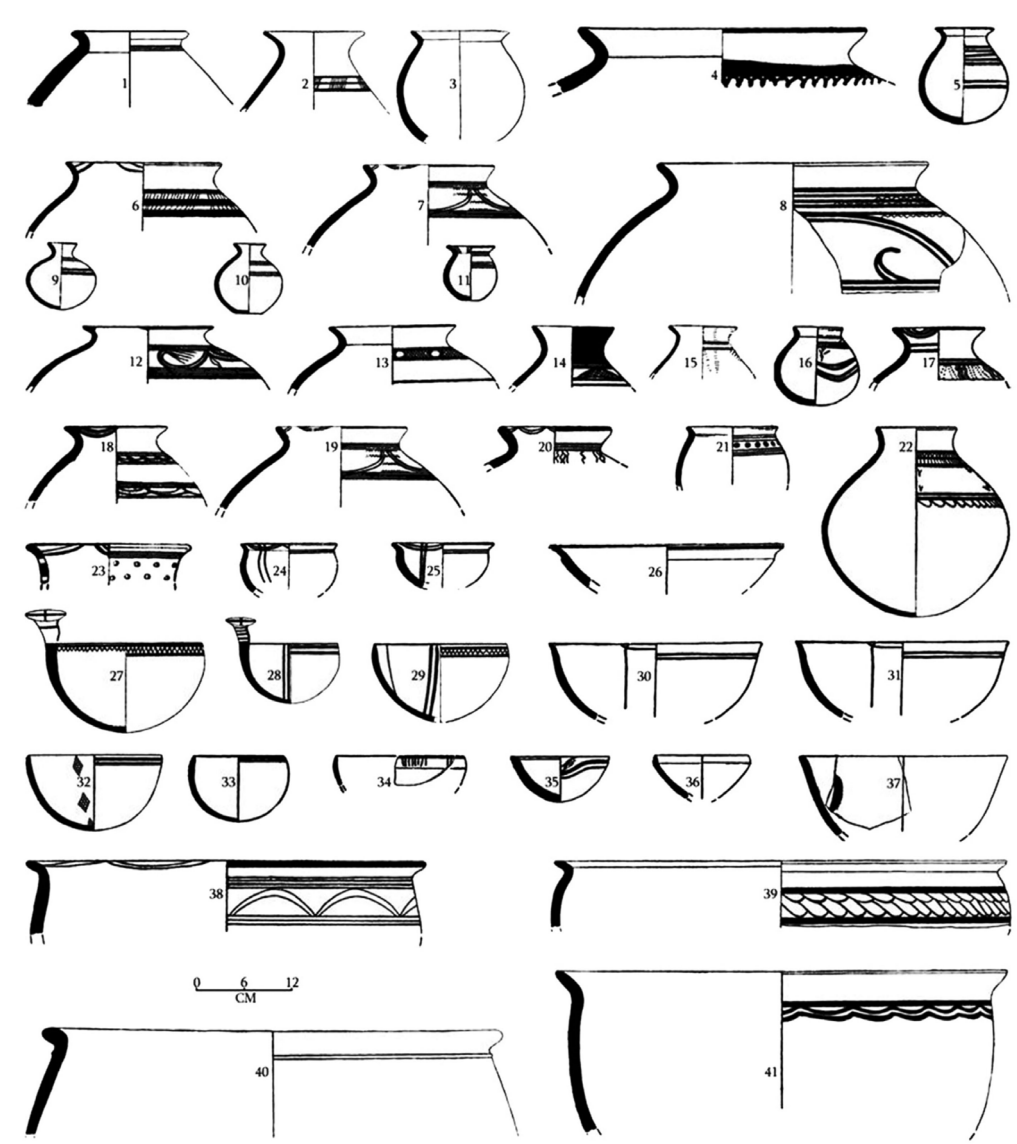


Figure. 2: *Micaceous Red Ware vessels from Lothal (After: Rao 1963; 1985)*

Methods

The major objectives of this paper are: (1) to understand Micaceous Red Ware in Vagad; (2) to identify the distribution pattern of Micaceous Red Ware in Gujarat within specific geographical sub-regions; (3) to understand the chronological position of Micaceous Red Ware; (4) to recognize whether Micaceous Red Ware represents a separate industrial/cultural complex; (5) to understand the probable region of its origin; and (6) to recognize the presence of Micaceous Red Ware and associated artefacts at sites outside Gujarat. It is assumed that the results of this study would be useful to resolve at least some issues pertaining to this pottery tradition in Gujarat.

In order to achieve the objectives, Micaceous Red Ware from Vagad (Sonawane and Mehta 1985) was chosen for detailed typological studies and its findings were compared with the data from other sites in Gujarat such as Lothal (IAR 1954, Rao 1979; 1985), Rangpur (Rao 1963), Desalpur (IAR 1963-64), Kanewal (Mehta et al. 1980), Ratanpura (IAR 1984-85) and Rojdi (Possehl and Raval 1989). For comparison and correlation of artefact data, excavation reports of Bet Dwarka (Gaur *et al.* 2005), Dhatva (Mehta *et al.* 1975), Jokha (Mehta *et al*. 1971), Kanewal (Mehta *et al*. 1980), Kuntasi (Dhavalikar *et al*. 1996), Langhnaj (Sankalia 1965; Clutton-Brock 1965; Ehrhardt and Kennedy 1965), Lothal (Rao 1979; 1985), Malvan (Allchin *et al.*

1995), Nageshwar (Hegde *et al*. 1990), Oriyo Timbo (Rissman and Chitalwala 1990), Rangpur (Rao 1963), Rojdi (Possehl and Raval 1989), Somnath (Nanavati *et al*. 1971) and Surkotada (Joshi 1990) were consulted.

Vagad

Vagad (22o 19' 00" N, 71o 52' 00" E) is located on the right bank of the Bhadar River in Dhandhuka taluka of Ahmedabad district (Figure. 1). The archaeological mound locally known as Kedio Timbo (Figures. 3 and 4) excavated by M. S. University of Baroda in 1981-1982 covers an area of 450 m north-south and 300 m east-west and rises to a height of 2 m from the surrounding plain (Sonawane and Mehta 1985). The occupational deposits of the site incorporate both Urban Harappan and Post-Urban Harappan elements divisible into three sub-periods, viz. Periods IA, IB and IC, based on three successive architectural levels. Remains from six circular huts were unearthed at the site. Also recovered were Yajna vedikas/fire pits. The pottery assemblage from the site includes Sturdy Red Ware, Buff Ware, Chocolate Slipped Ware, Micaceous Red Ware, Crude Red Ware, Crude Grey Ware and White Painted Black and Red Ware. Other small finds from the site include terracotta and stone weights, pulley shaped terracotta ear ornaments, beads in various materials, shell bangles with chevron motifs, toy cart wheels, discs, spindle whorls, crucibles, copper objects, saddle querns, pestles, rubber stones, and sling balls. Faunal remains from the site represent such species as cow, buffalo, goat, sheep, dog, spotted deer, gazelle, black buck, blue bull, pig, and rat. Based on calibrated radiocarbon dates and relative dates Vagad can be dated between c. 2200–1600 BCE (Sonawane and Mehta 1985; Krishnan 1986; Dimri 1994).



Figure. 3: *General view of the archaeological mound at Vagad*



Figure. 4: *General view of the disturbed archaeological mound at Vagad*

Pottery

Studies on the ceramics from Vagad in various degrees were carried out by Sonawane and Mehta (1985), Krishnan (1986), Krishnan and Hegde (1988), Dimri (1994; 1999), Herman and Krishnan (1994) and Rajesh (2011). All these studies, except Sonawane and Mehta's work, concentrated on Micaceous Red Ware and analyzed the materials using both petrographic and conventional methods. Sonawane and Mehta (1985) identified the presence of Harappan Red Ware, Buff Ware, Chocolate Slipped Ware, Micaceous Red Ware, Gray Ware and Black and Red Ware at the site which showed affinities to the pottery from Rangpur IIA-IIB, Lothal B, Rojdi IA-B and Surkotada IC. Petrographic studies of various wares from Vagad by Herman and Krishnan (1994) proved a technological identity for Micaceous Red Ware, distinct from its associated wares. Though all the above-mentioned studies shed light on different aspects of Micaceous Red Ware, none of them attempted a detailed typological analysis of these ceramics, an exception being Dimri (1994), who studied the site Vagad as one unit of analysis. Therefore, a detailed macroscopic analysis of the entire Micaceous Red Ware from Vagad was conducted to understand different features of this regional Chalcolithic tradition.

According to Dimri (1994), the excavated pottery assemblage from Vagad in the collection of M.S. University of Baroda consists of a total of 1188 pieces, including 1121 diagnostic and 67 undiagnostic sherds. Dimri (1994) also speaks about the presence of 117 Micaceous Red Ware sherds (98 diagnostic and 19 undiagnostic pieces) in the collection (Table 2). Thus, Micaceous Red Ware (Figures. 5 and 6) comprises 9.85% of the total collection from Vagad.

Of the 1188 sherds, 8.71%, 25.17%, 23.44%,

3.54%, 32.73%, 1.53%, and 4.88% derived respectively from layers 1, 2, 3, 4, pit 1, pit 3, and surface. Some 39.14% of the sherds came from pits and surface. Various ceramics obtained from the site include Red Ware (Fine, Coarse and Micaceous) Black and Red Ware (Coarse), Buff Ware (Fine), and Gray Ware (Coarse). Red Ware is the predominant, followed by Black and Red Ware, Buff Ware, and Gray Ware. These ceramics show strong similarities with the pottery of Rangpur IIA –IIB (Rao 1963), Lothal B (Rao 1985), Rojdi IA-IB, and Surkotada IC (Joshi 1966). The total pottery assemblage from the site is divided between 80.1% rim sherds, 12.82% body fragments, 0.2% shoulders, 4.01% bases, 0.67% complete vessels, 2.1% stems, and 0.1% handle.

Table. 2: *Excavated Ceramics from Vagad (Adapted: Dimri 1994: 28)*

Ware		Diagnostic Sherds	Un-diagnostic sherds	Total Number of Sherds
Red	Fine Red	781	28	809
	Coarse Red	21	0	21
	Micaceous Red	98	19	117
Black and Red	Coarse Black and Red	131	0	131
Buff	Fine Buff	61	20	81
Gray	Coarse Gray	29	0	29
Total		1121	67	1188



Figure. 5: *Micaceous Red Ware from Vagad (After: Courtesy of Department of Archaeology, Maharaja Sayajirao University of Baroda)*

Micaceous Red Ware

The Micaceous Red Ware sherds varied from 3 to 16 cm in dimensions. Thanks to the big size of the sherds it was easy to identify their shapes without any speculation or doubt. Breakage of the sherds into big size might be an indication of the quality of the ware, i.e. the involved raw materials and manufacturing techniques. Diameter of the vessels varied from 8 to 30 cm, and diameter of 19 sherds are unknown as they are non-descriptive sherds. A few body sherds of Micaceous Red ceramics were reworked and used as spindle whorl/pottery disc.

Micaceous Red Ware represents vessel types such as convex sided bowls without handle, dishes, pots and stud handle bowls. Rim diameter of the pots is 8–12 cm. Diameter of the simple bowls

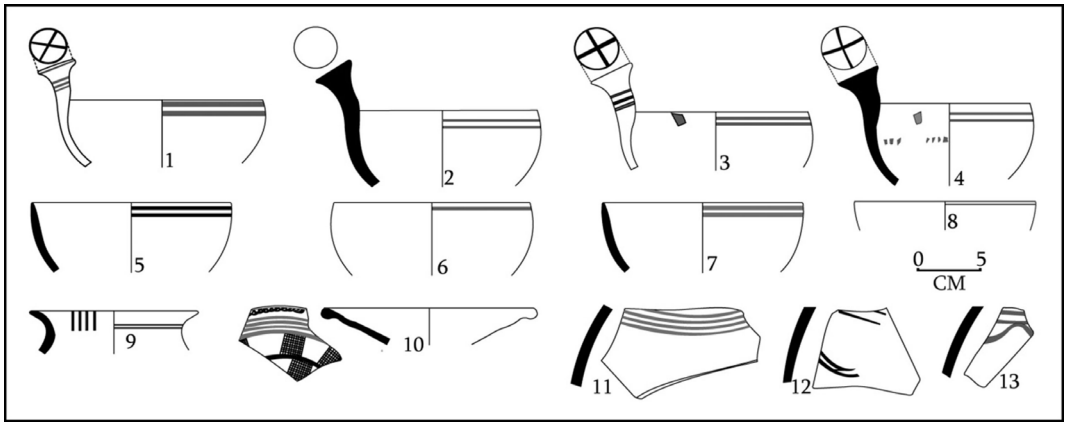


Figure. 6: *Micaceous Red Ware from Vagad*

(After: Courtesy of Department of Archaeology, Maharaja Sayajirao University of Baroda)

varied from 13 to 14 cm. Diameter of stud handled bowls varied from 14 to 15 cm. Both simple bowls and stud handled bowls are the most standardized ceramics with diameter difference of 1 cm in each category. Rim diameter of the dishes ranges between 24 and 32 cm.

Manufacturing technique of the ceramics from Vagad cannot be pinpointed and the vessels might have been made by hand/slow wheel or multiple techniques. None of the vessels retain regular striation marks indicative of throwing on the wheel. All the vessels from the site show probable marks of beating/paddling and very irregular and faint striations on some parts of their exterior or interior. The round bottomed vessels might be the result of a combination of slow wheel and beating/paddling. The possibility of the use of a fast wheel cannot be ruled out as well. The evidence for the use of molds is absent. In case of the stud handled bowl, the bowl and stud were made separately and attached together by pinching the clay. The possibility of multiple techniques of production can also be postulated from the evidence. Among the bowls, some have blunt carination, while the rest are devoid of carination. All sherds show a fine texture, and sand particles are fairy uncommon, with one of the sherds containing merely 1 or 2 sand particles of medium size. Both surfaces on all vessels bear thick slips and are well burnished. All the vessels have smooth feel in both exterior and interior. Both surfaces tend to be uneven except for a few cases. In all sherds, some portions of the both surfaces are eroded and a salt and calcium encrustation is present on the majority of the pieces.

The pieces tend to bear painted designs. The majority of the bowls show painted motifs on exterior and interior, while a few bowls have paintings only on the exterior. The patterns include geometric designs like horizontal bands, squares, parallelograms, non-geometric designs like slanting lines, vertical strokes and mesh/fish net decorations and designs of nature like intersecting wavy lines. These decorations occupy the rim, brim, shoulder, body, base and stud of the vessels in varying degrees. Some paintings in all the vessels are abraded/eroded and faded probably due to long term exposure to the elements.

Colors of the core, two edges of the core (exterior and interior surfaces), slips of the exterior and interior, and painted motifs on the exterior and interior were recorded using Munsell Soil Color Chart(1954). All sherds showed variants of red color and some also showed occurrence of gray color (Table 3). These color variations might be due to the changes in firing condition or use of the raw material from different sources.

Vessels with both oxidized and deoxidized cores are present in the Micaceous Red Ware assemblage from Vagad. Deoxidized cores are only present in the category of pots. The reason for the deoxidized core might be the firing condition. The contents in the raw material can be another reason. Break fracture is different and both even and uneven fractures are discernible. Fracture in the pot sherds is invariably uneven. Even fracture might be an indicator of a good firing technique. Uneven fracture might be the result of limitations in the manufacturing technique, including firing, inclusions in the raw material, and exposure to the elements.

Soot mark/smoke clouding or kiss mark is present in some sherds. This might be indicative of the prevailing firing condition at the kiln. Smoke clouding occurs during cooking. There are number of scratch marks on all sherds from the site. These scratches might be the result of the use of the vessels for various purposes and cleaning. They might also occur after the breakage of the vessels as they were exposed to cultural and natural transformations for a long time. The possibility of the occurrence of scratches during excavation and the following procedures cannot also be ruled out.

Particles of mica are visible in all the sherds from the site. Mica pieces are small in size and are sparsely distributed in all parts of the sherds. Small sand particles are also visible in the entire sherds. Some white particles were observed in 50% (21.43% pots and 28.57% stud handled bowls) of the pieces from Vagad. They might represent crushed shells or other organic inclusions. Herman and Krishnan (1994) also observed the absence of vegetable inclusions in the analyzed ceramic samples from Vagad. Micaceous Red Ware from Vagad is dateable to the Urban Harappan (2200–1900 BCE) and Post-Urban Harappan (1900–1600 BCE) Periods.

Table. 3: *Colour of Micaceous Red Ware from Vagad*

Details of Pot Sherds	Colour (Munsell Soil Colour Chart 1954)
External Surface	Weak red (10R 5/3, 10R 5/4)
	Pale red (10R 6/3, 10R 6/4)
	Light red (10R 6/6)
Internal Surface	Weak red (10R 5/3, 10R 5/4)
	Pale red (10R 6/2, 10R 6/3)
	Light red (10R 6/6)
	Gray (2.5YR 5/0, 5YR 5/1)
Core	Weak red (10R 5/3)
	Pale red (10R 6/2, 10R 6/3)
	Light red (10R 6/6)
	Gray (5 YR 5/1, 2.5 YR 5/0)
	Reddish gray (10R 5/1)
External Slip	Weak red (10R 5/3, 10R 5/4)
	Pale red (10R 6/3, 10R 6/4)
	Light reddish brown (2.5YR 6/4)
	Red (10R 5/6)
Internal Slip	Weak red (10R 5/3, 10R 5/4)
	Pale red (10R 6/3, 10R 6/4)
	Gray (5YR 6/1)
	Reddish gray (10R 6/1)
	Light reddish brown (2.5YR 6/4)
	Red (10R 5/6, 2.5YR 5/6)
External Paint	Dark reddish gray (10R 3/1)
	Very dark gray (2.5YR 3/0)
Internal Paint	Very dark gray (2.5YR 3/0)

General Characteristics of Micaceous Red Ware in Gujarat

The name of the ceramic type is misleading as Red Ware pottery with more visible mica particles than Micaceous Red Ware occurs in both Harappan and Early Historic periods. According to Herman and Krishnan (1994), the Micaceous Red Ware vessels of the 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 does not show any striations except the rim of a jar from Vagad (Herman and Krishnan 1994). Almost all the vessels in this ware are round bottomed (Herman and Krishnan 1994) with rare occurrence of flat bottomed specimens (Rao 1985). According to Herman and Krishnan (1994), the round bottom of the vessels cannot be directly obtained from fast wheel throwing. To get the round bottom, the potter has to use a mold 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, 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 perforted jars in this vessel group are considered as the result of adoption of the Harappan technique (Herman and Krishnan 1994). Most of these vessel forms and their variants are found during the Urban Harappan and the Post-Urban Harappan periods, while they show a general diminishing trend.

A number of the sherds bear painted motifs only on the exterior, while others are marked with such patterns on both surfaces. The applied paint tend to range in color from gray to black, and the pigment was produced from magniferous soil (Herman and Krishnan 1994). Rare use of white pigment was also noticed at some bowls from Lothal (Rao 1985). The designs range 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 represent the painted designs. The use of triangles, dots, squares, rectangules or diamonds in one area or all through the exterior or interior near the rim of the bowls is an interesting feature of this tradition.

Scientific Studies

Lal (1985) based on his chemical analyses suggested 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 1988). Thin section studies and textural analysis of this ceramic group from Vagad

(Krishnan and Hegde 1988) 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 1988) 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 in Micaceous Red Ware (Figures. 7 and 8) and in some of the burials both Urban Harappan ceramics and Micaceous Red Ware are found together (Rao 1985). The Micaceous Red Ware ceramics mainly occur in the burials of Period A Phase III and IV, and the major shapes of the same include water pots with flaring rim and round bottom, bowls with convex sides and round base decorated with black horizontal bands on the shoulder and suspended loops on the rim, stud handle bowls painted on the exterior of the rim with black bands, and jars with flaring rim and ovoid body having painted black horizontal bands and loops at the rim and horizontal bands at the shoulder (Figure. 8). Based on the observations made at the burials from Lothal, Ajithprasad (2009) points out that the association of Urban Harappan and Micaceous Red Ware in the burials might suggest the level of integration that existed between the producers and users of the both ceramic traditions. Ajithprasad (2009) further argues that it is an indication of heterogeneity of the Harappan society and its divergent roots.

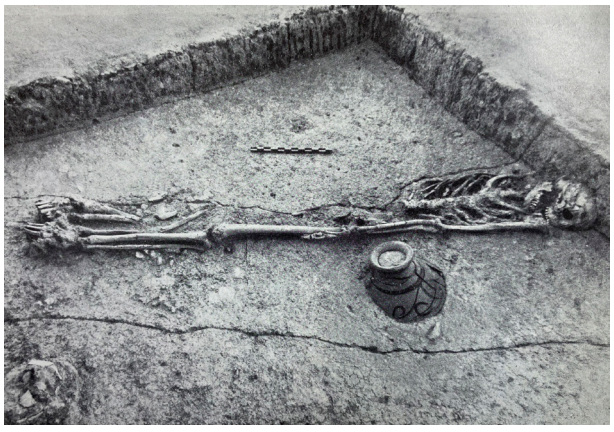


Figure. 7: *Micaceous Red Ware pot in a burial at Lothal (After: Rao 1979)*

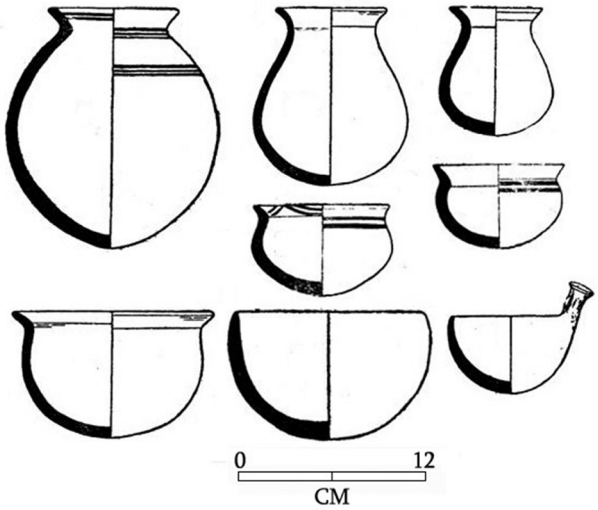


Figure. 8: *Micaceous Red Ware from the burials at Lothal (After: Rao 1985)*

Similarities and Differences

If one looks broadly into Micaceous Red Ware, there are a lot of similarities between this and other regional Chalcolithic and Classical Harappan ware types (Bhan 2010), and if one looks closely there are lots of differences, too. According to Rao (1985), there is close correspondence between the shapes 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 rims, rounded bases and painted black thick bands and oblique lines and a few jars from Pre-Harappan levels at Kalibangan. According to Bhan (2010), Micaceous Red Ware shares certain similarities with the ceramics of the Anarta tradition in such shapes as pots and bowls. Micaceous Red Ware vessels and Anarta globular pots share a commonality in their round bases, which may be due to the similarities in production techniques. Bhan (2010) also suggests the use of white paint in three bowls from Lothal as a continuation of the Pre-Urban Harappan tradition of the Sindh region, which was adopted by the regional Chalcolithic traditions of Gujarat. Perforated jar and bottle of 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 ware also share similarities with the Sorath Harappan and Prabhas bowls in shape and certain painted patterns.

The major difference of Micaceous Red Ware from other ceramics is the presence of a thick

glossy slip with a color 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 the Sindh region share certain commonalities with Micaceous Red Ware, there are differences in surface treatment, shapes, texture, feel, and decorative patterns. 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 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 1988).

Spatial Distribution: Within Gujarat

The main concentration of the Micaceous Red Ware tradition is around the Gulf of Khambhat, commonly known as the Bhal region. Related material is also reported from Kachchh, North Gujarat and other parts of Saurashtra (Figure. 1, Table 4). To date, none of the sites in South Gujarat have revealed this pottery type. Among this, twelve sites are excavated. In North Gujarat, Kachchh and the area outside the Bhal region in Saurashtra, this Ware was reported in limited quantity and variety. To date, none of the sites in the core or peripheral regions of its presence has showed its independent existence. Its occurrence in limited quantity at 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 have been political, social or economical in nature. The possibility of the limited manufacturing of this ware at peripharal sites cannot be ruled out as well. A detailed typological and scientific studies of the samples of this ware from different sites and nearby soil resources can cast light on this problem.

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). Citing this evidence and some other pottery paintings from Lothal and Rangpur, Mughal (1992) argues for the presence of the Jhukar phase pottery style (1900–1700 BCE) in Gujarat, emphasizing close and long-lasting interrelationship between the Late Harappan populations of Sindh and Gujarat (Mughal 1992). As the earliest date of Micaceous Red Ware goes back to 2600 BCE in Gujarat and no other region in Greater Indus has so far produced the same kind of pottery, it can be argued that this tradition may have originated in Gujarat and reached Lohumjo-Daro through interregional trade or moving communities like pastoral nomads and itinerant artisans. A Micaceous Orange-Red jar decorated with black painted bands from Shimal (2000–1300 BCE) in the United Arab Emirates has been compared to the ceramics from Lothal and Rangpur (de Cardi 1988; Gogte 2000). On the basis of this evidence, de Cardi (1988) and Gogte (2000) suggest the interaction between the people of Lothal and Arabia. The authors of the present paper have not have not seen the original ceramics from Lohumjo-Daro and Shimal, and the description given here is purely based on the published works. As the evidence from both the sites are very scanty, it cannot be considered as the result of major inter-regional trade of Micaceous Red Ware using communities.

Indigenous Origin

As per the current knowledge, Micaceous Red Ware appears to have originated in Gujarat and there are various pieces of evidence 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 (barring one sherd from Lohumjo-Daro) in other parts of the Greater Indus region, and if it is a Classical Harappan ceramic type it should occur in various sites in different parts of Greater Indus. The Micaceous Red Ware yielding sites are distributed in different sub-regions of Gujarat with its maximum concentration in the 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 this gulf. The chronometric and relative dates of these ceramics from various parts of Gujarat suggest the temporal distribution of the ware type around 1000 years.

Table. 4: *Micaceous Red Ware Sites in Gujarat*

Region	Site Name	District	Latitude	Longitude	Cultural Period*	Reference
Kachchh	Desalpur	Kachchh	23° 37' 00" N	69° 08' 00" E	UH, PUH	Soundararajan 1984
North Gujarat	Ratanpura	Patan	23° 28' 00" N	71° 48' 00" E	PUH	IAR 1984-85
	Datrana II	Banaskantha	23° 46' 00" N	71° 07' 10" E	UH	Ajithprasad and Sonawane 2011
	Nagwada I	Surendranagar	23° 18' 15" N	71° 42' 45" E	PRUH, UH, PUH	Hegde *et al.* 1988
	Suneth I	Banaskantha	23° 59' 00" N	71° 26' 30" E	UH	Ajithprasad and Sonawane 2011
	Runi	Patan	23° 33' 22.7" N	71° 48' 50.2" E	UH, PUH	Ajithprasad: Personal Communication
Saurashtra	Vagad	Ahmedabad	22° 19' 00" N	71° 52' 00" E	UH, PUH	Sonawane and Mehta 1985
	Nageshwar	Jamnagar	22° 18' 00" N	69° 02' 00" E	UH	Bhan and Kenoyer 1984a, 1984b, Hegde *et al.* 1990
	Kanewal	Kheda	22° 28' 00" N	72° 30' 00" E	PUH	Mehta *et al*. 1980
	Rojdi	Rajkot	21° 51' 47" N	70° 55' 08" E	UH, PUH	Possehl and Rawal 1989
	Rangpur	Surendranagar	22° 24' 10.7" N	71° 55' 69.8" E	UH, PUH	IAR 1963
	Lothal	Ahmedabad	22° 31' 37.2" N	72° 14' 92.1" E	UH, PUH	Rao 1979, 1985
	Koth	Ahmedabad	22° 37' 60.3" N	72° 17' 83.3" E	UH	Rao 1963
	Gadhada	Bhavnagar	21° 57' 43" N	71° 34' 44" E	UH, PUH	Possehl 1980
	Khanderio II	Bhavnagar	21° 58' 00" N	71° 30' 00" E	UH, PUH	Possehl 1980
	Kerlavlo	Bhavnagar	21° 51' 24" N	71° 39' 32" E	UH, PUH	IAR 1960-61
	Bhimnath I	Ahmedabad	22° 14' 27' N	71° 55' 31' E	UH	IAR 1978-79
	Chandarwa	Ahmedabad	22° 15' 54" N	71° 51' 19" E	PUH	IAR 1957-58
	Devgana	Ahmedabad	22° 18' 03" N	71° 48' 23" E	UH	Krishnan and Dimri 2005
	Malanpur	Ahmedabad	22° 19' 18" N	71° 46' 02" E	PUH	Krishnan and Dimri 2005
	Unchadi	Ahmedabad	22° 16' 40" N	71° 53' 14" E	UH	Krishnan and Dimri 2005
	Vejalka II	Ahmedabad	22° 15' 00" N	71° 52' 12" E	UH, PUH	Krishnan and Dimri 2005
	Bhimnath II	Ahmedabad	22° 14' 37' N	71° 55' 40' E	PUH	Dimri 1999
	Kharad I	Ahmedabad	22° 19' 10.4" N	72° 00' 50.4" E	UH, PUH	Dimri 1999
	Kharad II	Ahmedabad	22° 19' 16.7" N	71° 59' 29.7" E	UH, PUH	Dimri 1999
	Kotadiya	Ahmedabad	22° 20' 05.6" N	71° 59' 51.7" E	UH, PUH	Dimri 1999
	Padana	Ahmedabad	22° 20' 10.8" N	71° 56' 53.2" E	UH, PUH	Mirchandani 1980
	Vadgam I	Anand	22° 20' 51.6" N	72° 24' 79.2" E	UH, PUH	Joshi 1984
	Bagasra	Rajkot	23° 03' 30" N	70° 37' 10" E	UH, PUH	Sonawane *et al*. 2003
*PRUH: Pre Urban Harappan, UH: Urban Harappan, PUH: Post Urban Harappan						

Relative Abundance in Excavated and Surveyed Sites

While its exact frequencies are unknown at the majority of the excavated sites in Gujarat, it is not the dominant ware type at none of these sites. At Lothal (Rao 1979, 1985), Rangpur (Rao 1963) and Kanewal (Mehta *et al.* 1980), though the precise percentages of the ware are not mentioned in the excavation reports, they seem to be present in good quantities. At Rojdi (Possehl and Rawal 1989), Bagasra (Sonawane *et al*. 2003), Datrana II (Ajithprasad and Sonawane 2011), Ratanpura (IAR 1984-85) and Nagwada (Hegde *et al*. 1988) it is very rare. Nageshwar (Bhan and Kenoyer 1984a, 1984b) and Desalpur (Soundararajan 1984) have each reportedly produced a single sherd of this type, while at Vagad occur 117 sherds of it (Dimri 1994). The relative abundance of Micaceous Red Ware in surveyed sites in Gujarat (Rajesh 2011) also reveals that it is not the dominant ware at any of the concerned sites. Among the surveyed/revisited sites, Kotadiya yielded the maximum percentage of the ware (Figure. 9).

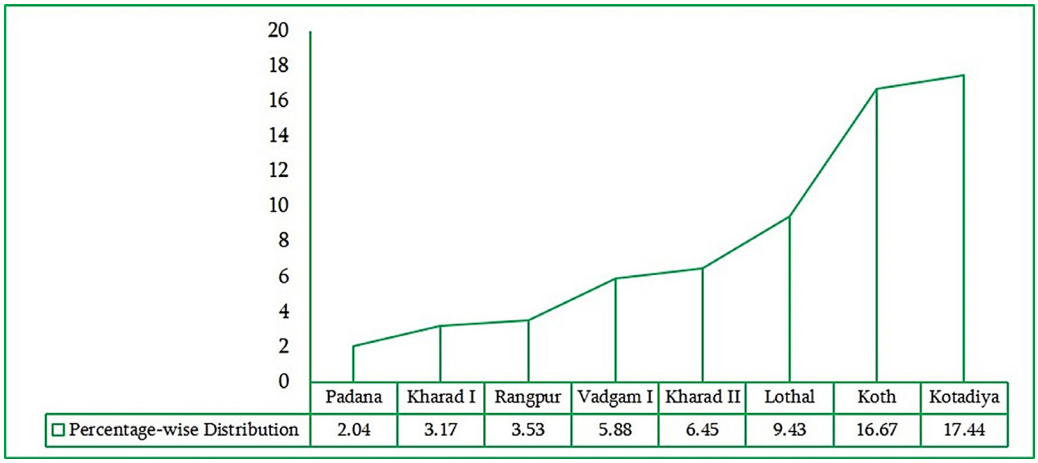


Figure. 9: *Distribution of Micaceous Red Ware at various sites*

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 the Sindh region is a matter of debate. Earliest evidence for the existence of the Micaceous Red Ware tradition is available from Lothal (Figure. 10), where it was found to rise in quantity towards the lower levels (Rao 1985). As the excavator failed to reach sterile soil due to water logging, the earliest date assignable to the ware is the beginning of the Urban Harappan period, i.e. 2600 BCE (Table. 5). Apart from Lothal, during the Urban Harappan period (2600-1900 BCE), it was in existence at a number of other sites (Table. 5). The lower limit of this ceramic tradition is Post-Urban Harappan period, i.e. 1900–1600 BCE (Table. 5).

A recalibration of the available radiocarbon dates from all the Micaceous Red Ware sites have been carried out by the investigators. Majority of the C14 dates are very old and not very accurate. Yet, recalibration reveals that the Micaceous Red Ware tradition begins around 2600 BCE and continues till 1600 BCE at various sites (Table. 5, Figure. 10). This recalibration was necessary as the earlier dates were site-specific. The reasons for the abrupt end of this tradition, which persisted almost 1000 years without considerable changes along with the Classical Harappan, Anarta Tradition, Sorath Harappan and Late Sorath Harappan, require further investigation.

Micaceous Red Ware: Ceramic Type/Culture/ Tradition

The data available to date from various parts of Gujarat suggests that Micaceous Red Ware is a regional Chalcolithic ceramic tradition rather than a culture or a Classical Harappan ceramic type. If it is a Classical Harappan ceramic type, it should be abundant in the Sindh region and attestable at various Classical Harappan sites in the Indian subcontinent. Micaceous Red Ware cannot be treated as a distinct culture because none of the excavated/surveyed sites in Gujarat have showed its independent existence, and it is not the prominent ceramic type at 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 a discrete 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 is limited in space. According to 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. To Deetz (1967), tradition is marked by a long temporal duration with relatively little spatial extent, while Eddy (1984: 92) defines tradition as a configuration of traits that has a very long life. If one analyzes the Micaceous Red Ware phenomenon based on these definitions, it has very limited spatial distribution (major concentration in the area around Gulf of Khambhat) and 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?

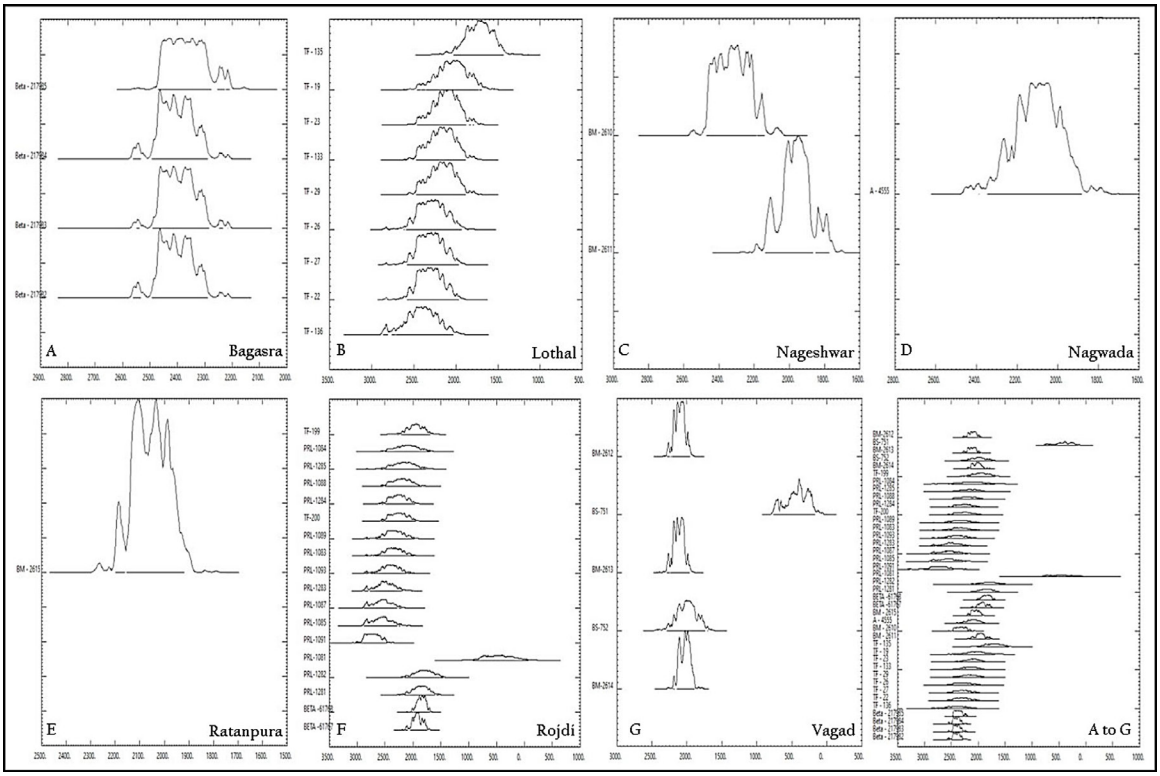


Figure. 10: *Probability plot of recalibrated radiocarbon dates from Micaceous Red Ware and associated Urban and Post-Urban Harappan sites in Gujarat (After: Reimer et al. 2009)*

Table. 5: *Recalibrated Radiocarbon Dates from Micaceous Red Ware Sites in Gujarat*

Sl. No.	Sample No.	Site	Radiocarbon Age	One Sigma Range (Calib Rev 6.1.0)	Two Sigma Range (Calib Rev 6.1.0)	References
1	Beta - 217982	Bagasra	3920±40	[cal BCE 2472: cal BCE 2396] 0.646437	[cal BCE 2493: cal BCE 2289] 0.96328	Chase 2007, Reimer *et al.* 2009
2	Beta - 217983	Bagasra	3910±40	[cal BCE 2468: cal BCE 2390] 0.655654	[cal BCE 2490: cal BCE 2284] 0.977813	Chase 2007, Reimer *et al.* 2009
3	Beta - 217984	Bagasra	3920±40	[cal BCE 2472: cal BCE 2396] 0.646437	[cal BCE 2493: cal BCE 2289] 0.96328	Chase 2007, Reimer *et al.* 2009
4	Beta - 217985	Bagasra	3880±40	cal BCE 2409: cal BCE 2334] 0.547731	[cal BCE 2470: cal BCE 2276] 0.926283	Chase 2007, Reimer *et al.* 2009
5	TF - 136	Lothal	3915±130	[cal BCE 2575: cal BCE 2202] 1.	[cal BCE 2708: cal BCE 2032] 0.946952	Possehl 1994, Reimer *et al.* 2009
6	TF - 22	Lothal	3845±110	[cal BCE 2467: cal BCE 2195] 0.922607	[cal BCE 2580: cal BCE 1972] 0.999055	Possehl 1994, Reimer *et al.* 2009

7	TF - 27	Lothal	3840±110	[cal BCE 2466: cal BCE 2194] 0.909813	[cal BCE 2578: cal BCE 1973] 0.999654	Possehl 1994, Reimer *et al*. 2009
8	TF - 26	Lothal	3830±120	[cal BCE 2467: cal BCE 2137] 1.	[cal BCE 2582: cal BCE 1932] 0.996707	Possehl 1994, Reimer *et al.* 2009
9	TF - 29	Lothal	3740±110	[cal BCE2299: cal BCE 2009] 0.926593	[cal BCE 2472: cal BCE 1881] 1.	Possehl 1994, Reimer *et al.* 2009
10	TF - 133	Lothal	3740±110	[cal BCE 2299: cal BCE 2009] 0.926593	[cal BCE 2472: cal BCE 1881] 1.	Possehl 1994, Reimer *et al*. 2009
11	TF - 23	Lothal	3705±105	[cal BCE 2210: cal BCE 1947] 0.910617	[cal BCE 2460: cal BCE 1877] 0.987367	Possehl 1994, Reimer *et al.* 2009
12	TF - 19	Lothal	3650±130	[cal BCE 2205: cal BCE 1877] 0.938502	[cal BCE 2351: cal BCE 1730] 0.951812	Possehl 1994, Reimer *et al.* 2009
13	TF - 135	Lothal	3405±125	[cal BCE 1832: cal BCE 1605] 0.763775	[cal BCE 1985: cal BCE 1434] 0.981009	Possehl 1994, Reimer *et al.* 2009
14	BM - 2611	Nageshwar	3600±60	[cal BCE 2035: cal BCE 1883] 0.992941	[cal BCE 2136: cal BCE 1865] 0.891748	Herman 1997, Reimer *et al.* 2009
15	BM - 2610	Nageshwar	3850±60	[cal BCE 2351: cal BCE 2274] 0.417963	[cal BCE 2472: cal BCE 2188] 0.942167	Herman 1997, Reimer *et al*. 2009
16	A - 4555	Nagwada	3700±80	[cal BCE 2202: cal BCE 2007] 0.890196	[cal BCE 2345: cal BCE 1883] 0.999655	Patel 2008, Sonawane and Ajithprasad 1994, Reimer *et al*. 2009
17	BM - 2615	Ratanpura	3670±50	[cal BCE 2135: cal BCE 2011] 0.84905	[cal BCE 2152: cal BCE 1919] 0.935443	Herman 1997, Reimer *et al.* 2009
18	BETA -61767	Rojdi	3570±60	[cal BCE 1982: cal BCE 1876] 0.702223	[cal BCE 2043: cal BCE 1746] 0.966474	Possehl 1994, Reimer *et al.* 2009
19	BETA -61768	Rojdi	3520±60	[cal BCE 1920: cal BCE 1766] 0.984769	[cal BCE 1982: cal BCE 1728] 0.931542	Possehl 1994, Reimer *et al.* 2009
20	PRL-1281	Rojdi	3520±110	[cal BCE 1979: cal BCE 1733] 0.894946	[cal BCE 2141: cal BCE 1606] 0.980955	Possehl 1994, Reimer *et al*. 2009
21	PRL-1282	Rojdi	3470±140	[cal BCE 1965: cal BCE 1615] 0.994306	[cal BCE 2141: cal BCE 1488] 0.98415	Possehl 1994, Reimer *et al.* 2009
22	PRL-1081	Rojdi	2360±210	[cal BCE 674: cal BCE 349] 0.645962	[cal BCE 916: cal AD 63] 1.	Possehl 1994, Reimer *et al.* 2009
23	PRL-1091	Rojdi	4150±110	[cal BCE 2879: cal BCE 2619] 0.958323	[cal BCE 2944: cal BCE 2463] 0.97858	Possehl 1994, Reimer *et al.* 2009

24	PRL-1085	Rojdi	4020±110	[cal BCE2698: cal BCE 2456] 0.764324	[cal BCE 2880: cal BCE 2282] 0.988379	Possehl 1994, Reimer *et al.* 2009
25	PRL-1087	Rojdi	4010±110	[cal BCE 2679: cal BCE 2428] 0.767172	[cal BCE 2878: cal BCE 2278] 0.980028	Possehl 1994, Reimer *et al.* 2009
26	PRL-1283	Rojdi	3980±100	[cal BCE 2625: cal BCE 2335] 0.944308	[cal BCE 2762: cal BCE 2203] 0.936677	Possehl 1994, Reimer *et al.* 2009
27	PRL-1093	Rojdi	3920±110	[cal BCE 2501: cal BCE 2277] 0.758116	[cal BCE 2697: cal BCE 2127] 0.948958	Possehl 1994, Reimer *et al.* 2009
28	PRL-1083	Rojdi	3875±120	[cal BCE 2489: cal BCE 2195] 0.917536	[cal BCE 2673: cal BCE 2009] 0.982949	Possehl 1994, Reimer *et al.* 2009
29	PRL-1089	Rojdi	3870±120	[cal BCE 2488: cal BCE 2193] 0.917547	[cal BCE 2640: cal BCE 2007] 0.975262	Possehl 1994, Reimer *et al.* 2009
30	TF-200	Rojdi	3810±110	[cal BCE 2411: cal BCE 2136] 0.88373	[cal BCE 2498: cal BCE 1948] 0.975146	Possehl 1994, Reimer *et al.* 2009
31	PRL-1284	Rojdi	3810±100	[cal BCE 2356: cal BCE 2137] 0.776415	[cal BCE 2491: cal BCE 1972] 0.987306	Possehl 1994, Reimer *et al.* 2009
32	PRL-1088	Rojdi	3770±120	[cal BCE 2348: cal BCE 2028] 0.934325	[cal BCE 2495: cal BCE 1884] 0.987545	Possehl 1994, Reimer *et al.* 2009
33	PRL-1285	Rojdi	3740±140	[cal BCE 2345: cal BCE 1950] 0.992712	[cal BCE 2495: cal BCE 1767] 0.987864	Possehl 1994, Reimer *et al.* 2009
34	PRL-1084	Rojdi	3700±150	[cal BCE 2300: cal BCE 1888] 0.987167	[cal BCE 2300: cal BCE 1888] 0.987167	Possehl 1994, Reimer *et al.* 2009
35	TF-199	Rojdi	3590±100	[cal BCE 2043: cal BCE 1869] 0.698751	[cal BCE 2206: cal BCE 1686] 0.99461	Possehl 1994, Reimer *et al.* 2009
36	BM-2614	Vagad	3650±50	[cal BCE 2048: cal BCE 1948] 0.725596	[cal BCE 2143: cal BCE 1893] 0.982777	Herman 1997, Reimer *et al.* 2009
37	BS-752	Vagad	3625±100	[cal BCE 2141: cal BCE 1879] 0.972291	[cal BCE 2244: cal BCE 1739] 0.971872	Herman 1997, Reimer *et al.* 2009
38	BM-2613	Vagad	3720±50	[cal BCE 2104: cal BCE 2035] 0.502001	[cal BCE 2233: cal BCE 1973] 0.943823	Herman 1997, Reimer *et al.* 2009
39	BS-751	Vagad	2320±100	[cal BCE538: cal BCE 347] 0.638639	[cal BCE 673: cal BCE 168] 0.902065	Herman 1997, Reimer *et al.* 2009
40	BM-2612	Vagad	3710±50	[cal BCE 2146: cal BCE 2032] 0.83858	[cal BCE 2210: cal BCE 1954] 0.959932	Herman 1997, Reimer *et al.* 2009

Conclusions

As Micaceous Red Ware comes in different shapes, the related vessels clearly served an array of different purposes like serving, storing and ornamentation. The decorated vessels must have been used for storing and serving purposes rather than cooking. Some broken sherds were reworked and used as spindle whorl/pottery disc. Its occurrence in distant places like Lohumjo-Daro in Sindh and Shimal in the United Arab Emirates can be viewed as a sign of its importance as a luxurious ceramic type, as most of the ceramics used by local inhabitants are produced locally or procured from nearby areas. Its significance can further be assumed from the use of the ware 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 communities) enjoyed at the site. It also throws light on the probability that the 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. Notwithstanding this integration, they still continued the distinct tradition of pottery making till the withering away of the Harappan culture somewhere in the second half of the second millennium BCE, 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 of Gujarat cannot also be ruled out.

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