

UGC Major Research Project
TERRACOTTAS ART OF ANCIENT GUJARAT
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Preface

Creativity is an art which integrates mental and physical being. From the ancient time the best medium for man to create something was the clay and mud. The satisfaction of creating with your own hand is an articulation of the human being with combination of mind and his limbs. It gives immense contentment to glance at your own creation and feel happy. One of the very arts of ancient India which is continuing till the modern days is the art of making articles out of clay into beautiful terracotta objects.

This work begins with a brief introduction of the area of approach and discussion of the problems. Chapter I deals with a brief introduction discussing the problems and how to approach them. The work proceeds to understand all the excavated terracotta material from the sites of Gujarat from Chalcolithic as well as Early Historic, understanding, analyzing them and looking into the continuity of the objects. Later on an ethno archaeology research was carried out to understand the method and technique of the terracotta toys were being made.

Ingenious work is an art and it is impossible without cooperation of so many persons. Naturally to accomplish this dissertation so many persons provided direct or indirect contribution to give it a final shape.

On the onset I would like to thank University Grant Commission, New Delhi, for funding this research project in the form of Major Research Project and all the staff for their promptness of any queries requested to them.

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CHAPTER – I

INTRODUCTION

Introduction:

"It has been suggested by anthropologists who deal with the interpretation of cultures, that artifacts reflect norms and conventions of a society". The formation of ideas of different aspects of human society and its contribution can be understood by us from the various forms of art and craft available to us in the archaeological record like rock paintings, ceramic traditions, terracotta figurines and other artefacts. Therefore, artefacts are an important source material for revealing cultural traits of tradition and culture defining its place in the society. Terracotta is a very popular medium of artistic expression of people from very early times. Apart from revealing the artistic traditions; the technical skills are also visible in the making of terracotta.

Clay has been one of the most popular media of the art expression on the earth since a long time because of its elastic characters, which makes it easy to model and mould as well as it is must be one of the most inexpensive media available free of cost in desired quantities to every craftsman universally. The clay is the base of terracotta objects and makes the terracotta objects most satisfactory, wide-spread. It shows the man's imagination resulting in the creation of art and useful household articles.

The study of Terracotta art in Gujarat from excavated sites will be a unique endeavor. Gujarat witnessed almost all cultures from hunter gatherer stage to major dynasties. The geographical situation of the state is such that from the early times it was a meeting place of several cultural units who exchanged thoughts and material across the Indian sub-continent. Gujarat acted as a connecting point between the east and the west. While the connectivity is accessible through the land and the sea route, the cross culture exchanges took a different turn and are reflected in artifacts. The type of presentation of terracotta has continuity from earlier traditions and manifest differently from time to time and place to place.

Terracotta art served as an important medium of expression for different cultures for ages, reflecting its contemporary social order. Therefore its study becomes important not only from the point of view of art, but also from the point of understanding the socio-religious cultural habitat and daily life of the people and also from the point of view of technology. With this, the aim is to highlight the contributions to archaeological inquiries that can be obtained from the study of a limited assemblage, followed by carefulness for detail study. While discussing the significance of the results, the work further strives to reflect upon the objects as that what they constitute by themselves. Different terracotta objects reflect the thought process of the ancient people, and in turn will help us to understand the religion and society. Thus besides bringing out the aesthetic art, this study will also bring the inner thought of the people of the bygone era. The object excavated by various department of Archaeology needs to be methodological studied. For this purpose the terracotta objects displayed in various museums by the State Archaeology, collection in the Archaeological Survey of India Baroda Circle and the M.S. University needs to be thoroughly analyzed.

With the emergence of Chalcolithic culture in Gujarat, there dawned a new culture epoch which exhibited a considerable advance in the art of baked clay objects. These objects developed in new forms in later period and some of them retained their old self. A rich repertoire of terracotta objects is found from the excavations of every site of Harappan civilizations and Early Historic sites of Gujarat. It is an articulation of different cultural aspects reflecting the socio-economic, cultural and artistic traditions of urban and rural society.

Interdisciplinary reach of the current research is limited to ethnographic surveys and experimental replication studies. The ethno archaeological studies will help to understand the technical and other aspects. The terracotta of other excavated sites of the Archaeological Survey Circle office, Baroda and displayed in different museums will be to be taken into consideration and studied there itself.

Archaeological evidence of terracotta art exhibits a wide variety of craft in India associated with almost all periods, like the children's toys, household decoration and religious objects used in worship and rituals. In all the regions particularly clay has been used to create different art forms, which indicates certain stylistic variations.

With the emergence of Chalcolithic culture in Gujarat, there dawned a new culture epoch which exhibited a considerable advance in the art of baked clay objects. These objects developed in new forms in later period and some of them retained their old self. A rich repertoire of terracotta objects is found from the excavations of every site of Harappan civilizations and Early Historic sites of Gujarat. It is an articulation of different cultural aspects reflecting the socio-economic, cultural and artistic traditions of urban and rural society.

One of the important cultural phases of Gujarat is the Early Historic period. The excavations carried out of the early historic settlement except for a few were more than two decades ago. Hence in terms of the questions they sought to answer, the manner of reporting and the recording and analysis of the artifacts presents several limitations. A large number of terracotta objects have been recovered from these excavations but a systematic account of the material evidences is yet to be attempted. New archaeological concerns have also led to new questions being asked and more exact methods are being adopted for the recovery, recording and analysis of the data. Thus in view of the inadequacy of the earlier studies, there is an urgent need for a comprehensive re-look at the early historic material with a new and wider perspective.

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The study of terracotta art of Gujarat is important to verify the theories of continuity between the two cultural periods. The ethno- archaeological study is significant to understand the nature of changes in the technique if any. Attempts will be made to understand the different cultural aspects reflecting the contemporary socio-cultural and artistic traditions of a society. The objects may possess many common characteristics, yet there are peculiar, stylistic variations which differentiate from one another. These variations however small are very interesting as they help a great deal in defining clearly the cultural horizons that is the change in time. Proper recording and documentation of the object will be the major contribution of the proposed study. Therefore a necessity was felt to carry out a detail study of the terracotta objects.

Literary sources are incorporated for understanding various facets of the subject under review. The studies of terracotta art of ancient India may be briefly outlined under several categories such as typological analysis (Coomaraswamy, 1927; Gordon, 1935; Banerjee, 1994 :), forming techniques (Kramrisch, 1939), the ethos of Coomaraswamy's work in emphasizing the essence of Indian art was carried forward by Stella Kramrisch. Her contribution to the study of terracotta is from the folk art point of view. Her main focus was on describing the style form and technique that was visible in the treatment of the development of Indian art. VS. Agrawala's work throws light on the emergence of the clay figurines and the literary evidence that can be used to describe the terracotta objects. On the other hand, Das Gupta's work on 'Unpublished Ancient Terracottas' in 1945-47, that have been preserved in the Musee Guimet, Paris has given a brief description of much terracotta. Dhavlikar's work is one of the few which focuses closely on the Chalcolithic and the early historic terracotta of Western India and the Deccan. His work is based on both literary and on archaeological evidence. Evolution typology (Dasgupta, 1961; Dhavlikar, 1977; Tripathi & Srivastava, 1994), regions specific studies (Gordon, 1937; Sharma 1967, Biswas; 1981) and also isolated efforts to look at it as process of art and aesthetics (Vidhula Jayaswal .et.al, 1986). Prathiba Prakash's (1985) work mainly deals with the animal figurines which have been dated to the period c.600 BC to 600 AD. Her work pertinently throws light on the technical features involved in the making of terracotta. The recent work of Arundhati Banerji 2004, on terracotta art helps in reconstruction though various aspects of the socio-economic and religious conditions of the early phases of habitation as found in the Neolithic and Chalcolithic cultures.

Since last 2-3 decades American and French Scholars like Casal (1979), Dales (1974), Possehl, Jarridge (1984), and Kenoyer, have explored and reanalyzed the excavated material of Harappan and few sites in India. Besides these, earlier scholars like Stuart Piggot (1958), Gordon (1958), Wheeler (1968), Allchin (1981), have examined them in detail and incorporated them in their books. Elke Rogersdotter (2011) has worked exclusively on the toy carts of Indus sites of Gujarat and made a detailed study.

Thus in view of the inadequacy of the earlier studies, there is an urgent need for a comprehensive re-look at the early historic material with a new and wider perspective. There seems to be a lacuna in the study of the development of the terracotta art of Gujarat over a period from

Harappan to Early Historic times. Most of the work has been dealt in cultural Historical approach. Here the work will be dealt in entirety. The information whatever available was+ not sufficiently well-structured and doesn't reflect the totality art traditions of ancient Gujarat. As a result the significance of terracotta art traditions of Gujarat remains unexplored. This integrated study would help in understanding various forms, styles, and change in the art pattern between the two cultures in Gujarat

This form of ancient craft has continuously evolved over thousands of years. Sometimes it served the purpose of exchanging thoughts; sometimes it is to give shape to the learned superior skill and sometimes to satisfy the utilitarian needs. Thus without understanding the creativity and workmanship of the terracotta art of Harappans it will be difficult to understand about this art of later period.

Physical Features of Gujarat

Gujarat is situated on the western flank of peninsular India, extends from 20.1° - 24.7° N. latitude and 68.4° - 74.4° E. longitude. The total area of this region is roughly 187,115 sq. km. which is bound on the north, east and south by Rajasthan, Madhya Pradesh and Maharashtra States respectively, while west by the Arabian Sea. It is the sixth largest state of India. The modern Gujarat comprises of three main physical divisions viz., the peninsular region of Kathiawad Kutch, and the mainland of Gujarat flanked by Sabarmati, Mahi and Narmada rivers.

Kathiawad

Popularly known as Saurashtra, was once an island or a group of islands of volcanic origin separated from the mainland. Kathiawad represents the nature of the desert of Sind as well as the wet lands of Central and South Gujarat. Physically, the peninsula of Kathiawad is divided into three region viz.:

The coastal lands: Coastal strip is muddy and occasionally fringed with a line of wind-blown sand hills and band of alluvium is formed by the encroachment on the Little Rann of Kutch by the Luni and Rupen rivers and on the Gulf of Cambay by the Sabarmati and Bhogava.

Hills: The hills in the central part of Kathiawad can be divided into the north-eastern series. The central highlands have water streams running between the rivers which run rapidly forming the drainage of the peninsula. They are very swift at their head-waters, but wind their way sluggishly as they pass through the flat alluvial plains before emptying themselves into the sea.

The Inland Plain:- The upward slop of the alluvial band from the seaboard eastward is very gradual, so that, except where wind blown accumulation of loam or sand makes small local eminence.

The surface of the country appears to be a flat level plain. As one approaches the interior the monotony of flat plain is broken by the low hills or surface irregularities formed by the courses of small rivers. This fertile alluvial plain sustains a large population, even as it did in ancient times.

The Wadhwan Gateway acts as a corridor between the peninsula and the mainland of Gujarat. The northern and southern extremities of the corridor area are a salt-waste, while central depression forms the Nal Lake. The tip near Gulf known as Bhal is a flat low-laying plain drained by sluggish streams and subject to annual floods.

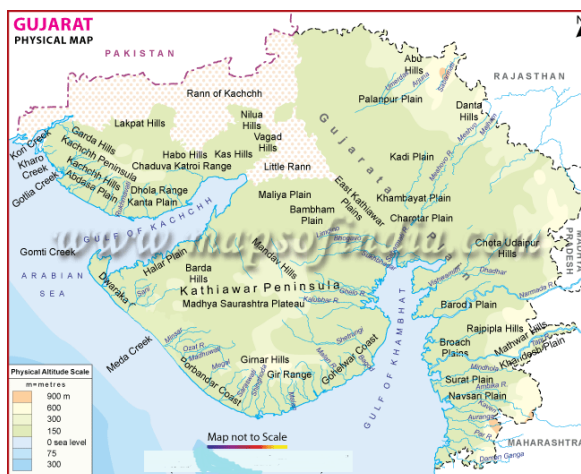
Kutch

It was also an island in pre-historic times. According to the author of the periplus there was open sea between the Kutch and the Indus. The process of filling up the shallow sea between the peninsula and the mainland by the alluvial deposits of the rivers such as the Banas and the Luni is still in process. The only hills belong to the Bhuj series in the center of the peninsula composed of the Deccan trap overlain by laterites in some places. The north-eastern parts of the peninsula are a marsh, while the flat and feature less plains of Chad-bet are surcharged with saltpeter. Scrub jungle covers the flat plains. An eastern branch of the Indus river known as Nara used to join the Rann of Kutch, but during the earthquake of 1933, it has ceased to flow into the Rann.

Mainland of Gujarat

The mainland of Gujarat is an alluvial plain partly formed by the annual flood-deposits of the Sabarmati, Mahi, Narmada and Tapti rivers. Physically, the region can be divided into the coastal area, the plains proper and the eastern highlands. A narrow fringe of wasteland delimited by the tidal waters of numerous parallel streams that flow through Gujarat, right from the Damanganga estuary in the south to the Gulf of Kutch in the north. The southern half of the narrow coastal belt stretching from the river Damanganga to the river Kim is barren stretch of sand - drift and salt – marsh fringed here and there with small hills. The rivers Tapti and Ambica give uniformly rich deeper loam. The Gulf of Cambay is another vast-salt march flooded by spring-tides. The loam brought in by the Bhogava, Bhadar, Sabarmati and their tributaries gives the Bhal region of uniform level having black silt particularly suitable for cotton and wheat. The northern plains gradually rise and hills sink once again into the plateau in the Banaskantha and Sabarkantha Districts.

The north-eastern hills consist of the outliners of the Aravalli system, the Vindhya, the Satpuras and the Sahyadris. These hills are detached masses of Deccan Trap. The southern half of the great Gujarat plain shows a surface soil of black loam, a vast alluvial deposit. The northern half shows the soil of light red sandy loam, but on the borders between the two, it is an admixture of sandy soil. The black soil extending from Surat to Baroda is not only very fertile but also remarkable for the desert like appearance.



(courtesy www.Maps of India)

Map 1. Map of Gujarat

CHAPTER II

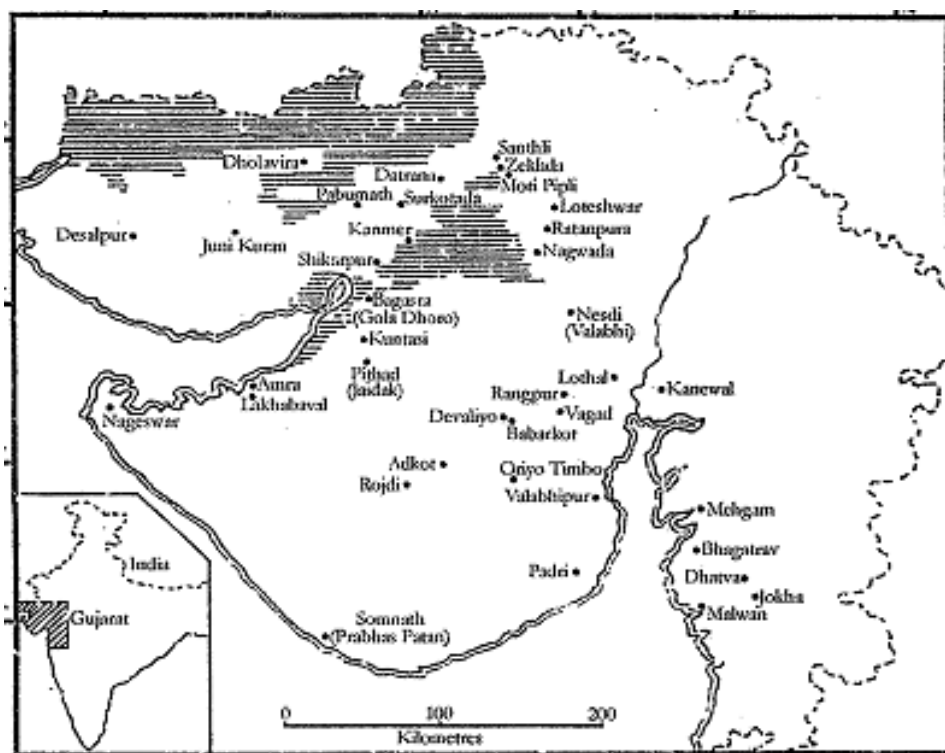
SITES OF HARAPPAN PERIOD

Gujarat has been extensively explored and excavated among other states of India. More than hundred sites are excavated by different institutions. Some of these sites were excavated thoroughly while others are excavated in a small scale to understand the cultural sequence of the site. These reports are published in the form of books, stray papers or in journals and reports. This chapter is devoted to give some information of the sites excavated in Gujarat right from excavation at Prabhas Patan during the field season of 1955-56. The brief outline of the cultural periods of the habitation deposits accumulated at each site along with important antiquities in general and terracotta objects in particular is given to know the nature of the site as a background to interpret and understand the nature of terracotta objects found at a particular site. This brief introduction will help us to know the role of the terracotta objects at a given site. From this background one can infer antiquities in a particular cultural period and in a particular geographical region within the Gujarat State.

The Harappan period witnessed a new epoch in the making of minor art and craft especially in baked clay. It saw the rise of new significant change and advancement in the material traditions. It was more organized with rise of urbanization and vast commercial activities. With development of technology there was surplus production and craft specialization. The sites revealed uniform pattern of layout and big town and cities were all interconnected local villages for receiving the necessary essentials from their neighbours. They had planned burnt bricks, a typical pottery style, stamp seals, standard system of weight and measures and the undeciphered script. The control and planning of the daily needs of the people must have been carried out with some organized communities and authorities. Besides using bronze as they are known after they invented and used the technique, objects of stone, shell, gold, silver, steatite were also used for trading. They had commercial relations with distant lands and this helped them to enlarge their vision for artistic objects. The art of clay was produced due to the observations of their surroundings. Thus some objects which were more in vogue in their daily life were the one

which they use to make the most. Without distinguishing the Harappan period a totality of the terracotta objects have been taken in deliberation to understand the objects and their use better.

This chapter deals with the variety of terracotta objects reported from various Harappan affiliated Chalcolithic sites of Gujarat. Large numbers of animal figurines are excavated from the sites. The different types of terracotta objects recovered from these sites are classified under the headings like animal figurines, human figurines, toys, ornaments, tools and instruments, religious objects, other objects and miscellaneous objects and described earlier as a general classification. These are further sub-divided into the following forms and varieties.



Map.2 Excavated Harappan Sites of Gujarat

Amra:

Amra (22° 16' N; 69° 56' E) is a small village nine kilometers west of Jamnagar and five kilometers away from Lakhabawal on the bank of a small stream. It was excavated by the Department of

Archaeology, Maharaja Sayajirao University of Baroda. It revealed three periods of occupation corresponding to those of Lakhbahal, which is Harappan, Early Historic and Late Medieval.

The Period I has yielded black and red ware in abundance along with red ware and buff ware. Here the antiquities like the shell bangles, terracotta objects beads appear. Period II is marked by Early Historic ceramics and structural activities appear. The coarse and fine black and red ware, red polished ware and painted pottery were found in this period. Period III represents the ival pottery type (Rao & Kumaran, 2015:15).

Teracotta objects included spindle whorl, two beads, two sling balls, an earthen ring, two wheels and four unidentified terracotta objects.

Bagasara:

Bagasra (N 23 3' 30": E 70 37'10") is located in the Maliya Taluka of Rajkot District, approximately 40 kilometers north of the town Morbi. The site locally known as Gola Dhoro is situated half a kilometer northeast of a sleepy village of The site on the mound is known by the name of small village about half a kilometer towards northeast; Bagsara. One such small but important craft and trading town of this civilization is being excavated since 1996 by a team of archaeologists from the Department of Archaeology and Ancient History of the Maharaja Sayajirao University of Baroda on the southeastern coast of Gulf of Kutch at Gola Dhoro in Gujarat (Sonawane et. al. 2003)

The site was first reported in the late 1980's joint exploration by the Deccan College, Pune, and the Gujarat State Archaeology Department. The Maharaja Sayajirao University of Baroda carried out a surface survey of the site in 1995. An excavation began in 1995-96 and was conducted each year since until the season of 2005, with the exceptions of the years 1999, when bad weather shortened the season and 2001, when the big Gujarat earthquake interrupted (Sonawane et. al. 2003)

The settlement measuring 1.92 hectares is about 7.50 m high from the surrounding area. Archeological excavations suggest that the settlement got its start perhaps from a small farming

village. Subsequently a massive fortification wall measuring 5.20 m in width was built in three successive stages on the northern half of the site, leaving surprisingly little space of approximately 50 x 50m, at any stage of its history, for the construction of residential houses and craft workshops. However, there are indications that people not only lived inside the fortification in mud brick houses but that some of its population also seems to have lived outside the fortified area in the lower southern half of the settlement that has not revealed any fortification (Sonawane et. al. 2003)

The excavations at the site for the past eight years have outlined the importance of such smaller settlements that are far removed from the core area situated near specific resource areas, in the economic development of the Harappan civilization. The prosperity of the settlement during this phase is not only reflected in the construction activities undertaken at the site, but also in flourishing craft and trading activities.

On the basis of structural features, material remains and quantitative distribution, the site can be divided into four phases of occupation. Phase I-III all belong to the urban Harappan period while phase IV constitutes a Post-Urban Harappan phase. Since the radiocarbon dating of some charcoal samples have so far not been completed, the date of the site must be seen as relative. The internal time periods of the phases have been broadly comprised by, for example,, linking the pottery types to similar pottery from Dholavira, Rojadi, Rangpur and other dated sites. The internal time divisions have been outlined as: Phase I: close to 2450 BCE; Phase II: ca. 2400-2100 BCE; Phase III: ca. 2100-1900 BCE and Phase IV: ca. 1900-1700 BCE (Sonawane et. al., 2003).

The unique geographical location of the settlement close to the Gulf of Kutch, North Gujarat and Saurashtra must have immensely contributed to the economic development of the settlement. Studies have revealed that the people of Galo Dhoru manufactured several craft items of shell, semiprecious stone, faience and copper, besides stockpiling and distribution of various raw materials like variegated jasper and shell to other Harappan workshops (Sonawane et. al., 2003).

Terracotta objects:

The site has yielded large number of terracotta objects like toy-cart frames and wheels with projected hubs, tops, pottery rings, beads, bangle fragments, terracotta triangular cakes, sling balls, spindle whorls and animal figurines are the important ones. Plate 1

Animal figurine:

The Harapan site of Bagasra has yielded a total of nineteen animal figurines. On the basis of their size they can broadly classified into small which is fifteen in number and one large. The smaller variety varies between mm in length and 20-19 mm in height. The large figurine on the other hand measures 150 mm in length and 85 mm in height. Some of the figurine are rudimentary and found broken n excavation.

Sixteen figurines have been yielded from this site. Out of which two are definitely bull figurine on the basis of a hump and curved horns where as two other specimen without head have the character of the bull such as the hump could also be said bull. Among these two figurines, on one the head is broken and body shows the prominent hump and tail, which is well fired and made using sandy clay. In the other figurine identified as a bull, a prominent hump and curved horn was present. The figurines are both painted with red slip and made using fine clay which appears to be well fired.

The single specimen of the larger variety figurine has its head missing and although its torso in most parts resembles a bull, it is difficult to rule out the possibility of it being some other animal. This bull has six holes, one on each foot, one on rear and one in neck region through which the head was connected with the torso. These indicate that probably it was used for wheel attachment and could have been used as a movable toy. The figurine has fish scale designed in black and red color painted all over body. The figurine has a prominent ridge on its back, which indicates that the makers most probably used moulding technique in its manufacture. It is beautifully made and highly stylized. Thus Bagasra artisans used both handmade and mould technique for making toys.

Heads of two animals without the torso could be most probably of that of bull with their broken caved horns attached on them. One of head shows two holes, one on the top and other in neck

region. This could be probably to attach a string or stick to make its head movable. Another head shows the applique work on the head, eyes made separately. So total of six bulls were discovered from this site out of total sixteen figurines.

Cart frames

A large number of cart frames are found from this site numbering more than 63. Most of the cart frames from this sites found in broken condition and only a very few of them have survived the ravages of time and thus it is difficult to enumerate the exact number of cart frames as most of them have survived in the form of little bits. Hence only complete cart frames and significantly large fragments have been taken into consideration in this study.

Cart frames are usually found in two type's viz. solid rectangular and perforated types which have perforation on each side of the frame. Most of the time each size shows the bigger hole and in center tiny hole to hold vertical struts. The middle part of both short side have perforation o attach a stick. Cart frames of the perforated type have been found in rudimentary condition, and it is difficult to reconstruct them in proper shape. Sometime the cart frames have a bit curvature. A closer inspection of these reveals that most of them have clay mixed with sand and very few were made using very fine clay.

The cart frames are mostly handmade. Most of them are of the same size; approximate width measuring 30-40 mm and by comparing with complete frames and other probably constituting about half of them original size, it can be postulated that length sizes approximately would have ranged between 35-85 mm.

A few fragments of cart frames show evidence of painting. They are painted in red color or applied with red slip and have marks of design over it like checkers, stripe in black and sometimes in red and brown, dotted design. Most of them are well fired but few specimens are ill fired.

Large number of terracotta figurines (animal) and wheels are found at the site, which together indicated to have probably been used as toys and sold in the market. An alternate explanation would be that they served as object of display. Nevertheless irrespective of their purpose, the cart frames from Bagasra show a high degree of skill.

Wheels

A total of forty one wheels were recovered from this site. The size of the wheel varies with diameter ranging from 2 to 10 cm. Most of the wheels are broken and some of them are found to be intact. The differently sized wheels constitute partly the type given a hub. It is notable that they are either placed on the flat or on the side with the hub. The wheels are usually handmade but there also exists a few specimens which show marks of striation on their surface which indicate that they were made on wheel as well. They are very well made and well fired although there are some pieces which show improper firing conditions. The hub is prominent, sometimes the mouth of perforation on the inner side of a wheel become a wide, because of it being used for long time. Evidence of painting is well executed. They are mostly painted in red color and sometimes these painting depict the stripes or spokes and dotted design over it in white and black.

The wheels were not separate toy entities by themselves. They were attached with figurines and cart frames. One animal figurine with perforation on each foot, probably for wheel attachments were also recovered from this site.

Tops

A total of fifty one tops were unearthed from Bagasra. Compared to other objects tops are good in quantity. Most of them belonged to the standard size with the diameter ranging from 2-3 cm.

Tops may be described as having a flat or slightly concave disk-like top and a thick, pointed knob at the bottom. Majority of tops so far discovered are of fine texture although a few coarse specimens are also present. Only one top shows the dual type top, having a pointed knob on both sides. These are either well fired or ill fired and have smooth surface to feel. The color ranges from red to dark gray.

Probably the purpose of toys is for playing in modern times where different types exist. Also there exists no resemblance with any ritual object. Sometimes it is also called as lid but it is difficult to define them as lid, because we rarely find miniature pots in Harappan site with a lid.

Sealing

A stamped impression of such seals on clay/terracotta sealing has also been found in the excavation. One of the steatite seals discovered this season has decorative linear patterns incised on three sides and a deep, scooped out rectangular socket-like cavity on the fourth side; originally it perhaps had a sliding lid (Figure 9) to cover the socket. This appears to be unique (Sonwane, et.al 1994)

Bangles

Bangles numbering twenty one have been found in the excavation in which all are fragmented. Among the objects related to ornamentation discovery from the site, bangles are special mentioned even though they are limited in number. They are fine, well-fired and mainly reddish brown in color.

Beads

Almost eighty nine beads recovered are fragmentary in nature and these tubular beads are handmade and light red in colour. The shape and sizes of these beads are similar to that of stone beads. It is difficult to infer them as simple replications of more priceless ornaments

Balls

Small balls or marbles numbering eight recovered from this site are sometimes labeled, as toys constitute another important category of terracotta objects. They vary in size and can be seen in fine and coarse variety. These balls are mostly seen in grey colour.

Cakes

Large numbers of terracotta cakes were unearthed from this site numbering to 137. The use of triangular cakes could not be yet understood, possibly used for ritualistic purposes. They are red in appearance and have rounded corners.

Miscellaneous objects found were numbered one hundred thirty seven which included spindle whorls, tops, pottery rings, discs, cakes, and inlay pieces.

Bhagatrav

Bhagatrav (21 29' N & 72 42' E) is situated 2 km South of Jetpur on the banks of river kim in Hansot taluka of Bharuch district. It was excavated by S R Rao with Period I as Harappans and Period II as Early Medieval. The artefacts include pottery like Painted Black on Red, Chocolate on Buff Ware, sherds of Reserve Slip Ware and Polychrome ware. The terracotta animals like bull without a hump, beads of faience, steatite disc beads, carnelian beads, and copper fragment has been reported from period I. The period II yielded the jar knobbed lid coarse grey ware. (Rao1970:83-108)

Desalpur

Desalpur or '*Gunthli*' (23 40" N & 69 10" E) is situated at at the northern banks of Bamu Chela a part of Dhrud River in Nakhtrana Taluka, of Kachcha district. It is about 25 km from Bhuj and measures about 130 meters by 100 metres and has three metres of deposits. It was excavated by K V Soundara Rajan in 1964. Period I A and B belong to Mature Harappan and datable to 2000 BCE to 1600 BCE. Period II belonged to Early Historic people with Rang Mahal pottery. Harappan pottery was found like Red Ware, Reserved Slip Ware, Painted Thin Grey Ware, Coarse Ware, Bi-Chro ware, Black & Red Ware and Micaceous Red Ware. Artefacts found were terracotta animal figurines, sealing, toys & cart frame, wheels and weights. Stone weights sling balls, blades querns, pestles and arrowheads, copper knives chisels rods, rings steatite seal and Faience beads. Terracotta seals, copper seals, steatite seals and two scripts engraved with seals have also been discovered from this part of the country. Other artifacts found include ceramic wares, beads composed of semi-precious stones, faience, copper arrowhead, chert blades and others (Joshi, 1972:98-144, IAR1963-4:10-2).

Very few terracotta objects have been unearthed from the excavation which includes cakes, animal figurines, gamesman, wheels, toy cart frames, beads and bangles and one script bearing seal and a sealing.

Dholavira

Dholavira (23° 53' 10N; 70° 13' E) is an archaeological site in Khadirbet in Bhachau Taluka of Kachcha district of Gujarat state in Western India, which has taken its name from a modern village 1 km south of it. The site of Dholavira, locally known as *Kotada timba* contains ruins of an ancient Harappan city. It is one of the largest and most prominent archaeological sites in India belonging to the Indus Valley Civilization. It is located on the *Khadir bet* island in the Kutch Desert Wildlife Sanctuary in Great Rann of Kutch. The site is surrounded by water in the monsoon season. The site was occupied from c.2650 BCE, declining slowly after about 2100 BCE. It was briefly abandoned and reoccupied until c.1450 BCE (Rao & Kumaran, 2015).

The site was discovered in 1967-68 by J. P. Joshi and is the fifth largest Harappan site in the Indian subcontinent, and has been under excavation almost continuously since 1990-1996 by the Archaeological Survey of India. Eight large urban centers have been discovered: Harappa, Mohenjo Daro, Ganeriwala, Rakhigarhi, Kalibangan, Rupar, Dholavira, and Lothal. The ancient site at Dholavira, is flanked by two storm water channels; the Mansar in the north, and the Manhar in the south. Excavation was initiated in 1989-90 to 2004-2005 by the Archaeological Survey of India under the direction of R. S. Bisht. It is one of the rich Harappan sites and the other one is Rakhigarhi. The excavation brought to light the sophisticated urban planning and architecture, and unearthed large numbers of antiquities such as seals, beads, animal bones, gold, silver, terracotta ornaments and vessels linked to Mesopotamia. The sophistication and forethought in the city planning of the Harappans is evident in these ruins. Artifacts like seals, ornaments, vessels and utensils made of gold, silver and terracotta; bones and a few items of Mesopotamian origin were found among these ruins. Based on these, archaeologists believe that Dholavira was an important local, as well as cross boundary trade center. The city is structured as a central fort with much fortification, a surrounding tier of settlements and a lower town. Many reservoirs can also be found here. The water management system was equally sophisticated as the city planning. Stone waterways and reservoirs, making use of the lay of the land, were used for storing and directing the scarce rainwater. A vast spherical structure, believed to be a burial chamber or memorial, is present in Dholavira. However, no bones or

remains can be found inside the structure. The layout that is briefly described above pertained to the fully-developed form of the Harappan city (Rao & Kumaran, 2015).

There are identified seven major cultural stages, serially numbered from Stage I to Stage VII which document the gradual rise, culmination and fall of the Urban System of the Harappan civilization vis-s-vis the settlement which spread over a time period of one and a half millenniums spanning the whole of the 3rd millennium and half of the following.

The first settlement of Stage I was a strong fortress now lying buried in the castle mound. A part of the southern arm of its fortification that was laid bare near the south-western corner measured 11.10 m at the base. It showed tapering sides to an extant height 4 m. The foundation of the planning that was laid in Stage I formed the nucleus on which the subsequent settlements of the later stages expanded gradually. Even the building materials, whether standardized bricks (9 x 8 x 36 cm, ratio 1: 2: 4) or stone, both undressed and dressed, remained in use, subsequently through Stage V (Bhist, 2015:33).

In Stage II, a 2.80 m thick brick masonry wall was added to the pre-existing defensive wall from the inner side and the face of it was plastered over with fine paste of white and pink clays at least as many as thirteen times. There is another significant development that took place. A residential area was coming up to the north of the walled settlement. Besides, pottery forms and antiquities diversified as well as increased in both quality and quantity.

Stage III, sub-divided into two phases, i.e. IIIA and IIIB, was a most creative and important one in many respects: the southern arm of the antecedent fort-wall was further widened from the inner side with an additional brick-masonry of about 4.5 m and the existing walled settlements was made into a castle and another walled subdivision, arbitrarily called as bailey, was added to it from the west. In the north, the extended residential area of Stage II was cleared of structures for carving out a multipurpose ground. Further north, the extensive walled town (which would become middle town subsequently) was founded. Reservoirs were created on the south, west and north of the built-up divisions on an ostentatious scale and design. And, finally, an outer fortification in order to surround all the components was constructed during this stage. For the

first time, square steatite three seals much smaller and lighter and furnished with figures but without inscriptions appeared in addition to a potsherd bearing Indus signs and also a cubical weight. Besides, a good number of classical Harappan pottery forms with painted motifs made their debut (Bhist, 2015:540).

When the town of Stage III had lived two-thirds of its life, it was immensely damaged by a catastrophe. Its tell-tale marks were vividly present in the defensive wall of the castle. Repairs were undertaken, the lower town was added and the city-walls were extended further eastwards in order to enclose the new additions. As a result, the erstwhile town attained full cityscape that dominated the cultural scenario for centuries through Stages IV and V.

Significantly, during the first three stages, i.e., I, II and III, the inhabitants exhibited an abiding preference for colourful clays, e.g., white and pink for plastering nearly all the structures whether defensive walls, roads, streets, ceremonial ground, or the walls and floors of private houses. Even roof tops of the houses might have been treated similarly. But, this tradition came to an abrupt end with the end of Stage III B and beginning of Stage IV, as if under a royal decree or by a resolute public consensus. At Stage IIIB, the cityscape had attained its fullest growth V (Bhist, 2015:33).

Stage IV belonged to that form of the classical Harappan culture which is so widely familiar with from a large number of excavated sites. Almost all the salient features of the city planning were scrupulously maintained along with the monumental structures such as gateways, fortification, and drainage system. The famous ten-signed inscription of unusually large size was surely in use during this stage. All the classical Harappan elements such as pottery, seals, weights, beads, items of gold, silver, copper, ivory, shell, faience, steatite, clay and stones are found in abundance (Bhist, 2015:33).

Stage V is characterized by the general decline particularly in the maintenance of the city. It is more vividly reflected in the citadel. The other items such as pottery, seals, weights, etc., continued in use, however. This stage was followed by a temporary desertion of the site, perhaps

not lasting more than a few decades before the Stage VI ushered in.

Stage VI presents a state of cultural transformation. New ceramic traditions coming from the sides of Sind, Rajasthan, Gujarat and far-off region in the north made appearance. The one-time city shrank into a smaller town, confined to the citadel and the southern margin of the middle town only although some of the existing fortification walls were kept in use, a new wall of different construction was raised on the north for delimiting the settlement. The classical planning was largely given a go-by. Domestic buildings were laid out in a different planning. Bricks were no longer in use. While many of the pottery forms and decorative motifs were still in vogue, new ceramics in the form of white painted black-and-red and white painted grey wares along with a coarse ware bearing incised or appliqué or both kinds of designs and also some Bara related pottery made their appearance. Many other traditional items continued in use though the seals underwent a change. Rather being square in form, those were long rectangular with a flat or triangular back with a hole for string. The seals still bore nicely cut inscriptions but no figures. Stone cubical weights were still in vogue in addition to similar ones cut out of potsherds. Overall picture that is projected is that impoverishment and rapidly crumbling urbanism. Having lived there for about a century, the late Harappans of Stage VI abandoned the settlement. In addition, many funerary constructions are present in the area, with several articles like mud seals, bangles and ring engravings along with them. Archaeologists believe that Dholavira was an important centre of trade between settlements in south Gujarat, Sindh and Punjab and Western Asia. (Bhist, 2015:76).

Painted Indus black-on-red-ware pottery, square stamp seals, seals without Indus script, a huge sign board measuring about 3 m (9.8 ft) in length, containing ten letters of Indus script etc has been found from here. Large black-slipped jars with pointed base were also found at this site. A giant bronze hammer, a big chisel, a bronze hand-held mirror, a gold wire, gold ear stud, gold globules with holes, copper Celts and bangles, shell bangles, phallus-like symbols of stone, square seals with Indus inscription and signs, a circular seal, carnelian humped animals, pottery with painted motifs, goblets, dish-on-stand, perforated jars, Terracotta tumblers in good shape, architectural members made of ballast stones, grinding stones, mortars, etc., were also found at this site. Stone weights of different measures were also found (Singh 2008:163)

Terracotta Objects:

Large bulk of terracotta objects have been yielded from this site. The large number of these objects gives an idea that the use could be seen both religious and utilitarian use. They were aesthetically made maybe used in ritualistic purposes or for children's toys. They were decorated with colour which was made to be attractive may be for attracting the buyers or simply used in the household. Large numbers of animals and bird compared to human figurine which are less in number have also been yielded from here. This folk art may have been circulated and in demand by different communities with different beliefs and may have been replicated from other medium such as stone and metal. There is a miscellany of other terracotta objects such as ladle, dices, sling balls pellets, hopscotches etc (Bhist, 2015:540). Plate 2

Figurine:

Large number of animal and bird figurine has been yielded from this site. Out of two hundred and eighteen figurines, very less number of human figurines has been found from here numbering only eighteen, where as animals numbered hundred eighty six and birds numbered eighty five all together. Sometimes the figurines had holes for an axle obviously to fit a wheel on either side for moving along and secondly those are painted to form a wheel which was fitted.

Human figurines:

Most of the figurine are found broken sometimes detached limbs, mutilated torso, a foot or a hand has been found from the northern drain, which according to the author may be these figures were used for some ritualistic purposes and were immersed in the water. Two of the figurines were surface found. The figurines were artistically hand made very proportionate body of the female figurines, where as other parts of the body were very badly executed and facial features were not prominent. Some of the figurines had the head missing. The parts of the body were sometimes luted with main body. The ornamentation of the body was done with appliqué technique to show the necklaces and pendants and even the anklets.

All these figurines are made of greyish white kaoline and not very well fired with red slip applied on them though they are weathered and washed. The surface find has been found from

the southern side of the fortification. These figurines were not found from the habitational layers or from the residential area (Bhist, 2015:540).

Animal figurines:

These figurines were found from all layers. Of one hundred eighty six animal figurines, fifty two were found from citadel and eighty two were found from middle town and fifteen were found from the lower town and thirty were from outside the fortification wall. Animal figurines like cattle, water buffalo, sheeps, dogs, elephants, and rhinoceros and monkey were found from here. Dogs were sometimes depicted having heavy collar and some of the animals are not to be seen now a days like the tiger and the elephant. These figurines were found from all layers. Most of the figurines were made of sandy soil but some of them were made of Kaoline. Most of the figurines did not exhibit any classical style except for two. There were fourteen figurines which were applied with chocolate red slip along with painting in white and black pigments. They were drawn in horizontal or vertical strokes (Bhist, 2015:535).

The animal figurines were made with elongated stumpy legs and a sheep and bull figurine have incision relating in their modelling which appeared realistic. Most of the figurines were fragmentary. Here the ram figurines were dominating followed by bull, dog and elephant (Bhist, 2015:548).

More than eighty bird figurine has been found from here. No figurine has been found from Stage I, II and VII but from Stage IV and V lots of bird figurines have been found. Large number of bird figurines was found from various places like the citadel, middle town and lower town while in stadium, eastern reservoir and annex part it is found very less in number (Bisht, 2015: 550).

Large number of duck figurines was found out of which twenty five headless duck figurines were yielded, which were very stylistic in nature. The figurines appeared to have bulging body and treated with red to dark chocolate slip having white painting on them. They have flat bottom with a perforation made just below their long neck to attach wheels and threads to pull them as toys. Wings had incision decoration mostly or using clay pellet as decoration.

Two broken peacock figurines and eight whistle birds and many broken unclassified birds were also found from here. Perforation was found in one of the figurine on the neck portion just like

the duck toys. They are hollow from within and mostly devoid of any kind of slip or painting. They seem to be broader at the middle and leaner at the end having perforations. There were also two pigeons perched on the pedestal (Bhist, 2015:540).

These figurines were made of sandy alluvial soil and well fired. About sixteen figurines were found to be painted with white pigment over red slip surface. Painted motifs were mostly horizontal, vertical bands and dots (Bhist, 2015:540).

Toy Carts:

More than two thousand pieces of and fragments of toy carts frame along with terracotta wheels have been yielded from this site. The main variety contains solid frame either concave or straight with perforated chasis and there were many types or the sub varieties also like the perforated chasis type were found in plenty. Solid chasis frames both concave, flat one contains holes vertically and horizontally (Bhist, 2015:540).

Wheels:

More than five hundred terracotta wheels were reported from the site, their most probable use was defiantly as an attachment to toy carts frames/chassis. The whole assemblage possess three variants- 1) wheels with pronounced and sharp hub, 2) wheels with convex surface at one side on the perforation point and lastly 3) the wheels with thin perforation and having both plane sided surface. Large number of wheels gives wide range of diameter from being very thin and small to large and thicker ones. Wheels were painted usually with white pigment and occasionally with red and black colour. Generally wheels are well baked having thick to thin fabric sometimes, even potsherds were employed for making wheels. There is one example of wheel on which graffiti mark was inscribed. Wheels on which painting were fairly preserved are total thirty in number and majority of them were from middle town (Bhist, 2015:545).

Ornaments:

Ornaments made out of various materials. Among ornaments pendants, bangles and beads, rings and spacer are found in considerable number. Pendants are eighteen in number having perforations or engraving at top for the thread. They are of various shapes like conical, or the

castle type. They seem to be used for both the purposes for ornament and gameman (Bhist, 2015:607).

Bangles are found in large numbering more than two thousand five hundred. Most of them were plain few had painted decorations like dots and line on them. Very few had incised decorations on them (Bhist, 2015:608).

Beads were also found in number having different shapes cylindrical, discoid, and tubular. Long tubular beads with red polish having tapering end or cylindrical ends were very majestic to look at.

Spacers

These are generally used to give space between two beads in a necklace having thin rectangular shape with perforation in between. They were found few in number

Other Miscellaneous Objects:

Sling Balls: More than five hundred sling balls have been yielded from here. Most of them were plain but few of them have mail incision decorations on them.

Hopscotches: More than four hundred hopscotches were reported from here. They were made out of potsherds and smoothened on the edges.

Rattles: These are the toys of the infants who enjoy the noise generated by the toys. Eight such toys were yielded from here, out of which four are found fully undamaged and rest are fragmentary. Among these two have white paintings on them and found to be hollow having small clay pellets inside them to create sound (Bhist, 2015:609).

Gamesman: More than five hundred gamesmen were found from here. They were basically found in three varieties: castles, pellets and cones. All are plain and few are painted in horizontal lines. Castles are found more in number compared to others and the pellets have two varieties that is circular and triangular one which have round edges and sometimes show finger impressions. Cones are like small conical objects. They are all handmade (Bhist, 2015:609).

Ladle: Only three ladles were found from this site. They were found from the middle town and were bright red in colour having deep bowl and a handle along with shoot marks on the mouth area. The second one was quite shallow with channel handle and the third piece was broken. Most probably used for some kind of ritualistic puposes (Bhist, 2015:609).

Other objects: Other objects like Celts, chisels, points, tiles button, crucible etc., were also found.

Celts recovered were only in two pieces having sharp working edge which were narrower and thicher at the top forming triangular shapes. Two chisels were found out of which one is round and is cylindrical in shape with flat working edge and the other was flat rectangular shape having sharp working edge. Crucibles or Moulds were found very less in number and most of them are fragmentary. One of them however was found intact has a boat shape having traces of copper along with shoot mark (Bhist, 2015:609).

Points here were found in three varieties; the first one was of cylindrical shape was narrower and pointed at one end, the second variety was the rectangular shape was narrower and pointed at one end, and the third variety is a thinner version of the cylinder type (Bhist, 2015:609).

Tiles are found in less number, one having engraved decorations. One half broken buttons was found with two minute perforation. Decorative inlay pieces were found very less in number. They were all ond shape with few exceptions. Only three terracotta cubical discs were obtained from this site. One smoking pipe was found which has shoot mark at the mouth part (Bhist, 2015:610).

Jokha

The excavation at Jokha was conducted by the Department of Archaeology and Ancient History of the M.S. University of Baroda, during 1966-67, under the direction of Professor R.N. Mehta. Jokha is situated at a distance of about six kilometers to the South of Tapi I Kamrej Taluka of Suat District. The actual site known as Savamora or Gabhan is the north of village at a distance of about 200 meters, having a height of about 1.5 meters from surrounding area. A canal known

as Kataegam, a tributary of the Tapi flows past Savamora on its northern side (Rao & Kumaran, 2015).

On the Savamora mound, six trenches were laid on the central and northern side. The trenches revealed for to six almost horizontal layers. Among the few pits, deepest pit was found in Trench III, probably used by medieval period. The upper three or four layers were greyish brown or grey. The lower layers were of blackish yellow kankary earth that turned into yellow earth. Especially black clay did not yield any antiquities and hence to be natural. The pottery types like painted red ware, buff ware, red and black ware, painted red ware with black bands on white back ground. The pottery is characterized by slipped ware that had paintings in black. The pottery showed affinity to the Malva ware as well as some forms had strong affinity to late Harappan ware. His mixture of pottery indicates a phase of Chalcolithic culture belonging to the middle of 2nd millennium B.C.

The discovery of polished stone tools here some traits similar to Tekkalakotta (Nagrajarao, 1965:55). These cultures range from 2nd millennium at Kokha and have strong affinity to the Langhnaj culture dated to a period later than 2500 B.C. The Chalcolithic pottery is characterized by medium fabric and fine core. The colour of this ware usually ranges from dark brown to chocolate. The paintings on his pottery are usually geometric. Typologically, these potteries consist of dish-on-stand, pots, deep bowls etc. with varieties of neck forms. During Chalcolithic period, Jokha revealed plain red and buff ware, plain and painted red ware together with crude decorate wares. Gaban or Savmora mound of Jokha revealed the antiquities made of stone, metals, bones and terracottas.

From the Jokha, terracotta objects like stoppers, discs, bulls head, parts of toys, bar lamps etc. are obtained. The copper objects recovered from Jokha are nails, rings, sheet, celt and bangle piece. Thus, the excavation at Jokha revealed that the earliest period (Period I) belongs to Chalcolithic culture.

Terracotta objects:

Small head portion of a bull with partly open lips was found from Jokha. It is of red colour. Parts of its horn and upper lips are broken. A small portion of the elephant's head and trunk like

projection shows that it could be the head of an elephant. Nine stoppers were obtained from the excavation. Out of them five are broken. The complete specimens have truncated thin end and flat thick end. Another has a perforation below the top and another one is tapering from the middle. Two discs made from potsherds are flat with a perforation in the middle. Fragment of a leg was also found.

Juni Kuran

Juni Kuran (23° 57'N:69° 47'E) is situated in the district Kutch of Gujarat. The excavation was conducted by Pramanik for two seasons in 2003-2004 & 2004-2005 of the Archaeology Survey of India of Baroda Circle. It is situated in the strategic route of trade and migration. It has revealed the cultural remains of two cultural phases that is Mature Harappan and the Late Harappan. The excavation has brought to light three-fold division of town planning i.e. Citadel, Middle Town and Lower Town each being fortified. Important structural findings include mud platform of 03 m height, two stadiums (one for commoners and the other for aristocrats), pillared hall and chamber on fortification wall and gateways. Besides, a good number of antiquities were discovered including a seal with unicorn and 8 letters. The pottery includes coarse red ware, red ware, red slipped ware, black ware, and black slipped ware, black on red ware, reserve slip ware, perforated sherds and painted red ware. Semiprecious ornaments, stone and bone object, shell ornaments (Rao & Kumaran, 2105).

Terracotta objects like anthropomorphic forms, bangles, sling ball, toy cartframes, cakes, animal figurines, votive tank, feeding bowl etc.

Kanewal

Kanewal (22° 28' N., 72° 25' E.) is a natural lake situated in Bhalbaru of Cambay Taluka of Kheda District. It is about 20kms. to the northeast of the Gulf of Cambay. The Harappan settlements were located on the north western and western part of the Kanewal lake at a distance of about 23 kilometers to the north-west of Cambay.

The excavations at Kanewal were conducted by the Department of Archaeology and Ancient History of the M.S. University of Baroda, during 1977 under the directions of Professor R.N. Mehta. The excavations were conducted in two different localities namely Kesarisingh's Khetar and Sai

It is a Chalcolithic mound, situated on the north-western part of the lake. It covers an area of 350 meters x 200 meters and rises to the height of 4 meters, from surroundings plain. On this mound five trenches were laid down on the different heights. In Trench I, Chalcolithic pot sherds were found up to the depth of 15 cm. The other three trenches viz. No. II, III, IV were put on the periphery of mound. Trench V measured 6 x 6 meters and were dug up to 1.10 meters. Five layers with two habitation levels were exposed. There was no difference in pottery from top to bottom. It provides to be a single culture site and was divided into two sub-phases viz. I-A and I-B. Trench V shows the structures in two different levels. The structure in phase IA was circular foundation of a hut with a diameter of 3.50 meters. The floor was 15 cms thick, very well-rammed by spreading Kankar and yellow silt mixed with black clay. The evidences of wattle and daub were also recovered. The other structure in I-B was also a hut which was similar to the structure found in I-A. The most interesting thing recovered was a heap of twenty-one complete terracotta sling balls of various sizes and shapes. The excavation has revealed evidences of a single culture (Mehta, et. al., 1980; Momin 1982).

The ceramic assemblages unearthed from different trenches have some affinity with Rangpur Period II-A, II-B and Lothal Period B phase V.

Other objects like carnelian, faience, chank and terracottas have discovered during excavation. The beads show that the people had developed aesthetic sense and had attained a high standard in the art of lapidary. A number of fragments of saddle querns and pestles of stone were recovered during excavation comprise other household objects. Another very interesting feature of this excavation was discovery of sherds with inscribed Harappan letters. Terracotta objects like triangular cakes, spherical balls circular cakes, mashtikas are found which are also indicative of Harappan affinities. The evidences of antiquities and ceramics indicate the presence of the Harappan culture. The chronology of all the wares from different sites like Lothal, Rangpur, Somnath, Navdatoli, Ahar, and Prakash indicates a common period of 2nd millennium

B.C. If this date could be relied upon one surmise that the Harappan settlements at Kanewal and in the Kheda district of Gujarat were in existence by about 2nd millennium B.C.E (Mehta, et. al., 1980; Momin 1982).

Terracotta objects found were twenty seven sling balls of various sizes, five spindle whorls, two pellets, six lumps and one each bull figurine, wheel, bead, cakes.

Kanmer

Kanmer (23°23'N; 70°52'E) the ancient site of Kanmer, locally known as Bakar Kot, is located close to the modern village of Kanmer in Rapar taluka in the Kachch district of Gujarat, Western India. It was discovered by R.S. Bisht and his colleagues of Archaeological Survey of India way back in the eighties of the last century (IAR 1985–86: 15–19). The site was excavated by Kharakwal et.al of the Institute of Rajasthan Studies, JRN Rajasthan Vidhyapeeth, State Archaeology and Indusproject, Research institute for Humanity and Nature, Kyoto, Japan. The excavation has revealed five cultural sequence starting from early Harappan, Period I has revealed Pre harappan phase having coarse red ware, red slipped ware red ware with buff slip, bichrome ware, cream slipped ware, chocolate slipped ware and perforated ware. The potsherds have fishscale designs, a series of bands triangles chessboards and diamond pattern. It has revealed successive floor levels and few are plastered (Kharakwal et.al. 2012).

Period II Mature Harappan is divided into phase A and B representing classical Harappan pottery and Anarta tradition pottery Late Harappan. With the continuation of the phase I wares except the cream slipped and bichrome, the II A has revealed classical Harappan ceramics. The new ceramics revealed in this II B phase are white painted black and red gritty red ware, kaolin type ware, burnished black ware, coarse red ware noticed. The fortification wall was raised in buttress fashion and the core was filled with mud brick and stone slabs at regular intervals. Hearths streets, spacious rooms plastered floors were found in this phase. The furnace was found very near to inside of the fort wall. On examination it was found faience bead manufacturing area. Period III revealed degenerated urban period with a continuation of ceramics and artefacts, there is a general decline in the shapes, texture, painting and firing. The site was

reoccupied by the Iron Age people. The artefacts found are terracotta seals and sealings, animal figurines, toy cartframes, wheels, discs, dice, sling, balls, beads, bangles, cakes, crucible with copper slags, shell ornaments, cowries bone needles and spatula, many iron objects, stone beads and objects, glass objects like beads, bangles and vessels(Rao& Kumaran,2015: 52-55)

Terracotta Objects:

Large numbers of different terracotta objects have been yielded from this site. Terracotta objects numbered 1,747 occupying 7.4% of the total number of the registered objects. The total objects defined are seals and sealings, animal figurines, toy cartframes, wheels, discs, dice, sling, balls, beads, bangles, cakes, crucible (Kharakwal et.al.,2012). **Plate 3**

Seals

Terracotta objects with seal impressions differ from the fired clay lumps with seal impression, which were probably used as sealing. Twelve specimens of seal impression clay lump were recovered from the excavations, among which three specimens were impressed with Indus seals and 12 specimens with Historic and Medieval seals. Seven specimens of them were found in stratigraphic contexts as shown below. Complete though the surface is partially flaked off. The measurement was length 3.32 cm, width 3.54 cm, thickness 1.66 cm, weight 15.7 g. Circular on plan having one hole in the centre. A unicorn facing right and confronting a sacred alter and two Indus scripts are impressed on the obverse side. Two Indus scripts are engraved on the reverse side before or after firing (Kharakwal et.al.,2012: 546).

Animal Figurines:

Twenty-one specimens of terracotta animal figurines were yielded from the excavations. Among them, all specimens were found from stratigraphic contexts. Some were complete and some were fragmentary. There only heads of animals were found and the body part missing. The animals which were identified were fourteen bulls, a buffalo, and a dog. They were mould made. The measurement of the bull seems to be Length: 7.8 cm, height: 6.3 cm, width 4.3 cm. Some had prominent hump, and some had less hump and some had only the horns left. Two lion heads have also yielded from the site. They seem to be of them were of historical period which had brahmi script inscribed on them. According to the authors the lion heads seem to be of historical

period which looked similar to that of the ones found from Mathura of Kushana type. All were hand made (Kharakwal et.al. 2012:546).

Cart Frame:

Thirteen pieces of cart frame and five specimen of wheel have been unearthed from this site. Two types of cart-frames are found; hollow frame chassis and flat solid chassis. The former type is characterized by projecting side bars ends and two openings in the centre. A series of holes is perforated along each side of the cart. The latter type has a solid rectangular body with holes along each side and in the centre. Some are just small fragments but very important as they are part of a hollow frame chassis having a projection of a side bar with a hole at the juncture between the side bar and the horizontal bar. White and red slip was applied on them, and some of them have black bandson both side. The second type have flat chasis and rectangular in shape having holes along each side and in the centre. They are applied with red slip, white slip. One of them has depression like perforation with two small incised dots excercuted on a shallow depressionon the surface (Kharakwal et.al., 2012: 546).

Wheels:

Five wheels which are found have a measurement of 7.0 to 2.0 in diameter and the holes have more the 2.0cm in diametre. They have prominent hub and their edges are rubbed off and one or two are of hick body with a prominent hub (Kharakwal et.al.,2012:546).

Dice:

Terracotta dices from Kanmer are cuboid in shape, each face of which has incised dots which count one to four. Fourteen specimens were unearthed. The same type of dice of stone and bone were found in the excavations. Ten specimens were found in stratigraphic contexts as shown below. They are confined to Period III through Break to Period IV. Three of them were incised with dots before firing. Maybe some pipe like tools were used to incise and other were incised with sharp pointed tools (Kharakwal et.al.,2012 : 546).

Sling Balls:

Sling Balls were found numbered ninety seven. They were all found from all periods and period IV yielded in large number, out of which only three were decorated with incised dots and lines. They were all hand made.

Bangles:

The fragmentary terracotta bangles found were three hundred in number. They were found in large number in Period II A and II B. They were measuring around 11 to 12 cm to less than 6 cm in diameter. They were all plane except one which had incised design and a rectangular section.

Beads:

Eighty one bead specimens were recovered from this site. Terracotta beads are defined as objects having a perforation. The shapes included short barrel, long barrel, short bicone, arecanut. The section of the arecanut is round and the ratio of the length is less than one diameter. The barrel beads which were short were less than one cm (Kharakwal et.al.,2012 : 546).

Pendant:

Terracotta pendant is defined as having a rodlike shape or oval shape with perforation. The latter shape has carination. Six specimens were found in the excavations. Three specimens were unearthed. In terms of formal features, there are two types; one type has a rod shape with a hole near one end, and another type has an oval shape with carination (Kharakwal et.al.,2012:546).

Cakes:

Terracotta cake includes triangular, rectangular or oblong on plan and flat rectangular or lenticular in section. The number of 226 in the register is represented by complete or almost complete specimens; fragments are not included in this number (Kharakwal et.al.,2012:546).

Crucibles:

Terracotta crucible is defined as a vessel with copper slag on the surface. Two specimens (nos. 174 and 175) were unearthed from the excavations, both from Break. They have 2 - 3 cm in thickness.

Discs:

In total, five hundred forty six specimens of terracotta disc were unearthed from the excavations. They have been classified into three types; one by knapping the entire edge, second by grinding the entire edge, and third were made of fired clay. Although their diameter ranges from 1 - 9 cm, there is a concentration between 1 cm and 5 cm. Perforated disc with a hole in the centre counts 133 in number. Similar stone objects were also found. They were of two types one which is made of potsherd and other one is made out of clay. There are those which are perforated from one side and those which are from both sides (Kharakwal et.al. 2012:546).

Pyramidal objects:

Small terracotta pyramid shaped objects with rounded apexes numbering fifty one were found in the excavation. They must have used as gamesman (Kharakwal et.al.,2012:546).

Khirsara

Khirsara (23 27' N: 69 03' E) lies about 85 km Northwest of Bhuj on the Bhuj-Narayan Sarover State Highway. Excavation was initiated in 1989 by the Archaeological Survey of India under the direction of ASI's Superintendent Archaeologist, Vadodara, and Dr Jitendra Nath. The site is locally known as 'Gadhwali Wadi' and is located on the south-eastern outskirts of the present village overlooking river Khari. It has emerged as one of the most prominent mature Harappan settlements in Western Kutch. The prime reason for Harappans to settle at Khirsara was perhaps the availability and easy accessibility to raw materials and minerals in the vicinity. Khirsara produced a variety of objects for export such as various types of beads of semiprecious stones, steatite and gold, shell bangles, inlays etc. Discovery of a large number of drill bits and shells debitage indicates that these items were meant for export. During excavation, discovery of a

unique warehouse, a factory site, a citadel, seals, antiquities were unearthed. Khirsara is fortified and measures roughly about 310 x 230 metres. The super structure of warehouse seems to have been made of perishable items like wood or wattle and daub (Nath,2012 : 58).

The citadel, a fortress overlooking a city or perhaps protecting a town, shows fortification and re-fortification which scholars reason that elite clan might have lived there. The factory site discovered during excavation had several products showing that it was utilised for manufacturing activity. The discovery of a hoard of gold beads, semi-precious and steatite beads, copper implements, seals, weights, shell objects and debitage indicate that this area (factory site) was once utilised for manufacturing activity. Among prominent antiquities we have found 25-26 pieces of disk type gold beads from the factory site there. The gold beads are of disk type, globular and tubular. A variety of seals which include square, rectangular and bar types made of steatite, soap stone and sand stone have been discovered at Khirsara. The bar type seals bear Harappan character only whereas the two rectangular seals represent figurines of unicorn and bison on the obverse. The analysis of botanical remains done by the Birbal Sahni Institute of Palaeobotany, Lucknow reveals that the carbon dates for samples collected from the site fall in the range of 2600-2200 BC approximately, which is roughly 4,600 years old (Nath,2012 : 58).

Khirsara's close proximity with river Khari might certainly have supported the maritime trading activities of its inhabitants. Archaeologists believe that Khirsara was probably important as it was located on the trade route from Sindh to other parts of Gujarat and advance trade used to be from this part of Gujarat around 4,600 years ago. (Nath et.al, 2012).

Terracotta Objects:

Large number of terracotta objects have been found from Khirsara which reflects the traditional craft of the society used for many multipurpose utility. **Plate 4**

Animal figurines:

A large number of bulls with or without humps have been obtained from this site. They are rudimentary and sometimes headless. The hump and the tail could be seen in some of them and some of them had head with horn. The eyes were sometimes drawn as pinched decorations. The

bulls have been applied with chocolate, red and buff slip. These figurines were sometime had painting of black lines (Nath & Randive, 2013 : 258).

Another animal found was of a dog made out of white clay. The head is rudimentary and the nail mark decoration was seen on the body. Three figurines of birds were found from this site which is rarely found in all the sites. They are all in broken state. One of them have a long neck, most probably it could be a peacock. One of them has traces of red slip and bold black line painting over the neck and head. Another one is headless wheeled bird which resembles a duck. Besides these a wheeled bull figurine has also been found from here which is similar to the one found at Lothal (Nath & Randive, 2013: 278)

Cart frames & Wheels:

Few toy carts were found of which all of them are found in fragmentary state. Traces of slip could be seen on them. The wheels were also found in large number. They were of three types: Wheels with hub, wheels without hub and wheels made out of potsherd. They are all fine textured and well fired and sometimes painted. A hubbed wheel had geometric painting on the inner side while others had an incised mark with English alphabet H. Most probably it was a potter's mark. Some of them are quite big; the diameter is about 9mm. Some of them are bi-convex. Some of them are made out of potsherds where the edges are smoothened (Nath & Randive, 2013: 288).

Ornaments:

Both bangles and beads were recovered from here. The bangle fragments were of hand made, ill fired and of different texture and colour. The buff and red coloured bangle pieces were applied with red buff and chocolate slip and sometimes painted with bold black strokes. Some of them were decorated with nail mark. Their thickness of the bangles varied from 6mm to 16 mm and their diameter varied from 40 mm to 90mm. They must have adorned the hands of different ages (Nath & Randive, 2013: 288).

A large number of beads with variety of shapes have been yielded from here. The shapes are circular globular, short barrel, short bicone, tubular, bi convex, disc, and cylindrical, concave and short bi concave. They were made in wheel or handmade. They being used for neck and ear

ornaments and the larger variety could have been used for the neck piece for their cattle also (Nath & Randive, 2013: 288).

Ear Studs:

Ear Studs of variety of shapes were recovered from this site. The drum shaped with a narrow in the middle is also known as pulley shaped ear studs which are still worn by certain communities of Gujarat. It is found in other Harappan sites like Vadad and Kuntasi etc. The other variety has a bigger flat end at one side and tapers to a smaller flat at the rear and middle portion is narrower. They are all well baked and hand made.

Pendants and Amulets:

One piece of broken pendant which is oval in shape, broken from the lower end and a perforation in the upper end was found from here. One amulet found from here is cylindrical in shape has a groove in the neck portion for tying the thread.

Miscellaneous Objects:

Some of the terracotta objects are found in very less or just one. Weights: The weights are cubical in shape and some of them are truncated or circular with flat base. A circular terracotta object with flat ends has been found along with hoard of stone weights have been found which weighs around 5.2 gm

Seals: A seal resembling that of a stopper has been recovered from here. It has a flat circular stump attached to a stem to hold the device at one end.

Spindle whorls: This object has been found in large number. They are of various sizes. One interesting feature is that it is pyramidal or hubbed wheel shape with a perforation in the center to insert stick for spinning yarn.

Discs with two perforations: A flat disc with two perforations, one being in the centre and the other little away from it. The diameter of the disc is 39mm in measurement.

Gamesmen: Few gamesmen resembling the shape of pawn in the chess board have been found.

Sling balls: Different sizes of sling balls have been obtained from excavation. They could have

been used as a marbel or used in catapult to aim at the birds or just for playing purposes. The excavation also yeilded tablets, crucibles of different sizes and shapes, and large number triangular cakes which are found from the industrial centre for keeing the area hoot for smelting or for other reasons (Nath & Randive, 2013: 293).

Kuntasi

Kuntasi (22 45'N & 70 36'E) also known as Bibi-no-Timbo', located about 30 kms away from Morbi, Maliya Taluka in Rajkot District, Gujarat. The site exists at a distance of nearly 3 kms away from Kuntasi village, on the right bank of Phulki River, based about 5 kms inwards from the current shoreline. The excavations revealed threefold sequence of cultures that's Mature Harappan, Late Harappan and the Late Medeival along with their structural phases of occupation. Period I is attributed to the Mature Harappan age which dates back to 2200 to 1900 BCE and the Period II which comprises the Late Harappan phase dating to 1900 till 1700 BCE. The region was declared as a manufacturing centre and also a jetty. Two hectares of unwallled suburbs and walled town are a portion of the Kuntasi town. The western part of the wall contains a stone platform and had been an intricately planned settlement which was employed for shifting of goods, storage and also production. The ceramics like red ware, painted red ware, bichrome ware, buff ware, and perforated ware, black on red ware, resrved slip ware and coarse red ware and grey ware were found. The antiquities revealed were terracotta toy cart frames, wheels, hopstoches, spindle whorls, animal figurines, lamp, bangles pieces, dice, and loom weight, ladle, and crucible, slingballs with ornaments of semi precious stones, copper objects and many more (Dhavlikar et.al. 1996).

In the later period we find steady declines of the settlement. The ceramic types continued from the early period along with white painted black and red ware was noticed. The antiquities found are terracotta toys cart frames, wheels, spindle whorls, pendants,female figurines, spacer, sling ballas and ear ornaments, beads of semi precious stones, gold, shell, terracotta, dettalium shell and beryrl, pendants of shell and agate,copper objects bone ear ring, lead piece etc (Dhavlikar et.al. 1996).

In the late mature phase, Kuntasi was developed into an industrial area and a port. The site was reoccupied after a gap of 2500 years. The structures of this period were noticed in the form of few huts along with coarse grey ware and tiles. This site has been best described as an industrial area or an emporium (Dhavlikar et.al 1996, Rao & Kumaran 2013).

Terracotta objects:

Very few objects have been recovered from this site. According to the author it being an industrial site very few toys were found.

Animal figurines:

Two bulls were yielded from this site. One has a pointed hump, pinched mouth and a pointed tail at its end and very well fired, whereas the other bull is fragmentary with a broken horn and head. It is crudely made.

Human figurine:

Only one female figurine has been yielded from this site. It was made with piched technique, having pinched nose, horizontal arms and stumpy legs.

Cart frames:

Two frames were found from this site. One is flat chassis has rectangular shape with eight holes, four the four corner and the two holes were on the middle of the either side. Most of them have vertical holes along the margin of a longer axis were for fixing poles and two rows across in the middle were for fixing the axle with lashing. They were made of well levigated clay and red slip is applied on it. The second one is a curved kind with a projection at the centre. The three holes were at the three ends. Th hole on the projected part was quite big. It consisted of two such pieces joined together with cross bars in the three holes in the upper margin whereas the the larger hole in the lower margin was meant for the wheel and the axle (Dhavlikar et.al. 1996).

Wheels:

Four wheels were found from here, out of which one was spoked wheel. One of them was perfectly circular with a flat rim; the hole was clearly made before firing. It is well fired. Another

one is a very small. Other two were small with a small hole at the centre and well made. The spoked wheel had a diameter of 11.8 cm. It has a projecting hubbut what is interesting is that it was painted with lines clearly resembling spokes (Dhavlikar et.al. 1996).

Spindle Whorl:

The number of spindle whorl found from here are seven in number. They are all made out of potsherds with aperforation at the centre. They are made out of thick and thin sherds and the edges are smoothened and sometime they are biconvex too.

Sling Balls:

A few sling balls have been found from this site numbering four. They are all either medium or small sizes. Among them one is very tiny looks almost like a pellet.

Pully shaped beads:

Nine beads were recovered from this siteThey usually one end rounded and bulbous whereas the other is truncated and flat there is a tansverse perforation running through. In local language it is known as Pokhani which is still worn by the bharwad women.

Other Miscellaneous finds:

One pieces each of hopscotch made out of pot sherd with fine fabric; one lamp which was fragmentary and roughly circular in shape; one small broken bangle piece which was rectangular in section with an intented section; one dice which is long rectangular in shape with square cross section and is marked with blind holes; one loom weight; one oval spacer thick in section with two holes used for making ropes; one ladle with oval mouth made of fine fabric; one crucible which is fragmentary (Dhavlikar et.al. 1996).

Lakhabawal

The excavation at Lakhabawal was conducted by the Department of Archaeology and Ancient History of the M.S. University of Baroda during 1956, under the direction of Professor B. Subbarao (Bhan, 1983: 151-153).

The Lakabawal ($22^{\circ} .24$ N. - $70^{\circ} .00$ E) is about 22 Km. southeast of Jamnagar, the district headquarters. The archaeological site is situated on the northern bank of river Nagmati and measures 150 x100 meters. P.P. Pandya, who discovered this site in 1949 recovered plain and painted red ware, plain and painted buff ware, historical black on red ware, red polisher ware and few crested ridge cores (Rao & Kumaran, 2015).

The excavation of the site have revealed three periods:

Period I: The earliest period was characterized by pottery with thick fabric like that of Period II-B of Rangpur sequence with admixture of buff slipped greenish sherds, the prominent forms such as bowls and dish on stand were found.

Period II: This period was represented by red polished ware and considerable quantities of coarse black and red painted pottery. The distinctive shapes in the painted pottery were a large vessel with flared rim and painted designs of net pattern. An ornament of gold with exquisite filigree work, either on ear-ring or a head ornaments was among the interesting antiquities of the period (Bhan, 1983: 151-153).

Period III: This period was represented by very late occupation on the mound with crude rubble structure and Late Medieval coins. A few cores with typical crested ridge and marks of previous preparation were also found during the surface of the mound (Bhan, 1983: 151-153).

Very few terracotta objects have been found from here. There were two beads one of them is fragmented, two balls, two spindle whorl and an unidentified terracotta object.

Loteshtar

Loteshtar ($23^{\circ} .36'$ N. , $71^{\circ} .50'$ E.) is situated in the Sami Taluka of Mehsana District in North Gujarat. The site, locally called 'Khatri No Timbo' is located about half kilometer east of

Loteswar village on a high sand dune close to the left bank of the Khatri Nadi, a small tributary of the Rupen. The entire mound covers an area of about 135 x 135 meters. The excavation at Loteswar was carried out by the Department of Archaeology and Ancient History of the M.S. University of Baroda, during the field season of 1990-91, under the direction of Sonawane.

Excavation are carried out at four carefully selected places at the site, after assessing the surface indicators like the spread of pottery, lithic artefacts and macro-faunal remains, with the following objectives: To know the cultural sequence; to understand the significance and to ascertain the chronology of the regional ceramic tradition characterized by the gritty red ware; and to understand the nature and significant of intra-site patterning of micro lithic artefacts and faunal remains in terms of occupational history of the site (Sonawane and Ajith Prasad, 1994).

The excavation revealed a maximum habitation deposit of 1.65 meters belonging to two separate cultural periods. Of these, Period – I belonged to the Mesolithic culture and Period – II belonged to a chalcolithic culture affiliated to the Harappan culture. Period – I is represented by 60 cm. to 1.00 m. thick deposit lying directly on a stabilized sand-dune. This deposit has yielded a large number of micro lithic tools and other lithic artefacts like flat sand stone ‘palettes’, grinding stone and hammer-stones. The micro lithic industry includes both geometric and non-geometric types. The tools were made of chert, chalcedony, jasper, agate and quartz. Among other important material remains belonging to this period are two small shoulder bone paints and few prismatic or faceted red and yellow ochre crayons. The excavation has also brought light two human burials belonging to this period. One of these was in a sort of extended articulate position, hands below the head and the lower extremity of the legs drawn upwards. The second burial was found at the western slope of the mound and was in a sort of crouching position. Period – II is represented by a maximum of 80 cm. deposit at the top of the mound in Trench I. This deposit, however, is composed of a large dump of rubbish materials. In all other trenches, the regular habitation deposit is hardly 20-25 cm. No. structural remains of this period has been unearthed in the excavation. However, a conspicuous feature at the site is the occurrence of a large number of pits which were dug during this period. These pits cut through the Mesolithic deposit down into the natural soil. Their size vary as much as from 2 meters in diameter and 2 meters in depth to 0.5 meter in diameter and 0.5 meter in depth. They are invariably filled with ashy soil, pot

sherds, animal bones and other waste materials. The significance of these pits has not yet been fully understood (Sonawane and Ajith Prasad, 1994).

Pottery types belonging to the Period – II include gritty red ware, red ware, black and red ware, burnished ware, coarse red ware and coarse Grey ware. No classical Harappan pottery type is met within any of the trenches. The collection however, is predominated by the gritty red ware and red ware. There two types are analogs in shape and decoration, with similar types of pottery from Nagwada and the coarse red ware and polychrome pottery of Surkotada. The gritty red ware is characterized by predominantly handmade or partially wheel made vessels having a gritty core and indifferent firing. The red ware was by and large well fired and was made of fine clay. Prominent shapes in both the types are bowls, basins and a medium size pots/jars. Most of the bowls and pots were decorated with different shades of black or red colour in a cream or white background, thereby producing a bichrome effect. Sherds of other pottery type like black and red ware and burnished black ware very few in number. Sherd of coarse red ware and coarse grey ware pots were decorated with incised designs. A few sherds of red ware decorated by ‘reserved slip’ technique are also met with. Among other artefacts belonging to this period are a few terracotta pinched type lumps and mushtika type lumps, a large number of steatite micro beads and very few beds of agate, carnelian and amazonite (Sonawane and Ajith Prasad, 1994).

The excavation has also yielded a large quantity of faunal remains of exploited fauna from both the periods. This included skeletal remains of not only land animals but also the aquatic faunal like fish and turtle.

The radiocarbon dates obtained from Period – II deposits suggests that the regional chalcolithic pottery like gritty red ware had a very early origin in the fourth millennium B.C. in North Gujarat. The calibrated two dates from PRL Nos. 1564 and 1565 are 2921 B.C. and 3698 B.C. (Sonawane and Ajith Prasad, 1994).

Terracotta objects:

Forty seven pellets were of varying sizes with diameter ranging between 10 mm. to 20 mm. and with shape like void, spherical etc have been yielded from this site. They were solid, well fired,

red or black or mixed tint. They were handmade from wet clay. One of them was somewhat cuboid in shape and small in size whose diameter was 13.05 mm.

Four Spindle whorls of which one was broken with a perforation, it may be circular. The diameter of the specimen is 57.83 mm. The diameter of the perforation is 6.68 mm. and thickness is 6.22 mm. Two beads, one Lume and an unidentified terracotta objects have been also recovered from this site.

Lothal

Lothal ($72^{\circ} 14'25''\text{E}$ $22^{\circ} 31'35''\text{N}$) is situated between the river Sabarmati and Bhogava and three km north of Saragwala village. The excavation was carried out by Archaeological survey of India under Rao in 1955 to 1962. It has revealed nearly 8m cultural seposit classified into period A (2450 to 1900 BCE) and Period B (1900 to 1600 BCE). Period I is further divided into phases I to IV and phase V belongs to Period B. The early Harappan begins to appear in phase I but the fortified city was laid down in phase II. Phase III has been the most prosperous one. The houses were larger and various craft activities were found in the Lower Town. A house with paved channels which served as passage was found. The evidence of huge fires that destroyed the warehouse was noticed in the form of large quantities of ash. Dock was also built during this phase (Rao, 1985).

It has revealed evidences of specialized craft activities such as bead making, ivory and shell working and bronze smithery. The discovery of etched carnelian beads and non-etched long barrel shaped beads of Harappan origin in Kish and Ur (in Iraq), Jalalabad and Susa (in Iran) suggested that they were in great demand in the West. A Persian Gulf seal and several circular seals bearing Indus motifs and scripts found in Bahrain and Failaka Islands suggested that the Persian Gulf Island took an active part in the Indo-Sumerian trade. The close resemblance in the shape of copper objects such as barbed fish hooks, tanged arrow heads, splayed chisels, hollow nails and rivets with flat heads commonly found in Susa and Lothal may be attributed to exchange of ideas through trade between these two cultures (Rao, 1979). Reserved slip-ware is considered of a foreign origin occurring in most of the mature Harappan sites of the Indian

subcontinent including Gujarat. It is found in the Sargonoid level at Brak and Ur (Wolly, 1979:331-339) which suggests that there might have been an interchange of materials among these sites. The so called dock at Lothal has other interpretations too. One of them is that it was used as a tank. No matter what the brick lined enclosure at Lothal might be, it is clear that site was an important manufacturing and trading center on the south-eastern edge of the Harappan Civilization during the mature Harappan phase (Possehl, 1992:125).

Terracotta Objects:

The artefacts found from Lothal include terracotta objects like pottery, human and animal figures, personal ornaments and toys. Large use of terracotta could be due to the extreme scarcity of stone baked clay served as a substitute wherever possible (Rao, 1985). **Plate 5**

Human Figurine

Total number of human figurine found at Lothal was only thirteen in number, the Mother Goddess figures from Lothal resemble “Kulli-Mahi” figurines which has less decorated headdress in the form of a pinched band of clay, unlike the figures found at Harappa and Mohenjodaro.

Male Figures:

Only two male figures and a sub human represented by a Gorilla have been found at Lothal. A fourth figure with a human body and the head of a bear or a horse suggest an animal headed man. It was a Torso of male which is either red ill baked or buffish in colour prominent belly with navel indicated by a blind hole (Rao, 1985).

Female figures:

Lothal yielded four female figurines. Both crude and fine specimens of female figures are found, among which three are female torso chocolate slip on buff surface, elegant body, broad chest, separated arms but broken, well-formed waist applique breast fallen off resembles mother goddess figure from Tepe Gawra and one female figure buff slipped well baked prominent pinched nose, eyes and nose indicated by depression (Rao, 1985).

Animal Figures

There are seventy four specimens recovered of the bull which was the popular animal figure, the was said to be the next most popular animal figure is dog found 34 in number from the site, two figures each of rhinosources and pig and one each of unicorn elephant, tiger, spotted leopard, bear, ram, cow, horse and squirrel are also found (Rao,1985).

Unicorn:

Among the terracotta animal figures recovered at Lothal the head of the unicorn is interesting. The Lothal specimen has a medium sized snout and laterally projecting ears, the neck is decorated by nail punch marks and the eyes pallets have fallen off. Buff well baked only head intact.

Bull

Bull was the most popular animal at Lothal. Seventy four terracotta figures of humped and humpless varieties have been found along with elongated neck, short head. Some of the features of terracotta bull reported have buff surface on chocolate slip partly faded, red slip on buff surface, faded red slip, slipless, grey-ill fired, cream washed, sturdy build with a short thick neck, pellet eyes, prominent slit mouth, one among them are reported with tail damaged, prominent hump and dewlap, separated legs and pinched horn almost looking like ears, features of humpless bulls are little different from humped bulls where they are dull grey ill fired prominent muzzle and short separated legs with transverse perforation for fixing wheels, thick short tail, long ears and long narrow muzzles and short horns (Rao,1985).

Dog

Lothal has yielded large number and variety of terracotta figurine of dog than any other Harappan site, there are found twelve in number three distinct breeds of dog can be identified common pariah dog, the mastiff and the hound generally found in dull red, red slip, dull red to grey, moderately baked, prominent head, thick neck, slit mouth, short raised neck, short narrow snout few are damaged and unstratified(Rao, 1985).

Horse

The most controversial among the animals known to the harappans is the horse; Lothal has yielded 3 more terracotta models of horse dull red to grey and ill fired, long raised neck , short pointed snout, pick ears mane indicated by a low ridge over the neck, short strumoy tail and short separated tail (Rao, 1985).

Pig

Two terracotta models of pig are found at Lothal one of them has a thick snout, large head and short tail, ill-fired, faded red slip two prominent projections suggesting horns or ears.

Ram

Two terracotta figure of Ram are found at Lothal one of them is hollow head of Ram which must have been fixed to the body another miniature model of a crouchant ram with double folded legs and back sweeping horns dull red or faded red slip with narrow neck or hollow head are recovered.

Elephant

A terracotta head of an elephant with a long trunk has been found from Lothal. Along with terracotta figure leg bones of an elephant near the dockyard of Lothal have been found. Faded buff slip ill baked, rounded head long trunk, applique tusk near the mouth, incised eye-brow and thick neck (Rao,1985).

Tiger

Lothal has yielded one terracotta figure of tiger which was produced using a double mould it has a large head slit mouth and incised nostrils, applique eyes have fallen off, the chequered pattern incised of the body suggest the stripes of tiger, red slip moderately baked (Rao,1985).

Rhinoceros

Terracotta models have been found from Lothal one of them is the head of rhinoceros. A complete but smaller model of the rhinoceros has also been found. Dull red, well baked short

horn on thick snout, one among the findings were head of rhinoceros which is red slipped and well baked, flat base, thick neck fold of skins indicated by thick corrugation (Rao, 1985).

Leopard

Terracotta animal figure with a long and thick head found at Lothal may represent a leopard, another animal with large circular depression all over the body may suggest a spotted leopard but other features are more akin to those of a dog. Red to grey in colour and ill baked, round head and snout (Rao, 1985).

Bear

Lothal has yielded one fine terracotta bust of a bear it has a long snout prominent nostrils indicated by deep incisions a slit mouth and incised eyes. Several models have one of them has a human body and head of a bear.

Birds

Among the few terracotta models of birds from Lothal the duck, swan, and peacock can be identified. A clay model of what looks like a peacock has a long raised neck and a short beak, the plumes are shown by pinched clay at the rear end but legs and other details are lacking. Other figurines of birds cannot be identified (Rao, 1985).

Miscellaneous animal figure

A large number of toy animal figurines with movable head have been found at the present excavation, they can be grouped under three categories (i) wheeled figures also called bird and animal chariots (ii) animal figures with heads moving in horizontal or vertical plane (iii) zoomorphic figures with movable limbs (Rao, 1985).

Muffles, Crucibles and Moulds:

The copper smiths and goldsmiths used muffles, crucibles and moulds in terracotta for melting and casting metals. The crucibles are of two types; one being a shallow bowl in which the ingot was melted and other with a channel for pouring molten metal. Most of the ornaments such as

heads and bangles were made by beating the sheet metal, but pins, celts, drills, spear-heads, daggers, and small figurines were cast using moulds (Rao, 1985).

Plumb-bobs:

Lothal yielded four plumb-bobs and one cylindrical pulley. Carrot shaped terracotta objects with or without a tang appear to have been used as plumb-bobs by the masons to check the perpendicularity of the structure under construction. Among them, two types can be identified; one with vertical hole right through the body for passing thread and other with conical shape which has a small grooved knob for tying (Rao, 1985).

Cylinder:

Lothal yielded six cylindrical objects with shallow depression in the centre, biconcave, flat top and some have low depression in bottom and top.

Loom weights and Net-sinkers:

Thousands of ovoid and tabloid terracotta balls with four finger marks are found from Lothal. These are considered as net-sinkers. Objects of similar shape in brick or terracotta are still being used at Kaveripattanam as net-sinkers. Lothal yielded 6 loom weights, biconcave, flat top and some have low depression in bottom and top.

Spindle-Whorls:

Two types of spindle-whorls have been found from Lothal. One of them is of arecanut shape with concave or disk-base and narrow top, while the other is only a ring with a rectangular or plano-convex section, Lothal yielded 6 spindle whorls. Red slipped, dull red, buff, grey to dull red, ill baked, and few are moderately baked, planoconvex, rubbed potsherds and few are rectangular in section

Spools:

The Harappans used terracotta disks having numerous holes as spools by fixing a number of sticks between two disks. Some of them are thick tabloids while others are wheels with

prominent hub. Dull red, dull grey, plano convex, one is well fired and another is ill fired, conical one side and circular on plan (Rao, 1985).

Ladle:

A terracotta ladle with a tapering end has been found from Lothal. The present specimen was found very close to the brick-altar. Soot marks are also found on the rim and under surface of the ladle.

Gamesmen:

The terracotta gaming pieces from Lothal can be divided into five main types; i) zoomorphic figures, ii) pellets, iii) tetrahedrons, iv) cones and v) castles. The zoomorphic figures represent the dog, bull and horse. Small clay lumps or pellets pressed between three fingers are found in large number at Lothal. They have finger marks and round ends (Rao, 1985)..

Dice:

A cubical terracotta dice found at Lothal is marked with small blind holes on all sides. No pyramidal or cylindrical dices are found here. Grey well baked, cube with number marked by blind holes.

Game-Boards:

Five game boards marked in three different ways have been found at Lothal. The boards must have been generally made of wood.

Toy-carts:

Three types of toys-carts are found at Lothal, whereas only two are found in the Indus Valley. The first type had a solid chassis, concave or flat. The second type had a perforated chassis and the third a detachable cross bar in the perforated chassis. Terracotta models of wheels used for toy carts are found in large numbers. Some of them are found to have been moulded have a prominent hub on either side or on the interior only. In a few cases the spokes are indicated by painting with intersecting lines. Lothal yielded 3 toy carts and 9 cart frames which are red slipped, grey, dull red, detachable cart frames, perforated cart frames, curved frames and concave

side frame ten toy cart with wheel were yielded, painted in red over buff slip, wheel with a prominent hub and concave interior (Rao,1985).

Toy Boats:

Out of the five miniature clay models of boats found in the excavation at Lothal only one is complete and represents a ship with a sail, which was dull red and pointed prow, curved prow, sharp keel and high margins.

Miscellaneous Objects:

Marbles:

Terracotta balls of varying sizes have been found from Lothal. Some of them are perfect spheres, while others are crudely modelled. Although a few of them are given a red or chocolate wash none of them are painted. On the other hand two balls were found decorated with finger nail incisions. The smaller ones must have been used as marbles and the larger ones as sling balls.

Spinning tops:

Terracotta bi-cones with sharp points at both ends and wide flange at the waist found at Lothal in considerable numbers are admirably suited for being used as spinning tops by children. A smaller bi-cone with blunted ends could be made to spin with the help of fingers.

Ornaments:

The numbers of personal ornaments in terracotta found were in thousands the majority of which included bangles, bracelets, wristlets and finger rings. The ornaments could be broadly categorized into ear-ornaments, head-ornaments and wrist ornaments.

Ear and Head Ornament:

The most popular ear-ornament was the pulley shaped biconical object with flat circular top and base. A horizontal perforation for suspending it from the ear by means of chain could be seen. This ornament was painted with intersecting lines or spoked wheel designs in black over red or chocolate over green or buff. The size varies from 1.5ins to 2ins in diameter (Rao,1985).

Two types of hollow conical ear-pendants. A small beautiful ear-stud of floral design with four petals and toothed margins has also been found.

A star shaped object of cog wheel type with a stud in the centre for fixing it in the perforated ear-lobe is an interesting type from Lothal. The teeth in cog wheel vary in number from 8 to 11.

A small but beautiful ear-stud of floral design with four petals and toothed margins are yielded from Lothal.

Hollow conical pendants occur in gold at Lothal. Bud shaped objects in terracotta with a short tang found at Lothal appears to have been used as ear-stud.

Fan shaped terracotta objects with a tang and decorated with incised patterns appear to have been used as hair pins by inserting a wooden or copper pin in the vertical hole noticeable in the tang (Rao, 1985).

Bangles:

They can be classified into three types. The most common type has a round section varying from 0.25 ins to 0.75 ins. The second type was bracelet or bangle with a triangular section and was often treated with red or brownish slip. The third one was a wristlet or bracelet with an intended exterior. Majorly were in circular section and five in triangular section, dull red scalloped (Rao, 1985).

Balls and Pellets:

A large number of burnt clay pellets of various sizes and shapes have been found in all the phases of occupation at Lothal in houses, streets, fire-altars and in big jars along with bones, ash and terracotta triangular cakes. A few of them have also been found from burial pits and house floors. On the basis of their shapes they were divided into three groups; i) First group consisted of cubes or cuboid pellets with two or four finger impressions on the sides, ii) Second group consisted of spheres and ovoid pellets with or without finger marks, iii) Third group consisted of ovoid pellets bearing four finger impressions all on one side only. Pellets were also found along with triangular cakes in the fire-altars at Lothal. Some of the triangular cakes were reported with

graffiti mark, two intersecting lines, and circular grooves in the centre. There were nine spheroids and triangular cakes, seven sling balls were yielded from Lothal (Rao,1985).

Malvan

Malvan (21° 07' N & 72° 42' E) is situated on the lower estuary of the Tapti, on the bank of Dumas about 2 m in height. The excavation was first conducted by A.Ghosh and C. Guzdar in 1970. F .R. Allchin and J.P. Joshi discovered the site in 1967 while exploring the estuaries of the Gujarat coastal plain to define the s. limits of the Harappa culture. The site is greatly eroded and a large part of the ancient habitation has disappeared (Allchin & Joshi,1995:77 and IAR 1969-70).

This site has two periods- Chalcolithic and Late Historic. Chalcolithic Period I revealed an east west running ditch 1m wide by 1.5 m deep and 18.5m long. The ditch was filled with contemporary cultural debris. To the north of the ditch was a large mud brick structure for some of unknown use; while to the south were a series of postholes thought to represent a fence. Pottery found were of Red, Painted Buff, Gray, Coarse Red, Plain Black and Red and Lustrous Red wares Artefacts were stone flakes, semi-precious & steatite beads and pastes, copper bangles and humped bull and circular cakes were found(Allchin & Joshi,1995:77) .

Terracotta Objects

Very few terracotta objects have been found from this site. The tTwo Bulls ; one is broken and the othe one is somewhat okay ; Two wheels with central hole and smooth edges; nine hopscoches found both in grey and red ware; eone ear plug,one cake and one ear ornament were found in Malvan (Allchin & Joshi,1995:77).

Motipli

The village Motipli (23° .49' N. , 71° .32' E) is situated in Radhanpur Taluka of Banaskantha District at a distance of about 10km. to the West of Radhanpur town on the right

side of the road going to Varahi and Kandla. The site, locally known as 'Shakatari No Timbo' is situated about 3 km. to the west of the village on a large sand dune, adjacent to a large interdunal depression known by the Shakatari No Talav. The excavation at Motipipli was conducted by the Department of Archaeology and Ancient History of the M.S. University of Baroda under the direction of Professor V.S. Parekh and Dr. V.H. Sonawane during the field season of 1992-93.

The entire site measuring 600 x 120 m. was systematically dug up a few years back during the drought relief work. It had yielded important Harappan affiliated Chalcolithic pottery and Mesolithic implements on the surface. Due to the disturbed nature of the site the excavation has limited objectives of understanding the stratigraphic context of the Chalcolithic ceramics and sequence of cultures at the site.

The excavation was confined to a few undug areas left off by the relief digging; altogether eight trenches of varying measurements were opened up at different parts of the mound. The excavation revealed a regular habitation deposit of 30 cm. belonging to the Mesolithic, Harappan affiliated Chalcolithic and historic periods. The Mesolithic occupation at the site is represented by a 20 cm. deposit in the fourth layer laying directly over the natural soil. It has yielded a number of micro lithic blade and flake cores along with a few typical Mesolithic tools like crescents, backed blades and points. The tools were made of chert, chalcedony, agate and jaspur. No pottery is found associated with the Mesolithic industry. Faunal remains collected from this deposit are fragmentary and heavily incrustated with calcium salts. Some of these are charred too.

The chalcolithic deposit was mainly represented by the layers 2 and 3 in the trenches III, IV, VII and VIII. It has a maximum deposit of 50 cm. However, in the entire trenches layer 1 and 2 include a few sherds of the historic pottery too. No evidence of structural remains of the Chalcolithic habitation was found in any of the trenches. A variety of interesting pottery of different types like fine red ware, buff ware, gray ware, gritty red ware, burnished red ware, black and red ware and reserved slip ware were collected from this deposit. The most interesting group of pottery, however, is a type of fine red ware and buff ware which are found to be similar in shape and fabric to the pottery from the burials excavated at Nagwada. Important shapes in this area large pots, dishes, dish-on-stand, beakers, and large beaker like vases with narrow

mouth and bulbous body etc. These vessels are generally wheel made, but some were definitely handmade and showed features of scraping and paring on the surface. They were made of fine clay and are generally adequately fired to have a completely oxidized core. A few of the fine red ware pots were treated with a cream or chocolate slip and painted with thick bands of dark chocolate or black pigment at the rim and shoulder. In addition to these, in some of the pots, red pigment was also used generally in a cream background thereby imparting a polychrome effect; another interesting vessel belonging to this group was a large pot with a very prominent ledge at the neck. Similar type of vessels was reported from the pre-Harappan levels at Kot Diji. Infact, all the above mentioned vessels were comparable with the pre-Harappan pottery types from Balakot, Amri and Kot Diji. Although a few sherds of perforated jar, and sherds of Harappan red and buff wares were recovered from the excavation, typical Harappan vessels were far and few between at the site. Another interesting aspect was a prominent presence of reserved slip ware.

Another group of pottery was predominated by the gritty red ware and red ware. It was represented by large and medium pots, small pots with constricted neck and bulbous body, bowls, basins, dishes and dish-on-stand. These vessels were generally decorated with thick bands and lines of dark chocolate or black colour at the rim, neck and shoulder. Often, such decorations were done in a cream background to get a bichrome effect. Similar jars/pots were also met within the burnished grey or black ware and burnished red ware. The black and red ware was represented at the site by a very few sherds of bowls. All the above types were common in many of the Chalcolithic sites in North Gujarat and they were believed to be belonging to a regional pottery tradition affiliated to the Harappan culture.

Other important antiquities found in the excavation were a copper/bronze nail, a folded strip of copper and fish hook, a number of typical chert/flint long blades, a few ornamental beads of chalcedony, steatite, lapis-lazuli, shell and spherical terracotta beads decorated with delicately incised lines and dots, terracotta pellets, terracotta lumps of the two pinched variety, mushtika type and a single triangular cake from the surface. A few scrapers and spindle whorls, both fashioned on pieces of pottery were also collected from this deposit. A faunal remains collected from the Chalcolithic deposit includes skeletal elements like bone, teeth and horncore of cattle, sheep/goat, deer and pig.

Terracotta Objects:

Nine beads were recovered from the site. A fragment of barrel shaped bead having incised design of dots (Motipipli, No. 204, Tr. VII/A, (2), 0.48 m.). The thick disc bead has slightly convex body with incised dots design and a broad hole for making necklace may be for animal or human being. All are finished and handmade. The diameter of the specimen is 22.50 mm. and thickness is 13.54 mm. (Motipipli, No. 279, surface).

Other objects yielded were one spindle whorl, two triangular cakes with rounded corners, and two unidentified objects. Forty six pellets have been yielded from this site. Most of them are complete and hand made. The diameter of the pellets ranges from 6.83mm, 12.39 mm to 24.40mm.

Nagwara

Nagwada (23° .29' N., 71° .41 E.) is located in Dasada Taluka of Surendranagar District in the north-western part of the main land of Gujarat. The excavation at Nagwada was carried out by the Department of Archaeology and Ancient History of the M.S. University of Baroda during 1980 and 1990, under the direction of Professor K.T. M. Hegde.

Among the four Harappan mounds in Nagwada village, Mound I (Nagwada - I) yielded material relics of the mature phase of Harappan culture. The mound - I in Nagwada village is locally known as Godh. It is located at a distance of 3 km towards the south of the present village, on a relic sand dune, formed close to the northern bank of an ephemeral storm drain called the Vonkadi. Towards the east of the mound there is a large inter-dunal depression where monsoon run off accumulates to form a sweet water pond.

The entire mound measuring 140 m x 110 m.² was put under a 10 x 10 m.² grid. The thickness of the habitation deposit in the cuttings varied from 95 to 110 cm. With five distinct layers incorporating four structural phases. The single period occupation is divided into two distinctive phases. (Hegde, et. al., 1986-87).

Period I-A

The initial settlement of the immigrant Harappans at Nagwada was represented by the occupational debris confined to the lowermost strata and burial pits dug into the natural soil. However, no substantial habitation deposit of this sub-period has so far been unearthed. Structural remains were confirmed by a few post-holes and rammed mud floors. Besides the scanty occupational deposit, four symbolic pot burial and two extended inhumation burials with pots as grave goods were confined to this earliest cultural deposit. The burial pots found at the site show a close affinity with the pottery found from Pre-Harappan levels at Amri (Period – I), Kot Di ji and Nal. This type of pottery is not met within any of the later habitation deposits at the site. The extended burials were found in east-west orientation. One of the symbolic pot burials contained ten intact pots. The main varieties of burials ceramic include dish-on-stand, dish, beaker; bowl disc based globular jar and short necked globular medium-sized vessel. Such pots associated with burials are reported in Gujarat for the first time. Of the six burials, three were found on the southern and western periphery of the mound exposed to the surface towards the stream, whereas the remaining three were traced below the occupational deposit within the habitation. (Hegde, et.al. 1986-87).

Period I-B

The subsequent deposit of upper layers has yielded material relics coeval to the mature phase of Harappan culture. Structural remains of this sub-period consist of both moulded mud-bricks show the standard Harappan size ratio of 1:2:4 (8 x 16 s/x 32 cm. and 7 x 14 x 27 cm.) The brick masonry consisted of alternate layers of headers and stretchers. Though most of the exposed structures were rectangular in plan, in one case a semi-rectangular or curved annexe to an oblong structure was also observed. The walls of these structures have almost uniform thickness of cm. One of the independent rubble structures measured roughly 6.6 x 4.4 m. while other brick structure measured 6.6 x 5.1 m. with a portion wall indicating a porch or a verandah in front (Rajesh & Ambika, 2006-07: 47-67).

The ceramic industry of Nagwada is characterized by Harappan and non-Harappan pottery types. The classical Harappan sherds representing fine red ware, buff ware and chocolate slipped ware

are few. In spite of their limited occurrence they represent the characteristic features of the mature phase through their painted natural and abstract decorations and standardized vessel forms like 'S' profile jars, perforated jars, beakers, dish-on-stand, large storage jars, medium sized, disc-based vases and even typical miniature vessels. Gritty red ware and white painted black and red ware represent the indigenous non-Harappan wares. Gritty red ware dominates the ceramic assemblage of Nagwada. This ware is distinctly different in its production, forms and the use of pigments for decorative designs in comparison to the Harappan wares. It is evident that it underwent some change in its decorative elements particularly its design pattern and preference for the pigments used for painting from lower to upper levels. The ceramic assemblage recovered from the lower levels show more ornate and intricate pattern of designing. White-painted black and red ware as such does not show any evolution. Other pottery types found at the site include reserved slip ware, coarse red ware and incise grey ware. (Hegde, et. al. 1986-87).

Important antiquities recovered from Nagwada include a variety of gold and silver ornaments, copper ornaments and implements like celts, chisel, knives, bangles, beads and pendants, cubical weights of agate, inscribed clay sealing, long-parallel sided chert blades of Rohri origin, terracotta mother goddess figurine with imbedded steatite beads, triangular cakes, toy-cart frames and wheels and bone points together with several other house hold objects. Most of these objects show striking similarity in their style and techniques with objects reported from many mature Harappan sites (Hegde et. al. 1988: 56-65).

.Radio-carbon assay of a single charcoal sample collected from Nagwada – I had given a date of 2133, 2067-2047 Cal. B.C. – A 4555 University of Arizona. Apart from this, the ceramic evidence found at Nagwada – I together with other associated antiquities compare well with the Surkotada I-B – I –C (Joshi, 1972; and Lothal A IV, Rao, 1985). This cultural analogy is further supported by corresponding radiocarbon dates obtained from Nagwada – I with Surkotada and Lothal. Therefore the settlement of Nagwada can be assigned between the last quarter of third millennium and first quarter of the second millennium B.C.E (IAR 1985-86, 88-89; Hegde et. al. 1988: 56-65; Sonawane & Ajithprasad 1994: 37-49).

The most significant contribution of the Nagwada excavation was that it has brought to light interesting features of specialized craft activities carried out by its inhabitants. Archaeological

data recovered from Nagwada clearly demonstrate that a variety of stone beads and shell objects were manufactured here, processing semi-precious stones and marine gastropods acquired from the catchment area of the settlement

Terracotta Objects

Compared to other affiliated Harappan sites of Gujarat the terracotta objects of Nagwada are less in number. Though less in number, it reveals a wide vogue of craft in Gujarat found from all the periods. These are the object which helps us to understand many aspects of the community including socio-economic and religious significance. Terracotta objects found from Nagwada is realistically well made. These comprises of a variety of objects like household items, toys, ornaments and items for religious practices. **Plate 6**

Animal/ Bird figurines

Very few pieces of animals and bird have been recovered from Nagwada. None of the figures could be identified properly. Some of them have been identified as a bird, a cat broken by neck and four bulls. They were all damaged and were used by the children for playing. They were made very crudely. These pieces are important source of knowledge about the animals and birds of that time (Sen, 2014).

Spindle Whorl

Twenty four pieces has been found from Nagwada. They are simple pottery discs perforated from the centre. The wear and tear on the sides of perforations indicates that they were worked on for spinning cotton and wool. Most of them are found from the pits sealed by layers. Those found from the pits were sometimes broken and some of were fashioned from potsherd and even hand made. Broken pieces showing the perforation path is very well defined. Sometimes it has a bigger perforation on one side. Their rough and uneven circular edges were smoothened by rubbing. The various sizes of the holes and number of spin show that weaving was done in plenty. The colour varies from red to chocolate slip seen on these whorls. The diameter measures from 45 mm to 60 mm. The thickness varies from 8 to 15 mm. Today the Bharwads, a pastoral community of Kutch and Saurashtra use this type of spinning device for wool known as Takli.

Complete oval disc fashioned on a potsherd of red ware having chocolate slip measuring about complete disc handmade, red ware measuring (Sen, 2014).

A potsherd of Chocolate slipped ware converted into a flat ring having rectangular section is a fine example of rubbed workmanship. Measuring –diameter central hole. The central hole is very prominent measuring about 11.70mm.

Wheels

Wheels found from Nagwada are four in number and sometimes broken with hub on one side and sometimes it is fashioned on a pot sherd with simple perforation on the toy carts for the children to play with. Though less in number, it was a significant find from Nagwada. They are all hand made.

A broken piece of wheel with a hub on one side, the inner side is plane. Colour is slightly reddish buff and the circumference shows used marks.

A wheel slightly broken on one side is having one side convex and another side plane. The convex side is having hub and buff in colour, edge shows used marks. Diameters- 40.91 mm and the thickness - 12.45 mm

Toy Cart Frame

The five specimen found from Nagwada are broken. Two types of toy cart frames are found from Nagwada. The toy cart chassis found here has rectangular shape with five small holes on one side and four holes on the other side and the second one show an outline forming the main body. Most of them have vertical holes along the margin of a longer axis are for fixing poles and two rows across in the middle are for fixing the axle with lashing. There are two or more horizontal hole in the frame are meant for the yoke. All of them are hand made and well baked. The toy cart frame found from the pit is flat and broken. The wheels and toy cart indicates the agricultural goods carried to and fro distant lands, which in turn indicates the transport system of that time.

A broken specimen of toy cart frame having three vertical holes at the periphery for fixing its poles. The centre has two holes maybe for fixing axle with lashing. The back lateral also has two holes for fixing the longitudinal bar to which the yoke was attached. From the length side it

seems to be broken. The length is 51 mm; breadth is 51mm and the thickness is 23.9 mm. A specimen having broken length measuring 41.26 mm and breadth about 40.5 mm and thickness is 11.25mm. There are two verticals holes at the periphery and one horizontal hole.

A specimen having broken length measuring 50 mm and breadth about 43.5 mm and thickness is 09.25mm. There are two verticals holes at the periphery and one horizontal hole (Sen,2014).

Titotum

Titotum are discs with central perforation were eleven in number. The perforations are sometimes big and sometimes very small. These are also modern kind of toys made of wood which the children love to play with. Many titotum has been found in the excavation of Nagwada. All these are different diameters ranging from 23 mm to 46 mm and the thickness ranging from 4 mm to 15 mm

A finished specimen of tetotum fashioned on a potsherd having large perforation. The diameter of the specimen is 30.02 mm, thickness is 7 mm and the diameter of the whole is 10.12mm. A finished, handmade specimen measuring 40.12 mm in diameter and 15.10 mm in thickness.

This is a finished specimen, handmade, which has buff color with a very small whole in the center. It is thick in the middle and outer edge is very thin. The diameter is 46.01 mm and the thickness is 15.1mm.

Discs

Potsherds were fashioned into semi circular or circular discs by rubbing the uneven border and were twenty four in number. These are discs without holes, found plenty in number from Nagwada. One of the discs shows hand mark impression. They are well baked and their diameter varies from 40 mm to 85 mm and the thickness varies from 4 mm to 11 mm. They were most probably used as hopscotch which again is a popular game played among young girls. Circular disc even edges and fashioned on a potsherd having designs on one side in black. Diameter is 40.38 mm and thickness is 9.48 mm Circular disc fashioned on a potsherd with no rubbing marks having uneven edges. The specimen has a band design in brown slip. Diameter is 49.79 mm and

the thickness is 6.06 mm. A huge well made circular disc, fashioned on a potsherd having smooth edges. Diameter is 83.24 mm and the thickness is 10.15 mm.

Semi-circular broken disc, having finger impression is fashioned on a potsherd. Diameter is 50.78 mm and the thickness is 4.83 mm. A well made circular disc, smooth edges, fashioned on a potsherd having engraved parallel lines on one side. Diameter is 41.30 mm and thickness is 10.88 mm. A well made circular disc, smooth edges, fashioned on a potsherd having designs and thick lines in black on one side. Diameter is 50 mm and thickness is 8.7 mm.

Pellets

The pellets numbering thirty seven were one of the most popular and are found in plenty. These are small, solid spherical shaped terracotta balls. Some of the broken ones are found from the pits. The colour of the balls is generally red. They vary in different sizes. These objects were either used for decoration purposes or by the children for playing (marbles). No decoration is found on the surface of these balls. They are handmade. They vary in size with diameters ranging from 11 mm to 24 mm.

This is the biggest pellet having 24 mm in diameter in size. Small in size having a diameter of 14 mm to 0.70 mm. Smallest among the pellets found at Nagwada having 10.98 mm in diameter. This specimen having a shape of solid triangle. Small in size having a diameter of 13.8 mm (Sen, 2015).

Bangle pieces

The terracotta bangles seem to be popular in Nagwada as they are found in plenty numbering nine. Most of them are found from the pit. Almost all bangles are handmade and well baked. The color varies from red to lighter red. Their diameter varies in different sizes and the thickness measures from 5 mm to 10 mm of different sizes. It can be assumed that the bigger in diameter might have been used by women and the smaller in diameter by the children. The bangles are usually round in section. Nagwada bangle pieces are devoid of any decorations. Ovoid in section, flat on either side well baked, thickness – 10 mm (0.98 cm). Three of them are circular in section well baked having thickness about 5 mm to 6 mm (Sen, 2014).

Pendent

One elongated pendent, narrow at one end and broader at the other from where it is broken was found from here. At the narrower end there is a perforation. A broken piece of terracotta pendent having hole at both end for passing thread having oval cross section, has length – 20.65 mm had yielded in the excavation.

Beads

Beads are important object to make necklaces or other ornaments numbering seven. Beads of cylindrical, bi-conical and spherical shapes have been unearthed. Some of them broken from perforation have been found from pit. The beads are reddish in colour, handmade and well baked. The beads here have any decorations with various dots. A broken cylindrical bead consisting of incised design of dots, length 0.15m (Sen, 2014).

Female figurine

The female figurine found in Nagwada is small and simple in modeling. The colour of the clay is blackish brown indicates ill baking. The eyes, ears, mouth and navel are marked by small steatite circular beads inlayed while the clay was plastic. The nose is indicated by a small pinch. The breast is shown by placing a small bit of clay lump, of which one is remaining. The figure is broken just below the navel. It is a very unique piece not yet reported from any other Harappan site. (Hegde, et.al, 1990). It was found on the floor of the house. It measures 55.93 mm in length and the breath is 17.09 mm. This blackish – brown colored ill baked clay figurine was marked by small steatite circular beads inlayed on the clay. The navel portion is also marked by a bead inlay (Sen, 2014).

Clay Sealing

One important find of Nagwada is an oblong clay lump bearing positive impression of a rectangular seal. This unbaked clay sealing bears signs all along its upper margin, and an animal motif below representing charging bull. However there is no indication of its use on any package either in form of impressions of twisted cords tied into knots or hole on its reverse side. One thing is certain that the people of Nagwada were a literate lot. (Hegde, et.al, 1990)

This is clear indication of cultural and commercial contacts with other prosperous communities. The length of the specimen is 52.17 mm and breadth is 17.72 mm

Triangular Cake

Lot much numbering twelve terracotta triangular cakes have been unearthed from Nagwada. Most of them are found broken, but the interesting part is that some of them have varying incisions and impressions marks on them. One of them which is broken, has nail mark decoration, while the other has leaf impression and a star like impression on its surface.

A triangular cake with rounded corners is handmade. The lengths of the three sides are 67.12 mm X 61.74 mm X 67.02 mm. The thickness of the cake is 18.10mm. A triangular cake having rounded corners, measuring on the three sides 68.5 mm X 72 mm X 69mm.

Terracotta lumps / Mushtikas

Four pinched terracotta lumps, mushtika and clay lumps having idli shape are found in plenty. They vary in different shapes and sizes and sometimes have rough surface. Their colour too varies from red to dull red. Few of these lumps have matt impression on them. Six of these lumps have reed impression on them. One of the big clay lump found from the surface, has reed impression. Though it has a very rough surface, the impression is very clearly visible.

Miscellaneous Objects

All these terracotta objects are found in few pieces. They reflect the importance of the day to day life of the people of Nagwada.

Votive Tank

Three terracotta votive tank have flat rectangular base with walls on three sides were unearthed from here. One side of the wall is broken. It was red in colour and is hand made. It contained lacrome when excavated. One broken piece of votive tank has one side intact corner.

Conical object

Two unidentified conical objects having flat circular top have been found from Nagwada. One of them is having small circular decoration on its side. Most probably they are toy articles. Both of them are hand made.

Ladle

A hand made object looks like a ladle has been found. This could have been used as serving scoops. This could have been used in the rituals for pouring liquid. Only one specimen has been found from here which is hand made and its length is 33 mm (Sen, 2014).

Cylindrical object

A well made cylindrical object bend little on one side suggest possibly an animal leg of a toy figurine. It is proportionate from top to bottom.

Lid

A well made lid has been found from Nagwada. It is small in size and thus could be used by the children for playing.

Weight

A well made terracotta weight has been unearthed from Nagwada. It is cubical in shape and red in colour. One single specimen has been found from here, (No. 3235, Tr. XXIII/A, Pit2 sealed by (2), 0.65m)

Lamp

A miniature lamp most probably used by the children for playing purpose has been found. It is hand made and the colour is red

Stopper

Two stopper look alike has been found from Nagwada. One of them was found from the surface. It is handmade either red or black in colour.

Other finds are crucible, a rubber skin, a wedge, a feeding cup has been found from Nagwada

Nesdi (Vallabhipur)

Nesdi (Vallabhipur) was excavated by the Department of Archaeology of M.S. University of Baroda during 1980, under the direction of Professor R.N. Mehta in 1984. Nesdi is situated at a distance of about a kilometer to the South-West of the present Vallabhipur, a Taluka headquarters of the same name in Bhavnagar District. The cattle breeders move from one area to another for fodder and water but where area be rich in fodder and water, they build more permanent settlements known as Nesa, Nesdi from which village name come. The actual site covers an area of 200 x 200 meters, on the stream locally known as Daredio of the main river Ghelo.

For excavation, two small trenches, 5 x 5 meters were taken. Both of them revealed the existence of a rammed – earth floor of circular huts. From the excavated trenches, sherds of red ware, buff ware, chocolate slipped ware, black and red ware, crude red ware and lustrous red ware were recovered. The osteological remains indicated the presence of cows and deer. Here the archaeological deposit was very thin so the natural soil was traced at a depth of 50 cms.

The other associated antiquities include terracotta bull figurines, spindle whorls, stone and shell beads, pot-sherds having graffiti marks. From the nature of the habitation deposit and antiquities recovered from it, it appears that it was a seasonal camping station of Harappan cattle breeders repeatedly occupied by the Harappans on their way or back for the search of fodder.

Terracotta Objects:

Two bull specimens were reported from Nesdi excavation. Nesdi revealed single bead specimen, eight Spindal whorl, nine discs, six lumps and two unidentified objects.

Nageshwar

Nageshwar (22° 20' N., 69° 03' E.) is situated 17 km. north-east of Dwarka between Pindara and Poshitra Bays on the southern shore of the Gulf of Kutch, in the Okhamandal Taluka of Jamnagar District. The site is located on the north-eastern edge of a large 12 km., perennial sweet water lake; presently the site is 8 km. south of the Poshitra Bay Coast and 6 km. east of the Pindara Bay Coast.

The excavation at Nageshwar was carried out by the Department of Archaeology and Ancient History of the M.S. University of Baroda during 1984, under the direction of Professor K.T.M. Hegde (Hegde, et. al., 1984-85).

The Harappan mound measuring 145 x 1000 m. was systematically destroyed by the local earthwork contractors, who dug up pits leaving 6 x 10 m. wide baulks, for collecting earth to build an embankment around the lake to augment the accumulation of monsoon run off flowing into it. This destruction revealed a 2 m. thick deposit of Harappan cultural debris consisting of stone rubble structures, nearly all varieties of Harappan pottery of mature phase including the reserved slip ware, fine quality grey ware, dish-on-stand in red ware containing the typically internally incised decorative designs of radiating strokes in concentric circles. The whole site with assurance could be assigned to an industrial function from the evidence of spread of thousands of fragments of *Turbinella pyrum* and *chicoreus ramosus*, gastropods, fragments of shell bangles, ladles, inlay pieces etc. This is the first site in our country to show such an abundant evidence of industry based on marine shells (Hegde, et. al., 1984-85).

During excavation Trench I and II measuring 4 x 4 m. and 6 x 2 m. respectively were laid in the central portion of the mound. Trench III and IV measuring 2 x 2 m. and 4 x 14 m. respectively were put in northern and southern peripheral areas considering their association with specific industrial activities. The exposed occupational deposit of two meters has revealed two distinct sub-divisions of a single period i.e. phase I-A and I-B, phase I-A represented by a cultural deposit of 0.70 to 1.20 m. is marked by the arrival of Harappan immigrants at Nageshwar. Phase I-B succeeds I-A without any cultural gap. Thickness of this occupational deposit varies from 0.90 to 1.40 m. and includes two successive structural phases. The structures that are associated

with phase I-A and those found at lower levels of Period I-B had rammed mud floors. The stone rubble structures which were unearthed in Trench I and II in the upper levels of I-B phase showed a few courses of rubble walls framing corners. The floor of one of these structures in Trench I was also found to be paved with stone slabs. There is one interesting structure that was probably used for the adoration of fire god. It was unearthed in Trench III, Layer 4 (Hegde, et. al., 1984-85).

The cultural relics at the site represent a single period with two sub phases, which are designated as Phase I-A and I-B. lustrous red ware, a characteristics ware of II-C and III periods of Rangpur (Rao, 1962-63) and black and red ware found at Lothal A and B. Rangpur II-A, II-B, II-C and III (Rao, 1962-63), Surkotada I-C and Desalpur I-B are absent at Nageshwar. Therefore, the absence of black and red ware and lustrous red ware at Nageshwar and the presence of pottery of mature Harappan phase suggest a close chronological relationship with I-A and I-B phase of Surkotada and I-A of Desalpur. Thus, the phase I-A at Nageshwar could be dated to the last centuries of the millennium BCE (Hegde, et. al., 1984-85).

Artefacts made from shell have a high potential for revealing useful information on the Harappan infrastructure and skill that were necessary to exploit this marine resource. Nageshwar has thrown some useful light on this aspect of the Harappan culture. Three species like *T. Pyrum*, *C. ramosus* (for ornaments, utensils) and *Fasciolaria trapezium* were found from Nageshwar. The shell collectors of Nageshwar used the tall, thick, hollow stemmed tabular aquatic plant, locally known as baru (*Sorghum halepensis*) which grows in Bhingaja Talav, for building small sea-going vessels (Hegde, et. al., 1984-85).

The number of finished artefacts as well as fragments and the recovery of stone tools make us able to reconstruct the salient features of shell industry. The artefacts found from Nageshwar:

Pottery: Excavation revealed vast quantity of pottery, Phase I-A yielded beautifully painted, gracefully shaped and well baked pottery types of mature Harappan phase. Among important fabrics at Nageshwar were red ware, reserved slip ware and grey ware. This pottery tradition in the frequency of different types was noticed. This phase marked similar geometric decorative designs and absence of floral and faunal motifs (Hegde, et. al., 1984-85).

Miscellaneous Artefacts:

Among the other finds recovered in excavation are an agate cubical weight, moulded triangular terracotta cakes, pinched spherical terracotta lumps, terracotta bangle fragments, a terracotta toy cart frame, terracotta spindle whorls and ornamental beads of carnelian, faience, steatite, terracotta, and dentalium. Among metal objects, folded sheet and a wire of copper are important. There is special whet stone with small circular depressions perhaps meant to polish the sharp exterior cut edges of shell circlets and spherical stone pieces probably for polishing the interior cut edges of shell circlets. A number of shell bangles carried incised 'V' Chevron motifs. There were broken ladles made of *C. ramosus*, pendants, beads, carefully cut square and triangular shell inlay pieces (Hegde, et. al., 1984-85).

Terracotta Objects:

Variety of objects has been recovered from Nageshwar. Human and animal figurines are conspicuously absent. **Plate 7**

Discs:

Potsherds are fashioned into circular discs by rubbing the edges. Some of them have perforations in the middle. Sometimes they were not smoothened on the edges and some of them are semicircular in shape. Nine of them have yielded from excavation and many more were found from the surface. The largest among them is 8 cm in diameter and the diameter started from 3cm.

Spindle Whorl:

Cloth impression was found on the potsherds. This evidence was further supported by the spindle whorls. They are made out of potsheds with a convex surface on one side and a perforation. Five such spindle whorls were found. They were all made from red ware and chocolate slipped ware.

Toy cart frames and wheels:

Two types of toy cart frame were recovered from this site. The first type is in the form of flat solid chasis while the second one shows an outline forming the main body. These two are

represented by two incomplete broken specimens. The broken one does not show the vertical holes on the chasis. Only one horizontal hole is seen in the fragmentary piece representing second type for fixing the axle. They were treated with red slip. Wheel found in Nageshwar is without hub. Only one such piece was found from excavation. It was hand made well baked thick circular perforated with rounded edges.

Pellet and Pooter's dabber:

One pellet was found from here handmade measuring 1.8 cm in diameter and not so well baked. The potter dabber is a circular solid object with constricted neck and prominent convex knob. It is well baked and dull red in colour and the base measures 8 cm in diameter.

Triangular cake & Pinched lumps:

About twenty triangular cakes have been recovered from the excavation. They have rounded and pointed corners and are predominant in phase a. Most of them are broken and few are completely intact. More than two hundred pinched lumps were yielded from this site and some of them were collected from the surface. They have different shapes like spherical, oval, cubical and rectangular clay lumps marked with four or two finger impression confined to the side.

Bangles & Beads:

Small fragmentary pieces of bangles numbering four were recovered from Nageshwar measuring around 5 to 8 mm. Two beads were found from here. One is short bicone circular bead treated with chocolate slip. Another one is cylindrical slightly curved and tapering with chocolate slip. Both of them are well baked.

Two miscellaneous objects seem to be a small lid having a cylindrical in shape having vertical perforation and a disc with double perforation was also found.

Pithad/ Jaidak

Pithad (22° 41' N. , 70° 35' E.) village situated in the Jodiya Taluka of Jamnagar district of Saurashtra. The actual site, locally called 'Jaidak Timbo', is situated at about 4 km. South of

Pithad village on the eastern bank of the Aji River. This large site at present is composed of two mounds. The excavation at Pithad was carried out by the Department of Archaeology and Ancient History of the M.S. University of Baroda, during the field season of 1991-92, under the direction of Professor V.S. Parekh and Dr. V.H. Sonawane.

The first mound, Jaidak – I, is larger one measuring about 300 x 150 m. and has a height of about 5 meters from the surrounding plain. The second mound, Jaidak 2 probably an extension of the first mound, but now separated by a deep erosional nalha, is at about 50 meters south-east, and measures 140 x 30 meters. Excavation was carried out on the Jaidak – 2 mounds at its north western corner where structural features were clear on the surface itself.

The excavation had revealed a 1.40 meters habitation deposit having five different layers belonging to two distinctive periods. Of these, Period – I belonged to the Mesolithic culture and Period – II belonged to the late Harappan culture. The Mesolithic culture at the site is represented by layers 3, 4 and 5, having about 80 to 90 cm. deposits. It directly lies over an alluvial deposit of loose gravel and sand. The Mesolithic deposit has yielded a large number of micro lithic deposit has yielded a large number of micro lithic implements and other arte facts like pieces of flat sand stone ‘palette’ and hammer stones. The industry includes both geometric and non-geometric tool-types along with simple blades and flakes and other lithic waste. The collection, however is predominated by non-geometric tool types like a variety of points, backed blades, borers, retouched blades and flakes, an a large number of fluted blade-cores and a few flake-cores. A temporary break in the occupation at the site during this period is indicated by about 10cm. thick sterile deposit in the middle of the strata. A probably Mesolithic working floor has been traced at this level, on the basis of the regular arrangements of large, flat stone slabs and clustering of arte facts around these slabs. No substantial quantity of faunal remains id found from this deposit. A noteworthy find from excavation was the discovery of a few piece of ostrich egg shell from this level. It is for the first time ostrich egg-shell pieces are found from a stratified Mesolithic context in Gujarat.

The late Harappan occupation at the site is represented by about 50 to 60 cm. deposit. The deposit of Period – II which is lying directly over the Mesolithic deposit, shows two phases of structural activity. The first phase of structures at the site is represented by a long rubble stone

wall, with remains of a few more small walls in the second layer. However, the entire extend of these walls could not be traced in the excavation. Associated with this structures was found a large pot buried underneath the floor level. Structures of the second phase were built after leveling the debris of the earlier structures. The excavation laid bare large rubble built structure consisting of a rectangular, 6.2 x 5.5 meter hall with two smaller rectangular compartments attached to its main wall on its western side. The main wall of this structure has a width of 75 cm. and its extant height is 40 cm.

Fine red ware, buff ware, buff and cream slipped wares; coarse red ware and coarse grey ware are the important pottery types recovered from this deposit. The pottery bears similarity with Rojdi – Band Rangpur – II B and C period potteries. Bowls, pots and jars with various rim and body features, dishes and dish-on-stand are the important vessel shapes in pottery. A few of these vessels, especially bowls were decorated with simple painted lines and strokes in black pigment. However, large coarse red ware pots were generally decorated with simple dots and wavy lines incised on them. Besides, a few small pottery lamps and a sherd of stud handled bowl are also met with in collection. The black and red ware, so common in Harappan sites in Saurashtra, is not found at the site. A large number of small terracotta bi-conical beads and a few beads of chert, agate and carnelian, micro lithic blade tools and bits and pieces of copper/bronze objects are the other important antiquities recovered during the excavation.

Faunal remains from this period include fragments of bone, horn-core, antler and teeth of exploited animals. Besides, the faunal collection incorporated a large number of bivalve shells, which are found heaped in discrete cluster at different parts of the structure. This definitely indicates a wider and intense exploitation of aquatic resources by the late Harappan occupants of the site.

Terracotta objects:

Very few objects of terracotta have been yielded from this site. Discs made out of potsherds were found many in number. The edges were smoothened and perforation was done in the middle. Crucible pieces were found and fragmentary crucible was found from here. **Plate 3**

Discs: A disc with perforation made out of potsherds rectangular in shape with rounded corners and two perforations in the center. The length of the specimen is 34.41 mm. The width of the specimen is 5.43 and the breadth of the specimen is 25.93 mm. Many such rectangular discs with multiple perforations were also found from here. A Circular shaped terracotta disc with 28 perforations, surface treated with dull red wash, smooth along the circular end measuring diameter 43.11 mm, thickness 3.42 mm

Beads: Among the terracotta objects beads were found in large number. All these beads are handmade and well fired. They are twenty in number. They come in different shapes like the small barrel shaped beads; the big arcanut shaped beads having length of 23.07 mm and diameter 36.69 mm; round shaped bead with buff slip having 6.30 mm diameter; a small bicone, finished, handmade bead was found whose diameter is 6.59 mm. and thickness is 7.54 mm; Another unique small pot shaped beads have rim like projection on one end treated with red or brown slip four in number were found from here, measuring length 27.94 mm, diameter 36.79 mm.

An incomplete bead spacer made on a potsherd, surface treated with chocolate slip, fine fabric, perforation narrow in the middle, rectangular in shape, smooth along the periphery was also found.

Net Sinkers were found six in number. They might have been used as a weight, for fishing nets, or used by the fishermen. Net sinker looks like a bead having central big perforation. The one end of it is bigger and more rounded while other end of it is narrow and sometime with like a rim. A complete specimen of the net sinker, red in colour was found which was handmade. The diameter of the hole is 11.04 mm. and the length of the specimen is 26.81 mm. Another complete specimen with buff slip finished and handmade which has the length of 27.066 mm. and diameter of the hole is 10.88 mm to 0.22 m. Yet another specimen with blackish buff slip, convex sided finished and handmade. The diameter of the hole of specimen is 8.95 mm. Three discs were reported from this site were made of potsherd.

Rangpur

Rangpur (22° 26' N & 71° 55' E) is situated in Surendranagar district on the banks of river Bhader. An extensive site on the Bhadar River, trial diggings were undertaken in 1935 by M.S. Vats (ASI-AR 1934-5). He declared that it was a site of the late period of Harappa culture. Later on Ghurye, (1939), Dikshit (1947), and S. R. Rao (1953-56) excavated the site. Rao has classified the occupational deposit in four Periods with three Sub-Periods in the Harappa culture, Period II with an earlier, Period I, Microlithic, and even a Middle Palaeolithic stage, the last encountered in the river section, with points, scrapers and blades of jasper. The sequential datings as given by him are as follows: Period I: Microlithic unassociated with pottery, 3000 B.C.; Period II A: Harappa 2000-1500 BCE; Period II B: late Harappa, 1500-1100 BCE.; Period III C: transition phase of the Harappa, 1100-1000 BCE.; and Period III: Lustrous Red Ware 1000- 800 BCE (Rao, 1963:20).

As number of C-14 dates is available the dating of the Period of C Rangpur is based on a number of considerations, viz. thickness of deposits, changes in ceramic traditions and comparison with other sites both topologically and on the basis of 14C dates for Lothal, Navdatoli. The Harappan elements could be seen from II A to Period II C and late Harappan in Period III. The Period II A had inhabitants living in houses built on mud brick platform sometimes with bath having both private and public drains. Pottery included Red, Buff, and Grey, Coarse Red ware and micaceous red ware and Black and Red ware. The Micaceous red ware yielded stud handle bowl which is typically regional. Antiquities yielded are copper celts, pins, bangles. Gold and steatite disc beads and shell bangles terracotta toys. Period IIA was destroyed by floods and was followed by II B. The pottery found is of coarse fabric and Red ware, Buff ware and Micaceous Red Ware. Period II C is represented by pottery Lustrous Red ware Micaceous red ware is dominated by stud handled bowls. The Rao no doubt admits the arrival of new elements in Periods II C and III but at the same time feels that they were due to contact. According to him the equipment of Period II C are evolutions from the Harappa culture. Defining the importance of Rangpur, Rao says: 'The penetration of the Harappa culture into the Kathiawad peninsula, its survival up to the end of the 2nd millennium BCE in a decadent form, subsequently transforming itself into the Lustrous Red Ware culture, and the establishment of a continuous cultural sequence from 2000

to 800 BCE are important contributions made by the excavation at Rangpur. But it may be difficult to regard the new elements of Periods II C and Period III, particularly the Lustrous Red Ware, as evolved from the Harappa and as such a continuity of the Harappa sequence till 800 BCE., which itself may be too low a date for Period III, is open to question (Rao, 1963:20).

Terracotta Objects:

Animal figurines: Fine levigated clay was used to make the terracotta figurines at Rangpur. They are handmade and baked to a dull red colour in Period II A to grey or pink in period II C and III. There are painting decorations found after the application of slip or burnishing on the figurines which are found from period III. Among the animal figurine there are around 26 animals figurines were unearthed. Of these animals seventeen are bulls, two were dogs, two were horse and rests were unidentified. The animal figurines a slip were applied and their surface was burnished. They were very smooth and lustrous in appearance. Some of the bull figurine had hump and some were humpless having short legs, sometimes decorated with pinched mark and sometimes without decoration. They are found in red, grey and brown colour. Horses had mane indicated by an indented marline head visible deeply incised nostrils and had head with pricked ears. They were red in colour (Rao, 1963:20).

Beads:

These are more prolific among the personal ornaments of the Harappan. These were found in all phases but were mostly found in Period III. Pear shaped beads with a flat top and bottom and barrel shaped beads with raised edges were common types. Others were long truncated bicone, and long barrel circular with red slip. Almost twenty five beads were found from this site. Sometimes having black bands, incised horizontal strokes were found as decoration over red slip. They were convex pulley like sometimes having yellow wash.

Miscellaneous objects:

Other objects include horns, bird whistles, marbles, tabloids and small cart frames. Three bird whistles yielded in the excavations. One of them broken and other two are intact. They are prepared by joining the two moulded halves. Three small balls or marbles were recovered. Horns of animals were yielded from this site three are identified as bull and another one is of stag.

A small miniature cart frame has been found with axis hole and vertical perforation to fix the pole. Other objects found are a broken lead of a human figurine, a tabloid and many triangular cakes of various sizes, with pointed or truncated corners. Balls with pinched finger marks of also known as mushtika were found from ashy hearth were also found (Rao, 1963:20).

Ratnapura

Ratnapur ($23^{\circ} 28' N$, $71^{\circ} 48' E$), one of the late Harappan settlement of the Rupen estuary, is situated about 5 km. South of Shankeshwar in Sami Taluka of Mehsana District (Bhan, 1989, Sonawane, 1990). The excavation at Ratnapur was carried out by the Department of Archaeology and Ancient History of the M.S. University of Baroda, during 1983 under the direction of Professor K.T.M. Hegde.

The site is located at a distance of about 1 km. south of Ratnapur village, on the relict sand dune, formed on the northern bank of the Rupen River. A large depression seen on the northern bank of the mound might have served as a main water source for the settlement. The archaeological remains of the site are spread out in four distinct areas. Of these, concentration III which lies between concentration II and IV, occupies top of the dune covering an area of about 90 x 80 m. A small trench measuring 5 x 5 m. revealed a thin deposit of 5 cm. comprising large quantity of animal bones and lithic debitage. The lithic industry consists of blades, lunates, points and debitage of the manufacturing process including cores, made of chert, chalcedony, agate and jaspur. The lithic debitage is characterized by the typical Mesolithic tradition of this region. This evidence clearly suggests that prior to the late Harappan settlement this portion of the mound was occupied by the hunting-gathering community of the Mesolithic period. The other three localities (concentration I, II and IV) were inhabited by the late Harappans. It seems the immigrant Harappans did not occupy the area of the mound which was initially inhabited by the Mesolithic community. Excavations carried out in concentration I and II located little north of concentration III, measuring 35 x 50 m. and 60 x 60 m. respectively revealed a habitation deposit of 60 cm. comprising 4 layers incorporating 3 structural levels. The lower two strata revealed four circular huts marked by post-holes, while the upper one is devoid of such regular well laid

structures. The habitation of this later phase is marked by irregular hard rammed mud floors as working areas. The concentration IV located on the bank of the Rupen, measuring 100 x 150 m. was characterized by mostly circular pits. The largest pit measuring 2.60 m. in diameter and 1 m. in depth was found filled with ashy clay, variety of terracotta lumps, charred and uncharred bones together with late Harappan pottery.

The overall collection of cultural material remains is dominated by ceramic assemblage representing Harappan and non-Harappan traditions. The most distinctive types are sturdy red ware, coarse grey ware, lustrous red ware, chocolate slipped ware, buff ware, coarse red ware, and white painted black and red ware, polychrome ware and rusticated ware. Most of these ceramic types show strong affinity in their forms, fabric and decorations with the pottery types reported from Rangpur period II-C and III. The occurrence of chocolate coloured tan slipped ware, buff and cream slipped ware and coarse wares at Ratanpura indicate that the late Harappans of Gujarat had developed contacts with cultures related to Period I-C of Ahar. The presence of lustrous red ware at Ahar I-C also supports this hypothesis.

The excavation at Ratanpura revealed number of terracotta stamped sealing, three clay lumps with reed marks, beads, stoppers, pendant, spindles whorls, fourteen pellets, discs, mushtikas, etc.

A broken piece of clay lump which bears a stamp impression was an interesting find. This seal impression indicated geometrical motifs like horizontal lines looks like rays, small circles, point (dot) etc. Here the two small circles with central dot surrounded by big circle and this big circle enclosed by the band of lines or rays. These rays are small and somewhat thicker. The specimen is well backed, handmade. There is no indication of use.

This specimen is somewhat diamond shaped and crudely made with a seal impression. The seal impression includes geometrical motifs like circle, dot, rays, curved lines, etc. Here also two small circles with central dot are clearly seen. They are enclosed by curved lines which may be forming a big circle and again this surrounded by a ray like lines were handmade. There is also two other fragments may be part of the above described specimen.

Other finds are fourteen pieces of pellets ranging between 10 mm. to 20 mm in diameter, nine mushtikas. A specimen of oblong or oval mustika, thick and not broad was found from here. The finger marks shows that it may be made by using right hand. This was a complete piece, handmade and well backed. The length of the specimen is 79.24 mm. The width of the specimen is 51.53 mm. The breadth of the specimen is 8.83 mm (Ratanpura).

A specimen of somewhat oval mustika but it is broad and finger marks also suggest that it may be made by using right hands. The impression of all four fingers clear and it suggest the long fingers of the maker. The length of the specimen is 79.21 mm. The width of the specimen is 61.41 mm. The breadth of the specimen is 31.76 mm. This was a finished piece and well baked.

Rojdi

Rojdi (21° 51'N & 70° 54'E) is specifically located on the northern bank of the Bhadar River in Gondal taluka of Rajkot district. This place has been occupied continuously from 2500 BCE to 1700 BCE. This site was excavated by Gujarat State Archaeology and the University of Pennsylvania in 1957-59, 1962-62, 1982-85, 1992-94. The excavation for the season 1984-86 was also participated by American Institute of Indian Studies. The mound measured 500 X 200 meters, having Harappan and Late Harappan traits. Phase A & B is Harappan and Phase C late Harappan. Phase A has yielded lower floors above the platform which shows signs of intense burning and the pottery of this period shows little variation and are of very poor in quality. Phase B represents the peak of prosperity and has mud brick structure and pottery jars, convex sided bowls, perforated jars and dish on stands and Micaceous ware having bowl with stud handles. The pottery found had writings that belonged to Indus scripts. The excavations reveal that the houses in Rojdi were built on stone foundations, with mud walls above them. The pottery that has been excavated in Rojdi is a hard, red to buff ware that was made of well-prepared clay. The most found vessel is the hemispherical red ware bowl, with a stud handle. The pottery also has graffiti with signs from the Indus script. Some copper and bronze flat axes were found. There are two major areas that have been excavated at Rojdi and

these are Main Mound and South Extension. The excavations in these two areas were dated back to Rojdi C period. During the excavation, it was found that the houses here had stone foundations with the walls of mud laid over them. No usage of brick could be found. There was no evidence of any well, drainage system or bathing ghats found here. Phase A dates back to 2558-2137 BCE; Phase B: 2390-1800BCE; and Phase C: 2120-1785 BCE (Possehl & Raval, 1989, IAR 1993-94, 2000)

Artifacts found were copper fish hooks Celts, chert weights semiprecious beads, steatite beads and twenty one gold foil beads with two silver bangles eighteen gold beads five hundred twenty micro beads of gold and many micro steatite beads. Phase C of late Harappan saw a decline. Rubble structure few carnelian, shell and terracotta beads, copper axes, TC toy wheels and shell bangles were found from this phase. The other articles found in excavation included red coloured hard buff made articles that were made of clay (Possehl & Raval, 1989, IAR 1993-94, 2000)

Terracotta objects:

Rojdi yielded very few terracotta objects. Two bulls figurines; one cubical weight, five discs; three beads; one is spool bead; two cakes. One of the best find is plaquemade of fine red ware with red slip applied on the sides and buff slip in the middle and painted in black (Possehl & Raval, 1989: 158)

Santhli

The village Santhli (23° 54' N., 71° 29' E.) is situated in the Radhanpur Taluka of Banaskantha District at a distance of about 22 km. from the Radhanpur town. The excavation at Santhli was conducted by the Department of Archaeology and Ancient History of the M.S. University of Baroda under the direction of Professor V.S. Parekh and Dr. V.H. Sonawane during the field season of 1993-94.

The village Santhli has a water resource in the form of lake which is inter-dunal depression situated on the south-east of village Santhli. The actual site is the Chalcolithic in the nature, locally known as 'Ghanchi No Tiumdo' (Santhli – II) is located about one and half kilometer

south-west of Santhli village, on a large stabilized sand dune. Habitation debris at the site shows discrete concentration on the surface and it is spread over an area of about 120 x 90 m. Four trenches measuring 5 x 5 m. were opened up at different parts of the site after assessing the surface indication of habitation deposit. The excavation revealed total habitation deposit of 40cm. belonging to two distinctive cultural periods: Period – I and Period – II.

Of these, Period – I represented by the 2nd layer-2 having a cultural deposit of 25 to 30 cm. belonged to the Mesolithic culture. The deposit includes typical Mesolithic arte facts of both geometric and non-geometric microliths. This consists of tool type like lunates, triangles, trapezes, crescents, different type of points and backed blades along with blade-cores and flake-coarse. These tools were made on fine siliceous materials like agate, chert, chalcedony, jaspur and occasionally on quartz. Besides, a number of small pieces of flat sand stone slabs or; palette-stones', which are generally met with the Mesolithic assemblage in Gujarat are also recovered from this deposit. In spite of the large area occupied by the Mesolithic community the number of finished arte facts and lithic debitage found in the site are not very rich. This may be due to the fact that the sight might have been occupied only seasonally by the Mesolithic hunter-gatherers.

The deposit, however, yielded large quantity of skeletal remains of the animals hunted by the Mesolithic community. Apart from a large collection of long bones, more than seven skulls of a large cattle with intact mandible and large horn-cores are found in the excavation. From the features of the skeletal elements it seems these huge skulls are of a wild species of cattle. The bones are found as a discrete cluster had four such skulls piled together along with other bones. The sight therefore might have been a butchery and food processing site of the Mesolithic community. Apart from this the macro-faunal remains collected from the site included skeletal remains of sheep/goat, gazelle, pig, equid sp. (*Equus hemionus*) that of fish.

The Period II at the site is represented by a patchy and sparse, hardly 10 to 15 cm. deposit of Chalcolithic habitation directly overlying the Mesolithic. The deposit included a few sherds of pottery, and an equally non descriptive stone and shell beads and shell bangles, all indicating a very ephemeral habitation at the site. However, the Chalcolithic deposit incorporated two extended inhumation burials. Both the burials have an east-west orientation, head resting east. Among these the first burial is an extended joint or double burial of two adult individuals

inferred in the same pit. The bodies are found resting on their back with their head tilted in an awkward position and facing each other. Associated with the burials are found five clay vessels of different shape. All these vessels are similar to the pottery found in the burials at Nagwada.

The second burial is that of a small child and this also associated with a few pottery vessels mainly the large beaker type vessels and a large, shallow bowl or dish with a straight rim, which are similar to the types found in the first burial. But, the vessels were indifferently backed, due to which they showed a tendency to crumble easily. No other burial goods are found from both the burials. Most of the pottery found at the site on the surface and in the excavation is in fact sherds of the burial type pottery, indicating that there are a few more burials at the site which are now being disturbed due to ploughing and erosion. It is also important that no structural remains of any are found at the site.

Terracotta objects:

Only few pieces of terracotta objects are found from this site. One wheel specimen was recovered from Santhli. This wheel is handmade. Slight broken specimen of wheel having one convex side and another plain side and convex sides consist of hub and is buff in colour

Rings –Two specimens of rings were reported, from Santhli. A small piece of ring is handmade and well backed.

Shikarpur

Valmio Timbo (23° 14' 15" N; 70° 40' 39" E) as it is locally named is located about 4.5 km south of the Shikarpur village at the edge of the narrow creek extending eastward from the Gulf of Kutch. The site of Shikarpur was undertaken for the excavations from 2007- 2008 for four consecutive season till 2011 by a team of archaeologists; Kuldeep K. Bhan and P. Ajithprasad along with postgraduate and students of the Department of Archaeology and Ancient History of the Maharaja Sayajirao University of Baroda. The funds for carrying excavations were made available from the University funds, Archaeological Survey of India and the Department of Archaeology, Government of Gujarat. The rectangular mound approximately measures 3.4

hectares covering the entire elevated top of a stabilized sand dune. The overall height of the mound is about 7.5 to 8.00m from the surrounding ground, which is about 8.00 m MSL. Although the site was excavated earlier in 1987 to 1989 by the Gujarat State Archaeology Department, but neither the excavation were published and whatever little was published were patchy and inconclusive. Therefore the site was undertaken up for the re-excavation due its strategic location with a view of establishing the cultural sequence as well as the settlement features in terms of economic activities carried out at the site. Unfortunately, the site is encroached and disturbed by highway construction and development of windmills. Since the site is very close to Highway no 15 connecting rest of Gujarat to Kutch (Fig 1), the long term program of the Department is to preserve the site and develop as place for tourist attraction. A through examination of the surface features indicated extensive narrow ridge-like feature running all around the site suggesting a thick protective wall around the settlement. The site also revealed Harappan artifacts, especially ceramics and triangular terracotta cakes, spread rather evenly on the surface. In addition to the classical Harappan pottery the surface assemblage included small amounts of regional pottery. This season, nine trenches each measuring 5x5m. Among these six trenches were laid in the southern edge of the mound. They are aligned in a straight line extending from the southern fortification wall towards the center of the settlement in the north. The remaining three trenches are laid across a rain eroded gully in the western edge of the site. The excavations revealed a total of 6.40m deposit showing three fold sequences in the Harappan Occupation at the site. The early phase – Phase – I entirely belonging to the classical Harappan represented by about 3.00m cultural deposit. Harappan occupation in this phase starts with structures built of mud-bricks of distinct Harappan style. In addition to the classical pottery, the ceramic assemblage also includes a few sherds of regional pottery types. One of the interesting potsherd recovered from the excavation has cloth impression on interior and exterior side that perhaps would lead us to identify it : Potsherd with cloth impression Other artefacts found in this phase are large chert blades and cores , several terracotta cart-frames of various varieties and wheels, terracotta bangles, terracotta bull and other animals and human like figurines. One of the interesting find of this period is A: Chert Blades and Core, 5 female figurine partially broken off below the knees and the chest above. Its modelling as well as graphic rendering of the female genital is remarkable and noteworthy, which is not often in the case of Harappan female

terracotta figurines. Several stone beads and bead rough-outs along with 'erdestite' drills heads were reported from the site. We have probably located working area of this craft and that area will be undertaken for excavations next season. Faïence and steatite beads are relatively rare; so stone bead and bead rough-outs are shell bangles and ladles. Among copper implements a large Celt is an interesting find. At least five terracotta sealing were recovered from the site one of them with impression of square unicorn seal is quite remarkable. Another interesting artefact recovered from this phase is a steatite button seal having five concentric circles arranged around a central one forming central pattern. It has two small holes at the centre perhaps to thread it and tie it. This phase is followed by the Phase-II which is distinguished by preponderance of the regional pottery types (Bhan & Ajith,).

PHASE-I	Classical Harappan
PHASE-II	Sorath Harappan
PHASE-III	Late Harappan

The total habitation of this phase around 1.40 to 1.60m. This shows extensive use of locally quarried stone for the construction of the structures. The artefacts from this phase incorporate Harappan and local pottery types. Other artefacts like chert blades of Rohri type chert, shell bangles, stone beads, copper implements, terracotta bangles, beads, triangular cakes, craft frames and wheels continue as in the Phase – I. The Phase – II at the top is followed by the deposit representing the last phase of the Harappan occupation. Habitation deposit of Phase – III is thin and patchy and is generally confined to the top 10 to 20cm. The deposit is marked by the Late Harappan Material. Very few artefacts except ceramics have been reported from this phase. This phase also sees complete absence of any craft activity. Structures belonging to this phase are also meagre, except for the remains of flimsy, circular or apsidal stone structures. They seem to have been built using the stones from preceding phase. In addition to this a portion of the fortification wall in the southern edge of the site that is entirely made of mud bricks. The history of the construction of this wall is not as yet clear as the excavation of the trench could not reach up to the bottom level of the wall. The excavated part of the wall is about 2.00m high and has 15 vertical

courses. The exposed part shows two stages of construction and massive repairs work carried out in the early stages of the Phase II.

Terracotta Objects: Large numbers of terracotta objects have been recovered from Shikarpur as there might have been a demand of the toys due to vast population. The objects were a part of the day to day lives of the people having different variations, style resources and specialization.

Plate 8

Animal figurine:

A total twenty nine figurines were found from the excavations of Shikarpur in the last four seasons. Most of the figurines are of the same size. The length of the figurines varies between 20-80 mm and height between 25-50mm.

Only few figurines could be identified with distinct animal forms because of the bad state of preservation. A few figurines could be identified as 'bull'. The figurine designed as 'bull' are further classified into humped bull figurines, hump less bull figurine, stylized figurines in which the legs are joined, having a long snout, pointed nose and a curved hump. They are handmade and made using sandy clay. Majority of the animal figurines are small in size. Two specimens show provision for a movable head. The purpose of a whole in the figurines is to attach it with cart frame or to make it movable head. There are presence of light traces of paint and design over the figurine.

Figurines of Shikarpur show poor workmanship in comparison to those of other sites of Gujarat, which could be the reason of the bad state of preservation. Although the quantity of figurines is higher in Shikarpur there is no single evidence of unique figurine from this site. It is difficult to define the function of the figurines from here as very few of them revealed clear-cut evidence of them being used for playing purpose. Two figurines found from this site which the excavators refer to as 'unidentified object' seems to resemble a crude tortoise. Female figurine was found partially broken below the knees and the chest above. Its modeling as well as graphic rendering of the female genital is remarkable and noteworthy, which is not often in the case of Harappan female terracotta figurines.

Cart frames:

A large quantity of cart frame was also recovered from the site of Shikarpur. Like Bagasra most of them have been found in broken condition. Only a few cart frames have survived the ravages of time. Cart frames from Shikarpur show similar characteristics to those from Bagasra.

A total of one hundred twenty three cart frame have been found from this site in the last four seasons of the excavations. From this site two forms are found solid type and perforated type. Solid types were found in large numbers whereas perforated ones are in less number. Only a few fragments show variations in size with the width ranging between 35-75 mm and length between 45-105 mm.

The cart frames here do not show any unique feature, most of them following the same pattern. They were handmade, using both sandy clay and fine clay. The rectangular shape with rounded edge, have perforations on each side and the middle of both short sides also have perforations to attach a stick. There existed a minute perforation in the center to hold the vertical struts. The perforated type are quite interesting as they are quite big in size and made by very fine clay although no complete specimen of this type was recovered.

Cart frames from Shikarpur also reveal evidence of decoration. Few cart frames are painted in red color with design like checkers, stripe and dotted design. Most of them are well fired and reveal shows poor firing conditions. No unique feature was observed in the cart frames from the Shikarpur, but they are quite rich in quantity and also show the great variations in size.

Wheels:

This site is quite rich in wheels; a total of 60 wheels were recovered from Shikarpur. They exhibit characteristics which are very similar to those from Bagasra. Most of them are however broken, only few wheel survived in good condition. Variations in size are noticeable here as well, with the diameter ranging from 3-9 cm in measurement.

The wheels from Shikarpur are of poor workmanship. The wheels from Shikarpur are all handmade. Evidence of decoration is very clear, most of them painted with red color. They have

stripes and dotted designs over it in red and brown. No unique features were noticed in the wheels from this site.

Sealings:

At least five terracotta sealings recovered from the site one of them with impression of square unicorn seal is quite remarkable (Fig 6).

Tops:

The total number of tops recovered from excavations is 35 in the last four seasons. They follow the standard size with a diameter ranging between 2-3 cm in measurement. Most of the tops are of fine texture although a few coarse specimens are also present. They are all handmade. These are either well fired or ill fired and are smooth surface to feel. The color ranges from red to dark gray.

Somnath

Somnath also known as Prabhas Patan ($20^{\circ} .53'$ N. , $70^{\circ} .24'$ E.) is situated about 85 Kilometers to the south of Junagadh, the district headquarters in Junagadh district of the peninsula of Saurashtra. On the eastern side of the town is the confluence of the river Haran and Saraswati while north of the Prabhas is the rolling plain of 'Nagara' i.e. the Lilli Naghera (Green Nagher).

The excavation at Somnath was conducted by the Department of Archaeology and Ancient History of the M.S. University of Baroda jointly with Government of Gujarat in 1956, under the directions of Shri J.M. Nanavati and Prof. R.N. Mehta (Nanavati et. al., 1971).

Mound III, IV, and V were selected for this purpose. The trenches were numbered from I to IV. During the excavation, Trenches I and III revealed structures built of stone rubble. The regular shapes of stones point out that they were not dressed for building purpose and it also explain paucity of bricks as building material. No roofing tiles were discovered which leads one to infer that they were covered with leaves, grass, etc.

The excavation has revealed the habitation deposit of five distinctive cultural periods as follows:

Period I: Chalcolithic with Prabhas ware (2000 B.C. – 1700 B.C.)

Period II: Chalcolithic with lustrous red ware (1700 B.C. – 1300 B.C.)

Period III: Iron using culture with red and black ware

Period IV: Early historic (7 B.C. to 00 A.D.) with RPW and associated wares (0 A.D. – 6 A.D.)

Period V: Medieval with crude wares (6 A.D. – 10 A.D.)

The C- 14 dates at Rojdi and Lothal suggested that these cultures belong to the early part of the 2nd millennium B.C. Therefore it is reasonable to place Period I of this excavation in the early part of the 2nd millennium B.C. i.e. between 2000 BCE to 1700 BCE. Similarly, Period II with the lustrous red ware suggested that of it is ware of the latter half of the 2nd millennium BCE and hence the Prabhas layer of the Period II should be dated to this period from about 7th, 6th C.B.C. to about the beginning of the Christian era. Period IV should belong to the first few centuries of the Christian era with the help of the dates from Nagara, Baroda, Timbarva, Vadnagar and other sites. The last period ascribed to the Mediaval period of 6th to 10th Cent. C E (Nanavati et. al., 1971). On the basis of stratigraphic evidences as well as form, Fabric, decorations, pottery from this excavation can be classified into two main groups:

Among the miscellaneous antiquities, a number of fragments of chank bangles Chalcolithic pottery revealed by strata of Period I and II. Historic pottery revealed by strata of Period III, IV, V.

The Chalcolithic pottery included lustrous red ware and black and red ware with the different forms like bowl, dish on stand, globular pots, lid, basins, etc. and is wastage and beads found which shows that chank industry was flourishingly here. The microliths at Somnath also belong to Chathlothic period made up of chert, chalcedony, agate etc. The stone objects found from Somnath are mullers, pounders, large stone balls, querns etc. Among the metal object (mostly copper and iron) limbs of slags, arrow heads, poundes, ladles, nail, fishhooks, celt, coins etc. were found. Terracotta objects from Somnath excavations are very few in number. Most of them are handles of sauce pan with lumps and four legged stand (Nanavati et. al., 1971).

The excavation at Prabhas suggests a continuous habitation from Chalcolithic period down to the early historic and even medieval with some gaps. It is one of the oldest habitation site in this area established on the river Hiranya. However, during exploration carried out by K.K. Bhan of this site, plain and painted red ware, coarse red ware and lustrous red ware was obtained representing the Chalcolithic period comparable to the period I of excavation. Moreover, the Period II of excavation was also represented by red polished, black on red, coarse black and coarse red ware. Only one crested ridge core was recovered from the site (Nanavati et. al., 1971)..

The ceramic assemblage testified the fact that this site might have been occupied during Period II B and C of Rangpur sequence. Judging from the antiquities and ceramics of the site it seems to have started its activity during Chalcolithic period and was further occupied during Historic II, III, IV periods.

Further joint excavation was carried in 1970 and in 1971-73 by the department of Archaeology, Gujarat and the Deccan College, Poona to understand the further about the details of the culture. Again this site has revealed five periods

Terracotta objects:

Animal figurine one horse and an elephant have been reported from this site. A small black mother goddess with pinched face, short upper arms, breasts and fiddle type lower part is found from Somnath which could not be locate and hence could not be studied in detail. One ring specimen has been found from here. Two Spindle whorls have been yielded from this site with small perforation in the middle.

Discs:

Fourteen Discs from Somnath have been reported from here. The discs made on pot sherds. They are commonly reported from different excavated sites. They were made from those pot sherds which were well backed. Mostly all the discs are circular with rubbed smooth surface or rough surface. Sometimes discs also contain central perforation so it could be confused with wheel. From Somnath two fragment of medium fabric lump of shallow dish with in curved rim and a short channel spout for wick reported.

Sling Balls

They are mostly spherical and oblong of various sizes. They are well fired, big and heavy as well as handmade. They might have been used as throwing missiles. Single specimen has been found from here.

Surkotada

Surkotda (23° 37' N & 70° 50' E) is situated in Rapar taluka of Kachcha district. This site was brought to light by J.P.Joshi in the course of the exploration of N. Kutch between 1964 and 1968. The site was excavated by them in 1970-74 & 1979 (IAR 1970-1, p. 13; 1971-2, p. 13), bringing to light a threefold cultural sequence and the settlement pattern of the Harappans. The site was divided into three periods, I A, IB, & I C with each period there was a new trait which suggests that new people were migrating at the site. In Period I A, datable to c. 2300 B.C., the Harappans came to Surkotada and built a fortified citadel and residential annex, made of mud brick, mud lumps and rubble, containing houses with bath-rooms and drains. A new element in the population along with the already extant Harappa is seen in c. 1900 B.C. The newcomers used a coarse red pottery E (Joshi, 1990).

During this Period, I B, a revetment was added to the fortification of the citadel. Besides house walls the important finds are a heavy copper celt and a chisel and the usual Harappa beads, chert blades, etc.

Finally, in Period I C, with the Harappa still living here, another group of people using the black-and-red ware and a very coarse pottery came to the site. The site has yielded typically Harappan artefacts such as seals, weights terracotta toys and specially Equus bones though the species is still under debate and some skeletons in oval pits. The emergent picture after an evaluation of the relative and absolute chronology shows that the entire culture range at Surkotada is well within 2300 to 1750 B.C.E (Joshi, 1990).

Terracotta objects:

A variety of terracotta objects have been yielded from Surkotda excavation. These objects are like the toys and games, ritualistic and religious objects, domestic and miscellaneous objects. Majority of them are reported from all periods of the site. Almost all the essential elements of the typical Harappan terracotta craft traits have been recovered at Surkotda.

Animal figurine:

Only six bulls have been reported from this site which was found from period IB and IC. Out of these figurines only two are completely found where as rest are found in broken state. The complete ones are having hump which are artistically made. One broken specimen with a huge intact back portion of the bull and is broken from the front which is hollow figure with two perforations below the leg and a coiled tail. It is meant for the axle to pass through for attaching it to model wheels. It is painted over white and red surface. This type of huge figure is not yet reported from any other site. Another one of the bull was over fired and very realistically made. Very fine clay was used to make these animals and they are uniformly fired. It is of 13cm in height and width is 14cm. One of the broken figures has a complete horn having perforation may be attached to some toy which was pulled by strings (Joshi, 1990: 282).

Toy cart and frames:

Most of the toy carts and frames are found in rudimentary condition except for one or two. They are found in large numbers along with large number of wheels. Sixteen of them are found to be describable. Maybe it was one of the most popular toy of this place. Two types of cartframe were found from here. The first one had three subtypes. The first type is very thick and strong with four vertical pierced holes on each side to support the wood. Horizontal holes specify the use of shafts to connect one end of the frame to the other and the middle crosspiece. Another variety is the convex frame with a series of horizontal holes and two vertical holes at the end. The paintings are with red in horizontal lines in the corner. The third type is a flat frame with holes for vertical support along the sides (Joshi, 1990: 284).

A second type looks like a box with partition across the middle in some. The holes are seen at the bottom for the shaft and axles of the wheels for pulling the cart. One single complete specimen has been found with criss cross pattern (Joshi, 1990: 285).

Wheels:

Total wheels found are eighty one in number, of which some are painted and some are without painting. The wheels measures between 15 cms to 2.7 cms. Some of them are hand made and some are made out of moils. The handmade ones are very crudely made with rough edges. Even some of them were made out of thick potsherds. The hole in the centre was bored with with some sort of sharp borers which have a big diameter. Some of the wheels have their edges were rubbed and red slip was applied on them. The wheels are sometime biconvex, with hubs. Smaller ones have only one hub and the bigger ones have two sided prominent hubs. Some of them are painted with horizontal lines and some are not (Joshi, 1990: 285).

Gamesman:

A few pieces of gamesman have been found from here. Two stones with their surface scarched with some grooves might indicate some sort of gamesman. Three games man of terracotta from different periods occur in this site. These have wide base and round top or a cone top. The sides have have rounded off or scratched due to constant use and measures around 1.2 to 1.6 cm from all sides.

Hopscotch:

Thses are flat pieces of the potsherds which were rounded off for the children to play. It also could have been used as wheel or in spindle whorl. Fifty five such pieces of hopscotch have yielded from this site. They vary around 8.6 to 0.3cms in measurements. The thick and heavy ones were made from red ware, and small ones were also made from red ware. Hopscotch made from black and red ware were having thin section rough edges and concave inside. Some of these hopscotches were concave inside with flaked edges and has three painted bands on its outside (Joshi, 1990: 297).

Marbles:

A large number of balls or marbles were yielded from surkotda. They are thirty four in number. Mostly many of the smaller ones might have been used for marbles and the medium and the larger ones were used for other puposes. Almost all of them have a smooth surface.

Conical and cylindrical objects:

These objects are found in both terracotta and in clay. They are thirteen in number and out of which seven are in clay. The conical ones have a flat base and the top ends in cone and sometimes flat on the top. The clay ones are broken and rudimentary and even complete ones are found in clusters. One of the interesting facts about the clay cones are they are always found along with ash, loose earth, burnt charcoal, etc which indicates some sort of burning activity. Some of them are in the form of linga shape. This could be possible of some religious activity was carried out with the burnt, ashy linga (Joshi, 1990: 297).

Clay lingas are little larger in size than that of terracotta ones and handmade. They vary from 6 to 5.5cm and some time the colour is yellowish sandy where as terracotta cones are also 5.2cm in length E (Joshi, 1990).

Tanks:

Only one has been unearthed in the excavation. It is rectangular in shape with raised sides and a flat base. It is very coarse in appearance with a gritty core. Its length is 16.5cm and height is 8cm and the thickness is 2.8cm. Most of them are damaged and are coarse in appearance E (Joshi, 1990).

Cakes:

The terracotta cakes are found in different shapes in all the periods of this site. They are of triangular, oval and or circular in shape. The triangular ones are most common among others. The ckaes in general measures from 1.5 to 2cm. They are flat and the corners are rounded and have a uniform thickness. They are mostly found in clusters. Some of these are made out of well lavigated clay and uniformly fire where as some are not very vell fired and have a rough gritty

core. They are found to be fifty four in number. Some of them are broken and few are intact (Joshi, 1990: 299).

Spindle whorls:

They are found from all periods and are sixty three in number. They have some some painted decorations on the top and have small perforations. Most of them are made from broken pot shers by chipping the edges and rubbing them to give a round and smooth edges. The wholes must have been sharpend by some sharp pointed objects. Sometimes they are thick and sometimes thin and many a times they are found in concave thin with a small perforation at the centre. They measures from 7.0cm to 2.2cm in diameter and thickness varies from 1.0cm to 0.15cm (Joshi, 1990)..

Spools:

These are cone shaped objects with a rounded top and flat bottom having a perforation at the centre of the flat bottom. The perforation goes upto 0.5 cm in the interior. According to the author they might have been used as spools for winding the thread, having two spools one on each side joined by some sort of stick and they are only three in number found from this site (Joshi, 1990:302)

Ornaments:

Both terracotta bangle and beads have yielded from all he period of this site. The bangles are all broken. Some of them are painted and vary from thick medium and thin in shape. They have circular section. The beads are one thirty one in number and have yeided from various periods. They are found in all shapes.

Miscellaneous Objects:

Clay balls:

Only one clay ball has been reported from this site and has a rough surface.

Net Sinkers: Again only one special as been found from this sitehaving thick end and thinner section in the middle. The diameter at the end is 1.7 cm and the length is 3.4 cms.

Engravers:

Two of these objects have been reported from this site. They have a sharpened pencil kind of shape having a sharp end and may have been used as to decorate the pots or engrave or even paint it.

Gratings:

These are decorative pieces fixed on walls to serve as ventilators or windows for providing more light and air to the interior of the houses. Only three pieces have been found. They are flat pieces cut by some knife to give a jali kind of decoration (Joshi, 1990:304) .

Vagad

Vagad (22° 19' N., 71° 52' E.) is a small village situated on the right bank of the Sukh-bhadar river in Dhandhuka Taluka of Ahmedabad District of Gujarat. It lies about 10 km to the West of Dhandhuka, on Dhandhuka-Rangpur state highway. The excavation at Vagad was conducted by the Department of Archaeology and Ancient History of the M.S. University of Baroda during 1981-82 under the direction of Professor R.N. Mehta (Sonawane et. al. 1985).

The archaeological mound, locally known as Kedio-Timbo, was located to the south-east at a distance of about 1.5 km. within the vicinity of Vagad village. It covers an area of 450 m, north-south x 300 m. east-west and rises to a height of 2 m. from surrounding plain. The central portion of the mound accumulated maximum occupational debris (Sonawane et. al. 1985).

One meter occupational deposit in exposed trenches revealed five distinct layers of three successive habitation or structural levels. There were not much remarkable differences in ceramic types and other associated antiquities found from different levels. Thus, it proved to be a single period. The site divided into three sub periods viz., Period I-A, I-B and I-C, mainly on the basis of the successive superimposed three structural levels. Each phase was clearly distinguished from superimposed strata of subsequent phase (Sonawane et. al. 1985)..

Significant finds of this excavation are: (i) the discovery of four Yajna-Vedikas, (ii) terracotta and stone weights, (iii) storage jar found buried underneath circular hut floors, (iv) pulley-shaped terracotta era ornaments, (v) partially ground broken stone celt and (vi) graffiti on pot-sherds.

The excavation revealed circular huts like those already found at Kanewal, Zekhada and Nasdi. The layers namely 5, 4 and 3 associated with Period I-A, I-B and I-C respectively, gave evidence of circular huts. Out of six huts, two belonged to Period I-A, one to Period I-B and three to I-C. They varied in diameter from 2.50 m. to 5.80 m. A number of poles, as it evident from the presence of post-holes, supporting super structure of grass and reed ware marked along the perimeter of the artificially raised mud floors. Floors made of rammed clay mixed with Kankar and yellow silt. The evidence of the central post hole found in bigger hut suggests the pattern of trenches sloping roof as common practice.

Another striking feature of this excavation is the evidence of fairly big storage jar found buried underneath the floor of circular huts. Most of them were partially or completely filled with the fine powdery earthy matter.

The discovery of four circular clay-lined fire pits constructed within a slightly raised mud platform on the floor level of Period I-A. Of these, three bigger ones with swaggering base, their diameters being 1 m., 1.45 m., and 1.30 m. respectively. They were arranged in a triangular form at an approximate distance of about 90 cm. between the two. The fourth one, cylindrical in shape having a diameter of 40 cm. was placed a little inside between the southern and western pits. All of them were neatly plastered internally with cow-dung paste mixed with clay. These pits contained ash, possibly of cow-dung cakes.

The ceramic industry mainly consists of a sturdy red ware along with buff ware, chocolate slipped ware and micaceous red ware. However, crude and ill-fired pottery was not absent. It consists of a red ware, grey ware and black and red ware. Typical white painted black and red ware was found only in first upper three layers associated with Period I-C. The characteristics Harappan red ware made of well-levigated clay found uniformly fired. It consisted of convex sided bowls, dish-on-stand with flaring rim and carinated shoulders, square and beaded rimmed jars, basin, and goblets. They were treated with a red slip and rarely with a buff or chocolate slip. Decoration in the form of simple horizontal bands was normally confined to the upper half but in few, they were found on the entire vessel surface. In buff ware, light black or brown colour was used for painting over a buff or greenish buff surface. Decoration consists of simple lines, loops hatched crescents. The form of chocolate slipped ware were restricted to dishes, dish-on-stand,

convex bowls and miniature vessels. Painted designs included groups of vertical wavy lines as well as horizontal ones in dark chocolate shade. Stud-handled bowl, a jar with flaring rim was encountered in micaceous red ware. Hatched diamonds – single or multiple, alternate triangles hatched in quadrants, fish net design with hooks and floral motifs were the striking decorations of this ware. Among the coarse wares, grey ware forms were restricted to jars, basins, dishes, cooking vessels. Some jars were decorated with incised marks and concentric corrugation. Few sherds of white painted black and red ware in the form of convex sided bowls and everted rimmed ones were found only in Period I-C at Vagad. The bowls were painted internally in their own characteristic way. Representations of graffiti on some of these pot sherds have revealed quite interesting designs. Ceramic types, forms and fabric discussed above show strong affinities with the pottery of Rangpur Period II –A-B (Rao, 1962-63), Lothal B, Rojadi I-A-B and Surkotada I. C. The beginning of Vagad settlement is dated to C. 2000 B.C. as per the two radiocarbon dates obtained from levels of Period I-A and I-B. This is indicated by calibrated dates 2190-2080 and 1800-1600 B.C. respectively (Sonawane and Ajith Prasad, 1994).

A variety of ornaments produced from every conceivable material ranging from gamstones to backed clay were reported from Vagad. Beads of carnelian, agate, jaspur, chert, lapis-lazuli, reason might be the failure of monsoon and consequent migration. Cultural assemblage revealed from Vagad shows socio-economic parallels with those found at Kanewal and Zekhada. faience, steatite paste, chank, dentalium shell, terracotta were found in a plenty variety of shapes A funnel remains recovered from excavation has indicated that the presence of domesticated as well as wild animals. Few of them are charred. The accumulation of one meter deposit of three successive sub-periods at Vagad indicates an average life of the Harappan settlement for about four to five centuries. . A number of stone fragments of house hold objects like saddle-querns, pestles, rubbers and sling were unearthed from the working levels of circular huts beside stone blades, cores (Sonawane et. al. 1985).

Occurrence of terracotta ornaments of pulley like shape with central perforation, occasionally painted. This is a common fashion even today among the Bhharvad community of Saurashtra. Besides the ornaments, terracotta objects like spindle whorls, toy cart, wheels discs, horn of bull, crucible and copper objects throw some light on various activities of the Harappan at Vagad.

This site however did not reveal the presence of terracotta sling balls, triangular cakes, punched spherical cakes or even mushtikas

Terracotta object:

Very few terracotta objects were found from this site. Six ear studs have yielded from Vagad; which was a buff coloured, pulley shaped ear stud; a circular bead slight convex top and small convex base with narrow waist; a slightly broken buff coloured specimen of the ear stud with convex top and flat base (Fig. 9-3). Well backed. The length of the specimen is 30.09 mm. The diameter of the base is 33.56 mm. The diameter of the base is 25.24 mm. They were wheel made, finished and well baked. Of which nine wheels were reported. The length of the specimen is 35.46 mm. The diameter of top is 309.09 mm. the diameter of base is 30.45 mm. (Sonawane and Ajith Prasad, 1994).

Two spindle whorls; three specimens of stopper were reported from different excavated sites. The discs made on pot sherds. They are commonly reported from different excavated sites. They were made from those pot sherds which were well backed. Mostly all the discs are circular with rubbed smooth surface or rough surface. Sometimes discs also contain central perforation so it could be confused with wheel. Eight discs was found from Vagad,

One lump from vagad Most of them are ill fired, crude in workmanship, but they also well backed finely worked specimens also. Few of them bear some cut marks or groove of undistinct characters, rest are exclusively plain.

Zekhada

Zekhada (23° .40' N., 71° .20 E.) is situated at a distance of about 7 km. to the north of Varahi, the headquarters of Santalpur Taluka of Banaskantha District of Gujarat. In the vicinity of this village about 3 km. in the south-west direction, there is a sand-stone out-crop. On this mound, Harappan remains were discovered (Parikh, 1976). The excavation at Zekhada was conducted by the Department of Archaeology and Ancient History of the M.S. University of Baroda during 1977-78, under the direction of Professor R.N. Mehta (Momin, 1980-81).

This mound is variously known as Hasmasri, Harapasri or Amasari No Tekro. It is about 600 meters east-west and about 200 meters north-south. The mound has four high localities showing deposits varying from 50 cms to 1.5 m. The total height of the mound is 3 m. to 4 m from the surrounding plain. On the west of the mound, there is a pond and on its eastern side it ends near a 'Vangha' a seasonal water passage which flows in north-west direction, towards the river Khari which is about 3 km. from the site. The Little Rann of Kutch is 10km. to the west of the site. The surroundings area of the site is a sandy plain and almost without vegetation.

On the mound, the archaeological deposit was more at four different points and the settlement was divided into small groups. With this view the settlement was named as locality – I, II, III and IV. Out of these, locality – II occupied the central portion of the mound containing maximum occupational deposit. In all, seven layers were recognized in the habitation deposit. From all the layers Harappan, Post-Harappan and non-Harappan pottery was obtained.

The excavation was concentrated on locality I where floorings of twelve circular huts were encountered in five different phases. In localities – I, III and IV limited excavations were conducted. In locality – I, the floor of a hut was encountered in the first phase I-A only. The twelve huts discovered in locality – II were of two types: (i) circular (ii) circular with a porch on one side. The diameter of the huts varies from 2.60 meters to 3.60 meters. The floors were 10 cms to 20 cms thick made of rammed yellow earth mixed with Kankar and sand. Sometimes, they were plastered with cow dung. The debris on the floor indicated that the walls were made of wattle and daub and plastered with mud mixed with cow dung. The wall was supported by posts erected along the circular periphery at a distance of 60 cms. In a big hut there was a central pole to support the thatched roof. In some of the huts there were lobbies measured about 2.30 meters long and 1.50 meters broad. The huts were furnished with a fire place in the center of the hut or in the lobby. In one of the huts a raised pot rest was traced. From the huts pottery, saddle querns, mullers, terracotta lamps, triangular and oblong cakes (mushtikas). From the floor of one of the huts, a miniature pot filled with micro beads of steatite and two gold beads were recovered. All the evidence indicated that huts were used for living and there was no change in the construction of huts in different phases of their occupation. Similar huts have been reported from Kanewal (Mehta, et. al., 1980:15-17), Nesdi near Valabhipur and Vagad.

In the excavations a variety of antiquities were encountered which were made of terracotta, stone, copper, shell etc. The terracotta objects includes triangular cakes, circular cakes mushtikas, toys like fish, cart frame, net sinkers, rings and pendants.

The copper objects included an arrow-head, strips, wires, pendant like objects were encountered from huts. Broad chert blade and small chalcedony blades were limited in number. A variety of beads made from different material like jaspur, carnelian, agate, lapis-lazuli, steatite, faience, terracotta in different shapes were encountered. Numerous micro beads of steatite furnish the evidence of high perfection in the art of lapidary. The finished shell bangles shell slices, stem and other waste material indicated local manufacture of shell articles. All these antiquities have strong affinities with those reported from other Harappan sites.

The excavations revealed, Harappan, post-Harappan and non-Harappan ceramics from all the phases. The Harappan pottery is distinguished by thick sturdy texture. It is comparatively less in amount but it represents black painted red ware, chocolate ware and perforated ware. Buff ware was represented with a few sherds. Different shapes of potteries like bowls, beakers basins, dishes, dish-on-stand, globular pots, pots with funnel mouth and high necked pots were reported. This pottery has affinity with Lothal – B (Rao, 1956-57) and Surkotada – I C. (Joshi, 1972).

The post-Harappan pottery included plain and painted black and red ware, coarse gritty ware, Plain and incised crude ware and lustrous red ware. These types of pottery have affinity with Rangpur II-C and III (Rao, 1962-63), Surkotada – I .C. (Joshi, 1972) and Ahar I.C. The non-Harappan pottery included different varieties like red slipped ware and reserved slip ware, poly chrome cream slipped ware and reserved slip ware. This pottery has affinity with Surkotada I.C. (Joshii, 1972).

The post-Harappan pottery included plain and painted black and red ware, coarse gritty ware, and plain and incised crude ware and lustrous red ware. These types of pottery have affinity with Rangpur II-C and III (Rao, 1962-63), Surkotada – I.C. (Joshi, 1972) and Ahar I.C. The non-Harappan pottery included different varieties like red slipped polychrome ware; poly chrome cream slipped ware and reserved slip ware. This pottery has affinity with Surkotada I.C. (Joshi, 1972).

The evidence of Harappan culture at Zekhada shows that the Harappans moved not only in Saurashtra Kutch and some parts of Gujarat, but also penetrated in North Gujarat through Zekhada.

Terracotta objects:

Though very few terracotta objects have been recovered from this site, but it reveals a socio cultural aspect of the people living there. One bull figurine, which was not of a good shape and had made; one sling ball or marble; five rings; four pendants; three crucibles; three spindle whorls; three net sinkers were reported from this site.

Bead is one of the important objects for making necklace, an ornament. Terracotta beads are the cheapest to produce and were therefore mostly used by poor people. For making finely levigated clay has been used, which were moulded or modeled and treated with the slips and colours. They are fired carefully in closed ovens where heat was regulated. Sometimes beads also made by rolling clay lumps on fiber or reed which was burnt out when backed. Beads are of various sizes and shapes like barrel, disc, cylindrical, short biconical, truncated bicone etc. _Most of the specimen could not be located in the Departmental collection.

Discs – Twelve discs made on pot sherds were yielded from here. They are commonly reported from different excavated sites. They were made from those pot sherds which were well backed. Mostly all the discs are circular with rubbed smooth surface or rough surface.

Eight pellets were found from this site which were solid, well fired, red or black or mixed tint. Lumps one each recovered from Zekhada. They were handmade, well backed and some of them contain different impression like reed impression, vegetable impression etc.

The copious production of these terracotta objects found from the big centres must have been due to the demand of the market and was patronized by the authorities which were a boost for the artistic creation of art in clay. It peeps into the day to day life of a common man who in their own way put a form of their expression and the culture surrounding them. It is quite certain that the people of this culture exhibited, developed in style by giving these objects greater details and elaboration in depicting their artistic merits. It is not always were the potters who created this art but rather both common man and the artists who fashioned this art form.

CHAPTER III

Analysis & Discussion

The terracotta is one of the important forms of arts and crafts because it is a medium of creative expression of craftsmen through various shapes and forms. They are used as a tool for understanding the life of people because they comprise a variety of items designed for domestic use, ornaments, and toys for children, worship and cult practice, household decoration, popular religious and magical practices. In this regard, variety terracotta objects were reported from different Harappan affiliated Chalcolithic settlements of Gujarat. The different types of terracotta objects recovered from these sites are classified under the headings like animal figurines, human figurines, toys, ornaments, and miscellaneous objects which are also further divided as following.

Ancient people shared a close bond with nature. He created several animal forms of various sizes from different mediums. These objects for instance provide vital clues regarding the animal populations of a particular region during a particular period, for instance, the depiction of a rhinoceros on a Harappan seal indicate that rhinoceros were quite common in Northern India during the Harappan times and probably also served as a totem.

Among the riverine civilizations of the ancient world, Indus civilaization has its unique position. Ever since its emergence on the scene, archaeologists, historians and scientists from diverse fields have put in their expertise in solving different issues pertaining to Harappan culture. The complexity of the civilization, however, is that much remains to be understood even after nearly five decades of its discovery. Attention has been focused of the study of the major issues of Harappan civilization viz., the origin dispersal, decline, decipherment of script, authorship and other broad fats of material, culture like subsistence, trade and commerce, cultural contacts with other contemporary civilization. Undeniably, these are important problems to be tackled on a priority basis, but at the same time, there is an urgent need to divert our attention to the seemingly less important cultural arte facts hitherto neglected but which have vital repercussions

so far as the cultural understanding of the same is concerned. The object so far classified as minor antiquities have legions to speak about this culture. The terracotta objects come under this class of antiquities.

A rich repertoire of terracotta object is unearthed from almost every excavated or reported from explored Harappan sites. Profusion in number, richness in variety and different usages to which terracotta objects could have been put to, should make them attractive to a researcher in this field. The recent trend in archaeological researches is towards a holistic approach of cultural reconstruction with an emphasis on the life of common man (Tripathi & Srivastava, 1994). The terracotta art is a common man's mode of expression. This highly evolved form of plastic art is a powerful medium to understand day-to-day life of man. Though terracotta art has been designed as 'rustic art' or 'poor man's art', this beautiful evidence is a delightful mode of expression and a powerful source of cultural understanding. The sheer enormity of the number is a valuable tool for a better understanding of life of the people.

Dholavira needs a special mention as it is one of the five largest cities of Harappan civilization. Moreover as situated in the strategic region where trade routes was passing nearby and more over it was surrounded by many other centres which were catering to the needs of this city for many art and craft. The towns like Kanmer, Shikarpur Bagasara were all lying in the surrounding areas of Kutch. Lothal was a part of a major river system on the trade route of the ancient peoples from Sindh to Saurashtra in Gujarat and a centre for craft activity with hearths and markets. It

The favourite among animal was the bull with hump without hump and sometimes bull on wheel where as the other animal figurines were less in number. They were commonly found from all the sites. The same is true for the data under review. The other animals are far and few in between. The horse figurines found from Somnath and Amra are not available; none of these were available for the study. The other animals in the collection are represented by doubtful cases since both these sites revealed historic occupation just above the Harappan levels.

Ancient people shared a close bond with nature. Among the animal figurines following main forms were found –Unicorn, Bull, Dog, Horse, Pig, Ram, Elephant, Tiger, Rhinoceros, Leopard,

Bear, Cow, Duck, Squirrel, Peacock, Swan, Sheep, Nilgai, Hyena, Buffalo, Goat, Monkey, fish, Animal head, Horn, and wheeled animals. These figurines were of realistic and conventional types. Highly skilled artists must have modeled the realistic ones with care and the third category are found the larges and mostly in the rural areas. They must have been made for amusement for their children's toy or for some demand from the people. These figurines were mostly hand made and very few are mould made. Almost all sites bull figurine were found in large numbers except for Dholavira where Ram was found in large number. Dholavira being a big centre yielded a large number of animal figurines almost hundred eighty six in number. They were found from different excavated areas of Dholavira. They had different varieties with red and chocolate slip with white or black decoration having vertical or horizontal strokes and sometimes with incisions decorations. Birds were found largest in Dholavira numbering eighty five having varieties like ducks, whistle birds and others. One hundred and four animal figurines were found from Lothal. There were wide ranges of animals with wild and cattles, beautiful solid ones where bull is found in large number. Kanmer too yielded large number of animal figurines numbering twenty five followed by Shikarpur and Bagasara. Fig 1.

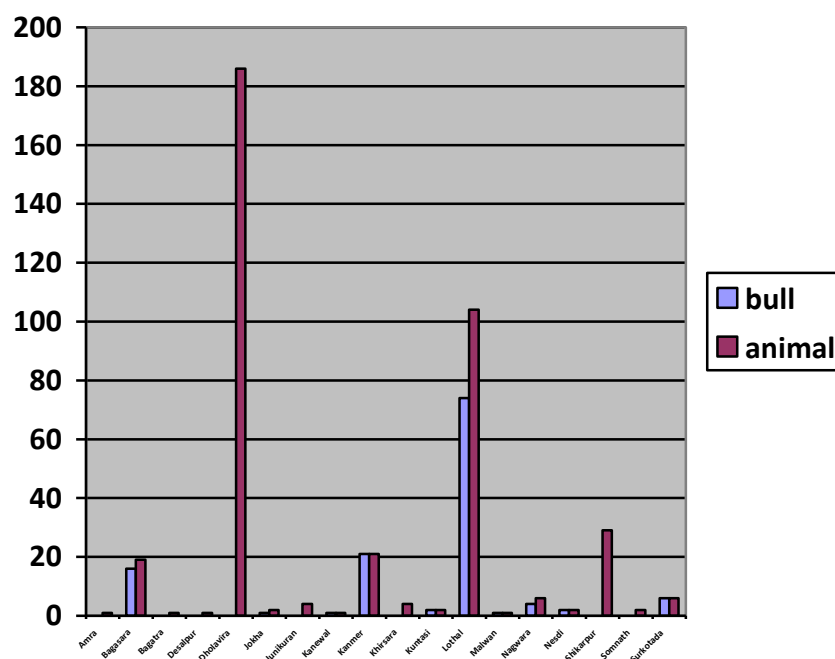


Fig 1. Animal Figurines

A large number of human figurines have been discovered in other Harappan metropolitan sites where as other than Lothal and Dholavira human figures in Gujarat are meagre in number. In the first group, human figurines are very few as compared to the animal figures. Among the human figurines only female figurines are present whereas male figurines are completely absent. Even among the female representations only one specimen obtained from Nagwada deserves special attention as it is one of the rare types of its kind. It has generated a great deal of interest because of its unique novel features, not so far reported from any other Harappan sites confined to the Indian sub-continent. Earlier it has been identified as female figurine by the excavators (Hegde, et. al., 1990). This could have been modeled just an ordinary female figurine as a toy for small children to play with.

The development of long distant trade and regional trade could be witnessed through these toy cart frames, wheels and weights. These were some popular items as most of the site have yielded toy cart and toy wheels. They are still popular among the rural areas to carry loads. In Harappan times they were of two types that are flat rectangular frame and concave rectangular frame with perforation and either with or without slips applied on them for decoration. They were found in various sizes. Dholavira yielded a large number of both complete carts and fragmentary cart frames and wheels which were both hubbed and hubless followed by Bagasara. The carts with flat rectangular framed carts are similar to that of the toy carts found in other Harappan sites elsewhere. This shows that Dholavira situated in the strategic route connecting Sindh and Gujarat, was a centre of trade and commerce where people from Sindh and other parts of Gujarat met for commercial purposes. More than two thousand pieces and fragments of toy cart frames which are solid rectangular chassis and concave chassis have yielded here. Another only one specimen was the cabin variety and had white and black painting as decoration. Shikarpur yielded one hundred twenty three cart frames from four seasons of excavation. Here solid ones are found in large number whereas the perforated ones are found less. Cart frames from Shikarpur also reveal evidence of decoration. Few cart frames are painted in red color with design like checkers, stripe and dotted design. Most of them are well fired and reveal shows poor firing conditions. Bagasara yielded forty three fragments from the excavation in 1996 and in 2004 belonging to Phase II. Majority was of solid type and fifteen were perforated. They were

found in different sizes and many in worn out condition. Other sites of Gujarat yielded less number of cart frames.

Dholavira yielded more than five hundred wheels having sharp hubs and with convex surface with one side perforation. Large number of wheels gives wide range of diameter from being thin to thicker variety. The painting was well defined for axles done with white on red slip. Shikarpur yielded sixty wheels. Bagasara also yielded forty one wheels. The hub is prominent, sometimes the mouth of perforation on the inner side of a wheel become a wide, because of it being used for long time. Evidence of painting is clear. They are mostly painted by red color and they also show stripes or spokes and dotted design over it in white and black. Other sites did not yielded much of this particular toy of cart frame and wheel. Other than toy cart frames, five models of boats reported from Lothal and two of them had sails on them.

Harappans were known for their love for ornaments. These included rings, bangles, ear-studs, pendants and beads. Amidst the wide range of terracotta ornaments – bead and bangles are quite popular as a poor man's choice. So far the beads and bangles are concerned – there is not much variation in the naming of these objects. Throughout the Harappan period, they remained in fashion and there is no regional variation also. The only remarkable antiquity of this type is the pulley shaped ear ornament. It is interesting to note that most of these objects were reported from those sites where Harappan as well as non-Harappan material remains was found together. Another interesting feature is that this type of ear ornaments were not reported from other Harappan settlements found outside the Gujarat. From this observation, it is quite clear that this typical ornament was used by the women folk of Gujarat who were the natives of this land and not those who migrated from archaeological research in Gujarat, it can be stated that there existed an indigenous base community which co-existed with the immigrant at a majority of the sites in Gujarat. Therefore, the pulley shape ear ornaments, especially belonged to the indigenous local non-Harappan community of Gujarat and not to the Harappans (Sonawane, 1991).

The third category consists of objects like crucibles, net sinkers, spindle whorls etc. Most of these objects possess functional character associated with some industrial or production activities and served as necessary associated tools and instruments. Crucibles are generally used by the coppersmiths or goldsmiths for melting and casting metals. So the presence of crucible at

Nagwada and Vagad certainly indicates some kind of local working of metals. The net sinkers were definitely used as a weight for fishing nets by fishermen. The presence of net sinkers at a particular site thus throws a light on the fishing activities of the people and fish taken as one of the food items. The evidence of the use of woven fabric at Nageshwar is provided by a cloth impression on a pot sherd. The discovery of spindle whorls at most of the sites provides an excellent evidence of the woven fabrics. It is quite possible that either cotton or woolen threads might have been spun during the Harappan times for making garments or even ropes. Except few handmade spindle whorls, the rest are made on pot sherd by rubbing the edge and perforating it in the middle. Cotton plant is found in plenty in Gujarat. The Bharwads are expert spinners and keep moving from one place to another with their herds of cattle and sheep/goat in Gujarat use spinning wool. These types of spindle whorls are called 'Takli'. House hold objects like skin rubbers, triangular cakes, pinched clay lumps, mustikas, sealing etc. played an important role in the domestic life of Harappan community. According to Rafique Mughal's opinion that triangular cake, clay lump and mustikas could have been used as wedges in the pottery kiln (Mughal, 1994). So far as the sealings are concerned, only one sealing is reported from Nagwada. The presence of sealing at Nagwada indicates the population of Harappans which formed a part of the Nagwada inhabitants. This finding clearly establishes cultural and commercial contacts of Nagwada community with other commercially prosperous Harappa settlements. The clay lumps bearing stamp impression found at Ratanpura are also quite interesting. This type of stamped impress designed is found for the first time in Gujarat from a site which belongs to a late Harappan period. Such stamped impression decorated clay lumps might have been used for house decoration.

The presence of triangular cakes, pinched cakes, pinched clay lumps and mustikas at the Harppan sites is still enigmatic. The functional or utilitarian of these are still a matter of controversy. The triangular cakes and pinched clay lumps are considered as diagnostic arte facts of the mature Harappan period. This helps us in identifying cultural association of the site on the basis of either presence or absence of this type of objects. Mustikas, by and large occur at sites representing different cultural phases. The information and occurrence of these objects from various sites does not pin-point at any positive evidence in favour of their functional identity.

So far as the toys are concerned the collection includes marbles, wheels, cart frames, discs and teetotums which might have been employed as various ways and means of entertainment of pass time activities of the children in general as the present day children do. Among the religious objects only votive tanks and votive stands are identified in the Departmental collection.

Besides, these, there are few objects which were grouped together under the category of miscellaneous objects. They include mostly clay lumps with reed impressions. The presence of such clay-lumps showing reed impression suggest the pattern of the construction of houses as well as wattle and daub method and also the used of reeds and clay lumps in pottery kiln. Therefore the area of occurrence of these clay lumps is essential to bring forth substantial condition with regard to its use. Apart from these, are few more objects which are partly broken or in various stages of preservation and hence could not be identified correctly and so labeled as unidentified objects.

The terracotta art in India, as often been described has had a checkered history. Beginning from circa seventh millennium BCE, the tradition has managed to survive till today. However, the terracotta art of the Harappan period stands out on its own as compared to later periods of the Indian sub-continent.

These terracotta objects, like pottery, throw valuable light on the occupations, artistic achievements and even religious belief of the people in general. Owing to the scarcity of stone, metal and other expensive or non-availability of other of stone, metal and other expensive or non-availability of other suitable materials, backed clay served as a substitute wherever possible. The “poor man” had satisfied himself with ornaments made of terracotta, as shells, metals and gemstones were very expensive. Sling balls and fish-net-weights were also made of backed clay instead of stone. However, the reason for preferring clay to stone is that it is a suitable medium for modeller to exhibit his artistic urge in shaping human and animal figures, personal ornaments, toys and even in making of domestic artefacts.

A close observation of terracotta objects revealed that they were, by and large, the products of handmade techniques. It has been unanimously accepted that the potters themselves made figurines and other objects of the terracotta. The clay as well as techniques employed might have

been same for manufacturing ceramics and terracotta objects. In this regard, the remark made by Mackay is noteworthy: “In many cases, exactly the same clay was used as for the pottery, and it is likely that the source of the supply was the same for both the potters and the image-makers” (Mackay, 1976). In the light of such observations, one attempts at reading the clues provided by pottery making techniques for the manufacture of terracotta objects. Though majority of the terracotta objects were made by hand, there are instances of the use of wheel as well as mould. So far as the handmade terracottas are concerned, they are the products of clay which was shaped by hand possibly at the leather hard condition. The objects were dried in sunlight and then subjected to firing, painting or slip, etc. was applied subsequently. Most of the Harappan terracottas are solid which happens to be one of the earliest methods of terracotta manufacturing. In the collection studied so far, not a single specimen of hollow terracotta was reported though few are found from other sites in Gujarat. So far the decoration techniques are concerned; they are decorated either by pinching applique or incised techniques. This elaborately shaped clay objects were later on subjected to firing for endurance and performance. The terracotta objects also must have been backed like pottery. Though majority of the objects under study are simple red colored objects devoid of much surface treatment, some of them have been treated with a slip or wash and even decorated with painted designs. Pulley shaped terracotta, ear ornaments are the best example of this type. They are many objects which are fashioned on pot-sherds by rubbing the edges to give a desired shape. Spindle whorls, discs, etc. can be classified under this category.

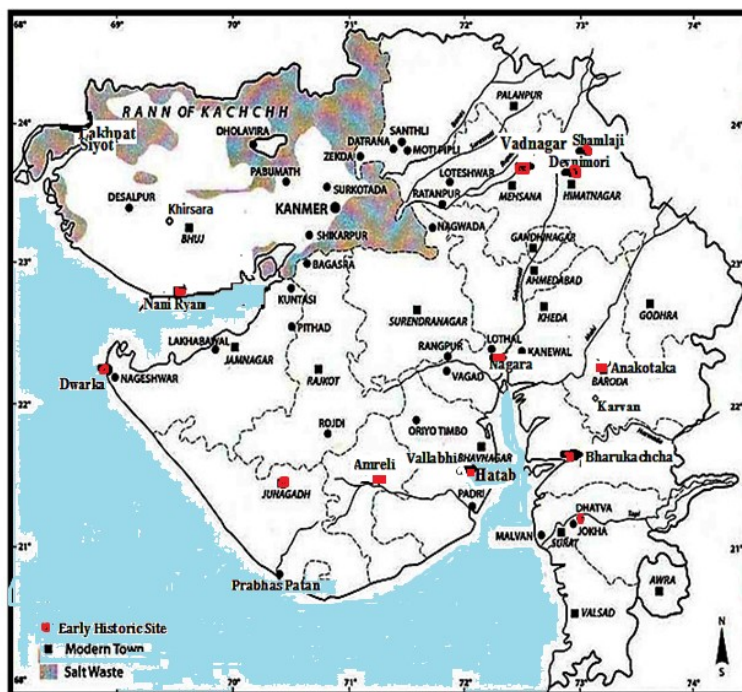
Chapter IV

Early Historic Terracotta

Early historic Gujarat transformed during this period through a combination of emerging dynasties, prospering commercial connections, and increasing urbanization. This period witnessed many changes with the rise of Buddhism and Jainism and opening of the trade routes on the long coast of Gujarat. The strong rule of the monarchs was the first element and the second was the backing of the ministers along with a marked territory. The political stability provided by the Mauryans and Western Kshatrapas dynasties and introduction of iron enabled commerce to move throughout this region and the implementation of a new coinage system facilitated the standardization of exchange.

The Early Historic period of Gujarat was flourishing with ports and big market towns. Terracotta art has managed to survive from the Harappan period to till date. In the beginning it was the Harappan civilization which saw a thriving centre of this art. Then comes a recession and again in the early historic period marked by the Kshatrapa rule Gujarat witnessed a steady flow of traders and increase in the craft production. The making technique in the evolution in the compositions marks as the development of terracotta art in the subcontinent. This art gradually gained momentum and came a long way from the Harappan period to the Early historic period. The kshatrapa period of Gujarat can be said to have been the most flourishing period where we see the increase in trade and influence of foreign made could be seen in various craft.

Different types of terracotta figurines were found from various parts of Gujarat. These were found from ancient sites through excavations. Terracotta figures were found from Vadnagar, Nagara, Shamalaji, Devnimori and Amreli, which are more concentrated to this study. They consist of various kinds of terracotta objects of human figurines, animal figurines, terracotta toys such as wheel, toy cart, dice, pellets, horses, figures of bull, terracotta beads etc.



Map 3. Early Historic Excavated Sites of Gujarat

Amreli

Amreli (21° .36' N, 71° .15' E) is the district headquarters of the same in Saurashtra which forms part of the Gujarat State. The ancient site known as Gohiwad Timbo, meaning the mound of Gohiwad is situated one mile west of the Amreli town was earlier excavated by Sastry and Garde of State Archaeology from 1934 to 1944. Amreli was mentioned as Ambrilika in the copper plate grant of Dharasena II dated 572 CE and Guhasena I dated to 565 CE the Maitraka rulers of Vallabhi (Rao, 1973:103).

Amreli has yielded two periods. Period I is represented by Chalcolithic period and period II is dated to 1st century BCE to 4th century CE. It has many sub phases. It is situated on the trade route from Somnath to Vallabhipur. Along with coarse red ware, coarse grey ware, black and red ware other wares found are Red Polished Ware associated ware of the Roman period and Glazed Ware comparable to the Chinese glaze used during the Han period (C. 205 BCE to 220

CE). Other finds of Graeco-Roman influence was a plaque with a bearded figure, bust in relief executed in the typical Hellenistic style bearing close resemblance to the silver relief showing Deonysius with wine cup from Taxila (Marshall, 1951:159). In the Amreli plaque, the figure holds a horn of plenty, and it is dated in 3rd century CE. A square infuse in clay found in earlier excavation resembles a Graeco-Roman Amorini in Gandhara, shown in all sorts of quaint poses dancing, fighting, wrestling, etc. Here they appear to be in a fighting pose. The inland and foreign trade largely helped this region in acquiring prosperity and brought about regular commerce with the other countries (Rao, 1973).

Very interesting terracotta objects are unearthed from this site. They are found in large number. They are animal and human figurines, plaques of gods and goddesses. The terracotta figurines of three main schools of art have been unearthed from Amreli. Firstly the Graeco Roman art is represented by a plaque with a bust in relief of a bearded Greek is executed in Hellenistic style. It has some resemblance to the plaque found at Taxila.(Rao, 1973) Second group represents the Kushana art of Mathura school representing many plaques having male and female figures. Other plaques have god and goddesses like Uma Maheshwar, Ganesha and Shashthi.

The third group has the representation of Gupta art having many male figurines and standing Buddha and Bodhisattvas on plaques. There are mother and child figurines, female heads and rudimentary figurines of both male and female. Plaques of the Gupta period depict fashionable men and women as also gods and goddesses of Brahminical faith. Most of them are plaques taken from a single mould without any appliqué decorations. A large number of toys in different poses are also found in the excavation. Hollow birds, monkey eating fruits, horse riders and wheeled animals are reported from Amreli (Rao, 1973).

Terracotta objects:

Amreli yielded more than two hundred terracotta animals and human figurines and plaques of God and Goddesses, though not found stratigraphical position, later excavations however terracotta objects were found in chronological order. **Plate 10**

Human Figurine:

Three main school of art is found in terracotta figurines firstly the graeco-roman art is represented by plaque with a beadered figure, the second group presents Kushan Kshatrpa art and the third one of the Gupta art, most of them are plaques from a single mould and without any applique decoration, the plaques of Kushan Kshatrpa period are in high relief with refined form well regulated contours and gradation of palques, the physical form in the kushan shatrap style is slender with flowing contours the female figures are found in large numbers, they have soft and rounded features and stand in tribhanga pose with akimbo in flexible attitudes the hairstyles are pleasing only one case of new female figures on the moulded jar handles of the red polished ware can be found on the whole this period yielded very simple and graceful female figurines. Figures of Buddha and bodhishatraps found here belong to the late shatrap period (Rao, 1973: 103).

Male Figurine

Quite a number of male figurines were found from here. Some are intact and some are fragmentary. They are best made made during the Gupa period they are found in different poses. Some of the male figures were wearing ornamentslike necklace and wristlets. They are seen to be wearing some sort of garmentlike along skirt where the folds were seen falling beteen the legs. They were all moulded and red slip was applied on them.

Female Figurines

Almost forty two female figurines have been found from Amreli, out of which fourteen were standing nude females in various poses. They are all mould made and coarse red in fabric but no slip is applied. The nude figures were found on the jar handles of Red Polished ware. They were all in akimbo pose with a girdle and a necklace on them. According to the excavator they were used as offerings to drive away ill luck. They are all dated to Kushana – Kshatrpa period (Rao, 1973: 101).

Other female figurines found wearing skirts and fitting upper body and lots of ornaments like wristlets, bangles, necklace maybe of pearl having two strings and sometimes a veil over the head. They were all moulded and red slip is applied to them. The female figures were made very

proportionately. Some of the figurines have very elegant facial features. They were having beautiful hairstyles and some had cascading hair over their shoulders.

Another set of figurines of mother and child were found in several sites of Kushana –Gupta period. Amreli figurines represent mostly Ankadhatri with a child in her arm. The plaque appears to be thin which shows the shallow moulds and grey and buff slip were applied. The child is held in her left arm and one of the child's palms was seen lying on the breast of the mother (Rao, 1973: 101).

Plaques:

A clay plaque with a bust in relief of a bearded Greek bears close resemblance to Hellenistic style wine cup of silver found from Taxila. Here he holds the horn of plenty and a square incuse depicts two figures dated to 3rd century CE.

The best specimen of Kushana art in plaque represents a standing male figure wearing a long skirt, and the folds are falling between his legs. There are many plaques of Gods and goddess. A plaque of Uma –Maheshwar seated on a crouching bull and a seated four armed goddess holding vajra in and a spear in the upper left hand with a halo behind her head is very precisely made. A figure of Ganesha and Shashthi was very beautifully moulded (Rao, 1973: 98).

Plaques of Gupta period depict fashionable men and women, gods and goddesses of Brahmanical faith and Bodhisattvas. A large number of toys such as wheeled animals, horse riders, hollow bird figures making jingling sound, monkey eating fruit etc many have been found, many of them are artistically made.

Animal figurine:

As many as fifty two terracotta animal figures were found in the pre-1945 excavation and only three came from the 1952-53 excavations. All of them are in round. Most of the figures are modeled with hand by pressing, pulling or pinching clay. For example, legs, ears, horns etc, are crudely found at Amreli. The legs are tapering and widely stretched. Quite often, proportions are utterly lacking; but there are some exceptions too. The horse, crouching bull and standing pedestalled elephant are highly realistic, and all the details are shown. The eye is indicated by

depression and the ear by pinching clay. Applique decoration is only seen on a bull. And its garland is decorated with incised lines. The wings of birds and the trunk of the elephant are also shown by pulling clay into rolls or by pinching it. The monkey eating fruit is very realistic. These animal figures must have been used as toys or for a ritualistic purpose (Rao, 1973:103).

Except in the case of the bull, no applique decorations are seen on any animal. The garland of bells is indicated by incised lines. The elephant and bull appear to have been moulded.

Ornaments

Ornaments were the major speciality of the human figurines of Amreli. They were of varied types and it was a part of fashion for both men and women.

Bangles and Wristlets:

Terracotta bangles and wristlets are the ornaments of the poor. Bangles are variously decorated by incised design. Occasionally pellets and horizontal bands in relief are also noticed. Corrugated bangles are very few, but anklets, which are flat in the centre, are found in considerable number (Rao, 1973: 103).

Beads:

The total number of beads of all categories from the 1945 and 1952-53 excavation is three hundred fifty six in number. Agate, jasper, carnelian, shell, paste, glass and crystal have been used for making beads. Among them the only twenty one terracotta beads were found. The common types are the cylinder, barrel groove and bicone and spheroid shapes. They are all hand made and red, grey and buff slip has been applied on them (Rao, 1973: 103).

Pendants:

Various designs of pendants were found from this site. They had varied decorations and most of them were mould made. They were made all from separate single moulds. They had some unique decorations like the head of a cock, wearing round bead necklace, different kind of birds, moulded tigers nail or a dagger decorated with pellets in relief, trapezoids plaque decorated with

circular grooves, shield with indented edge, design of pipal leaf, tortoise shaped pendent and full blown lotus like medallion (Rao, 1973:103).

Head dress

This was a part of fashion of the females of ancient times. The Ushnisha or a top knot with hair cascading down and others were wearing their hair as wing shape plaited hair on two sides of the head. A female wearing atrefoil hair in triratna style with a single crest pendent adorning her parting of th her hair. Yet another figurine has her hair tied up in trefoil with a plaited plain band in the centre (Rao, 1973: 102).

Wheels and toy cart:

Terracotta wheels suggest that toy-carts were popular. Some of them are moulded and others produced by rubbing the potsherds. On one of them the hub, spokes and rim are shown in relief, while another is decorated with pellets on the rim. But it is not certain whether the latter was used as wheel at all because there is no central hole. One of the wheel has a prominent hub, is moulded. All the others are made of potsherds rubbed to the shape of wheel (Rao, 1973: 103).

Akota and Medical College

Vadodara (22° N, 73°.16' E) is situated on the right bank of the river Visvamisri. It was located on the ancient highway connecting Gujarat, Malwa and Rajasthan. Excavation had been carried out in two different places by Subbarao of the Department of Archaeology, Maharaja Sayajirao University of Baroda. The Akota area mound is known as Dhan Tekri one of the mound near Vishwamisri River and medical college area that is the Kothi mound. Excavation taken here reveals five period of settlement.

Period I revealed microliths and thus can be called as prehistoric period.

Period II can be definitely dated to Kshatrapa period based on coins and potteries like red polished ware and other associated wares like coarse, brown and black thick pottery with gritty core and impressed design ware. It can be fixed till late third century CE. The ceramics of crude

black and red ware, red polished ware, red burnished ware, stamped ware, red burnished ware Roman torpedo sherds, Kshatrapa coins, glass and shell bangles, beads, along with terracotta objects like animal figurine, human figurine, discs, cones wheels with hubs prancing horses etc were found .

Period III saw the deterioration of the coins like the Indo - Sassanian coins and pottery and coming red slipped ware with black paintings, dated around 600 CE and the discovery of late khatrapa and Gadhaiya coins and Muslim glazed ware, terracotta and stucco pieces, and architectural fragments were found. This period is dated to sixth century CE. A number of terracotta figurines mostly animals were found in the excavation. Bulls are mostly found and there were single specimen of other animal like the lion, horse, crocodile, elephant and peacock. Fragments of decorative plaque, bust of female lower half of a female has been unearthed mostly found in the debris of period III. Those which are found from period II show finer features than that of later period

Period IV, V and VI revealed Islamic Glazed ware which was found in plenty, thick black coarse ware with gritty core, architecture of modern citadel by Sultan and relocation their capital to other place. Arretine ware and Red Polished ware have been found from here. Many antiquities like glass, stone bone objects and clay seals and textile and foreign objects has been found from here (Subbarao, 1953).

Terracotta objects

A large number of terracotta figurines, mostly of animals were found in the excavation. But they are not large enough for any stylistic comparison. But it may be noted that all the figures found from the debris of Period IV are mostly painted and show that they are all associated with some religious or semi-religious institution. A large number of them are parts of human figures and it is not possible to guess their function any further. A selected number of these terracottas have been described below. **Plate 11**

Parts of Human body

Very interesting terracotta objects from Akota are the different body parts and even different parts of the the face has been found especially from Period IV. It seems like the artist was trying to make a realistic body.

Interesting body parts are of the upper limb of human figure, terracotta finger, ear, palm of a hand, and earring painted in rose colour and a painted fragment maybe a part of a plaque are all found from Period IV Other miscellaneous objects are mango painted in rose colour, terracotta coil, fragmented bracket with a image and a knob painted in rose colour are found from Period IV.

Figurines

Single specimen of terracotta animals has been found from Period II, III, and IV. Some of the figurines are rudimentary and beyond recognition. From Period II two humped bull, lower portion of a female torso in half-relief, bust of a female, head of a crocodile, two humped bull and fragment of a horse have been found. From Period III trunk of an elephant, head of a peacock has been unearthed. Head of an animal hind part of an animal with an upraised decorated tail, and fragment of a decorative plaque have been found from Period IV.

It may be noted as a whole, that the terracotta from Period II show finer features especially the bulls and the human figure. Actually another head of a human figure in half- relief (not illustrated) was found from Trench IV and it closely resembles a “Post-Satavahana,” figurine from Kolhapur.

Clay seals:

One of the most interesting finds from Akota were the two clay seals struck from the same die, probably made of stone. One of them was found in layer 6 of Trail Pit I and the other was found in pit sealed by the same layer and hence belonging to the same age. It does not seem to be a cast of any gem, because, one of them bears on the back marks of the string over which this seal was impressed on clay affixed over it. The other is a rounded lump of clay. Hence, it is a seal

attached to some document or packet. About its age, they belong to the Early Kshatrapa period, because of the association of the Red Polished ware and a copper coin in a very bad state of preservation, but of the same type as the others.

The seals depict two prancing horses probably fighting or in a romantic postures with a star on top and a straight line below. This is enclosed by a line making an oval pattern. The whole design has been done in relief. The great vigour and the realistic nature of the representation speak highly of the art. But there are slight incongruities making the identification of the animals somewhat doubtful. For example the short head, (specially the animal to the right) and the long tail with a pointed tuft at the end suggest a bull. But the long legs and the general postures give an indication of the animals being horses. But taking the general features, they seem to be horses rather than bulls (Subbarao, 1953)

In appearance they seem to be like the Hellenistic or Graeco-Roman objects imported to Akota, with the other objects like the trefoil jar with a handle on which is depicted the figure of Eros. Similar Graeco-Roman seals with the figures of Goddesses and other human figures have been found by Sir Aurel Stein in Khotan. Clay seals have been sometimes attached to wooden tablets covering old manuscripts.

Wheel:

A terracotta solid wheel with a projecting axle has been found of Akota. It belongs to Period II. This suggests knowledge of wheeled communication, but there is nothing strange in view of the antiquity of cart in India from the days of Mohenjodaro.

Other objects

Some other objects like the dice, and two terracotta stopper with flat tapering sides and the other is tapering point has been found from Period IV.

It is very interesting to note that these objects have been found at a number of sites in India including Taxila, Bhita and Nasik. Large numbers of stoppers are reported from sites like maheshwar and Nasik.

Dhatva

The excavation at Dhatva was carried out by Department of Archaeology and Ancient History of the M.S. University of Baroda in 1968, under the direction of Professor R.N. Mehta (Mehta, et. al., 1975).

Dhatva is a small village on the bank of river Tapi in the Kamrej Taluka of Surat District. The actual Archaeological site is a mound locally known as Rundhi Mora lies at a distance of about 2Kms. to the south of Dhatva, on the Natrang-Dighas country-road.

The height of Rundhi Mora mound is about 2/3 meters with a radius of about 150 meters. The small water gulleys and marshes that have developed due to slight uneven land surface retain water for a longer period which provided the much needed water for the settlement developed there. On the Rundhi Mora mound, two trenches were laid down on the northern side which shows simple stratigraphy Trench. I revealed seven layers while Trench I revealed eight layers. The pottery of Chalcolithic levels shows a mixture of Harappan, Malva, black and red ware groups which indicate that the area was occupied by people of different ceramic tradition continued for sometime, then, it was abandoned. After some time, mound was re occupied by people who knew iron smelting using the local ore. This habitation existed in the early historic period (Mehta, et. al., 1975).

The ceramic of post-Harappan and Malva fabrics as well as black and red wares supply the data for the Chalcolithic cultures. The post-Harappan, Malva and black and red ware were obtained from the natural fissured black clayey layer as well as from the layer above it. This mixture was also noted at Jokha (Mehta, et. al., 1971). The chronology of all these wares from the different sites like Rojadi, Lothal, Ahar, and Navdatoli as based on C. 14, indicates the period of 2nd millennium BCE especially after the 18th Century BCE. If these dates could be relied on, one can surmise that the Chalcolithic horizon of Dhatva should belong to the later part of 2nd millennium BCE

According to the stratigraphic evidence and ceramic sequence, pottery from Dhatva can be divided into two main periods:

Period I : Chalcolithic (C. 2nd Mill. BCE)

Period II : Early Historic (C. 2nd CE)

The Chalcolithic pottery of Period I divided into three main types: Post-Harappan; Malva Chalcolithic; Black and Red.

The post-Harappan group includes painted black on red ware, red slipped ware, plain and red ware (weathered), mainly include one from: Globular Pots, Malva Chalcolithic pottery sherds having medium fabric, cream colour and black paintings. The decorations are composed of bands and wavy lines. Painted bowls, burnished red medium wares are different types found from excavation (Mehta, et. al., 1975).

Period II belongs to early historic period is characterized by coarse pottery. The excavation at Rundhi Mora revealed the antiquities of terracotta, copper, bone, shell as well as stone from chalcolithic levels. Thus, the material remains of the chalcolithic settlement of Rundhi Mora mound is highly interesting and indicates that in this period Surat district was in contact with Saurashtra, Maharashtra, Malva regions (Mehta, et. al., 1975).

Terracotta Objects

The terracotta antiquity consist of fifteen stoppers, five pieces of animal figurines, two spindle whorls, three wheels, discs and four small pellets. **Plate 12**

Animal figurine

Five pieces of animal figurines highly rudimentary has ben found from here. One is a bull with its head and legs broken red in colour three pices of only legs and one animal figurine with broken horns and legs which is black with red has been found from excavation from Period II.

Wheels

Three very beautiful wheels were found in the excavation. One of them is model of a modern hubbed wheel with nine complete spokes and two studs of the broken spoke are visible. The hub and the circumference are decorated by incicised pattern like dots.

The other is a fragmented wheel with single hub It seems to be hand made. The third one is a bead like wheel with use marks on the circumference with a big perforation. Most probably could be a bead or a spindle whorl.

Spindle whorls

Two black spindle whorls have been yielded in excavation, out of which one is fragmentary and the other is a complete and very beautiful in appearance. It has a circular perforation in the centre and is incised in a rombas shape touching the periphery of the sindle whorl. On the outerside of the rombas the area is decorated with incised dots. This one was designed out of clay and its weight is about 20 grams.

Beads

Thirty one terracotta beads were found from different periods of Dhatva. Out of which 29 belongs to the historic period. Twenty two of them are arecanut shaped bead. Some of them are red and some of them are black. Two are spheroid and rests are circular. The arecanut beads are found in two different shapes the concave tapering on the top at the place of perforation and plane on the side of perforations.

Discs

Discs are fround from both the Periods. Most of them are found from Period II. Discs are of two types. One which is circular made from pot sherds are three in number and the other type has single perforation at the centre and could be confused with a wheel. The second type are four in number. The were applied with red and black and red slips.

Pellets

Four pellets are found from Period II. These are well fired solid pellets with slips ranging from red, black or mixed tints. There are small in appearance.

Devnimori

Devnimori (23° 39' N, 73° 26' E) is situated at distance of about two kilometers to the south of Shamlaji, in the Bhiloda Taluka of the Sabarkantha District of Gujarat. Microlithic tools were obtained from loessic area. Two periods of occupation is evidenced from the site.

Period I is Mesolithic represented by microliths of agate, chert and chalcedony.

Period II is represented by Buddhist settlement assigned to early centuries of Christian era. Further, the absence of Gupta coins and presence of varieties of Vallabhi and Indo- Sassanian coins ascribed the site to Kshatrapa period from about 2nd/4th century AD to 7th/8th century AD (Mehta and Chowdhary 1966). The Buddhist settlement consisted of two viharas, a stupa, four votive stupas, a chaitya hall and a compound wall enclosing the settlement of mudbrick and burned brick of varying lengths and heights. Amphora and Red Polished Ware are found from surface and the brick stupa yielded inscribed casket with ashes of Lord Buddha, a globular pot containing eight silver Kshatrap coins, a gold foil fragment of blue glass and terracotta figures of Buddha. The decorated pottery from Devnimori is of two main varieties: (i) the Painted and (ii) the Stamped and the incised ware. Large number of iron objects is also recovered. The majority of these are nails and the remaining consists of arrow heads, spear head, knives, daggers, rings, sickle, chisel, and pick, frying trowel, scissors, door chain, hook and nearly a dozen of miscellaneous objects. The arrowheads were socketted and of either triangular or barbed shape. (Kumaran, 2009)

These are the associated ware of amphorae found mainly in the early centuries of Christian era. Red Polished Ware and the Black ware, which have been found from here, possibly developed under their influence. The pottery was mainly utilitarian. The architectural remains recovered from this site clearly revealed Graeco-Roman influence along with indigenous traditions.

Terracotta Objects

The terracotta object consists of beads, Votive tanks, animal figurines, discs, flesh rubber, etc.

Plate13

Animal figurines

A few animal figurines represent the humped bull and elephant and an unidentified animal. One of the bulls has a perforation on the leg suggesting thereby, that it had been attached on wheels. Other animals were pig, horse with a hole at the leg which shows it was on a wheel and meant for pulling.

Beads

Nine beads of terracotta and semi-precious stones were obtained from the excavations. Their varieties are a T.C. areca nut bead with a hollow in the centre of its flat base, a terracotta areca nut bead with truncated top, a biconical hexagonal bead of crystal, a hexagonal pendant with two holes perforated across its longer axis, a barrel shaped bead of carnelian, a short tubular bead of jasper, a spherical bead of jasper, a variant of no.3 but of microline and a small globular blue glass bead.

Gems for setting

A semi spheroid crystal with a flat side seems to be gem, set either in a finger ring or a necklace. A similar quartz piece is much smaller than the crystal.

Negatives

Two terracotta negatives were obtained. One of them is that of a triratna symbol, is a red negative of oval shape. The other is a red round negative of four petalled flower

Two fragments of rectangular votive tanks were obtained from Vihara I. One of them is of red and the other of light cream colour. These are too fragmentary to comment on.

Face Pot

A small pot with constricted middle part shows three applied bands in which are two circular applied dots. Their decoration reminds one of a face with two ears, eyes and a nose applied by hand. This pot has flat base. This wheel-turned pot seems to be the precursor of many wheel-turned votive objects that are seen today.

Flesh rubbers :Small cubic and rectangular bricks were obtained from the vihara, which might have been flesh rubbers.

Flat Discs: Flat discs are of two forms. One of them is thick unperforated type while the other has a perforation in the centre. The latter might be used as wheels or spindle whorls.

Roof-tiles :Two varieties of roof-tiles were obtained. One of them is rectangular flat tile with two holes on one side of it. The other is a semi-triangular tile with two perforations on one side of it.

T.C. Balls :Two T.C. balls are of less than an inch diameter.

Crucible :A small crucible of red colour and fused outer surface was obtained from vihara I

Heads: Under the head of teracottas are described only those pieces of teracottas which have their own independent significance. As much this group includes Budhha images, human and animal figures and arches, capitals, medallions etc.

Sculptures :This is most important group because it includes the Budhha images- the essence of Devnimori art. According to form this group can be sub-divided into three sub-groups i.e. Buddha images, human figures and animal figures.

Buddha images

All the images without any exception are in Dhyanamudra. In all fragments of twenty six images are discovered. Out of these twenty- six images twelve are almost intact with very slight damages and could be required, while remaining fourteen are highly damaged and hence could not be repaired or remodelled into complete pieces. From the fragments, the postures of other images can easily be judged.

In all twenty heads are found, out of which twelve could be refitted to their respective torsos. No complete images could be reconstructed from the fragments of remaining fourteen. From this it will be clearly evident that about 50% of the images are highly damaged and are beyond the possibility of repairs or remodelling unless the missing pieces are manufactured a new and added to them.

But from whatever is left it is not at all difficult to conceive the original features of all the images. The bends and postures of hands and fingers are the same in all the fragments suggesting a uniform posture of Dhyanamudra.

All these images are executed in 'alto relieve' (almost three dimensional relief). Only the back of the figure is hidden from view which is stuck to the backslab of the image that has a flattened wedge-shaped in such a form that it fits in the undercut of the surmounting chaitya arches.

As already mentioned above all the images are in Dhyanamudra seated in Padmasana. To form a Padmasana the legs are bent inward to an acute angle at knee in such a way that their toes are brought together in the lap near the abdomen, with heels turned upward. The hands are resting in typical mudra (pose) in the lap just above the heels. The palms of hands are turned upward with fingers stretched to full length. The right palm is resting on the left one. Terracotta figurines are in the form of sculpture decorative architectures and decorative bricks. Buddha images with a height of 2'2" to 2'-3" have been recovered Out of twenty six images only twelve are intact. All the images are seated in padmasana in dhyanamudra (Mehta & Choudhary, 1966:123). They are made out of mould and are different in their facial features, hair style, drapery and seat. The terracotta Buddha figures of Devnimori were made out of moulds for different parts and then assembled. These figures show clear cut influence of Kushana School of art as well as Gandhara School from their drapery facial features and hair. The animal figurines are found very few in number (Mehta and Chowdhary 1966).

Dwarka

Dwarka (22 15'; 69 0') is situated thirty five km of Okha and about twelve km from the main town. This place was associated with the epic Mahabhata. The literature Purana, the Harivamsa and the Bhagvata gives us information about this place. The name itself suggests a gateway to the west or the land within.

The excavation was carried out by Ansari and Mate of Deccan College, Pune in 1963. The excavation unearthed four period of occupation date from 1st century BCE to 19th century CE, where period I is datable to 1st century BCE to 2nd century CE based mainly on the findings of

red polished ware. The potteries were fragmentary and other sherds consisted of red ware, coarse red ware, red slipped ware, black slipped ware and burnished black ware. Other antiquities consisted of broken terracotta balls, stoppers, shell bangles, and a piece of iron. Period II which is datable to 2nd century CE to 4th century CE revealed the earlier potsherds as well as burnished red ware, red slipped ware and coarse red ware and in this period the black ware is decorated with impressed, pinched and incised designs. This period also revealed a sherd of red polished ware and few pieces of torpedo sherds (Tomber, 2007:979) with two handles attached to the rim and shoulders, a narrow cylindrical neck, elongated with appointed base and having gritty core. All the sherds show a black resin like residue which might have been the ingredient of the Roman wine. Period III revealed structures dated to 4th to 8th century CE and period IV revealed coins of Gujarat sultans polychrome glass bangles and glazed ware was dated later than 8th century CE (Ansari & Mate, 1966). The Bhagavata Purana mentions this place as Kusasthali (a place where kusa grass is found) built by Revata. The Greek traveler also mentions about this place in Periplus of the Erythraean Sea dated to 1 century CE as a prominent port as the island of Barake in the Gulf of Kutch.

Terracotta Objects

A large number of terracotta objects consisting of toys, beads, stopper, and animal figurine have been obtained. Among all the periods period IV have yielded large number of the terracotta objects. **Plate 14**

Animal figurine

A fragmented bull with only torso with a hump and the neck portion and a unique decoration of appliqué strapping and a red slip is applied to it. A horse with one leg with a perforation for wheel axle was found. Other three legs were broken. There is an ornate saddle on the back. It is decorated with incised designs and the curve of the neck is made very graceful. There were traces of white colour in the belly portion.

Wheel and toy cart

Three toy carts and a broken wheel were reported from here. Wheel with irregular shape with a central hole is ridged and the outer side is slightly convex was found here. Fragments of toy cart

with a flattish strip with sharp bend upwards with lug on each side to hold axle for the wheels was reported from here. The other one has three perforations for inserting sticks in imitation of present day bullock carts. Decoration consisted of cord impression and incised strokes on the upper surface.

Other miscellaneous objects

Other objects like stopper, sling ball, two stoppers, tile and skin rubber were reported from this site.

Hatab

Hatab (21° 35' N : 72° 15' E) is situated in the 20 km south of Bhavnagar district of Gujarat. On the banks of river Maleshwari, bounds the mound and functions as a moat and flows into gulf of Cambay. The moat has an inlet that leads to the Gulf of Cambay thus suggesting sea trade. The excavation at the site was conducted for two field seasons (2001-02 and 2002-2003) by Subhra Pramanik of Archaeology Survey of India, Baroda Branch. The excavation revealed a buried city with a habitation of upto 12 metres belonging to three cultural periods. (Rao & Kumaran, 2015:40)

According to Pramanik Hatab might well be the ancient trading centre, referred to as 'Ashtakapra' in the ancient Greek work of 'Periplus' of the Erthrean Sea and which also finds a mention in historical records of ancient geographer and eminent astronomer Ptolemy.

Period I : Mauryas - 4th century to 1st century BCE.,

Period II : Kshatrapa : 1 century BCE to 4th century CE

Period III Maitraksa – 6th century

The ceramics include red ware, buff ware, grey ware. Red slipped ware, coarse black and red ware, coarse red ware, coarse grey ware, chunky ware, lusturous red ware, coarse black and red ware and graffiti and painted sherds. The ceramics found at different levels at Rojdi can be compared to Rangpur II A, B and C respectively. This site revealed a double bastioned gateway

along with circumvallation covering the whole area except the river front. The other finds includes terracotta cake, plaque, bead, disc, wheel, earspool, weights, bull figurine, copper axe, bar celts knife, bangle, toe ring, round pin, stone weights gold, carnelian, lime stone, shell beads and blades of different stones (Rao & Kumaran, 2015:40).

The seals come from a pocket of the mud fortified ancient town, which is surrounded by a moat. 160 ancient seals, with the Brahmi script inscribed on them have been unearthed from this site. The seals are said to be 2000 years old and were probably used to stamp goods that were to be exported. The seals are well etched and are round and oblong in shape, almost similar to rubber stamps that are used today. According to Pramanik, "The site also has grain shells and a step-well, which indicates presence of a shell factory here,"

Other significant findings at the site include two bronze artefacts, one of a humped bull and another one of a human bust having Greek affinities. There is also a terracotta face of a woman. The ruins in Hatab not only reveal Shaivite artefacts of the Maitreka period but also indicate the influence of Buddhism. The other finds includes terracotta cake, plaque, bead, disc, wheel, earspool, weights, bull figurine.

Kamrej

Kamrej (21°16'N & 72°58'E) is situated in the left bank of Tapi about fifteen kilometer upstream of Surat. It was excavated by Gupa and others. It is the ancient city of Kammoni of the Periplus of the Erythrean Sea. The site has revealed three cultural periods.

Period I: 1st century BCE – 2nd century CE (Early Historic)

Period II: 2nd century BCE – 5th century CE (Historic)

Period III: 9th century BCE – 10th century CE (Late Historic)

The excavation has revealed the structural remains of the brick walls set in lime mortar along with a large kiln. The ceramics revealed red polished ware, red ware, coarse red ware, burnished red ware, burnished buff ware, grey ware, painted ware, black burnished ware, burnished buff ware, grey ware, painted ware, glazed ware, painted blue ware and turquoise blue glazed pottery

of Iranian origin, Aksumite sherd and amphorae. Beads and Bangle pieces of shell, fragment of glass, and beads of semi precious stones clamp with three bands, toe rings and copper coins, slogs and nails of iron, and lead are also found (Rao & Kumaran, 2015:49).

According to Tomber the Aksumite sherd shows the trade relation with Ashkumite kingdom in 3rd century to 7th century CE. She further says that the sherds could have reached through direct or indirect links with the Askamite kingdom (Tomber 2005: 100)

Terracotta objects yielded are terracotta male torso, female figurine, plaque of Vishnu, plaques, beads, two or three pieces of bangle of terracotta.

Mud Dam/ Khapra Khodia

Mud dam (21 25' N: 70 05' E) is situated in the north western side of Girnar. Trial excavation was carried out by Subhra Pramanik of Archaeological Survey of India with a view to study the settlement pattern, mud dam and artefacts of Early Historic Period.

Ceramic yielded are red ware, red polished ware, micaceous red ware, black on red and graffiti sherds, besides terracotta anthropomorphic and female figurine, shell bangle pieces, ink pot, discs, skin rubber and silver coins of kshatrapa period (IAR 2000-01:27)

One or two pieces of terracotta objects have been found from this site. This was a very small site and only trial excavation was carried out.

Nagal

Nagal (21 37' N: 72 55'E) is situated eight km west of Ankaleshwar on the south of Narmada estuary. The excavation was carried out by Soundarajan in 1959-60 of the Archaeology Survey of India. The excavator revealed three phases of occupation based on black and red ware. The evidence of microlithic industry yielding fluted cores and flakes and scrapers with red ware to Nasik/Jorwe was noticed just above the natural soil. Period I has Black & Red Ware having dishes, bowls and lotas, unslipped Red ware and Northern Black Polished Ware. In Period II there was no NBPW; grey terracotta animal figurines were found in this period (Ghosh, A 1989).

Phase I revealed well fired black and red ware of medium fabric, bone points or arrow heads, copper rings, beads, ivory comb, terracotta beads and a silver punched marked coin etc. In the phase II the black and red ware showed sophistication and competence in the technique, black ware grey ware incised and graffiti marked pottery of various motifs were found along with iron objects, ivory combs and discs, saddle querns and pestles. In Period III coarser Black & Red ware were found with few pieces of carnelian bead, tanged copper arrow head, net sinkers, bangles of shell bone and ivory, bone points, querns, pestles and copper antimony rods were found, dated to 2nd century BCE. Thus it was a small port with limited trade during this time (Rao & Kumaran, 2015:88-89).

Terracotta objects: Very few pieces of animal figurines have been found like cow, buffalo, elephant and a dog along with few bead pieces

Nagara

Nagara (20° .14' N, 70° .38' .33" E) is situated in the Khambhat Taluka of the Kheda District. Geographically it lies on the tip of Gulf of Cambay. It was excavated by R. N. Mehta by the Department of Archaeology, Faculty of Arts in the 1963-1965 by Maharaja Sayajirao University of Baroda. Nagara excavation has three mounds I, II, and III. Nagara is located in Cambay Taluka of Kheda District. It comprises of three mounds locally known as Hanuman Dhado, Varaimatan Dhado and Ratankhad respectively (Mehta 1968).

Period I (700 BCE-300 BCE.) is represented by Black-and-Red Ware, Plain Red Ware, Burnished Red Ware and an earthen embankment.

Period II (300 BCE-100 CE) is marked by the advent of NBPW. Arrowhead, points, chisel, and punch marked coins, terracotta figurines of mother goddess, beads and iron slag are recovered from this period. Terracotta seals and potsherds bear Brahmi script (IAR 1963-64, p.10). Although, the site was inhabited around fifth century BC, by the early centuries of the Christian era, it became a large town due to commerce (Sharma 1987:72). Excellent objects of chank and ivory have been found (Mehta and Shah 1968).

Period III (200 CE to -600 CE) is distinguished by the emergence of the Red Polished Ware, Roman Amphorae, Burnished Black Ware, Micaceous Ware, crude Black, Stamped Ware and- Red Ware and glass beads. Structural remains comprised of mud floorings, brick buildings and numerous channel hearths.

Period IV is Medieval and is represented by Glazed Wares. The first three periods showed undisturbed succession while in Trench I and II a distinct gap in the ceramic and cultural sequence occurs after Period III. This implies that the site was deserted for few centuries before it was reoccupied. The C-14, date for Early Historic level of this site is 1945 ± 90 and 2030 ± 105 BP, that is, 130 CE. A large number of iron objects have been obtained from Nagara. A majority of them are nails. The rest of the objects include knives, spear heads, arrowheads, dagger, sickle and fishhook. There are few miscellaneous objects whose functions are difficult to ascertain. (Kumaran, 2009)

The excavation revealed the use of Black and red pottery vessels settled for the first time with iron objects to clear the forests. Period II marked with a continuation of the earlier pottery with an introduction of a ware that is Northern Black Polished ware. Large numbers of antiquities were found in the Period III where the roman amphorae and other foreign objects marked the trade with other countries. Excavations at Nagara have revealed several terracotta objects such as beads, pellets, dishes, dice, and wheels, seals, with animal and human figurines (Mehta and Shah, 1968).

Terracotta Objects:

Besides pottery, four hundred forty three terracotta objects, such as beads, pellets, animal and human figurines, dishes, dice, wheels, seals etc. were obtained from the excavations at Nagara. These are usually hand made, well fired objects. A few of them are made from potsherds but most of them were produced from clay. These objects are classified in twenty-three different types, which are further divided into sub types. A few are too fragmentary to be classified.

Plate 15

Beads:

The terracotta beads from Nagara represents limited varieties of shapes and forms, majority of them confirming to arecanut shape the only other shape found is standard conical shape, singular examples of disc shape, bell like shape and one delicately shape small spherical beads are also found, handmade beads are found four in number, largest beads are found from period III numbering hundred and nine, period IV numbering twenty two and period I and II numbering fifty.

Arecanut beads have been classified into seven sub varieties on the basis of the decoration and treatment at the narrower and broader ends the beads generally taper towards one end and other is a flat end the height ranges from 1.32cm to maximum of 1.96 cm and the diameter ranging from 1.9cm to 2.9cm. The diameter of broader beads ranges from .9cm to 2.08cm these beads have helped to established that they were made from mould. The measurement of the perforation varies from .16cm to .14cm.

Shapes: There are two shapes of arecanut beads; Standard conical which has truncated broader end tapering narrower end and are black in colour and Standard arecanut 86 of these beads are of this shape. There are seven sub varieties.

Standard arecanut beads have with one end truncated and the broader end being bevelled. The beads are black in colour.

Beads having beveled broader concave ends, beads are black in colour.

Beads with narrower end being tapering as well as truncated, they are either black or brown in colour.

Beads having narrower and tapering end as well as tapering and truncated end, majority of them are black in colour and few are brown in colour.

The broader end of the beads were concave in the centre, majority of them are black in colour and few of them are red in colour

Beads having narrower and tapering end as well as tapering and truncated end double grooves are found at the broader end, all beads are found in black.

Standard bicone circular have with one end truncated and other being concave. The beads have a single median grooves, majority of them are black in colour and few are brown in colour.

Ear studs:

Five ear studs were obtained from Nagara, these are similar to squad stoppers have concave sides flat bottom and top. The concave sides and the hub separates this from the wheel made ones.

Animal figurine:

Lot many animal figurines have been obtained from Nagara excavation. Most of the figurines were modeled by hand by pressing, pulling or pinching the clay. Varied animal figurines were recovered from here.

Bulls

Among the animals bulls were found in large number totalling twenty seven, most of them were humped bull. Some of the bulls have perforated nose while the other does not have any perforation. At present the bulls with perforated nose are the oxen used in farming and drawing carts while bulls with unperforated nose are usually stud bulls.

Horse:

Forteen horses have been found from Nagara mainly from period II and IV most of them are broken without head some are saddled without head. The manes have pinched or incised decoration. One horse specimen has perforation in the neck for movement. They are mostly red in colour

Rhino: One specimen of rhinoceros has been found which is red in colour it's a complete specimen

Nilgai: An interesting specimen of an animal with slanting hump and a rather cylindrical mouth probably is a nilgai

Hyaena: Single specimen probably a hyaena is partly fragmentary Its hind legs are broken and its face and neck suggests that it could be hyaena.

Buffalo: Two small figures look like buffalo. One of them is an animal with hump and without a hump while the other one is an with flat horn and straight snout.

Elephant: Only four specimens of elephant are found. They are represented by a trunk and ears, and one in the running pose with partly broken legs.

Sheep: A small specimen of an animal with curved horns and marks of swastika on the neck and trume symbol on the thigh could be a sheep.

Human Figurine:

Twenty two human figurines were obtained from Nagara some were handmade and some were moulded, some of the figurines probably represents motif object and some of them might be simple toys, the female had elaborate coiffeur and sometimes pinched face and rudimentary arms and legs, some of the figures are highly rudimentary.

Pellets:

Forty eight pellets have been obtained from the deposits of all the periods, they are all solid well fired and colour ranging from red black and mixed tints, the diameter varies from 3.04cm to 1.04cm usually they are made from wet clay but one was prepared from the grinding of terracotta object, they are solid and can be compared with small marbels and large marbles, most probably the smaller ones were used as pawns and larger ones were used as strikers, it is also possible that the larger ones could have been used as sling balls used in catapults, most of them are found in black and red colour and one specimen has black with red colour. These pellets have also been found from other Indus valley sites as well as ancient Indian sites.

Disc:

The disc are usually made from the potsherds which were broken into circular shape and smoothen on the sides they occur in three types, type I is plain circular disc represented by twenty five specimen they must have been used for variety of games some are small fine and

smooth while others are large and crude, type II has perforation in the centre must be as the game known as *chakadi* which is twirled with a small stick. This could also be used as spindle whorl, type III is also perforated but has two perforations side by side near the centre of the disc it is a toy known "*chakadi*"

Dice:

These are rectangular object with a counts mark from 1 to 4 the counts are incised circles on each sides of it only three specimens of dice are object which belong to period III and IV.

Teetotum: Two specimens had been obtained from Nagara they are similar to biconical wheels but there cones are small and unperforated.

Sealings and Seals:

Twenty eight sealings and seals were obtained from the excavation at Nagara. All of them belong to period III and IV. Some of them are highly worn out, whereas the others are in good condition.

Sealings:

Nineteen sealings of black colour show a cow and a calf they are made out of lumps of wet clay. Another sealing has a bull and a trident it was made by rolling of strip and wet clay symbol was impressed upon it. The back part of it shows string marks.

Inscribed sealings:

Three sealings were inscribed. One of them had an oval die with four Brahmi letters, which are read as "*Buddhapasya*". The other seals have a circular die with the figure of "*Garuda*" like animal and the letters "*Mahasena*" inscribed below it. The third seal was pressed from behind and the letters "*Shri jayamitra and Vijaya mita*" are inscribed the string marks are shown on the top.

Two negative seals were found which are highly worn out. One of them is most probably an owl. Other one is too worn out beyond recognition.

Wheel:

Twenty two wheels have been obtained from this site. There are two types of wheel: one which is indicated biconical wheel with a perforish running through the centre, the other one is concave or flat side which has well worked hub on the outer side and the whole carrying the excel was perforated in the wet clay, most of them are red in colour and some of them are red and black in colour, few of them are broken.

Stoppers or Cones:

Thirty seven stoppers or cones have been found from this site out of them 10 are broken they are usually found from period II. They are all hand made the clay was rolled and been pressed between fingers, they are usually well fired and have red and balck colour. There are four types of stopper: a stopper with slight truncation, a stopper with depression on the truncated part and has a small perforation at the end, cylindrical stoppers and thick disc having concave sides.

Lamps

Four different types of lamps were obtained from this excavation. One of them is featureless small bowl with disc base having distinct lip for the wick. Two of them are intact and one of them is fragmentary. One of them is flat base and incurved rim. Another one is having concave sides and the rim has seven pinches for wick . All of them are hand made and red slip is applied on them.

Bottle

Two specimen represent bottle like objects; one of them has a flat baseand has screw like fingermark on the body and the other is fragmentary.

Shamlaji

Shamalji (24° .41' N, 73° .26' E) is situated in the Bhiloda Taluka of the Sabarkantha District. It is a picturesque village situated in a valley of Aravalli ranges. It must have been an important site overlooking a road connected the hinterland of India to the ports of the Arabian Sea. Limited

excavation have revealed crude red and black ware, stamped ware, red polished ware, amphorae ware and muslim glazed ware (Mehta and Patel, 1967).

The excavation at Shamlaji was conducted in the field-season of 1962, by the Department of Archaeology and Ancient History, Faculty of Arts, The M.S. University of Baroda, by R.N. Mehta and S.N. Chowdhary under the supervision of late Prof. B. Subbarao. Excavation of this site revealed four periods.

Period I (Beginning of CE - 50 CE) is associated with tuyeres, crucibles, lump of iron, chisel and mud brick structures.

Period II (50 CE - 400 CE) showed the evidence of a brick fort and is associated with Roman Amphorae. Many sherds with embossed, finger-tipped and incised designs were obtained in Red ware. They occur from layer (10) onwards. Besides these, other objects included votive tanks, terracotta pellets, female head, copper and antimony rods, lead objects, iron knife and nails.

Period III (400 CE-1000 CE) is associated with hearths and structures, copper bangles, rings, antimony rods, dice of shell and bone, plaque with lion's head, glass bangles, terracotta discs and iron sickle.

Period IV (1500- 1800 CE) is Medieval period and is represented by Glazed Ware and four structures of brickbats. This period is also associated with glass, iron strips, Burnished Black Ware and Burnished Red Ware (Kumaran, 2009.)

A mart connecting to Devnimori, revealed very few objects of terracotta. Among the figurines only few animal figurine has been found. Bull with hump is the main animal to be found here.

Terracotta objects

Terracotta objects consist of human figures, animals, discs, votive-tanks, etc. All together 12 terracota objects are found from this site. Some of them are broken and very few are objects are intact.

Animals and human figurines

Four animal figurine and one human figurine has been found from this site is a bull and a carnivore (?). The bull has its head and legs broken. Its hump and body were well made. The carnivore has its legs, tail and parts of the head missing. It has a creamy slip. The third specimen is probably a fragment of a bird belonging to Period III,. Fourth specimen is an unidentifiable animal with a perforation running across it. Only one highly worn out head probably of a woman with three peaked hair style was obtained from Period II.

Other Miscellaneous objects

Discs: Three circular thick discs were obtained from the excavations. One of them was broken and seems to be a skin rubber. The two others are simple discs found from here.

Votive tank: A fragment of a rectangular votive tank was obtained from layer (9)

Pallet: One spherical small pallet was obtained from here.

Beads: Six arecanut beads were found from the deposits of period II.

Somnath

Terracotta objects from Somanth excavations are very limited in number. Most of them are handles of saucepan- which are of twelve in number.

Two are lamps and one four legged stand. These objects are fragments of medium fabric lamp of shallow dish with incurved rim and a short channel spout a wick, varieties of Hook shaped handles of some object, Four-legged handmade stand with shallow depressions on three corners (Fourth corner is missing), and a wide round hole through its centre. This stand seems to be a votive stand. A hook shaped handle of a saucepan, with a decoration of a single line near its root. Saucepan handles from No. 8 to 16 are broken from their root where they were attached to the saucepan. All these handles are circular in section with a flanged slightly convex knob at its end. All of them are decorated with a painted geometric design of straight lines only. Most of these decorations are confined on circular section handle.

Decorations on the knobs of these handle are with a circle with four hubbed decorations with a dot in the centre and four dots in four compartments produced by four hubs. A circle with a double lined and single lined crosses overlapping each other. Decoration on the knob is of

hatching and a thick line along the length of the handle. A more flanged variant is an eight hubbed decoration within a circle. A thirteen hubbed variant could also be seen. A decoration of the knob is hatching and a band on the handle which is of plain type.

Timbarva

Timbarva (22°2'N: 73°4'E) is situated in Vadodara district almost 30 km south east of Vadodara. The mound locally known as Bokira Timbo is actually located three km North West of the village Timbarva. An exploration was carried out by Majumdar and Rao revealed some antiquities of Early Historic period. Later a trial excavation was carried out by Mehta in 1953 of Department of Archaeology & Ancient History, Maharaja Sayajirao University of Baroda to study the cultural sequence of Early Historic period. The excavation yielded three cultural occupations based on the study of ceramics (Mehta, 1955)

Period I : Pottery associated with Northern Black Polished Ware

Period II ; Pottery associated with Red Polished Ware

Period III : Pottery associated with Burnished Red ware with painting on white

Structural remains were found from Period I was noticed in the form of wattle and daub huts. The pottery included was red and black ware northern black polished ware, plain red ware, burnished red ware with slip varying from orange to red and black ware along with terracotta objects like stopper, skin rubber, handmade mother goddesses along with celts, legged quern, pestle, copper ring, iron arrow head, plough and a blade.

Period II had black and red ware, red polished ware, mica slipped ware, crude gritty ware, crude red polished ware, burnished ware, and white painted red ware. Other antiquities were terracotta beads, stopper. Skin rubber, stone tools iron nail, and gold pendant decorated with floral pattern by gold wire chain.

Period III is marked by red ware painted in black over white along with Medieval black burnished ware, red slipped ware with black interior and crude red ware. Some few antiquities

reported are terracotta bead, worn out seal, stopper, disc, and plaque with floral pattern, bone points, stone querns, iron ring, nail and blade (Rao & Kumaran, 2015:138-39)

Terracotta objects

Besides pottery, terracotta objects such as beads, stoppers, flesh rubbers and mother goddesses have been recovered. Very few terracotta objects have been recovered from this site.

Beads

The beads of arecanut, bionical and spherical shapes have been recovered from this excavation. Arecanut beads are of quite common occurrence in India. These beads are found in all periods of history, but at Kolhapur, they were gradually on the wane in the Bahamni Period. From other sites this type was recovered in the period assignable to 2nd to 4th Century A.D (Sankalia & Dikshit, : 149). They occur at Baroda in the Periods II-IV. At Timbarva, the distribution of the arecanut beads is seen in Periods II and III. The other types of beads are also of frequent occurrence. Truncated bionical beads were recovered from Harappa, Kolhapur and Baroda, while the spherical beads have also been recovered from Brahmagiri and Kolhapur.

Biconical Beads

Only one biconical bead of red colour has been removed from layer 7, period I. Another bionical bead of smoky quartz with flat hexagonal section was recovered from layer 4, Period II and III. The other types of beads are also of frequent occurrence.

Stoppers:

Terracotta cones of different shaped top like pointed which are found three in number and ten truncated top have been recovered from Timbarva. They are of different colours like black or red, some are rudimentary and some are perforated and intact.

Solid Cylindrical type

Five cylindrical solid terracotta objects were recovered from various periods. These are handmade and either well or crudely finished. The oblique base is formed by the action of the thumb while making it. The truncated top results from holding the clay on the top of the

forefinger. This truncation is later on worked out so that hole-like point or irregularly-shaped top is formed. The slightly oblique side is also the result of the manufacturing process.

Discs

Only two discs were recovered from layer 3. One of them is a circular red disc while the other is also of similar fabric and colour with concave sides.

Flesh rubbers

Three flesh rubbers were discovered from the excavation. They are rectangular terracotta blocks with herring bone patterns. These find suggest a long tradition for the use of such brushes at least in this part of India.

Mother Goddesses/ female figurine

Two figurines of mother goddesses and one rather doubtful fragment were recovered from period II. One of them is a red in colour with almost rectangular lower part, compressed thin waist and well-set breasts. The right hand of the goddess is broken while the left hand suggests that only the upper arm of this goddess was probably made. The head of this goddess is missing. It is measuring 28x15x35 cms.

The other goddess also shows similar leanings of arm and breasts, but the lower part of this figure is rounded. In this case head is missing. A third piece also from of the same period may be a human figurine and it is too fragmentary for any descriptions.

Vadnagar

Vadnagar (23 48'N: 72 36'E) is situated 30 km north of Mehsana was known as Anartapura, Camatkasapura, and Vadnagar in the ancient times. It is situated in Kheralu Taluka of Mehsana District in Gujarat. From the literary sources this town seems to have been one of the important centers in North Gujarat. The earlier excavation was carried by Rao and Mehta of the Mararaja Sayajirao University of Baroda in 1953 to understand the ceramic sequence of the site. The excavation also revealed the existence of a very flourishing chank industry, manufacturing

bangles, beads, etc. Terracotta sealing were also discovered during excavation. The northern end of this area was excavated. The south of this mound is another mound located near the Gauri Kund. It is called “Mound II” which yielded ‘Red Polished Ware’ and one lead coins. On the basis of evidence the excavation had revealed three cultural periods:

Period I (Early historic I): Characterized by the absence of the ‘Red Polished Ware’ and the predominance of the coarse thick ware black inside and red or brown outside. The punch mark coins and Stamped ware belongs to this period

Period II: It is characterized by the occurrence of large quantities of ‘Red Polished Ware’.

Period III: It is marked by the existence of the “Medieval Painted Ware” with black designs on a white background painted on red ware, dated from 600 CE at Baroda. There are no any other relics which can be assigned to a period later than 1000 CE (Subbarao & Mehta, 1955).

The recent excavation from the years 2008 to 2012 on the fringe of the present township, done under the able Director of the State Archaeology, Gujarat, Y. S. Rawat, has provided ample proof of existence of a thriving center of Buddhism at Vadnagar a thriving trading town way back in the second century dated to 2nd to 4th century CE. The excavator has identified five periods of continuous occupation of the site

Period I: Formative stage of the settlement

Period II: First Fortified Settlement (3rd century BCE to 1st century BCE)

Period III: Re planned town with burnt brick fortification (1st century BCE to 11th century CE)

Period IV: Modification of Internal planning (12th century to 17th century CE)

Period V: Period of present town planning (1th century to till date)

Period I has yielded pot sherds, punch marked coins, copper rings, bone points, glass beads, cowrie shells, terracotta beads and hopscotch, fragment of crucible objects possibly representing a stupawith the same circular object at its four corner (Rawat, 2010).

Period II revealed post holes at regular intervals on top of the walls and super structures, burnt brick in header and stretcher with mud mortar. Evidences gathered were hearth and fire activities.

The ceramics were the red ware, black and red ware, grey ware, and micaceous red ware with antiquities like punched marked coins, ivory bottom seal engraved with Brahmi characters.

Period III was marked by has the whole settlement on new plan and architecture. The burnt brick fortification was seen for the first time. The streets had rows of houses on both side. Large number of terracotta figurines of animal and human both hand made and moulded along with human headed pendants and floral pendants, bangle pieces, and some bangle pieces are even stamped, moulding of acanthus leaf was found in this period. The amphorae and torpedo sherds were noticed in plenty along with votive tablet with foot impressions, six petalled flowers, a crescent shaped stone tray depicting the scene of monkey offering honey bowl to Buddha, a stone head sculptured in Gandhara style, and a head, inscribed black polished ware with legends reading as '*devashrivishi, Boudhalasya, dharma,.... Rashi and Shakasya*', had written in Kshatrapa Brahmi character (Rawat, 2010).

The most important brick structure found here is the Buddhist monastery built on a high plinth measuring about 14.04m x 14.04 m with an open courtyard surrounded by cells on all side. Two votive burnt brick stupa square in plan dateable to around 4th -5th century CE is found outside the monastery (Rawat, 2010).

Terracotta Objects

Being a huge site large number of terracotta objects has been excavated. More than 1000 terracotta objects have been unearthed from this site. A variety of objects have been unearthed from this site. **Plate 16**

Human figurines

One of the most fascinating finds of Vadnagar is human figurines dominated by both male and female figures. They were all eighty in number and some were fragmented and even separate body parts were also found. The length varied from 1.2 cm to 5.3 cms. Most of them were mould made and few were hand made. The most enthralling thing is the beautiful human faces dominated by male. There were figurines of males, females, three figure of mother Goddesses and very few mythical figures and even female faces. Some of the heads have beautiful head dresses and both male and female were wearing ear studs. The mythical human figurine had big eyes and

teeth like a grotesque looks of the face. The female figurines have beautiful fashionable coiffeur and slender body. Both the male and female figures were wearing stylish ornaments. One of the broken lower body of female figure wearing long skirt and her feet and floral upper garment is seen. The length was 1.9cm tall. Most of them were mould made and few of them were hand made. The body limbs were sometime made separately and luted on the main body. They were applied with white, red and black slip.

Animals

Variey of animal figurines are found from all level of the excavation. More than 100 animals have been unearthed out of which bulls are found in large number. The animals found were bull, cows, horse, tortoise, cat, monkey, pig, deer, lion, elephant etc. Most of them were hand made and some are made out of mould. Sometimes one can find the lack of proportion and some were exceptionally refined. Most of the figureines were made by pressing, pinching or pulling the clay in shape. The legs were tapering and and pointed at the base and widely stretched. The eys were indicated with depression and the ears were pinched out. Some had incised and pin decoration on them. The bulls had mostly humps and some of them were broken. Some of the bulls have perforation on their nose which must have been meant for ploughing. One of the bulls was found in crouchant position which was very big measuring 6.7 cm in length which was broken. A beautiful tortoise with proper proportion was made from double mould technique. This indicates that even the die makers were skillfully making proportionate dies. A horse figurine had its mane decorated with pinched design. It measured 5.2cm in length and 4.2 cm in breath. Few broken horse heads with mane, broken camel heads, pigs with small tail, and other fragmentary animals were also found. Few cow figurines were found from here out of which one cow had round decoration aroud its neck could be the beaded neck piece put around the cows today. The birds like swan, peacock, sparrow heads were made very stylistically.

Ornaments

Vadnagar can be considered a fashion paradise of ancient Gujarat. From Khatrapa to Maitraka, lovely ornaments were found here. They were not only made of terracotta but of many other materials like shell, stone and metal. The designer bangles pieces, *cadās*, necklaces, ear rings and

ear studs, beautiful headdresses, armlets and waist bands were best found in Vadnagar in early historic times.

Beads

More than beads three hundred fourteen beads were found in these seasons of excavations 2008 - 2012. Other than arcanut types the round and standard conical shape, singular examples of disc shape, bell like shape and one delicately shape small spherical beads are also found, barrel, bicone, tubular, cylindrical and spheroid were also found.. Among them the most common was arcanut shaped. They are of both red and black in colour. Some of them were tapering at the end and some of them were round at the end. Most of them were solid and wheel made. They were very similar to those of Nagara. They were applied with red, black and white slip. They were most common found in all levels of the excavation.

Pendants

One of the most fashionable jewelry found in Vadnagar were the pendants mostly moulded. They are almost hundred eighty in number. Each pendant was made from separate mould and stylistically produced. They had sometimes single perforation or double perforation. Some of the pendants found were very unique. The pendants were of animal faces like the two sided *eckl* face, highly decorated with horizontal lines with pin tiger nail, a horn on a decorated circular medallion with two small stands at its end, stamped flat eagle, lion face, wheel like or chakra, snake hood and human face and stamped floral designs were found plenty. They can be considered as designer wear in modern times and most probably in ancient times too.

Bangles

Bangles were also very popular among the people of Vadnagar. Lot many bangle pieces were found numbering one hundred and fifty. They were found from thin to broad and flat shapes which were highly decorated. They had decorations like spiral grooves, circular grooves, stamped floral creeper decoration, stamped floral decoration with dotted border, stamped flat eagle decoration, layered bangle having different decorations. One piece of bangle had a design having two spiral clay bangle entwined to form a design. The stamped decorations were mostly

found on the broader width bangles pieces. They were both hand made and mould made. The bangles were applied with red slip and the broader varieties were applied with white slip.

Hair Styles

The female folks from ancient times liked to carry out fashionable hair styles. A female was wearing a trefoil hair in triratna style with a single crest pendent adorning her parting of her hair. Yet another figurine has her hair tied up in trefoil on two sides with a plaited plain band in the centre. The Ushnisha or a top knot with hair cascading down and others were wearing their hair as wing shape plaited hair on two sides of the head. This was the most common style found here. Sometimes they wore a veil on the head. They had similar styles like that of figurines found from Amreli.

Other than pendant and beads, additional ornaments found were waist bands, armlets and necklaces.

Wheels & Toy carts

Terracotta wheels suggest that toy carts were popular. Most of them were hand made, some of them were moulded and others were made out of rubbing the edges of the potsherds. They are numbering thirty four from the excavation. Most of them have hub made on them. Few particular wheels have the spokes were made by pressing the fingers; some had grooves to separate the spokes and some others spokes were painted with black. They are applied with red and white slip and some were verified having black shoot on it. Few toy carts were also found. They were all hand made, hollow, red slip applied on them. One of the toy cart frame had perforation to attach the wheels. The frames measured around 8.8 cm to 3.5 cm in length and 3.0 cm to 2.5 cm in width.

Miscellaneous Objects

There were about hundred sixty sling balls found of different sizes. They were found with red buff and black slip and measuring around 2cm to 1.5 cm and weighing around 9 gm to 4 gm.

Other than these dices, ladles, fruits especially mango, toy bowls having finger impression, grooved pulley, gamesmen, discs, four finger pinched lumps or mushtikas and triangles. They were all applied with red and buff slip.

Nani Raiyan

Nani Ryan (22, 49') is a small village situated in Mandvi Taluka, Kutch District right bank of river Rukmanti. In olden days it was known as Raipur or Raiyan. It is about six kilometers to the north of the coastal town of Mandvi in Kutch district. Three mounds had been thoroughly explored and materials have been studied. The potteries which are recovered from here were incised design, comb design, pinched design and circular design. There are grey wares, Black and red ware, red ware and amphorae ware all of historic period. There might have some craft specialization at this mart (Sen, 2003).

Terracotta objects

The distinctive face of human female figurines is found in plenty. They are made out of mould and some are handmade. They have beautiful coiffure and sometimes girdles around their waist. The animal figurines are also found in plenty. Most of the animal figurines are rudimentary and the bull figurines are found in maximum number. **Plate 16**

Uparkot

Uparkot (21° 52' 41" N: 70° 47' E) is situated at the foot hills of Girnar at Junagarh district. Excavated by the Department of archaeology, Gujarat was conducted on the roof of the caves. The lowest level was characterized by Kshatrapa pottery and coins datable to 3rd to 4th century CE. The antiquities yielded are bronze pot, with a spout, (Rao & Kumaran, 2015: 140).

Terracotta objects like human and animal figurines, sealing and bullae were found from here. One of the interesting things about one of the figurine is that it contains an excellent profile of a Sathian face with curly hair wearing tiara and neck ornaments

Chapter V

Analysis and Discussion

From the Harappa times we witnessed the growth of habitation areas which brought about the increase in production of different craft. The large quantity of animal figurines during Harappa times may be catering to the demand of the big clusters of inhabitants. Early historic period witnessed the thriving trade, merchants flocking the ports with new elements of the usage of terracotta objects, coins and many craft activities.

Most of the Early Historic sites of Gujarat have the cultural sequence with Period I which is either Neolithic and Chalcolithic and then there is a wide gap between Period I and Period II. Period II which is Early Historic many a times dated to 1st century BCE or 1st century CE and goes up to 4th century CE. In the case of the sites like Nagara, where Period I starts from Early Iron age dated to 3th Century BCE to 1st century BCE, where we found few pieces of Northern Black Polished Ware along with few iron implements and Period II is dated to 1st century CE to 4th century CE. Period III of most of the sites is Gupta dynasty dated from 4th century CE to 7th century CE and then the early medieval starts. In the early historic period of Gujarat we find that most of the sites are dominated by Period II when Kshatrapa Dynasty (1st century CE to 4th century CE) was ruling in this region. Large numbers of artifacts have been unearthed from this period made of stone, glass, terracotta, shell, metal. Ceramics like – Black & Red Ware, Burnished red Ware, Coarse red ware, Coarse black ware, Coarse grey ware etc. Terracotta objects like votive tanks, beads, pendants, toy cart frame, wheels, stopper, sling balls, crucible, flesh rubber, Coins like Silver Punch Marked, Silver coins of Kshatrapa, Gupta coins in silver and lead: Iron Objects like chisels, arrowheads, sickle, nails, daggers, spearhead, points etc. Stone – Muller, pestles, querns, pounders: Shell- bangles , ladles. There are also very small sites which just yielded very few numbers of terracotta objects like Timberva, Nangal, Dhatva, Uparkot etc.

It has been observed that the Period II of all the sites yielded large number of artifacts belonging to the Kshatrapa dynasty was the most prosperous period. The Kshatrapa themselves were the

Saka governors of the Kushanas were of Indo Scythian stock. They carved out a niche for themselves in the Western India. They were constantly in war with their neighbors the Satavahanas ruling in South that is Maharashtra and its seaboard for occupying the ports and marts. They made the open trade policy where many traders from the Western region were meeting in these marts and exchanging goods. Marts like Amreli Vadnagar, Nagara were all situated on the trade routes.

Large number of terracotta object were found from these sites indicate a thriving centre flocked by sellers and buyers. With a large number of terracotta we can assume that that this creative art served a double purpose to the society for their own amusement and for an urge to decorate their homes. The mould figurines indicate the introduction of moulds in the terracotta art during this time. The artists came in contact with new technology with formulation of style.

It can be noted here only that the animal figurines irrespective of introduction of the mould the animal figures were still handmade and the human figurines were put into mould and even hand made. Some rare animals like tortoise from Vadnagar were found to be made out of mould. The mark on wheels indicates that it was the work of the potter who made pots for the daily use and also the terracotta objects. The introduction of variety of terracotta animals like the horse and the horse cart and lion, elephant, tortoise, bull, rabbit etc. was very realistically handmade.

Among the animal figurines, bulls are found in large number with big humps and sometime small humps. The well-developed humps are also found in present day. Another feature is that some of the bulls have perforated nose and some without perforation. It is a practice in Gujarat that drawing carts and farming bull have perforation in the nose. Mostly in India, it is common that the stud bulls are without perforation. Horse was moderately found in less number. The depiction of mane is beautifully done. In some of the horses the mane is pinched and in one specimen the mane was pinned separately. Other animal are rhino, dog, deer, stag and a lion. The mane of the lion is done beautifully. Depiction of bird was almost nil except for one to two pieces. The animal legs are separately modeled with a short tail attached to a round portion of the back. The legs of the animals are pointed and sometimes shaped like blocks. Sometimes the animals were perched up in a pedestal and pulled with rope.

More than ninety six terracotta human figurines have been reported has been reported from Gujarat. Human figures are found in large number from Vadnagar and Amreli where only mould made figurines were found. During this period either double mould or single mould was used to make the figurines. Very few handmade figurines were found. Among the human figurines female figurines attained more attention. Another characteristic trait observed here is the depiction of the facial features like eyes, ears and nose done by appliqué and pinching or deep incision. There is greater amount of ornamentation, with elaborate coiffure and projection of different part distinctively. They fashioned pendants and gamesmen with female face. The bellies of the figurines are now prominent and the female figures have small breasts. The legs of the figurines are sometimes separately modeled, and sometimes use of appliqué girdle in the lower part and even anklets, marked by incision. The faces made out of mould are beautifully depicted whereas hand made one are though slender but disproportionate and crudely finished. Greater amount of ornamentation were seen now with elaborate coiffure and projection of different part distinctively. The human figurines now found were stylized in different poses and proportionate in body shape.

Large number of areca nut bead and pendants were found from Nagara, Vadnagar and Amreli indicates the demand of this bead and most probable it was used as fashioned jewellery. This phase was an era of fashion, and the ornaments were worn by both male and female. These ornaments were varied like bangles both simple and decorated; beads of different shapes for necklace and ear studs; armlets, head dress; waist bands, pendants of different types etc. It showed the life style and even the plain bangles indicate that the poor could afford to fulfill their desire to adorn themselves.

A large number of objects concerning outdoor games were found. They were like dice, palleys, balls, tablets, teetotums along with toy carts; toy wheels etc were unearthed from early historic site. The dices were having various decorations with round incised or painted circles to represent the number. This also show the popularity of the games played using dices.

The discs were a very common find in all the excavated sites. They were either made out of pot sherds or made on a wheel. They are known in Gujarat as paiya and are used in variety of games. They were found some times fine and smooth and some were large and crude. This is still

used by the children to play variety of games. The perforated dics were inserted with a wooden stick and is known as chakradi in modern times. The third one had double perforation which was played as chakradi. The toy cart suggests that the children what they observed in their surroundings were demanding those toys and it also suggests long distance travel and trade.

The household implements were also like votive tanks from all most all sites specify the preservation of water. The flesh rubber, stoppers, lamps, ladles, etc found from various sites indicate the daily life of the people.

The mould as it is used to make clay impressions appears with the Early Historic of Gujarat. Close stylistic correspondence between moulded terracotta's and stone sculptures, particularly, of the ,explains the terms "time variation" or "time bound" as used for these terracotta type by Kshatrap. The correspondence in style and composition between stone and the moulded clay sculpture of the Kshatrap times, is the suggestive evidence, which discoveries of model sculptures and moulds or matrix from the ancient deposits are positive indications for existence of such a practice

Different techniques are used for the working of the terracotta toys that which shows the traces of the early history. An observation was the terracotta objects were prepared on the previous evening and fired next day. This helped in avoiding the cracks in the object, thus it is essential for clay object to dry the twelve to fifteen hours in shade before they are out in fire. It is reasonable to presume that making of archaeological specimen which were broken or having rough core, the clay per half was acquire from the vicinity of the house.

It brought about two set of theories that is the mass scale of production of the moulds in short duration and replicating the master pieces without exercising much artistic knowledge or vision. Other than that some of the exquisite female figures were very distinct and beautiful which shows that high standard was attained in the art of modeling. The moulds were made from sculpted stone figure. The large number of mould figurines is found from Vadnagar and Amreli and few from Nagara. The ethnography study also reveals how a professional first carves out the design of the objects and then the caste was made. One or two mould has been found from Devnimori and a very small stone animal figure. It is also noted that among terracotta objects the

human figurines, animal figurines, ornaments, games objects like pellet, balls, dice wheels and cart frames etc, very few household item were found from the excavated sites. It shows the popularity of the things with which the children thought that they could play. It also showed the taste of objects among the people of Ancient India.

We also came to conclusions that many people were trying out this art as indicated by small unbaked and ill fired and sometimes charred animal figurines. The archaeological evidences from the excavated sites provide a reliable chronological to the terracotta traditions of early historic Gujarat.

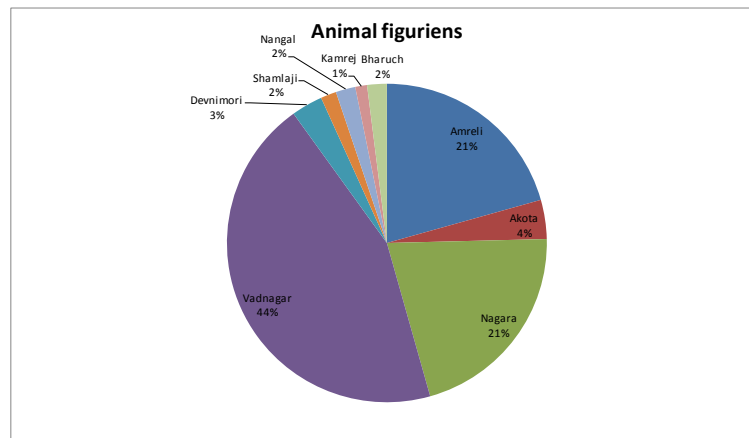


Fig 2. Animal Figurins

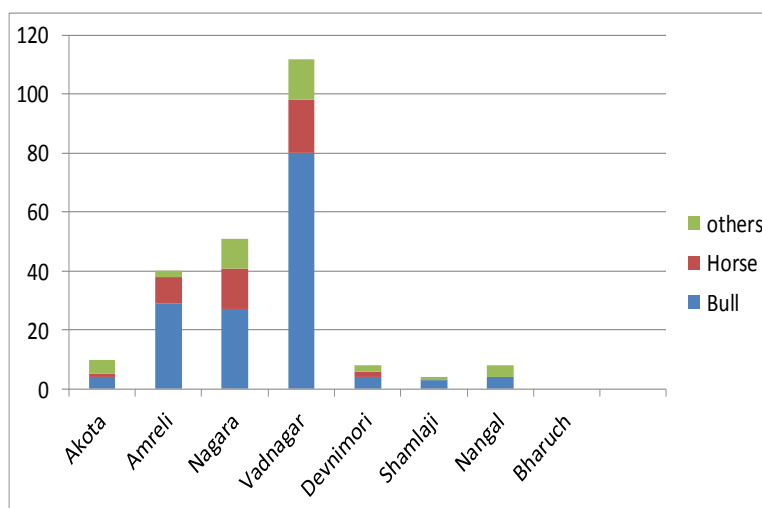


Fig 3 Human figurines

CHAPTER VI

Ethnological Studies & Technique of Making

Ethnography and Ethno archaeological information can be very effectively combined with experimental archaeology to provide specific models for archaeological testing or for further experimental or ethno archaeological tests. A large percentage of technologically focused ethno archaeological studies are of this type, asking specialist in a craft to remember the “old ways of doing things, or to try to make an ancient object somewhat different in shape or material than the modern object he or she usually produces”.

Clay has been considered as one of the most popular medium of art since ancient time onwards. It is a movable and easy moulding object. As clay object are fragile, to make them durable people invented the process of firing them. In its literary sense, the word “terracotta” (Italian terra-cotta and Latin terra-cocta) means “baked earth” or “baked clay”. Clay is a dense, viscous substance which consists of silica, generally mixed together with iron, lime, magnesia and other colouring oxides. When mixed with water clay forms a tenacious substance that can be moulded into different shapes. Generally clay is a fine-grained material which is plastic when wet. It becomes rigid, stable and durable when it is dried and fired. Clay is easy to manipulate and a well-levigated lump of clay can be easily shaped into different art forms or sculptures using simple tools. Later on it is been kept for sun drying and the fired in kiln that make it stiff and stern. These fired clay objects develop a brownish red colour and are known as “terracotta” that are hard, porous and durable in nature.

The use of terracotta was extensive and its purpose varied. Terracotta’s were intended chiefly for domestic use and worship, for household decoration, for children’s toys, etc., for popular religious and magical practices. Terracotta supply invaluable data for the study of the life and culture of the people (Pratiba 1985).

The terracotta is the most popular medium of the artistic expression of the people from the earliest time onward (Pratiba 1985). Terracotta objects have been prepared and used by human

beings from ancient time of human history in the form of household objects, ritual objects, aesthetic objects and sculptures. India too has a long antiquity of terracotta assemblages, reported from a large number of Harappan, Chalcolithic and Early Historic sites. In recent times also several places of the country have notable terracotta traditions. The Early Historic period of the state is characterized by its fine terracotta art as evident from sites of Gujarat.

Articles needed in our daily life like lamp, pot, plates, cups, buckets and big vessels used for storing grains are still very popular in every part of India. These are been used by everyone whatever their differences in their status or circumstances, whether geographical, social or financial. The images of gods too were made by clay. They are like elephant, horses and bullocks where also made and sold as played things and toys.

In India clay modeling is among the early skills developed by man where he has expressed his creative impulse. Terracotta is one of the earliest art forms of the Indian sub-continent and terracotta making is a part of living tradition in many parts of the country. Though easier to prepare they involve high manual skill for making them and technical accuracy is always required in the process. During ancient times terracotta articles were related to utility object, like utensils for cooking, eating and storing. They also serve as ritualistic objects i.e., votive tanks, figurines of mother goddesses etc. or as decorative object like lamps, jewelry and toys. They high light socio-religious life of the people and are significant as object d'art and antiquity. In modern India as a group they form a part of handicraft industries. In rural India they are used as utility goods and rural folks and tribals use them for religious purposes.

Ethnographic study is the study of present day people, usually through the study of the material remains of a society. It reconstructs the ancient way of life by studying the material and non material tradition from the modern society. The study aids in understanding the ways a terracotta toys was made and propose of what it is being made and used for. Through which can infer that ancient societies used the same technique as their modern counterparts given a similar set of environment circumstances.

This work is mainly concentrated on the technique and working of terracotta toys of Gujarat. Toys are the object for a child to play with, typically a model or miniature replica of something.

Playing with toys is supposed to be an enjoyable means of training young children for life in society. It is important when it come to growing up and learning the world around us. The earliest toys were made from materials found in the nature as wood, stones, shells, clay, sticks etc. The origin of the word ‘toy’ is unknown, but it is believed it was first used in the 14th century A.D.

Toys play an important part in the life of a human. Ancient toys were often made by the parents and family of the children who used them when they were kids or made by the children themselves. But in modern times the toys are often mass produced and sold in stores.. They provide entertainment while fulfilling an education role. They aid in the development of physical and mental skills which are necessary in later life of a human.

The present research throws light on the Ethnographic studies on the terracotta toys of Gujarat, a preliminary study. This study mainly concentrates on the terracotta toys of few sites of Gujarat such as Padra at Vadodara, few sites at Kutch such as Bhuj, Anjar and Naani Rayan, Bakrol at Ahmadabad and Patan.

In every community potters or Kumbhars live separately mostly in the outskirts area of the settlement. As a result of field investigation about ten potters family were questioned and various places were visited, it was found that there were scarcity of terracotta toys producing centers in the rural areas of Gujarat. Mostly the pots and pans are being made in the villages of Gujarat. The area where the potters stay is known as Kumbharwado in Gujarati is mostly situated outskirts of the village or towns. The working and the structure of the present day terracotta toys of those specific areas reflects the early historic toys of Gujarat. The visited sites of potter’s workshops are namely, old Padra Road, Padra, Kutch, Bakrol, Patan and Sidpur.

Padra is a city and a municipality of Vadodara district in Gujarat. Padra is located about 16 kilometers from Vadodara city. The potter’s workshop is located at Vadugam, a small village at Padra. This is the site that consists of lots of potters concentrate at specific area where we are able to understand the preparation of the clay. Here the toys are made mostly by moulds as well as handmade toys are also been used, according to the information of the potter at the site. The bodies of the toys are made on mould and the hands and legs are made separately by hand. The

moulds are first made on plaster of Paris. The both solid and hollow toys are made. Modern kilns are used to fire the objects. A certain kind of chemicals are used inside the kiln in order to avoid the burning on the walls of the kiln, so they use chemicals namely carbonic soda, bio caustic soda etc are used, glass wood are also used inside the surface of the kiln. The capacity of the modern kiln is 325 water pots per batch and 160 to 170 kg of wood fuels are used inside the kiln for baking the pottery. Around 2hrs of firing is need for baking the toys.

Kutch is the district of Gujarat in western India. This is the place that shows the evidence of lot of ancient culture and richly populated craft working. Here there are different places that show the evidence of the early historic working of the toys. The places such as Bhuj, Anjar, Nani Rayan etc. where the potters shows the working of the toys that replicate the working of the early historic one. They work on different variety of toys of animal figurines, birds, small toy vessels etc. Animal figurines include bulls, camels, elephant horse etc. There are different ways of making of these toys namely, moulding, handmade or pinching technique, solid made etc.

Bhuj is the city that situated in the district of Kutch. It is a vastly populated city with lots of craft activities. In Bhuj there is a small cluster of people who use to make different variety of toys generally of small toy vessels and other animal figurines that resembles the figurines of early historic period. They usually tent to make small toys. The clay namely “*karia mitti*” which is of black colour and “*geru mitti*”, which is of red colour are used for making toys. The toys are generally made by the ladies in that community. The technique that they used for making toys is either handmade or pinching technique and wheel made toys are also made by them.

Anjar is a town in Kutch district. It is a town of historical importance, located in southern Kutch around 40 Km away from one of the biggest sea ports in India- Kandla Port. Anjar is claimed to be the oldest town in Kutch.

Bakrol Bujrang is the village which is located in Daskroi block of Ahmedabad district in Gujarat. It is located approximately 18 km away from the city of Ahmedabad. In Bakrol Bujrang lots of potter’s workshop was seen along the vicinity of the main high way road. Where they use to

work on the potteries as well they use to make different varieties of toys of both small and bigger size. Different kind of toys are seen namely of animal figures that is of bull, cattle, horses, elephant, camels, goat etc and birds and other hanging objects. A considerable number of terracotta beads are also found from the pottery workshop. Majority of the beads are like the arecanut in shape, i.e. conical with one end being truncated or tapering, and the other size being flat or flat with a concavity in the centre. The beads are made using wheel which are of both hollow as well as solid in shape. Other toys are made using different technique i.e. of handmade, wheel made, moulding etc.

Bhuj and Ahmedabad district potters are making more of toys these days. In other parts of Gujarat toys are supplied by state like Bengal and the finishing and colouring are done here. Bhuj in Kutch is the only area where traditional toys are still being made today and sold in the market to cater the need of the demands of the local markets.

Making Process and technique

The accessibility of the raw material is a major concept for craftspeople and the supply of raw material is often suggested as a method of control of production. This is rarely a major issue for terracotta production, although clay deposits were sometimes owned and controlled. In large riverine floodplains around the world, clay suitable for terracotta production was generally widely available. In the modern days the potters do identify favored location for the gathering of the clay, but on the whole clay sources are quite plenty. Clays suitable for more specialization are a great deal rarer, so that access to clay might be more complex, and would need to be considered when analyzing past production.

Sources of clay and its preparation

Most of the potters acquire the clay from nearby ponds and water body. The preparation of the clay is mostly based on where it is been found. The potters of Anjar, Padra, Bakrol collect the clay from the ponds and from the nearby rivers. In certain places by digging of the sediments from the ground the clay is collected and then taken to the potter's workshop. The unprocessed clay which is brought from different sources has to be processed and prepared for the actual manufacturing. Firstly, the soil is cut into small pieces with the help of spade. Then two small

buckets of water is mixed with one medium sized basket of mud. The proportion varies from village to village according to the texture of the soil. In some cases there is no measurement as such, water is added as required. The preparation of clay is mostly done in the courtyard of the house or outside the house in an open space.

Preparing of the clay for making terracotta objects are the first essential step. The clay lumps is been allowed to dry in sun or shade. Once the clay lumps are devoid of humidity, clay is spread out and beaten to break up the clods and if any roots or other organic material are seen it is been picked out by hands. The helpers or the potters themselves perform these activities. For the cleaning processes the clay is been passes through a baskets, cloth or metal sieves in order to remove any other material from it. The very fine clay is been allowed to levigated i.e., the fine clay is then placed in the water and agitated. Then it is allowed to settle down at the bottom. This process can be done in a pit, lined with clay to prevent sediment inclusions, where the water is allowed to evaporate and the clay is been removed in layers, with the finest clay at the top as these are the last to settle out of suspension. After the clay gets processed to the desired quality, it is then mixed with water and left for a day or two.



Figure 4: Prepared clay lump

After few days any desired tempering material is added into it, and the mass of clay is kneaded with hands or feet to work the water and temper thoroughly into the clay, producing a uniform

clay body. This prepared clay may be wrapped to keep it damp until the potter is ready to use it; it is placed in a covered basin or pit. Tempers are referred to any type of material added to the clay. The tempers are presence of non-clay materials in the clay body, with no suggestion of whether these materials are found naturally in the clay or deliberately added. Temper, whether added or not, affect the working and firing properties of the clay (Miller, 2007). The common tempers are plant material, sand, shell, mica or other minerals, grog (fragments of fired pottery or bricks), dung, salt, or other clays. These materials generally do not require much processing prior to mixing with the clay. Clay in its original form is good enough for the sculptural forms, like toys and other figurines. All that was required with this clay was to crush the lumps with a hammer sieve it. This clay did not require anything to be added for using it as toy making. The clay or clay body can be stored for considerable period of time at various stages throughout this preliminary processing. Sometime storage of the final clay body prior to use is said to improve its working qualities.

Sometime, clay can be improved by mixing it with other type of clay or minerals or other organic material. Local clays should be tested for plasticity, shrinkage, maturing temperature, colour and especially if the ware is to be fired in an open fire or improvised kiln, resistance to thermal shock. The addition of the tempers like grog (up to forty percent) not only help to prevent the ware shattering if sudden heat is applied, but as it opened up the clay it allows a thicker and an uneven thickness of the clay to be fired. This is useful in the making of the toys and other terracotta objects.

Once the clay is prepared it's ready to be given different shapes according to the size of the toy. It is commonly observed that the techniques of manufacturing terracotta objects depend on the nature of products and the amount of production. Clay as a medium for creative expression has infinite possibilities. In its plastic stage it can be pinched, pulled, thumped, squeezed, rolled, bent, joined or moulded etc. Through the ethnographic studies we are able to understand different ways and technique of making terracotta toys. By doing different analytic studies in different areas of potter's workshops we are able to understand the basic knowledge of making a toy, through different technique such as;

1. Wheel Made Technique

Solid method

Hollow method

2. Handmade Technique

Pinching method

Solid method

3. Mould Technique

Wheel Made Technique: The basic form in this case is prepared on the potter's wheel. The wheel made technique can be done on two methods, "*solid and hollow*". In order to prepare a solid toy of an animal the bigger part of the body's of the animal like elephant, horse, tiger, cow, camel etc are modeled separately on the wheel as demonstrated by the craftsmen at the sites of Bakrol, Bhuj and Patan.

Here the prepared ball of clay is placed on the top of the fast running wheel. As per the modern technique the wheel is functioned by the help of electric current. But during the ancient period the wheels were functioned with the help of small bamboo stick that which is attached to the wheel, it is a manual process.



Figure 5: Clay is placed on a running wheel

Solid method: The clays are made into the desired shape by giving a light pressure on the lump of clay using both the hands. In order to make the body of the animal toy it is shaped into a prevalent pot like shape which is a biggest form usually applied for the animal like elephant. The other parts of the body like four legs, neck, trunk, head, tail etc are made separately on the wheel, thereafter. The heads are usually in the shape of a small pot while the legs are just the cylindrical elongated specimens. Ears are also made in the wheel in the shape of a flat dish.

For small animal toys the body is in the shape of a small narrow cylindrical barreled object. With the help of a thin thread the prepared parts are separated from the remaining lump of clay on the wheel. All the separated parts of the body are kept in the shade for a day in order to make it into a '*green hard stage*'. When the objects are in the green hard stage the separated parts are luted together i.e. joining the parts.



Figure 6: Arecanut bead made using both hollow and solid technique

A fine clay paste is also used for the luting as it acts as a gum in between the jointed parts. When the luting process gets over shaving or scraping is done to get an even surface on the body and to remove the extra bits of clay that is on the surface of the body. Areca nut beads are also made in the wheel which is demonstrated by the potters of Bakrol, which can be of both solid and hollow.

Hollow method: Some of the terracotta toys that we find are hollow inside. The technique of manufacturing hollow objects marks advancement in the art of clay modeling. On the wheel parts of the toy to be made are first thrown and then they are joined thus creating a hollow space inside the object. For example, an arecanut bead is a spherical shaped bead which is made by the same process. The striation observed on the surface of the bead was made by the contact of the fingers with the clay. The final finishing was also done on the wheel to get a smooth exterior. Following this the bead was cut off from the remaining lump of clay on the wheel using a thread. The preparation of a hollow arecanut bead was demonstrated by the potter of Bakrol that which give a clear cut idea of the process



Figure 7: hollow object made on wheel



Figure 8: Elephant's Legs in the wheel

Even animal figures are also made using this method. For example- for making an elephant or any other animal, first a big round cylinder for the body is thrown, and then four cylinders for the legs are made. Head, trunk, tail and other parts are thrown as per the design and all these parts are joined together with the help of slip and then joined together which is in a green hard stage. Eyes, ears, etc are added by rolling the clay and cutting out the forms.

Handmade Technique: Handmade technique is of two kind i.e., pinching method and solid method.

Pinching method: It is a kind of process which is used for producing certain kind of terracotta toys. Here the prepared ball of clay is taken and kneaded properly. The clay was shaped by hands and to highlight the individual features of the toys appropriate methods were adopted. Different types of toys are made using hands that is of pinching technique. To make an animal toy first the body was made and kept for overnight. By next day when the clay is at *green hard stage* the craftsmen pinches out the clay between his fingers for forming other parts of the body as tail, head, legs etc. These types of figurines have a crude appearance. This technique was also used along with other technique especially in the case of giving shape to nose. This pinching technique was demonstrated by the potters at Bhuj, it was also explained by the lady at the

pottery site. Here the ladies are the one who use to make toys and all these toys resembles the early historic period. As these toys are made by pinching technique the pinched out portion from the body is so delicate and can led to the breakage of these parts easily.



Figure 9: Potter demonstrating pinching technique

Solid method: It is the simplest way of making toys where the prepared clay is given desired shape and form by hand which are made solid. Larger shapes are given with the help of thumb and palm while smaller shapes and fine retouching is added with the help of figure. Often they use sticks having sharp end for decorating the objects. Here using different lumps of clay different parts are made such as the body, the legs, tail etc. And each part are joined together or luted together with the help of fine clay paste. After the luting process shaving and scraping is done to get an even surface. If needed extra clay is also added to the body of certain animals like camel, bull, rhinoceros etc in order to get a shape of a hump or to show other projected parts of the body. This solid technique was demonstrated by the craftsman of Bhuj where the toy camel was made.

Mould Technique:

Moulds are used especially if the object made in large scale. There are moulds made of clay, terracotta and plaster of Paris. Different type of mould is used for producing different kinds of

toys depending on its size. The moulds are used primarily for big animals like horses; elephant etc which are in large scale demand, different parts of the animal, pots etc. Moulds are prepared by the craftsman themselves. The carefully prepared clay in this method is pressed into the place with hands, pads or other tools against the individual moulds for casting off various part of the body of the animal. All the parts thereafter are luted together in the leather hard condition (Vidula, Kalyan 1986). Next the addition clay is scraped off the joined portion to make it smooth and then the slip is applied on it.



Figure 10: Animal mould

The moulded toy is kept for drying in a shaded area as the object dries it shrinks and this helps for the easy removal of the object from the mould. After the semi dry stage of the object, it is taken out and is placed on the wooden board and examined for defects. Then it is examined for any touchup, and smoothening of the rough edges. The object is then kept for the slow drying inside the workshop. It is turned or inverted on different sides for helping it to dry uniformly. The part which gets dry easily is often sprinkled with water to make sure that all the sides dry together. This method helps to remove and prevent cracks on the objects. When the object is dry it is sent to the kiln for firing, like in the case of bricks. Here the risk of damage is more in the case of terracotta. So they have to be more careful in the making of a moulded terracotta object.

Process of Firing:

Firing process commonly involves a proper arrangement of finished products, firing agents and creation of holes in the kiln to provide ventilation. Firing is done in closed kilns, locally. Kiln is located outside of the house in a separate place. Each family involved in terracotta making has either their own kiln or two or three families share a common kiln.



Figure 11: Open kiln at Bhuj



Figure12: open kiln Bhuj

Before firing the terracotta objects are sun dried. These sun dried objects which is in a leather hard stage are then carefully arranged in the kiln in layers. The placement of the object in the firing structure is an extremely important stage of the process, as incorrect placement can result in poor firing, marring of surfaces, or even the destruction of the product. The firing is done inside the closed kilns commonly and in certain places closed kilns are also used. At the bottom of the kiln, bricks are placed at certain distance, on the top of which terracotta materials are placed. The gap between bricks provides base ventilation and also helps in placing fire woods. Dry straw is given between each layer to provide buffer and aid to the fire. At the bottom of the kiln an opening is kept for setting the fire. A variation of the process is found for the objects which are aimed to get a black colour. These objects require a closed firing condition; hence, the holes here are closed by mud which results in their black colour through accumulation of carbon on the objects.

Different kinds of fuels are used to for the firing in the kilns. Fuels are the major raw material required in quantity by all of the high temperature pyrotechnologies, so that its support was an important issue for the craftsman. Wood fuel was used in most terracotta firings, and wood from specific species might be selected for desired characteristics of heat or smoke production if opportunity afforded. Prepared wood in the form of charcoal might be used for higher temperature fired clays, or for those firings requiring relatively smoke- free firing, but at added expense. Some waste fuels and especially dung fuels were deliberately chosen for the creation of black fired object, either for their high organic content where reducing firing were desired or for their high smoke production where soothing was employed (Miller 2007).

At certain places like Vadugam in Padra, Baroda district, they use electric kiln given by the government. Here certain kinds of chemicals are used inside the kiln in order to avoid over firing such as carbonic soda, bioacoustics soda are used. Glass wood is used inside the surface of the kiln. Two hours of baking is done in the modern kiln and its capacity is 325 water pots per batch and the wood used for firing is of 160 to 170 kg.



Figure 13: Outside the electric kiln



Figure 14: Inner view of electric kin

Other sites of Gujarat, Anjar, Bhuj at Kutch district and the site at Bakrol, Ahamedabad and other parts they used the normal kiln which is open and closed kilns. Inside the kiln on the floor

they spread broken pot shreds in order to maintain heat. At the villages of Bhuj district, Anjar, they bake the terracotta objects at 900⁰C temperature.

Colouring Process:

Mainly two types of colouring agents are used by the terracotta makers, 1) natural colour and 2) artificial colour. Only in few cases they use both of these types according to the nature of objects prepared.

Natural Colour: Different types of clay are used as natural colours by the potters. For the reddish colour clay called *Geru miti* and for black colour *kali miti* is used. Certain stones are also powered for making different colours. *Geru mati* and *kali mati* are brought from either nearby river side or they buy these from the local vendors.



Figure 15: kali mati



Figure 26: Artificial colour

Colouring is done before firing. Objects are given three coatings or wash of colour before firing. After firing the objects get a bright red colour. Some objects are burnished to increase their aesthetic beauty. A mixture of lac (gala) and spirit is given as a polish by a piece of cloth in that case after firing. In natural colouring there are both chemical and vegetable colours are used. Vegetable colourings are usually done only after firing, since the colour gets burned out.

Chemical colours like iron oxide are used for the red colour and other substance is used for different colours. In few occasions no colour is given, objects are directly burnt to get reddish brown (terracotta) colour. The terracotta objects which are black in colour are prepared with the help of a special firing technique. This involves firing in closed condition in which black colour is generated as a result of carbon accumulation in reducing condition.

Artificial Colour: In the villages where artificial colour is used, they buy the colours at different rate from nearby city or town market. Other agents required for colouring are – Spirit, Lac and Primer (white). In this case objects are coloured after firing. The most common colours they use are different shades of red, yellow and brown. Firstly the objects are given a coating of primer, then spirit and lac (gala) are mixed with the colour and two coatings of that mixture are given to the terracotta object.

Different types of colours are used for increasing the aesthetic beauty of the objects. In one object itself different colours are applied according to the object. The colouring is mostly done by the women's of the family, using different materials.

Decoration:

Terracotta objects are decorated with the help of different tools like sticks, pointed iron rods locally known as boki, knives and even the caps and nibs of pen. This is done just after the shaping of the objects when the clay remains soft. The designs are of three types, a) reliefs, b) engraved or incised or etched designs, and d) paintings. The first two categories of decorations are done before firing and the third category, i.e. paintings are executed after firing and only chemical colours are done before firing in certain cases. It is seen that in case of handmade and wheel made objects reliefs are created by adding extra clay and minutely decorated by hand. Incised or etched designs are curved by using sticks, pointed iron rods, knives, etc. Paintings are done mostly by women's of the potter's family. They using certain kind of brushes for painting such as, brush made of bamboo which is seen at Bhuj, piece of cloths and hair are also used at certain places like Patan for painting. The hair is made in a small roll with a pointed edge, where the edge is used for painting. When the rolled hair is dipped into the paint it can absorb more paint, so they can use it continuously at a one stretch.



Figure 17: Bamboo stick brush painting at Bhuj Figure18: Hair brush at Patan

The ethnographic detail of the present day is primarily based on two basic requirements – ritual and decorative. Observations on the archaeological specimen in the present day study are confined to a very few selected terracotta objects which come from the important early historic sites of Gujarat like Vadnagar, Amreli, Nagara, Hatab etc. By examining both the specimen it can be said there was very close utility of the objects like ritualistic, decorative, toys etc.

Types of terracotta objects:

There are three types of use of terracotta objects in Gujarat. They are use for ritualistic purposes, decorative purposes and as toys of small children.

Ritualistic: The ritualistic terracotta figures are widely distributed all over the Gujarat. There are regional variations among the figures according to their composition and forms, according to their votives or hieratic functions in the living communities. It is the religion with various rituals depending on the cult and Gods, that can also varies according to the worship of Gods of different local regional deities. A different tribal community of Gujarat performs different varieties of rituals in order to worship Gods and Goddess to fulfill their needs. All these rituals are performed from the ancient time onwards that practiced from generations to generations. The mostly seen terracotta figurines are of the animal, which are mainly of horses, elephants,

goats, bulls, tigers, dogs etc. The main purpose of the offerings relates to invoking protection from evil or some kind of fulfillment of wishes in their life. Animal figures are more popular as they are cheaper substitute to sacrificing animals, but still there are places where they do real goat and rooster sacrifice. Gujarat is a state that which consists of lots of tribes and this is the state that which is home to indigenous communities like Bhils, Rathawas, Dublas, Vasavas etc.

The mostly seen ritualistic terracotta figures of my field study areas are mainly of horses, snakes and other ritualistic objects like diyas.

Horse: In different parts of Gujarat there are different types of ritualistic terracotta figures mainly of horses which is mentioned as "*Ghoda*". In northern part of Gujarat there are ghoda of hollow, light weight, long- drawn- out figures of animals with open mouth and back and piercing ears on wheel, where the body is hollow along with solid segments. The upper part of the body is usually a tube cut diagonally forming an angular short neck and pot shaped protruding head. In the southern part of Gujarat the statuettes created are distinctly different from the other region in the state. Narrow drum like stomach structures the main contour of the body while slender tubes make the legs; the neck is also created of firm pipe of clay with a tapered end making the head. Pinched impression on clay creates the saddle, while a pierced nose and a slit makes the indentation for the mouth. Horses have found momentous deference as the personification of purity and energy as well as the chariot of Gods and goddesses in the entire country.

Snakes: Snake is one of the ritualistic figure that is widely worshiped in Patan District. These figurines are handmade object with decoration over it. These figurines consist of four head and one head snake is seen in a hooded form.

Diyas: Diyas are the other material figurines that seen in different areas of studies such as Bakrol, Bhuj, etc. These are object which act as oil- lamps. There are also other kinds of diyas which is in the form of elephant, here the body of the elephant is made on wheel and partly by hands and then luted out. A bowl like object is luted in the back of the elephant and over the rim of the bowl the series of lamps are attached. One lamp is also affixed on the forehead of the elephant and in the most of the cases it is also provided with a single triangular cut on the either sides to provide good grip for lifting the specimens. The simple diyas are sometimes handmade

and sometimes put in mould. Here the mould is made on plaster of Paris where the clay is pressed into the moulds.

Decorative: The decorative objects on terracotta are widely seen at Gujarat. They are used mainly as decorative items at houses, shops offices and other different places as a part of aesthetic view. They are elaborately decorated bodies and lustrous ochre coloured surfaces. The group of decorative terracotta consists of animal forms such as horses, camels, elephants and birds.

Horse: The horses are the mostly wide range of decorative terracotta objects seen in Gujarat. These figurines are made on handmade technique. All other decorative horses that found from different places of the field work are mostly imported from other places like Calcutta, Delhi, and Bombay etc.

Camel: The camels are the unique kind of decorative objects that which is seen in certain places of my studies. Camels are mostly seen in areas of Bhuj, Anjar, Bakrol.



Fig. 19: Decorative camel with double hump

Elephants: Most of the decorative terracotta elephant which is found during the field work at Bhuj, Bakrol, Patan etc are elaborately decorated which is standing once. These decorative figures of elephant are of big size that made on wheel. Different parts are made on the wheel and they are attached together by luting them together. They are decorated by incised and appliqué method, the animal also having an elaborate decoration by ornamenting its neck, leg and head.

Birds: The form of decorative terracotta objects that are found from different parts of my field studies from Bhuj, Bakrol, Anjar are birds of different kinds such as parrots, pigeon, etc. They are made by handmade technique in which the beaks and feathers are pinched out and the legs are made with the help of stick, which is shown as a standing bird. Different colour is also applied on the body such as red, green, white, etc.

Techniques of making these handmade figurines of horses, elephant, and camel are, first the body was made and kept for overnight. By next day when the clay is at *green hard stage* the craftsmen pinches out the clay between his fingers for forming other parts of the body as tail, head, legs etc. where it is kept for drying and firing



Fig 20: Decorative bird

Beads: Different forms of arecanut beads are been made by the potters of Bakrol. These beads are made in wheel which is of hollow and solid both.



Fig. 21: arecanut bead

Toys: Toys are the object for a child to play with, typically a model or miniature replica of something. Playing with toys is supposed to be an enjoyable means of training young children for life in society. It is important when it come to growing up and learning the world around us. There are different kinds of objects are which is seen from various area of the studies like Bakrol, Bhuj, Anjar and Patan. The types of toys that found are small kitchen vessels and bird whistle.

Kitchen vessels: Different kinds of small vessels are found from the pottery workshops. All these are done in wheel, where kinds of kitchen sets of different shapes are made like bowl, small pots, plates, jar etc.



Fig. 22: kumhar at Anjar making toy vessel

Bird whistle: Whistle are a kind of toy object that found at Patan. These whistles are in the form of a bird with the tail extending into a mouth piece. They are made on mould and it is of very fine object which can produce a high volume of sound as we blow through it.

These are the kinds of terracotta figurines that which is found from the different parts of Gujarat which are under my field studies.

Socio Economic Aspect

The kumhar community stays in a close knit area. They reside in the outskirts of the towns or villages. They are considered to be the lower caste in the Hindu family system and thus considered to be out caste and reside in the periphery of the town or villages. The potters of Baroda district were Hindus and in Kutch the terracotta work is carried out by the Muslim community. They usually stay in small families with extended families around them. The potters of Kutch live in joint family within a small Muslim community. They have migrated from Sind and have been carrying out this art for many centuries. They had been doing the pottery work for last 200 years onwards according to their record. There were workers of more than 1000 people from early time onwards, but gradually the number of people had decreased as time passes as they engaged in different other outside works rather than pottery work.

In a traditional potter's family of the Bhuj area, boys start learning the craft right from their childhood. At a young age they assist their father or the main craftsman. These days they are aware of education and send their children to school. In their free time they find time to learn this craft. Division of labour within a family can be found among this group. The exclusion of women from the basic skill of art of wheel made product is secretly guarded by the men folk and is passed to the next generations through certain conventional customs. The women folk are not allowed to work on the wheel and are thus able to learn the basic skill of terracotta art. This practice indicates a male patriarchal dominance in the society and also to prevent the out flow of the family skill when a girl gets married to another family. The women are allowed to make handmade terracotta objects and decorating the objects with colour. It can be the custom or a kind of rule which is followed most probably from the very early time onward. These gender variations are historically specific. Here this craft has been passed down from father to son for many generations.

As in the modern days they use to apply synthetic colours on the potters and on other toy items, but in ancient time they use organic colours for painting. For drying the pottery and toys they depend on the weather such as in dry season it take 1 to 2 days for drying in the sun but in the monsoon season it takes maximum 15days for drying. After the sun dry they keep it inside the kiln for the final firing process.

The potters make small toys of different varieties kinds such as small utensils like toys of different shape that which resembles the modern days like vessels also they make different kind of animal figurine kind of toys like horses, bull, cattle and birds. Mostly they made toys on wheel and by hand. All these kind of toys are made only during the festival seasons of the Hindus.

The Hindu festivals and fairs play an important role. During Diwali they make different types of traditional kind of toys that which is of historical importance. Here there are two kinds of working that is “seasonal working” and “non seasonal working”, during the seasonal working the potters works for 13 hours where they are able to prepare around 1200 toys. In non-seasonal days they work for 8 hours where they are able to make 800 toys. Here the men make potteries and other toy items where as women engage in painting all the necessary items. They are then taken to the religious fairs and the shopkeepers come to them and buy the objects in bulk. In the festival times they earn more than the non festive times.

Ethnography and its Analysis

An ethnographic study of the modern technique was needed for the better understanding of history. Significance of the use of ethnographic study for interpreting archaeological data is quite important to understand the bygone era. Exhaustive accounts of particular living traditions provide reliable interpretation of the ancient times. By the examination of the style and techniques used for terracotta toys, we are able to categorize them into three assemblage like the hand made the wheel made and mould made. Through this examination we are able to compare the modern and ancient technique and to trace the similarities in them. The terracotta working of Gujarat has a complex and multilayered significance. The study reflects that contemporary terracotta manufacture and usage have a potential to throw light on the past. There seems to be a partial modification and further elaboration of the ancient terracotta as per the time- variation and ageless type as analyzed. The inference from the present ethnographic study apply to pottery figures in particular, while clay figures of the primitive nature have been examined on the basis of the ethnographic observations, experimentation and literary account.

While comparing the ethnological and archaeological, we faced some problem of discontinuation of manufacture particular terracotta objects from the archaeological data. The animal figurines

and some jewelry could be found to be continuous in the process in the technique. There we found some evidence that there might be a continuation of the technique in terracotta manufacturing technique. Manufacturing techniques like modeling, handmade and wheel technique have been continuing from ancient times up to the present. As suggested from the archaeological findings even the combination of these techniques, which is commonly used by contemporary terracotta makers, were also used in the past. A different kind of present day terracotta toys resembles those of the early historic ones. For example, the replicas of early historic terracotta figure of the doubled humped bull are prepared by the present day potters of the Gujarat. The present day techniques to make these toys are mainly bases on handmade technique which is a simple and common way of preparing a certain kind of toys. In handmade technique there are different kinds of methods was applied such as pinching method and solid method. Through the pinching method the legs, hands, tail, etc of the animal was pinched out from the body of animal at the leather hard stage. It can be the similar method that was used by the early potters of the past too.

Through these ethnographic studies we are able to know that the starting with the terracotta making to terracotta use there is a clear association of gender with terracotta. Women today are banned from doing the wheelwork and setting fire to the kiln. Although the production cycle is family based and include high women participation the restriction of women in production stages like wheelwork and firing indicates the underlying patriarchy. The women's are mainly associated with other works like painting, decoration and handmade items etc.

The inferences drawn from the ethno archaeological parallels can be of two types. By studying the objects we can infer there that the terracotta objects can be differently categorized and the ancient people depended on these objects for its utilitarian principles they served. The second point can be taken as that we cannot study the ancient objects solely based on ethnographic research. We have to understand that certain things like the socio-economic principles prevailing among the craftsman, the marketing system etc. cannot tell us about the bygone era. Thus the study demonstrate that patronage by economically strong section of the society at times contribute momentum to the origin and growth of particular art or craft styles. The requirement of the art and craft gave impetus to the growth and development of the craft centers.

Analysis

Clay had been one of the most popular medium of art expression since ancient time onwards. The baked clay figurines have a long continuous history of about three thousand years. There are two reasons seems to be particular responsible for such a popularity of clay modelling. First, it is the elastic character of clay which makes it easy to mould and model, and the second one is it perhaps one of the most inexpensive media, almost universally available free of cost in desire quality to every craftsman (Vidula & Kalyan 1986). The firing process by which durability is provided to clay object also does not involve many expenses. The importance of clay figurines as representing one of the significant culture patterns of the Indian society cannot easily be ignored (Vidula & Kalyan 1986).

The ethnographic observation reveals a close relation between urban settlement and the terracotta technique. The qualitative demand for particular occasions by a large section of the society is an urban feature. Hence “mass production” of clay figures during a relatively short duration at intervals in the annual cycle explains the increase use of toys.

Different kumbhar communities are involved in terracotta working at various areas in Gujarat. There is no potter of any particular cast or religion who works on this craft as these potters are from different religious background. Division of labour within a family can be found among this group. In most of the communities only male members are allowed to work on wheel. Here the children are not at all involved in making the clay objects as they have other priorities these days.

There are different behavior pattern for different clay in various firing conditions. There are various kind of clay from where it is obtained such as the clay from the banks of river, from the sediments of the ponds, and from the courtyards of the house. The lump brought from the banks of the river, contain very high proportion of sand which is suitable for moulding. The clay which is taken from the ponds was very sticky and was very suitable for moulding. This was used mostly by the potters of the present days. The third type if clay was obtained from the courtyard which contains roots and other material on it. After picking up the impurities this clay can be combined with other clay and can be used for moulding and for other preparation.

The study which was initiated on a modest scale for recording the present day practices relating to the terracotta art of the Gujarat developed subsequently into a, somewhat, complex ethno-archaeological enquiry. Since, this research is based primarily on the ethnographic data; they cover major part of the present monograph.

CHAPTER VII

Observation & Discussion

Clay has been one of the most popular media of art expression since ancient times. The most probable reason for its popularity is its elastic character which makes it easy to model and mould and also it is perhaps one of the most inexpensive media, available in desired quantities. The firing process by which the durability is provided to clay objects also does not involve much expense. In spite of the free access of raw material to every individual, the efficiency of in clay modeling seems to be restricted only to a selected group of the society. It has been suggested by anthropologists, who deal with the interpretation of cultures, that artefacts reflect inherent norms and conventions of a society. Therefore, artefact categories are important sources for revealing culture traits.

Proper studies of art and craft objects, besides revealing artistic and technological attainments also indicate useful clues towards understanding basic elements of cultures in totality. Among various art and craft traditions terracotta making is of particular importance, as it has enjoyed a wider acceptance by societies since several thousand years. They are not merely art objects, but seem to cater to a group of socio-religious needs of the society. Therefore, the information which could be deriving from this single category of artefacts is manifold. For instance, it not only throws light on its manufacturing process, artistic qualities, and disposal and discard mechanism, etc., but it also embodies socio-religious conventions. (Jayaswal and Krishna, 1986).

Discussion

Decoration, status, rituals & offerings or just for toys! What was the role of terracotta objects in two different ancient cultures? Many anomalies can be interpreted while studying this subject.

Toys could be ideal thought as virtually every theory of child development says that play is crucial to development in every way. It impacts cognitive development, social and emotional development, as well as language development. It does seem that toys encouraging certain

personality traits or styles of playing, like more aggressive play, will have an impact. Researchers sometimes characterize babies and young children as little scientists when they're playing with toys. For the children the coordination of brain and hand is important and working with clay is one of the best activities to develop the motor skills. They're testing ideas, creating hypotheses and evaluating them, and trying to solve problems. The type of toy a child plays with can be important, but how they're using the toy and whom they're playing with is also important

Clay is the medium which could be moulded easily in the desired shape. Thus for the children of the by gone eras it was very popular medium to play with and shape them up differently. It would have been a natural fact for the children also to carry out the heritage of their forefathers where the clay was also used for making household item. As suggested by Kenoyer, it was era of flexibility and the young adults could change their positions and occupation (Kenyor, 2000:131). Keeping this in mind some of the objects might have been used as a toy like the marbles or sling balls used for the catapult, the animal and bird figurines on wheels, the small miniature pots, bird whistles used for fun by both old and young, discs to play diferent kind of Indian games like sattaury, tops and other which are still played today. The dices found may have been used for different types of games for both adult and children alike. With active receiving and modifying proper illustrative values by children thus can be suggested to invite toy material to the realm of calibration efforts. The toys also played various social spectacles and these toys reaches in different social strata of the society and could have contributed to various social objectives of the past. Or some of the objects scattered hither thither could appear to be valueless and could be used as toys? Some of the fragile ones could have been just decorative items.

Many small miniature pots do suggest that the replica of the household Items were used as toys for the children to play with.

On the ritualistic front the large number of animal and human figurines and other items, were they dedicated as votive offerings? Most of the terracotta figurines (including the female ones) were found broken and discarded in secondary locations. None were found in a context that could be interpreted as a temple. This was one of the reasons why Marshall suggested that they were votive offerings rather than cult images. The fact that so many of them were broken

suggests that they may have been part of a ritual cycle and were made for short-term use for certain specific occasions. Bull figures which dominate in every site of Gujarat either be it Harappan and Early historic does reveal some kind of domestic ritual practice. The bulls and cart frames scattered everywhere could suggests some kind of ritualistic fuction probably used before agricultural purposes to get a good harvest or before going for long distance trade.

Likewise the male and female figurines or the dolls found in large number from the Early Historic sites could also suggest some kind of rituals. They have beautiful coffiers on their head and sometimes clothed and sometimes nude. They were popular across the Mediterranean, from Southern Italy to Egypt and Asia Minor. In the Roman period, these dolls were sometimes modernized by reworking the hairstyle. This might explain why our doll wears a hairstyle that incorporates the melon arrangement or two side buns on the top often associated with the Hellenistic period as well as the braided locks at the crown which more closely resemble Flavian and Trajanic fashions. The finest examples may have been dressed and dedicated as votive offerings, while the simpler versions served as toys (Phippen 2000). If this is the case is it possibe it might have represented an ideal of womanhood to which young girls were meant to aspire. In playing with this kind of figurine, young girls were being encouraged to grow into good wives. It was a precious toy of some ritualistic routine for them to leave the childhood and enter into young adults.

Both male and female adorned themselves with ornaments. Ornaments like bullae were pendants worn by boys to ward off evil spirits and simultaneously proclaim their status as freeborn children. The Romans adopted the practice of wearing *bullae* from the Etruscans. Bullae were also worn by Roman magistrates and victorious Roman generals (*triumphatores*)

With the ethnographic study it was very clear that there are specialized artisans to make different kinds of terracotta objects. Some of them were also making potteries along with the toys. Most of them were staying outskirts of the city or villages. According to Keneyor, craft workshops and others are not confined to one area but found all over the the settlements (Keneyor, 2000: 52). There could be a possibility as the different craftsmen were living in synchronization and catering to the need of the society. There is further possibility that though there was harmony among the craftsman, again their role played in the cultural milieu of the society, brought about

status and power. Among these craftsmen there might have been a centralized authority that was supplying and working on the demand of the society. They must have been the ones who were controlling the trade and prices of these items.

In the Early Historic period it was the king and the merchants who were controlling authority. With the open trade system the terracotta objects witnessed the influence of the overseas objects which were flooding the markets craftsman carried out their regional traits with foreign influence.

Ethnography study also suggests that there is also rise of migration of toy makers to big cities like Delhi and Mumbai for better earnings and make a specialization in those arrive. Here another factor played important role that is procurement of raw material. In today's scenario the best clay is brought from Bengal. So most of the terracotta objects which are intricate and beautiful are sold in the market and the application of coloring process is done here. Is that a case of the Harappans also? Similar suggestion can be put in the case of ancient India. Most of the beautiful crafts objects are found from the Harappan cities of Gujarat. Geological factor like procuring the clay from different places and manufacturing at a different place could have been practices as we can find similar looking things of clay from different sites. There could have been a struggle to endure in unknown land and to survive they did brought about uniqueness in their craft productions. There is a speculation that rich capital craftsmen moving to new settings embedded with new set of ideas, so there could have been distinctions in the production of craft items which we find among the objects yielded from same site.

Preparing of the craft objects requires skilled potter's knowledge and mixing the temper is a complicated process which essentially remains within the family realm. The fine sand for making fine ware and big grain sand makes coarse ware is also a specialized technique of sieving for days to prepare very fine clay. By ethnography study it was quite clear that the expert modelers of making toy models were different than those making potteries. It needed the experts touch to make these beautiful objects. The beautiful intricate geometric painting during the Harappan times and the realistic painting during Early historic times gives must have been carried out by the women folk as we found out in ethnography study.

On the economic front the contributions of the craftsmen were very valuable and each objects had some purpose in the market. The objects with slip and decorations could mean a greater demand in the market to fashion and distinguish them for some kind specialization and status. Thus this could be mean differences in the in the class distention of the society where a section of people could afford the beautiful costly items and with its replica in bronze must be a social symbol.

The belief system was becoming stronger as they were mingling with traders and travellers from different lands. Not only they were bringing new things of trade but also bringing new ideas and faith.

Observations

It is aimed here not only to bring forth the entire evidence of terracotta belonging to various periods initiating from Harappan culture to Early Historic Culture but also to reconstruct the cultural history of these people primarily on the basis of this cultural component of Harappan civilization especially of Gujarat. The study centers on small or so-called minor objects of the Harappan material culture.

The mature Harappan terracotta art was the art of agro commercial urban and semi urban centre. Animal figurines were found in abundance while human figurines were found very less in number except for few sites. Among animals bull was dominating. The pinching, pressing down the clay and appliqué method of early Harappan period was still in practice but they rarely used moulds except for the masks at Harappa and Mohenjo-Daro. The terracotta objects of Gujarat Harappan had red, buff or black slip was applied on them and some of the objects had painting to decorate it or to demarcate certain parts like the wheel which were found from Dholavira, Lothal and Kuntasi. The figurines were less elaborate and hand made. The study of terracotta art form from different stages tells us that the technique of making these objects did not much changed till today. The variation of the forms and some changes could be seen in the figurines which distinguishes this art in various stages.

Terracotta objects are important archaeological antiquities as they are in way models of man what he had observed in the surroundings. Earliest terracotta objects were found from

exploration and excavations. Early mature level objects were made out of well levigated clay and were modeled in excellent style. In the post Harappan period the terracotta objects were characterized by simplicity and crudeness and were ill baked. Appearance of other animals like cow apart from bull, dog, wheeled birds bird whistle etc. happened.

In addition to this, small objects like beads, bangles, toy carts, wheels, sling balls, discs, sealings, spindle whorls, variety of cakes and clay lumps have also been taken into consideration. Besides these, some other objects which are otherwise generally neglected as a source material of cultural studies have been incorporated here in detail. These so-called minor objects have great potential as a source material in bringing back to life the otherwise dead archaeological data.

The foregoing description clearly indicates that during Harappan times, terracotta making had attained a status of popular art expression. Besides catering to the ritualistic needs of the society, it was also meeting demand related to amusement and decoration besides to sustain domestic demands. The picture emerged out of these studies does not change much even if one takes into consideration the entire known bulk of the terracotta objects recovered from various other excavated sites of Gujarat. Human figurines were found in less number except some from Lothal. Animal figurines along with bird figurine were found in profusion. One interesting find is the bird whistle which was very unique in its own which is also very popular in the modern times in Gujarat.

As time passed this tradition was confined to the masses who took interest to create varied objects. With the advent of the Kshatrapa rule in Gujarat, this art reached its zenith. The new art of moulding with both single and double mould helped the people to bring out beautiful proportionate figurines. With the rise of interaction of the merchants and traders from foreign land, in this region, its influence reflected in the style and ornamentation of terracotta figurines (Sen, 2013, 104). The human figurines now found were stylized in different poses and proportionate in bodily shape. It is presumed that the human figurines may have been involved in a cultural or ceremonial event (Banerjee, 1994). This was best illustrated from the objects found from Vadnagar, Amreli, and Nagara etc. The famous figurines of Buddha from Devnimori are class apart for its execution and beauty. The beautiful seals with different symbols of bull and trident are very accurately carved.

This study has helped us to understand the characteristics of stylized and ornamentation of the models of the figurines which was changing due to many factors. One of the major reasons the amplification of trade and the demand for particular goods by the merchants. From this study it become evident that the animal figurine obtained more consideration than that of human forms and are more realistic and better modeled. The treatment of these terracotta specimen do not show any marked difference in different sites particularly in the mode of decoration and anatomical details which have been depicted by multiple incision, punched circlets pinholes appliqué and bands.

Among the human figurines female figurines attained more attention. Another characteristic trait observed here is the depiction of the facial features like eyes, ears and nose done by applique and pinching or deep incision. There is greater amount of ornamentation, with elaborate coiffure and projection of different part distinctively. The bellies of the figurines are now prominent and the female figures have small breasts. The legs of the figurines are sometimes separately modeled, and sometimes use of applique girdle in the lower part and even anklets, marked by incision. The faces made out of mould are beautifully depicted whereas hand made one are though slender but disproportionate and crudely finished.

The treatment of these terracotta specimen do not show any marked difference in different sites particularly in the mode of decoration and anatomical details which have been depicted by multiple incision, punched circlets pinholes applique and bands. The variety and richness in ornamentation are the most notable features. The figurines both animal and human were sometimes handmade and sometimes moulded. Some of the animal figurines are made in hollow technique. Most of the figurines were crudely made and found to be rudimentary. Most of the time the figurine was not well fired and the core were found to be gritty.

Depiction of bird was almost nil except for one to two pieces. The animal legs are separately modeled with a short tail attached to a round portion of the back. The legs of the animals are pointed and sometimes shaped like blocks. Bulls are found in large number with big humps and sometime small humps. The well-developed humps are also found in present day. Another feature is that some of the bulls have perforated nose and some without perforation. It is a practice in Gujarat that drawing carts and farming bull have perforation in the nose. Mostly in

India, it is common that the stud bulls are without perforation. Horse was moderately found in less number. The depiction of mane is beautifully done. In some of the horses the mane is pinched and in one specimen the mane was pinned separately. Other animal are rhino dog deer stag and a lion. The mane of the lion is done beautifully.

The big trading marts like Amreli, Nagara, Vadnagar and most probably Nani Ryan saw the increase in human figurines. One of the major techniques was the introduction of mould and thus production of terracotta objects in a large scale. Among the terracotta objects like beads, cart frames, wheels etc. were found more in number. The terracotta objects unearthed from the excavated sites of Gujarat are found in large number where as the figurines in the early historic Gujarat are also found handful except for few big urban centres variety and richness in ornamentation are the most notable features in terracotta figurine art of Gujarat.

It brought about two set of theories that is the mass scale of production of the moulds in short duration and replicating the master pieces without exercising much artistic knowledge or vision. The moulds were made from sculpted stone figure. The large number of mould figurines is found from Vadnagar and Amreli and few from Nagara. The ethnography study also reveals how a professional first carves out the design of the pot and the caste is made. One or two mould has been found from Devnimori and a very small stone animal figure. The appearance of god and goddesses from 3rd -4th century CE in this art form which is remarkable and the slow decline of animal figurine were noticed.

Towards the end of third millennium BC, the Harappan civilization was fully developed. The people manufactured different terracotta objects of varied styles. The technique they used was by handmade and less of moulding. The period between the Indus Valley and the beginning of the Iron Age is generally referred as Dark Age in Gujarat, though Chalcolithic settlements were found in Central India and in Deccan. They used to bake terracotta objects at a uniformly high temperature. The next phase of terracotta art was witnessed during the Pre Mauryan Period. The terracotta of Early Historic period was very distinct from those of the earlier phases on the basis of their making techniques, style and ornamentation.

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List of Plates:

Harappan Terracotta Objects

Bagasara : Plate 1



Fig. 1 Bull



Fig. 2 Bull



Fig.3 Pig



Fig.4 Wheels decorated



Fig.5 Cart Frames

Dholavira: Plate 2



Fig.1 Human Figurines (CourtseyBhist)



Fig. 2 Human Figurines (CourtseyBhist)



Fig.3 Pig (Courtsey Bhist)



Fig.4 Animal figurines (Courtsey Bhist)



Fig.5 Cart frames (Courtsey Bhist)



Fig.6 Wheels with painted (Courtsey Bhist)



Fig.7 Wheels with painted spokes



Fig.8 Bangles

Jaidak Plate 3



Fig.1 Perforated



Fig.2 Multiple perforated disc



Fig.3 Disc



Fig.4 Disc



Fig.5 Bead



Fig.6 Bead



Fig.7 Net sinker



Fig.8 Net sinker



Fig.9 Bead



Fig.10 Votive tank

Khirsara: Plate 4



Fig.1 Bangle: Cart Frame and decorated Wheel (Courtesy Nath & Randive)

Lothal: Plate 5

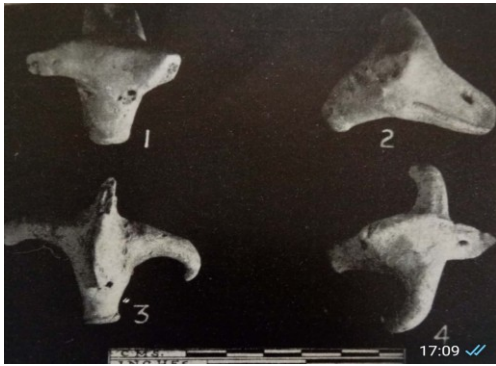


Fig.1 Animal head figurine (Courtsey Rao)



Fig.2 Pig (Courtsey Rao)



Fig.3 Ram (Courtsey Rao)

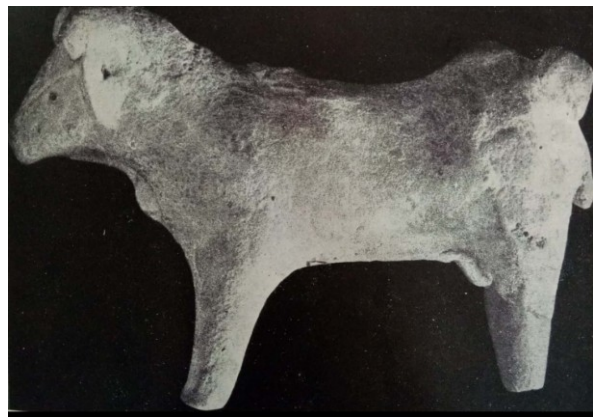


Fig.4 Ram (Courtsey Rao)

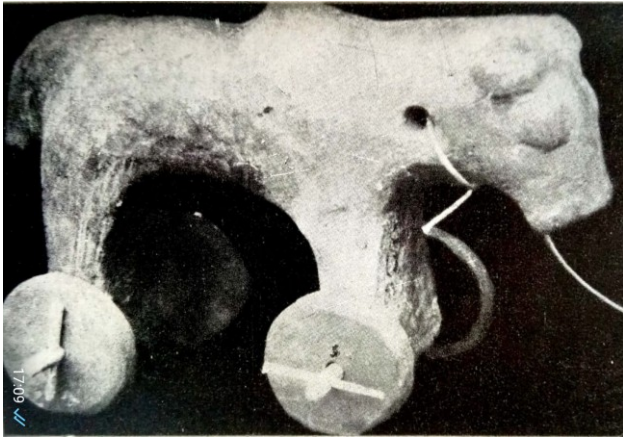


Fig.5 Animal on wheel (Courtesy Rao)

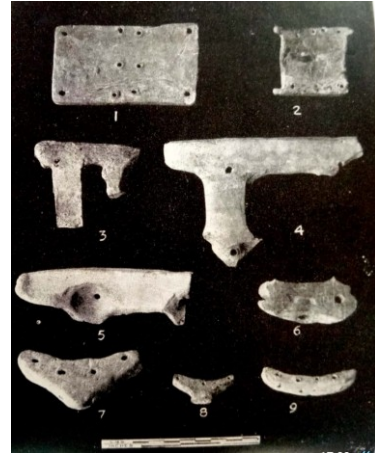


Fig.6 (Courtesy Rao)



Fig.7 Ship (Courtesy Rao)

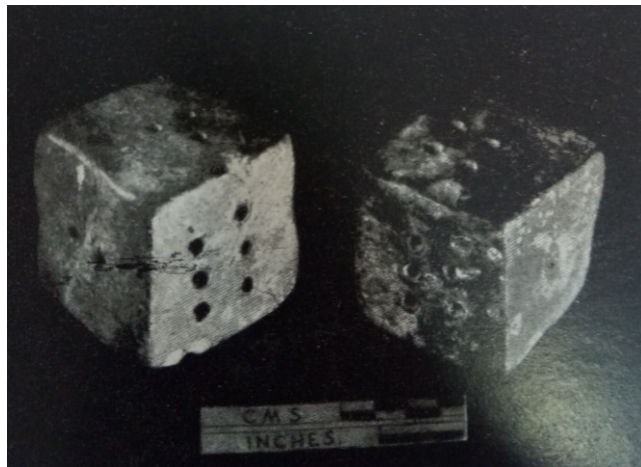


Fig.1 Dice (Courtesy Rao)

Nagwada: Plate6



Fig.1 Cup



Fig.2 Bead



Fig.3 Broken Wheel



Fig.4 Disc



Fig.5 Bead



Fig.6 Animal Figurine



Fig.7 Bead



Fig.8 Perforated Disc



Fig.7 Bead



Fig.8 Lid



Fig.9 Cart Frame



Fig.10 Cart Frame



Fig.11 Votive tank



Fig.12 Broken Votive tank



Fig. 13 Cup

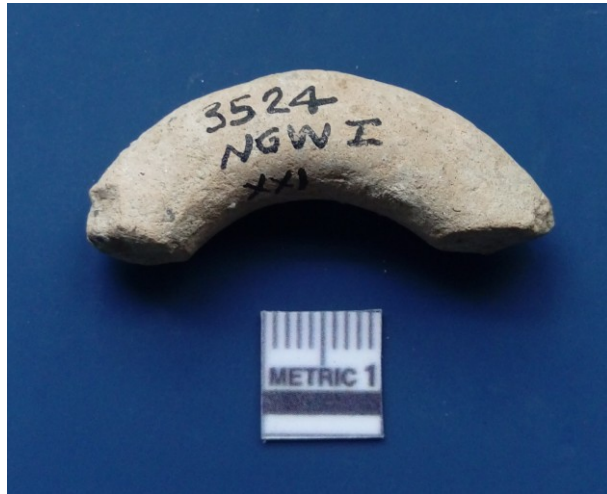


Fig. 14 Bangle piece



Fig.15 Sling Ball

Nageshwar Plate 7

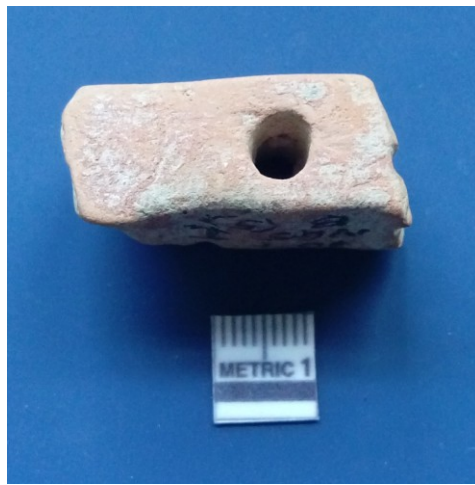


Fig. 1 Cart frame piece



Fig 2 Mushtika

Shikarpur Plate 8



Fig.1 Animal Figurine



Fig.2 Animal Figurine



Fig.3 Bull Figurine



Fig.4 Seal



Fig.5 Human Figurine (Courtesy Bhan)



Fig.6 Miscellenious Objets



Fig.7 Cart frame



Fig.8 Wheels



Fig.9 Cart frame



Fig.10 Cart Frame

List of Plates:

Early Historic Terracotta Objects

Amreli : Plate 10

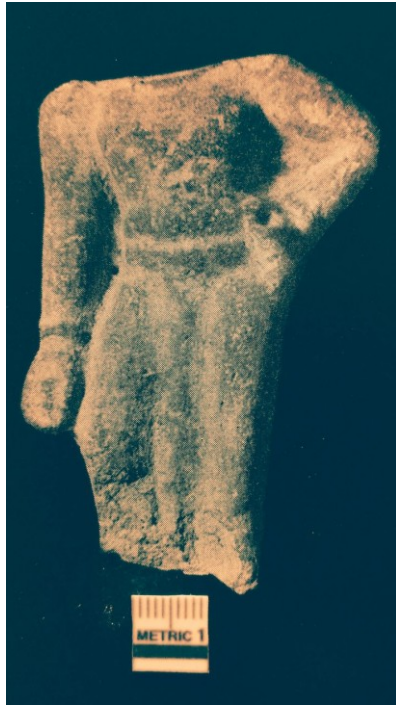


Fig. 1 Human Figurine (Courtesy Rao) **Fig. 2 Human Figurine**

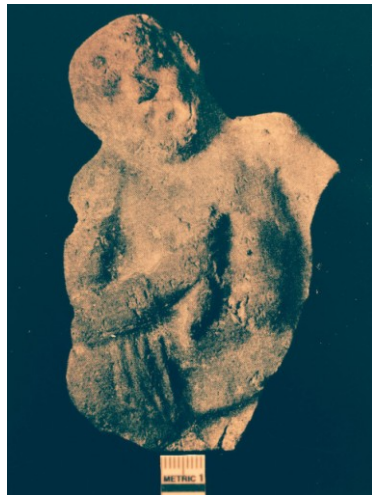
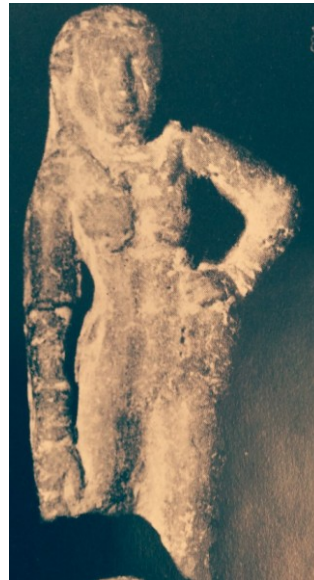


Fig. 3 Human Figurine (Courtesy Rao) **Fig. 4 Human Figurine**



Fig. 5 Human Figurine (Courtsey Rao) **Fig. 6 Human Figurine**



(Courtsey Rao)

Fig. 7 female Figurine **Fig. 8 Female Figurine**

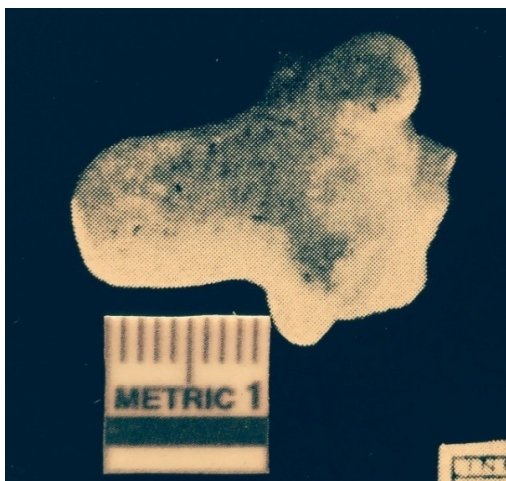


Fig. 9 Animal Figurine (Courtesy Rao) **Fig. 10 Animal Figurine**



Fig. 11 Animal Figurine (Courtesy Rao) **Fig. 12 Elephant Figurine**

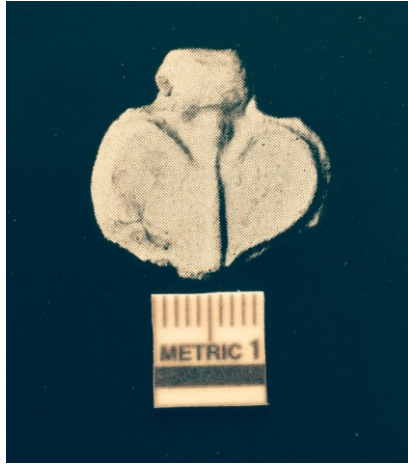


Fig. 13 Pendent (Courtesy Rao)



Fig . 14 pendent (Courtesy Rao)



Fig. 15 Wheel(Courtesy Rao)

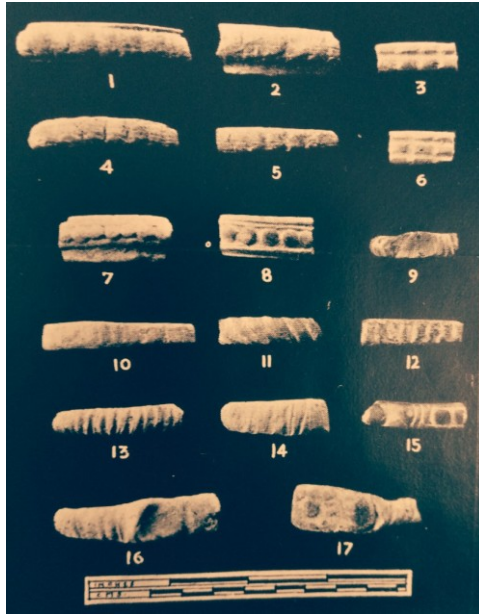


Fig. 16 Bangles (Courtsey Rao)

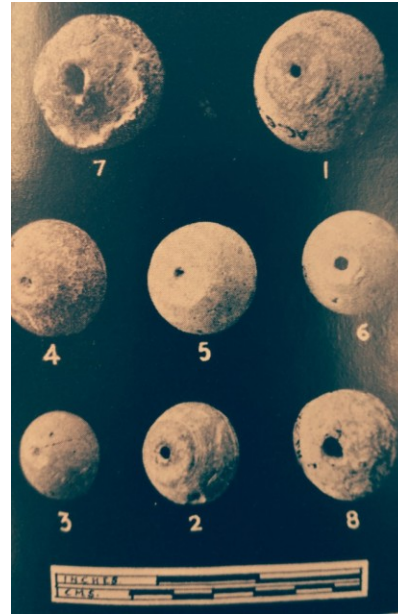


Fig. 17 Beads (Courtsey Rao)

Akota : Plate 11



Figure 1: Wheel



Figure2: Ear stud



Figure3: Games Man



Figure 4: Arecanut Bead



Figure 5: Incomplete arecanut bead and a completed one



Figure 6: Animal figurine

Dhatva: Plate 12

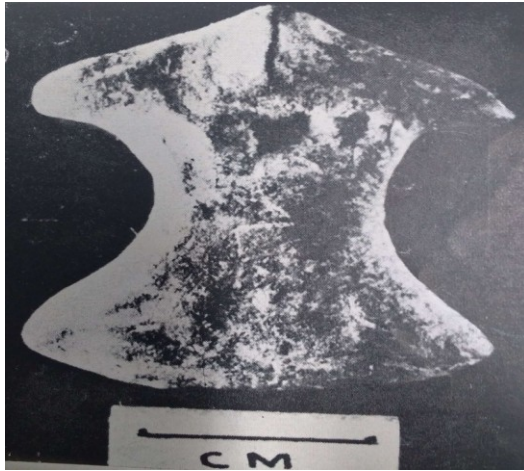


Fig.1 human figurine



Figure 2: Animal figurine

Devinimori: Plate 13



Fig. 1: Bull



Fig. 2: Pig?



Fig. 3: Horse on a wheel



Fig. 4: Elephant



Fig. 5: Spindle whorle



Fig. 6: Die of petalled flower and mould



Fig. 3: Humped bull with a perforation on the leg



Fig. 8: Votive tank



Fig. 9: Ear Stud Pulley type



Fig. 10. Lids



Fig. 11: Buddha Face



Fig. 12: wheel



Fig. 13: Buddha Sculptures

Dwarka: Plate 14

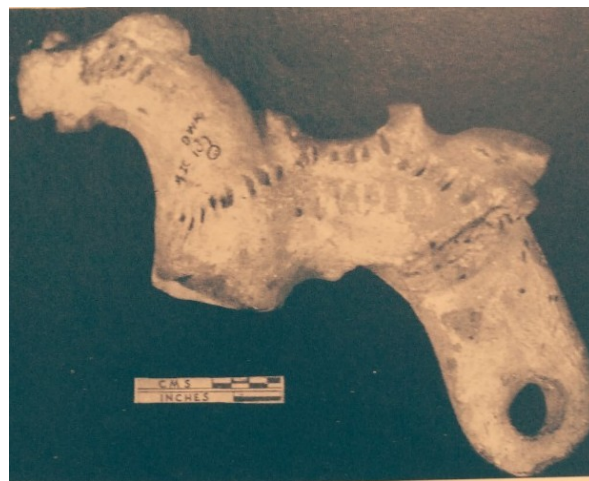


Fig. 1 Hose on a wheel

Nagara: Plate 15



Fig. 1: Human figurine



Fig. 2. Animal figurine



Fig. 3. Bull figurine



Fig. 5: Animal figurine



Fig. 6: Arecanut bead



Fig. 7: Seals



Fig 8: T.C face



Fig 9: Bull



Fig.10: Dice



Fig.11: Pendent



Fig. 12: Miscellaneous objects



Fig. 13: Seal



Fig. 14: wheels

Vadnagar : Plate 16



Fig.1: Human figurine



Fig.2: Standing human figure



Fig.3: Animal figurine



Fig.4: Different forms of human face pendent



Fig.5 Bangle pieces



Fig. 6 Broad moulded Bangles



Fig. 7: Arecanut bead



Fig. 5: pendent



Fig.6 Wheels



Fig. 7: Pieces of cart



Fig. 8 Dice



Fig. 9 Moulded tortoise

Nani Ryan: Plate 17



Fig. 1: Heads of human figurines



Fig. 2: Heads of human



Fig. 3 Animal figurines



Fig. 4 Wheel



Fig. 5 Human figurines and heads



Figure 6: Lids

