CHAPTER VII

MINOR ANTIQUITIES

In this chapter lithic and shell industry of Jamnagar district is discussed in details. Moreover, minor antiquities like terracotta, metal and stone objects, coins and inscriptions are also incorporated.

I. LITHIC INDUSTRY

The stone tools were used for fairly a long period from Lower Paleolithic period down to Chalcolithic period. Hence, the lithic industry of the district are classified into two main divisions:

(1) Prehistoric Lithic Industry
(2) Protohistoric Lithic Industry

(1) Prehistoric Lithic Industry:

Various scholars right from Bruce Foote to Bainright, H.D. Sankalia, B. Subba Rao, K.N. Mehta, S.C. Malik, Mrs. Alchim, K.T.M. Megde and many others surveyed various parts and located many sites in the region. Formerly, it was through that only part of North Gujarat was suitable for early man. But then came discoveries of Central Gujarat, in the valley of Sabarmati, Lower Mahi, Orsang, Karjan and Lower Narmada. However, recently tools of lower, upper palaeolithic and mesolithic period were recovered near Chapaner, Visadi and Tarsang of Panchmahal district.

During the last few years South Gujarat, Saurashtra and Kutch have also yielded the traces of tools of Prehistoric
people. Evidences of existence of earliest stone tools have been obtained at Rojadi\textsuperscript{7} on the Bhadar river, Vagad on Sukhbadar and at Pindara in Kalyanpur taluka\textsuperscript{8} of Jamnagar district, whereas stone tools of succeeding period known as middle Palaeolithic period have been found at several places in Saurashtra the notable sites being Rojadi, Jetpur\textsuperscript{9} and Rajkot.\textsuperscript{10}

Till recently very little systematic work was done in the present district. Except one Lower Palaeolithic sites near Pindara\textsuperscript{11} and one mesolithic site near Shanvad,\textsuperscript{12} nothing was known until the present investigations was undertaken. Hence, during the course of exploration the more likely sites such as, river valleys, natural ponds were examined. The areas near perennial sources of water like streams or rivers, hillocks of Barda hills were carefully surveyed and studied. In this way, traces of prehistoric cultures in the form of stone tools were brought to light from various parts of Jamnagar district.

The Prehistoric remains of the district were classified into three divisions on the basis of typology and technique of manufacturing because stratigraphic horizons of these tools were not well preserved.

(I) Lower Palaeolithic period,

(II) Middle Palaeolithic period,

and (III) Mesolithic or Microlithic period.
Traces of the distance of tower Palaeolithic cultures were obtained near Pindara (Kalyanpur Taluka) by Shri J.P. Joshi. However, during present investigation some stone tools were also collected near Trivani Sangam and Vijaypura village of Bhanvad Taluka in river Varti. All the tools were collected from the river bed and unfortunately, none of the section is preserved, for detail study. These tools can be typologically compared with the tools discovered from river Bhadra. Dr. Sankalia has studied the section of this river at Bojadi and Jethpur and the tools of this period has been found from the earliest gravel deposit overlying the trap.\(^{13}\) (Fig. 3.2) and has been dated to mid-Pliocene period. It is useful in fixing the age and period of the tools collected from the district as they bear close affinities with tools reported from the above sites.

Only a few artifacts were recovered from Trivani-Sangam, which includes a handaxe (?), two scrapers, a cleaver and a hammer stone (Fig.F.1). Their details are as follows:

**Handaxe: (?) (Fig.F.1:1)**

A rolled ovate handaxe on reddish rhyolitic glass pebble, (Fig.F.1:1). The alternates sharp flaking has given rise to more or less straight cutting edge. Some of the cortex is left untouched at butt end on the lateral side and apex of the handaxe is broken at later stage.

(I) Lower Palaeolithic Period:

**Nature of the Sites and Their Stratigraphy:**

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Side Scraper: (Fig. F.1:2)

Thick more or less rectangular side scraper on rhyolite with flat underside and almost vertical sides. One of the lateral sides has been alternatively flaked to form a working edge.

Convex Scraper: (Fig. F.1:3)

A convex-sided scraper of rhyolite flake having flat underside with eroded bulb and prepared platform. One side has slightly convex surface and has been worked all over by alternate flaking, showing hammer technique and small flakes have been taking off from the other side also. Triangular in section with a mid-ridge in the centre.

Cleaver: (Fig. F.1:4)

Slightly circular cleaver with oblique cutting edge. However, flakes have been removed all over the body, slightly polished surface as a result of rolling.

Hammer Stone: (Fig. F.1:5)

A hammer stone of sandstone with battering or bruises marks all around the periphery. Its batter indicates that it was used possibly for secondary flaking.

One cannot really infer the exact or even the most probable use of these stone tools. But it is an excepted notion that they might have been used by these early food gatherers for digging (handaxe), chopping (cleaver) and scraping (scrapers) etc., in variety of ways and means. To meet the primary needs of his life, he seems to have adopted local easily available stone as a raw material for making his implements.
The presence of hammer stone in the tool-kot possibly indicate direct percussion or hammer stone technique. In this the pebble or nodule which is to made into a tool will be kept in right or left hand or the right or left knee (after suitable padding). Then alternate flakes are taken out by striking the hammer stone against the stone from which tool is to prepared.

(II) Middle Palaeolithic Period:

Stone tools of this period are collected in explorations as surface finds from the river beds. Kalavad, Anda and Taran revealed the traces of stone tools of this second group of lithic culture. Tools collected are made from crypto-crystalline material like agate, jasper, obsidian, pitch stone, rhyolite, rhyolitic glass, chalcedony, carnelian and exculisive volcanic material. These tools are comparatively smaller than the previous group. Typologically and technologically these seems to form a separate group and indicate possibility of their resemblance with the tools of series II or middle Palaeolithic.

The explored stone artifacts mainly reveal few varieties of cores, scrapers, points and burins. The required portion of the tools intended to develop scraping edge and seems to be flaked in clactonian and levallois fashion.

As already noted above, that none of the river sections could be studied. The stratigraphic position of this tool assemblage becomes clear by studying the section in a Nala nearly 12 km east of Rajkot, Pojadi and Jethpur (Fig.B.2) where the tools of this period have been found in the upper gravels, which has been
dated to late or upper pleistocene period.

The tool assemblage of the district can be classified into few sub-types of scrapers, points and burins, considering their shape, size and working edge. The details of the representative types are as follows:

**Cores:**

The cores of various sizes have been found from the district. Following is the description of some of the representative types:

1. A more or less rectangular clactonian core (Fig. F.2:1) of chalcedony with negative bulb of percussion or conchoidal flake scars on upper and one of the lateral sides. The undersurface retains the cortex (Anda).

2. A irregular clactonian flake scars all around the core, with a small portion of cortex retained at one end (Kalavad).

3. A small clactonian core (Fig. F.2:3) of flint with conchoidal flake scars all around the core (Kalavad).

**Points:**

Points are generally made on flakes and one of the feature is that the longer sides or one part of these bear intentional marks of retouch. Sometimes even the upper and under surfaces are clearly finished. Such types are indeed rare but specimens of such types have came to light from Nevasa and Kalagaon. During present investigation of the district few bifacial and unifacial points were recovered and following is their description:

1. **Bifacial Point:**

   A leaf-shaped bifacial point (Fig. F.2:4) of obsidian.
It is worked on both the lateral sides having upper and under surface also carefully finished. (Kalavad-I).

(1a) A triangular bifacial point (Fig.F.2:5) of plasma. It is worked on one of the lateral sides, with central mid-ridge on the upper surface. (Anda)

(2) Unifacial Point:

A thin cainctanian leaf-shaped flake (Fig.F.2:6). It is worked on one of the lateral sides with a mid-ridge on the upper surface, while the under surface has a prominent bulb of percussion. (Tarana).

Scrapers:

The explored tool-kit reveal few varieties of scrapers developed on flake or blade flakes. The required portion of the stone tool intended to develop scraping edge is retouched. These scrapers are classified into few sub-types of scrapers considering their shape and working edge. Their details are as follows:

(1) Double Edged Side Scraper:

A double edged side scraper on a levallois blade flake (Fig.F.2:7) of volcanic material with prominent bulb of percussion on the under surface, while the two lateral sides are worked to form the working edge. (Kalavad).

(2) A variant of 1. It is made on carnelian. (Kalavad)(Fig.F.2:9).

(3) A small irregular flake of volcanic material (Fig.F.2:10) having two lateral sides nearly worked out to form the working edge. (Tarana).
(4) A more or less circular flake of Chalcedony (Fig. F.2:11) having two sides worked to form the working edges. The under and upper surfaces are also carefully worked. (Anda).

(5) A thick leaf-shaped clactonian flake of Jasper (Fig. F.2:12) with two lateral sides worked to form the working edges. (Anda).

(II) End-cum-side scraper:

A thick triangular flake on rhyolitic glass having one lateral and shorter sided worked on the upper surface to form working edge (Fig. F.2:9). A small portion of cortex is retained on the upper surface having a prominent bulb of percussion on the under surface (Kalavad).

(III) Side Scraper:

A thick roughly oval-shaped calactonian flake of rhyolitic with one of the lateral sides worked to form the working edge. The plain under surface has a prominent positive bulb of percussion (Fig. F.2:13). The upper surface reveals the flake scars of the flakes taken around the edge (Anda).

(IV) Convex Scraper:

(a) A semi-circular flake of volcanic material with convex or arched working edge, (Fig. F.2:14) which is obliquely retouched from above and under surfaces (Tarana).

(b) A variant of (a) made on Pitch stone (Fig. F.2:15)(Anda).

(c) A thick semi-triangular flake of rhyolitic glass (Fig. F. 2:16) with arched working edge, which is obliquely retouched from above and the under surfaces (Anda).
(v) Concave Scraper:

(a) A thick semi-circular clactonian flake (Fig. F.3:19) of rhyolitic glass with concave plain under surface, while the upper surface has obliquely retouched surface (Anda).

(b) A thick flake of plasmo having concave plain under surface. The upper surface certainly remain unworked. The concave edge is worked with central flaking on one side. (Fig. F.3:18)(Kalavad).

Burin:

This is a specialized tool for engraving and working end is a point which is secured by removing a flake or a burin facet by a vertical blow parallel to major axis of the flake. Following is the description:

A burin developed on a flake on Chaledony. A thick but sharp point is achieved by the intersection of the bevelled sloping surface (Fig. F.3:21)(Kalavad).

Flakes: (Fig. F.3: 17, 20, 22 and 23).

During exploration few levallois and caletonian unworked flakes were also recovered. They are made on carlenian, jasper and other volcanio material and were found from Kalavad, Anda and Tarana.

Culturally middle Palaeolithic man did not change much than his Lower Palaeolithic ancestors. He was possibly economically still wanderers, hunter and food gatherer, though he reduced the size of his stone tools are preferred fine crypt-crystalline material for making them and restricted his preference to few tool types.
One cannot really infer the exact or even most probable use of these stone tools, but it is excepted notion that they might have been used for scraping, (Scrapers), points could have served as arrow heads or spear heads. While burins possibly were used for engraving.

(III) Mesolithic or Microlithic Period:

Whole of Gujarat is rich in sites of Mesolithic or microlithic period, the district of Jamnagar is no exception to it. About 15 mesolithic sites have been discovered in various parts of the district. River valleys of Vertu, Jogari, Dilamadi, Sosai etc. revealed the traces of this culture. But the concentration of the sites was mostly noted around the Barda hills. Some of the isolated mounds and hillocks also revealed the traces of microlithic tools. However, the distribution of such sites indicate that Barda hills were densely populated during this period.

A interesting feature of the region is its proximity and prevalence of raw material for microliths. And hence wide range of fine grained material like chalcedony, jasper, agate and material of similar type seems to be the common raw material. It was evidently clear that the character from the different sites varied to some extent and so did the size. The nature of the sites on which they lay also varied. But it was observed that hillocks or river banks providing flat gently sloping surface with good view of the river and easy access to its shore were selected as the sites. Few boulder like masses over the sites overlooking the rivers found at few places, possibly indicate that they might have served as ambushing places as in the case of Morpur(Fig.C.1-4).
Most of the tools of this period are the products of pressure or indirect percussion technique. The analysis of the collected microlithic indicate that it was wasteful process in which about 70 to 90% are the waste flakes in seriated sample, wherein random sample collection. The actual tools range hardly for about 3% to 5% in the collection. Most of these sites are rich in microlithic cores and waste flakes of all varieties and yield very few blades and finished tools. It is thus quite obvious that such sites represent workshops, where stone age band, taking advantage of easily available material, manufactured tools and took the blades and other finished tools in the living campus and left the remains behind.

In order to obtain more material (proper tools and cores) collections where made from each site as a whole instead of measured squares. This obviously meant that the collections were selective in the sense that waste was not completely neglected. The material collected from each site is recorded in the chapter of explorations of the present study.

Microlithic assemblage consists of non-geometric tools i.e. artifacts like lunates, triangles, trapezes etc. were absent. The assemblage consists of various types of cores, backed blades, points, borers, burins, scrapers, blades and blade flakes.

Explored microlithic assemblage is described in the following pages typewising, illustrating few specimens of each variety:
(A) **Cores:**

On the nodules the platform is prepared by removing a few flakes from the primary surface. This platform is used for the punch to rest, in the process of taking out flakes. After removing the flakes from the nodule, the residue of the nodule or the core gives fluted appearance.

These cores, which are one of the waste product, of the process of manufacture, are occasionally used as scrapers, because number of them have very sharp edge formed by the intersection of two very well worked surface. A large collection of such cores are classified into five groups:

(I) **Amorphous Core:** (Fig. F.4: 10-11)

These are irregular in size and shape. The flakes which are taken out from these are also irregular. Few of them show few blade flakes scars, while most of them show scars of irregular flaking.

(1) A pointed block of agate shows irregular flaking over the core body. (Krishenguda; Taluka: Bhanvad).

(2) An irregular amorphus core, of chalcedony, showing two flakes, while rest of the portion is unworked and retains the cortex. (Krishenguda; Taluka: Bhanvad).

(II) **Conical Core:** (Fig. F.4: 1-3)

These are partly conical or triangular in shape and goes on tapering towards the pointed end. In this type, long but thin parallel sided flakes are taken out from the periphery of the broad, flat striking platform, which serves as
punč-rest.

(1) An elongated conical fluted core of chalcedony. Few long parallel sided flakes have been struck off of the length of core. Cortex is retained partly on the under surface. (Trivani Sangam; Bhanvad Taluka).

(2) A variant of 1, with trimmed back. (Morpur-II; Bhanvad Taluka).

(3) A small elongated conical fluted core of agate. Few long parallel sided flakes are taken out of the length of the core. Few flakes have also been taken from the under surface (Morpur-I; Taluka Bhanvad).

(III) Cylindrical Core: (Fig. F:4: 4 to 5)

Cores of this type are cylindrical in shape. Some of them are partly worked, while others are completely worked all around the periphery. Flat striking platform for the punch rest are seen mostly on both the sides of the cylinder.

(4) A fluted short cylindrical core of chalcedony worked all over the surface. (Morpur-II; Taluka Bhanvad).

(5) A long fluted cylindrical core of chalcedony, long parallel sided flakes have been taken struck off from the longitudinal side of it, while from the under surface parallel side flakes have been also taken out.

(IV) Flat Core: (Fig. F:4:6 to 9)

These are also blade-cores but they are flatish in shape. Some of them revealed the original unworked flat cortex. In this type flakes are mostly taken from one of the flat sides or semi-cylindrical side.
A semi-flatish fluted core of agate. Long parallel sided flakes are removed from the upper surface, while the under-surface remains unworked. (Morpur-I).

A semi-rectangular fluted core of chalcedony, long parallel sided flakes have been taken out from the upper surface, while the back retains the cortex. (Morpur-III).


A variant of above, made on exclusive volcanic material. (Krishangada).

(V) Multi-platformed Cores: (Fig.F.4:12)

In shape these are cylindrical, conical and flat, but the main character of these cores is that they have two or more striking platforms. In some cases the flakes have been removed from the periphery of the nodule as well as the flat striking platform. Some of these cores show parallel and cross flaking scars. In some cases truncated cores are also seen in this type.

A more or less cylindrical fluted core of chalcedony.

Parallel sided flakes have been removed from the cylindrical as well as striking platform side. (Krishan Guda).

(B) Points: (Fig.F.5: 13 to 15)

A number of specimen of this type of tools have a point which is secured by secondary working on one of the ends, which gradually tapers to a point.

A fine specimen of a point developed on chalcedony flake. (Fig.F.5:13). A sharp point is secured at the opposite
side of the bulbous end by steeply blunting the thicker side. (Machaliwad-I; Taluka Kalavad).

(14) An equally good specimen of bifacial tanged point (Fig.F.5:14) developed on chalcedony flake. A sharp point is secured at the opposite side of the bulbous end by steeply retouching on both the sides. (Machaliwad).

(15) A bifacial point developed on jasper. Point is obtained by retouching on both the sides at the opposite side of the bulbous end. (Fig.F.5:15) (Nayadiya; Taluka Kalyanpur).

(C) Borers: (Fig.5:16 to 19)

A true borers or Awl has a thick projecting point, which has been carefully retouched. It may be made by taking deep notches on the side of the flake or nodule. This may be a small, just a projecting tip or a fairly elongated thick point. The body from which it protrudes may be of any shape, square, rectangular or even round and made on flake or nodule, worked or unworked.

(16) A fine well worked stone borers. (Fig.F.5:16). A sharp drilling point is secured at the opposite end of the bulbous end by taking two flakes from either sides. The tip is further worked by flaking resulting into a sharp drilling point. (Nimapur-II; Taluka: Bhavnad).

(17) A triangular flake of chalcedony. A deep notched flake has been detached from one side and the other side is retouched from the dorsal side to obtained a fine
drilling point. Half of the portion of the borer retains cortex on the ventral side. (Bagadiya; Taluka Kalyanpur), (Fig.F.4:17).

(18) A borer on Jasper flake. (Fig.F.5:18). Two notched flakes have been detached from either sides to form a drilling point. (Morpur-I; Taluka - Bhavnad).

(19) A borer of chalcedony. Two deep notched flakes have been detached from either sides of the flake from one end to form a drilling point. (Balamdi; Taluka : Kalavad), (Fig. F.4:19).

(D) Burins: (Fig.5:20 to 24)

This is a specialised tool for engraving. The working end is point, which is secured by removing a flake or a burin facet by vertical blow parallel to the major axis of the flake.

(20) A burin developed of chalcedony blade flake. (Fig.F.5:20).

A thin sharp burin point is achieved by the vertical blow parallel to the major axis of the flake at one end.

(Morpur; Taluka - Bhavnad).

(21) A micro-burin on jasper flake. A fine point is obtained by taking flakes at one end. (Fig.F.5:21). (Trivani-Sangam).

(22) A burin developed on chalcedony flake. A thin but sharp burin point is achieved by a vertical blow parallel to the major axis of the flake. (Fig.F.5:22). (Krishenguda).

(23) A variant of 22. (Fig.F.5:23).
(24) A micro-burin developed on jasper. A thick but sharp point is achieved by intersection of the vevelled sloping surface at both the ends. (Shanvad; Taluka Bhanvad), (Fig.F.5:24).

(B) Blades: (Fig.F.5: 25 to 32)

These are made on long parallel sided flakes. Most of them are either with one mid-rib or the parallel ridge. Following types of blades were found:

(a) obliquely backed blades,
(b) single straight sided blades,
and (c) double straight sided blades.

(a) Obliquely Backed Blades: (Fig.F.5: 25 to 27)

In this the back side is straight for half or more of the length and then gradually or suddenly tapers into a point. The back is partly or fully retouched.

(25) A parallel sided blade of chalcedony. The thicker side is steeply blunted, whereas, the opposite lateral side forms the sharp blade cutting edge. (Fig.F.5:25) (Morpur-III; Taluka Bhanvad).

(26) A variant of 25. (Fig.F.5:26). (Krishenguda; Taluka Bhanvad).

(27) A small variant of 26. (Fig.F.5:27).

(b) Double Straight sided Blade: (Figs. F.5 & 6: 23 to 30).

is one where both the lateral sided are retouched for cutting purpose.

(28) A long blade of agate with two parallel ridge in the center. Both the lateral sided are retouched for cutting purpose. (Fig.F.5:28), (Krishenguda; Taluka Bhanvad).
(29) A smaller variant of 29. (Fig. F.6:29) (Morpur-I; Taluka Bhanvad).

(30) A broken blade of chalcedony with two lateral side retouched. (Fig. F.6:30) (Trivani-Sangam; Taluka Bhanvad)

(c) Single straight sided blade: (Fig. F.6:31)

is one where only one of the lateral sides are retouched for cutting purpose.

(31) A small single straight sided blade of jasper (Fig. F.6:31), with central mid-rib and only one lateral sided is worked. (Morpur-I; Taluka Bhanvad).

**Side Scraper**: (Fig. F.6:32)

This is the tool usually made on a thin or thick flake but sometimes on core itself. The working edge is on the lateral side, while the opposite side may be usually thick end suitable for hand-hold or hafting is intentionally prepared for this purpose. The retouching is normally from the upper surface, but may be formed on the under surface as well.

(32) A small rectangular agate flake, (Fig. F.6:32) having retouched lateral side, retouched from both the faces. (Trivani-Sangam).

**Round Scraper**: (Fig. F.6:33)

Where the scraping edge is seen all around the periphery of the tool is also known as discord scraper.

(33) A scraper of agate. (Fig. F.6:33). The circular edge is formed by removing flakes all over. The scraping edge is further retouched. (Trivani-Sangam).
End Scraper: (Fig. F.6:34)

Where the scraping edge is perpendicular to the major axis, it is known as the end scraper.

(34) A thin semi-rectangular flake of chalcedony. (Fig. F.6:34)

The under surface is plain. The broader convex edge at one end show minute retouch. (Morpur-I).

**Concave Scraper:** (Fig. F.6:35)

In this type, the hollow or the concave side of the scraper is used as working edge after retouching.

(35) A semi-rectangular chalcedony flake, show retouched concave scraping edge on one of the longitudinal sides. (Morpur-I).

**Blade Flakes:** (Fig. F.6:36 to 38).

These are blade flakes without any retouch. The most common are blade flakes with parallel sides and or either with one mid-ridge or two parallel ridge. The main difference between blade flakes and blades is that they are not retouched.

(2) Protohistoric Lithic Industry:

Lithic tools produced by various techniques had a long life in India. The food-gatherers of lower, middle palaeolithic period, mesolithic period and chalcolithic food-producers used lithic tools. The technique of tool-making and consequently typology and function differed from period to period. There is one technological feature which can be used to separate the "microliths" as from the lithic blade industries associated with chalcolithic occupants. In the later case a core
preparation technique known as "crested guiding ridge" is extensively utilized. This feature is not found in microlithic hunting and food gathering sites.

Such types of crested ridge cores and tools have been reported from number of sites like Mohanjodaro, Rangpur, Maheshwar, Nasik, etc. associated with chalcolithic cultures. The present investigations of the district has revealed three factory sites, i.e. Tarana-III, Apikhan and Rupamora. Moreover, large number of other chalcolithic sites yielded such lithic tools, but the major collection was made at three above mentioned sites.

As already noted earlier that region has good deposits of raw material, hence, wide range of fine grained material like chalcedony and agate seems to be the common raw material. However, it varied from site to site depending upon the local availability of raw material. The actual tools range hardly 1% to 2% in the collection. Most of the collection comprises of cores and very few finished tools. Thus, it is quite obvious that such sites represent workshops, where chalcolithic men taking advantage of available raw material, manufactured tools and took the other finished tools in the living campus and left the remains behind.

The tool kit of chalcolithic people of Jamnagar district consisted of various varieties of cores, core tools, points, crested ridge blades, blade of various variety and few scrapers.
made on flakes. The most important feature of this industry was the existence of large number of cores with crested ridge and few flakes with longitudinal crests.

Explored lithic tools of chalcolithic period are described in the following pages typewise, illustrating few specimens of each variety.

(A) Cores:

Various types of cores were obtained from the district. One of the most important feature of these cores is the existence of crested ridge along with other types of cores. A large collection of core was obtained and have been classified into following seven groups:

(i) **Crested ridge cores:** (Fig. F.13: 1 to 3)

The most important feature of this lithic industry is the existence of large number of cores with crested ridge. The ridge is obtained by removing a series of flakes across longitudinal axis at a right angles to its face along one edge. Another series of flakes are removed from opposite side with negative scars of the earlier flake serving as platform. The result is that the earlier flake scars are truncated and a ridge with zig zag edge is prepared. This facilitates the detachment of large parallel sided flake. Hence this is also called as crested guiding ridge. This ridge also possibly served as a keel which could be inserted in a groove or a slot to keep the core in position while flaking.
(1) A long 3.9 cms chalcedony crested ridge fluted core. Few long parallel sided flakes have been struck off of the length of core. A crested guiding ridge is developed by alternate flaking from one of the lateral sides of the core (Fig. F.13:1) (Tarana; Taluka Jodiya).

(2) A large 4.7 cms chalcedony crested ridge fluted core. Few long parallel sided flakes have been struck off from the length of core. A crested guiding ridge is developed by alternate flaking from one of the lateral sides of the core. The dorsal side retains cortex at places (Tarana; Taluka Jodiya). (Fig.F.13:2).

(3) A comparatively smaller core of 2.3 cms. It is developed on a chalcedony. A few long parallel sided flakes have been struck off the length of the core on the ventral side. Two crested ridges have been developed by alternate flaking on both the lateral sides. The core retain a small portion of cortex at one end. (Arkan; Taluka Talpur) (Fig. F.13:3).

(IV) Conical Cores: (Fig. F.13: 4 to 6)

These are partly conical or triangular in shape and go on tapering towards the pointed end. In this type, long but thin parallel sided flakes are taken out from the periphery of the broad striking plate form, which serves as punch rest.

(4) A long 4.1 cms chalcedony fluted core. Few parallel sided flakes have been struck off the length of the core on the dorsal side. Cortex is retained at one of the sides of the core. (Tarana; Taluka Jodiya) (Fig. F.13:4).
(5) A medium size core, 3.9 cm long of chalcedony. Parallel sides, flakes have been taken from all sides of the core. (Kalavad: Taluka Kalavad). (Fig.13:5).

(6) A long chalcedony fluted core (4.3 cms). A few long parallel sided flakes have been taken out from ventral surface, while the under surface is also neatly dressed. (Arikhan: Taluka Jaipur)(Fig.F.13:6).

(III) Cylindrical cores: (Fig.F.13: 7 to 9)

Cores of this type of cylindrical in shape. Some of the cores are partly worked and some of them are completely worked all around the periphery. Flat striking platform for the punch rest are seen mostly on both the sides of the grinder.

(7) A fluted short (2.1 cms) cylindrical core of chalcedony. Worked on the ventral surface. However, few irregular flakes have been taken from the dorsal surface as well. (Arikhan; Taluka Jaipur) (Fig.F.13:7).

(8) A fluted short (2.4 cms) cylindrical core of chalcedony. Worked on all over. A portion of cortex is retained just near one of the lateral sides on the dorsal side. (Tarana; Taluka Jodiya)(Fig.F.13:8).

(9) A comparatively long (2.5 cms) cylindrical core of chalcedony. Few long parallel sided flakes have been taken on the vertical surface, while the dorsal surface also neatly dressed except at small portion on the dorsal side. (Tarana; Taluka Jodiya) (Fig.F.13:9).
(IV) Flat Cores: (Fig.F.13: 10 and 11).

These are blade cores but are flatish in shape. In this type flakes are mostly taken from one of the flat sides or semi-cylindrical side.

(10) A semi-squarish core of chalcedony (2.4 cms) long parallel sided flakes have been taken from ventral surface, while the back is slightly dressed. (Taran: Taluka Jodiya) (Fig.F.13:10).

(11) A comparatively longer semi-squarish fluted core of chalcedony (2.7 cms) parallel sided flakes have been taken from all over the core. (Arkhan; Taluka Lalpur) (Fig.F.13:11).

(V) Multi-platformed Core:

In shape they are mostly cylindrical and flat, but the main character of these is that they have two or more striking platforms.

(12) A more or less cylindrical fluted core of chalcedony (3 cms). Parallel sided flakes have been taken from two opposite sides of the core. (Godawari; Taluka Lalpur) (Fig.F.13:12).

(VI) Amorphous Cores: (Fig.F.13:13 to 14 and 16 to 19)

These are mostly irregular in size and shape. The flakes which have been taken over from these cores are also irregular. Few of them show few blade scars, while most of them show scars of irregular flaking.
(13) A block of agate (3 cms) show irregular flaking over the core body. (Rupamora; Taluka Bhanvad) (Fig.F.13:13).

(14) A long pointed block of agate (4.4 cms) showing irregular flake scars over the core body. (Kalavad; Taluka Kala- vad) (Fig.F.13:14).

(15) A long pointed block of chalcedony (4.6 cms). Few parallel sided flakes have been taken from the core body on one side, while rest of the core is dressed as well as it retains cortex at places. (Tarana; Taluka Jodiya) (Fig.F.13:15).

(16) A long pointed block of chalcedony. (4.2 cms). Few parallel sided flakes have been taken out from one of the sides of the core body. (Tarana; Taluka Jodiya) (Fig.F.13:19).

(VII) Core Tools:

Some interesting evidences about the use of waste or exhausted cores occurs at the lithic sites of Jamnagar district. This provided by fine pointed tools and scrapers from these cores. Following is the description of these tools:

(17) A fluted core of chalcedony and one of the side have been developed into a scraping edge by retouching it from under surface. (Lola; Taluka Kalavad) (Fig.F.13:15).

(18) A fluted core of chalcedony. The point is attained by oblique retouch. (Kota; Taluka Kambhaliya) (Fig.F.13:16).
(19) A fluted core of chalcedony. The point is attained by retouch from under surface. It could have served as a arrow head. (*Tikhan; Taluka Lalpur) (Fig. F.13:17).

(20) Points: (Fig. F.13: 20 to 23)
A number of specimen of this type of tools have a point, which is attained by secondary working on one of the ends, which gradually tapers into a point.

(21) A good specimen of point of agate. A sharp point is attained on a leaf-shaped flake at the opposite side of the bulbous end by secondary working on both the ends, which gradually tapers to a point. (Saparwadi; Taluka Kalavad) (Fig. F.13:20)

(22) A good specimen of a arrow-head of chalcedony. It is worked on both the sides from under and upper surfaces. (Saparwadi; Taluka Bhavand) (Fig. F.13:21).

(23) A beautiful tanged arrow head of chalcedony. A sharp point is secured at the opposite side by steeply blunting the thicker side. (Tirana; Taluka Jodiya) (Fig. F.13:22).

Borers: (Fig. F. 13:24 and 25)
A true borer or awl has a thick projecting point, which has been carefully retouched. It may be making deep notches on the side of the flake or nodule. This
may be small, just a projecting tip or a fairly elongated thick point. The body from which it protrudes may be of any shape and even sometimes scrapers are developed from the body portion of these tools.

(24) A fine well worked chalcedony borer-cum-scaper. (Fig.F. 13:24). A sharp drilling point is attained at the opposite end of the bulbous end by taking a notched flake at one end. The under surface is also neatly dressed developing scraping edge at one end. (Rupavara; Taluka Bhavnagar).

(25) A fine well worked agate borer. A small but sharp drilling point is obtained on leaf shaped flake by removing a deep notched flake at one end and retouching at other side. (Arikhan; Taluka Lalpur) (Fig.F.13:25).

Scraper: (Fig.F.13:26 to 31)

This is the tool usually made on a thin or thick flake, but sometimes on core itself. It has many varieties depending upon the position of the working edge. Following is their description:

Convex Scraper: (Fig.F.13:26)

In this type of scraper the scraping edge is seen all around the convex side.

(26) A convex scraper (Fig.F.13:26) developed on agate flake. The convex edge is retouched from under as well as upper surfaces. (Rasnal; Taluka Jodiya).
End Scrapers: (Fig.F.13:27)

where the scraping edge is perpendicular to the major axis, it is known as the end scraper.

(27) A semi-rectangular flake of agate. The under surface is plain. The broader convex edge at one end show minute flaking. (Tarnan; Taluka Jodiya).

Side Scrapers: (Fig.F.13:28 to 31).

This is the tool usually made on a thin or thick flake. The working edge is on the lateral or larger side, while the opposite site may be usually thick end and suitable for hand-hold or hafting is intentionally prepared for the purpose.

(28) A flake of agate with one of the lateral sides developed into a scraping edge. (Rupamoda; Taluka Bhanvad)(Fig. F.13:28).

(29) A thick flake of agate with one of the lateral sides developed into a scraping edge. It retains cortex at the upper surface (Morpur; Taluka Kambhaliya), (Fig.F. 13: 29).

(30) A thick irregular flake of agate with one of the thinner lateral sides developed into a scraping edge by taking minute flaker. (Surivadar; Taluka Kalavad).

(31) A thick irregular flake of agate with one of the lateral sides developed into scraping edge. (Fig.F.13:31) (Naonal; Taluka Jodiya).
(C) Crested Ridge Flake:

(32) A long crested ridge flake on quartz with zig-zag crested ridge on the upper surface. (Tarana: Taluka Jodlya).

(Fig. F.13:32).

Blades: (Fig. F.13: 33 to 40)

These are made on long parallel sided flakes. Most of them are either with one mid-rib or the parallel ridges.

Following types of blades were found:

2. Double straight sided blades.
3. Obliquely backed blades.

1. Single straight sided blade:

   is one where one of the lateral sides — usually the thicker back side is steeply or obliquely blunted to facilitate rafting, whereas the other forms to cutting edge.

(33) A single straight side blade of agate, having two mid-ridge on the upper surface. (Kalavad: Taluka Kalavad)

(Fig. F.13:33)

(34) A variant of above in chalcedony, with one side obliquely blunted to facilitate rafting. (Lalol: Taluka Kalavad).

(Fig. F.13: 34).

2. Double straight sided blades:

   is one where both the lateral edges are retouched for cutting purpose.
(35 to 39) Double straight sided blades of chalcedony with single mid-ridge on the upper surface having both the lateral sides worked. (Tarana, Lolai, Godawari, Nagdishwar).
(Fig.F.13:35 to 39).

(3) Obliquely blunted blade: (Fig.F.13:40)
In this the back side is straight for half or more of the length, and then gradually or suddenly tapers into a point. The back is partly or fully retouched.

(40) A obliquely blunted blade of chalcedony with back fully retouched and the upper point broken. (Laloi; Taluka Kalavad).

II. TERRACOTTA OBJECTS

A study of terracotta objects gives valuable data for ascertaining socio-religious conceptions, dress, ornaments, past-time activities of the people at large. It also throws light on the art of local artists. However, it is not possible to pin-point exactly the various uses of terracotta objects.

The terracotta objects obtained from the district can be studied under two main categories viz.; chalcolithic and historic terracotta objects. The terracotta objects of the district include human and animal figurines, discs, stoppers, saucepan, handles, lamps, debbers, spindle whorls, beads, plaques etc.
All these objects are described below periodwise and typewise.
Chalcolithic Terracotta Objects:

(1) Terracotta Lamps: (Fig.F.14: 1 to 4)

During exploration of the district four terracotta lamps were recovered. They are of different shapes and sizes. Such types of lamps have been found from number of explored and excavated chalcolithic sites of Gujarat. Following is the description of these lamps:

(a) Fragment of a fine red fabric lamp of dish with incurved rim and short channel spout for which. The lamp is decorated with blade vertical bands at the rim. Wheel made. (Nageshwar; Taluka Okhane Easily). (Fig.F.14.1).

(b) Fragment of a medium fabric lamp of shallow dish with incurved rim and a short spout for which. The rim is decorated with black decorations. Wheel made. (Haripur; Lajpur Taluka). (Fig.F.14:2).

(c) Fragment of fine red fabric lamp of shallow dish with incurved rim. Wheel made. (Rasnal; Taluka Jodiyada). (Fig.F.14.3).

(d) Fragment of a course fabric lamp of a shallow dish and incurved rim. Wheel made. (Waripur; Taluka Lajpur). (Fig.F.14:4).

(2) Spindle Whorls: (Fig.F.14:5 to 10).

The spindle whorls have been found from number of sites during exploration. Such types of spindle whorls are also reported from number of chalcolithic sites of Gujarat like Rangpur,²¹ Rasnal,²² Zakha,²³ etc. They are mostly made from pot-shards. Moreover, a specimen made deliberately from
the clay also among the finds. They vary in size and range in diameter between 1.3 to 3.1 cms. and has thickness between 4 to 17 cms., depending upon the thickness of the pot-sherd converted into spindle whorls. Attempts have been made to make thin circular to some extent. These were possibly used for spinning the cotton. Their detailed description is as follows:

(a - c) Fragments of spindle whorls with a hole in the centre.
(Fig.F.14:5 to 7). These are found from Godhavari (Lalpur Taluka), Shaparwadi (Kalavad Taluka), Tankaria (Kalyanpur Taluka).

(d) Incomplete fragment of spindle whorl with an unfinished hole in the centre from Singesh (Lalpur Taluka), (Fig.F.14: 8).

(e) A complete spindle whorl with a perforation in the centre.
Made from pot-sherd. (Fig.F.14:9). (Saidevilya, Shavvd Taluka).

(f) A deliberately made spindle whorl with a perforation in the centre. (Iolai; Kalavad Taluka), (Fig.F.14:10).

(3) Discs:
Five specimens of unperforated pottery discs were obtained during explorations of the district. The most notable feature of this group of objects is that they are found in all periods right from chalcolithic period to late historic period VI. As these under discussion have come from chalcolithic sites and are made from chalcolithic pottery show it is quite reasonable to presume that they belong to chalcolithic period.
Almost all of them are made from broken pot-sherd and an attempt has been made to make them circular. They vary in size ranging between 6 to 12 cm in diameter, depending upon the thickness of the pot-sherd converted into discs. Most of these discs seem to be the products of past time activities particularly of the children and hence they do not convey any functional significance except as paly things.

(4) **Saucepan Handles:** (Fig. F.14: 11 to 13)

Four well fired terracotta saucepan handles were obtained during exploration. All of them are broken from their root, where they were attached to the saucepan. All those are circular in section with a flanged slightly convex knob at its end. One of the specimen is decorated with painted geometric decorations of straight lines only. They are found from Vankavaner (Kalyanpur), Hadiyana (Jodya), Tankaria (Kalyanpur) and Rasna (Jodya Talukas).

(5) **Faince Beads:**

The exploration of Kalavad-II revealed a parallel shaped faince bead (Fig. F.20:2). Such type of faince beads have reported from Lothal, Rangpur, Zekada etc.

(6) **Unidentified Terracotta Objects:** (Fig. F.13:4)

Six well fired unidentified terracotta objects were obtained. One of the specimens has parallel line decoration. They are from Kota (Khambhalia), Morpur (Lalpur), Pipertoda (Lalpur), Godhavari (Lalpur) and Kalavad (Kalavad Taluka). However, their fragmentary condition does not convey any
functional significance, but it can be conjectured that some sort of art activity was going on those days.

**Historic Terracotta Objects:**

The historic terracotta objects of the district include human and animal figurines, discs, stoppers, dabbers, beads etc. All these objects are discussed below type-wise:

(1) **Human Figures:** (Fig. F. 15, 16)

During exploration of the district two terracotta spouts with human figures were found. The genesis of making spouts and handles in metal, bone and ceramics bearing figurines can be traced to remote past, such spouts and handles have been reported from different parts of the world during different archaeological explorations and excavations. The earliest depiction of figured vessels in India can be traced back to proto-historic period. Few theriomorphic (bull-like vessels have been reported from Chandoli and Navdatoli.²⁷ The figured spouts and handles in Sunga and Maurya period are conspicuous by their absence.²⁸ However, number of Roman metal objects have been brought to light from Deccan and Western India, though typically, Roman pottery handle or spout with human figures has not been reported from any site yet.²⁹ The idea of decorating pottery handles and spouts with human figures appears to have become popular with Indian potters during the first centuries of Christian era, as a result of brick trade with western world of which every student of Indian art and
history are well acquainted. Indebtedness of number of foreign motifs seems to be going on during this period. The Greco-Roman metal pots and ceramics possibly inspired the Indians to prepare handles and spouts in ceramics, according to the art trends prevalent in India.

Recently two such interesting terracotta spouts bearing human heads were recovered during exploration of Khakharda and Chachlana villages of Jamnagar district. The details of these figured terracotta spouts are given below:

**Figured Terracotta Spout From Khakharda: (Fig.F.15)**

The present terracotta is actually a fragment of a spout with angular mouth and its relief produced alone the curvature of the spout. The rounded body is intelligently constructed into a beautiful female head. It measures 5.5 x 3 cms, while the portion below the chin is broken and missing.

The artistic skill and technique used can be well judged from the treatment of modelling facial features. The artist has carved it with some sharp instrument and probably used fingers as there are traces of finger impression on it. It is prepared from finely levigated clay, devoid of any impurities. The perfect firing has given a reddish brown colour and resembles the red polished ware. It seems to have separately prepared and then luted to the main body of the pot. Pottery handles with human figures in red polished ware have been reported from Amreli,30 and Somnath31 (Gujarat) and Nauragabad32 in Haryana.
The figure has a long oval face. The hair is protruded on the forehead forming three distinct fascinating locks curled inwards, the central hair lock is almost rounded with hair flaring out in circular formation. The traces of hair are also hanging out on the temple on the right side of the figure. It wears a prominent catula mark on almost vertical forehead. The upper portion of head is carved with rectangular cap-like device which possibly is made to produce the mouth of the spout. At the base of the forehead are traces of eyebrows. The almost shaped eyes are executed in relief with bulbs of eyes shown prominently. Cheeks are full and rounded with depression around, bow shaped lips are finely chiselled, while the chin is a bit heavy and rounded slightly big circular pushpa kundala in each ear lobe graces the oral face of the figure (Fig. F.16). On the whole, it presents successful artistic work.

Explorations and Excavations in different parts of Rajasthan has thrown welcome light on the art of modelling human figurines in ceramics. The ancient sites of Raish, Nager and Sambhar have yielded valuable ceramic handles and spouts. R.C. Agrawal in his careful study of these pottery handles and spouts in Kaolin presented a very interesting iconographic account. The present noteworthy image greatly resembles the Sarasvi handles found from Sambhar (ancient Sakhambhari) which is now preserved in archaeological museum at Amber near Jaipur. The oval face, treatment of hair and eyes, modelling of pushpa kundala and prominent catula mark on the forehead remains striking similarity with Sarasvi handle.
depicting 'Ganga coming out of the matted hair locks of Siva,' and another ceramic spout with female head from the same site. The Sambhar example are slightly crude in treatment in comparison with the one under discussion and thus obviously indicate its early date of Circa 1st/2nd century A.D. 35

Terracotta Female (?), Head From Choglamsar. (Fig. F.17)

The present figure is a lug and almost triangular in shape. The lug has been artistic by modelling a beautiful human face, probably of a lady. The upper part and the back portion of head is preserved, because this part was possibly attached to the main body of the pot. It measures 4.3 x 4.7 cms and is prepared from levigated clay with a medium core. The back and upper portion of the figure is black in colour and while the lower portion has a red colour and this possibly is caused due to black and red nature of the pot. It also seems to have been separately prepared and then luted to the main body of the pot.

It is a face of young youthful lady with oval features and probably with long hair and the part of which are preserved on the proper left of the face. A decorated fillet or ornamental band is tied on the head, over the vertical forehead, which is decorated with vertical incised lines and parallel bands. Eyebrows are not clearly visible, but eyes are marked with applique almond shaped relief. The iris of the eyes are shown by oval depressions in the centre. High bulging cheeks are quite prominent and gives a appearance of a youthful lady. Nose is worn out, while the lips are carved in low relief on the whole the
facial features are typical Indian.

The treatment of decorating fillet and excuting eyes in the image can favourably be compared with human head on the Nagar Surahi dated to Kushana period. However, the present terracotta seems to belong to Circa 3rd/4th century A.D. 36

It is interesting to note that number of jars with carved handles have been reported from the early historic levels at Taxila, Achchhata 37 etc. but none of them bears human figures on it. 38 Possibly such vessels were probably prepared for daily use. While the jars with figured spouts and handles were probably for ritualistic purpose and possibly that the reason for its presence in small quantities. Hence, from available data regarding adoration of liquid containers like Surahi, Chatra, Siren pots and handles of various jars seems to have some religious background. The association of river goddess Ganga, the holy river, with such spouts cannot be ruled out, as in the case of Sambhar example depicting Ganga coming out of the matted hair locks of Siva. However, it is mere a conjecture and one must await some literary reference to support.

(2) Animal Figures:

During the present investigation of the district few animal terracotta figures of Ram and horse were found from Kambhaliya and Kalyanpur Talukas. These terracotta figures can be dated to historic period on stylistic grounds.
Terracotta Figure of Ram: (Fig.F.18)

The exploration of Bharana village (Bharana-II) a terracotta figurine of Ram was recovered. It measures 6.7 x 5 cm. The neck and snout portions is damaged and missing. It has applied eyes. The forehead has a decoration of chain-like garland, suspended on the horns. The curved horns are damaged from one side. Similar evidence of terracotta figurine of Ram with applied eyes is found from Rangmahal and belongs 4th/5th century A.D. The present terracotta can also be dated to the same period. It is modelled by hand and backed, unlike Rangmahal specimen.

Horses: (Fig.E.14: 24 and 25)

The explorations of the district revealed two terracotta horses. These were found from Khakharda-II (Amlyana) and Manpar sites. They measure 9 x 5 cm and 6 x 4 cm. The legs and head portions of terracotta are missing (Fig.F.25,26).

Such types of horses have been reported from several sites like Champaner, Dwarka and Patan etc.

(3) Terracotta Plaque: (Fig.F.19)

Only one terracotta plaque was obtained during exploration from Kotharia village of Jodlya Taluka. The present plaque is broken — possibly representing standing human figure in relief. Only the lower portion of the plaque is preserved, while the rest of the portion is broken and missing. The ventral side of the plaque has red burnished surface, the dorsal side has a impression of cloth indicating that the plaque was dried on a cloth, when it was in wet conditions. However, it present some problems in
dating. Since, it has been obtained from historic period site, it can be tentatively ascribed to this period.

(4) Dabbers: (Fig. F.14: 19,20)

Two terracotta dabbers were obtained from Bamanasa (Kalyanpur Taluka) and Hadhyana-II (Jodiya Taluka). They were used by potters for expanding or enlarging the surfaces of the pots. Following is the description of the dabbers:

(a) Half of the dabber is broken and missing (Fig. F.14:19). It has a knob at the top and semi-spherical base. Such type of dabbers have also been reported from Anrall in period-II.40 (Bamanasa; Kalyanpur Taluka).

(b) A complete specimen of dabber with conical top and flat base found from Hadhyana-II of Jodiya Taluka (Fig. F.14:20).

(5) Stoppers: (Fig. F.14:18)

In all only one stopper was obtained during the explorations of the district from Khakharda-II. Moreover, nearly three more stoppers had been obtained during excavation at Dwaraka41 and have been incorporated here.

These terracotta stoppers are fashioned deliberately for specific use. Similar terracotta stoppers are found from several sites in India. So for their use is concerned it is generally now accepted that they were possibly used as stoppers. The detailed description of these objects is given below:

(a) Stopper. Cylindrical with ridged or beaded top, (Dwaraka).
   Not illustrated.

(b) Stopper. A irregular shaped stopper, (Dwaraka). Not illustrated.
(c) Stopper. Short thick, smooth and well made, black in colour
(Dwaraka). Not illustrated.

(d) Stopper with stud shaped top long circular stopper proper
flattened on two sides with perforation through it. The top
stud is noched with pinch of firmer to produce a ridge like
top. In addition to this, there are two vertical parallel
lines on one side of the top. These lines are made in such a
way that it forms grip for the strings binding the stopper with
the container proper, (Khakharaad-II; Kalyanpur Taluka).

The measurements of the diameter suggest that it might
have been served as stopper for high necked narrow mouthed
containers. Tradition of making stoppers also covers a wide
range between Chalcolithic to historic period-IV. The present
stopper seems to belong to Historic period-I or II as suggest­
ed by the other antiquities recovered from the site, (Fig. F.14:
38).

(6) Terracotta Beads: (Fig. F.14: 15 to 16)

Two terracotta macadam shaped beads were obtained from
Panali (Dhandhorji) and Kutharimad (Lalpur Taluka) villages,
during the present explorations. Similar types of beads have
also been obtained from Panchasals, Ahmedabad districts during
recent explorations. However, such type of beads have also been
reported from number of places in early historic sites of Guja­
rat. The description of the above mentioned specimens is given
below:
(a) Aracanut shaped bead with flat base having truncated or tapering top. Buff colour. (Dhandhorji; Taluka Lulpur). (Fig. F.14: 11).

(b) Aracanut terracotta bead with convex base having truncated top. The specimen is partly broken. Black in colour. (Kuthri-wad; Taluka Lulpur).

(7) **Wheels**: (Fig. F.13:24)

Only one specimen of terracotta wheel was found during exploration of the district from Kekhara-II of Kalyanpur Taluka. The present specimen has a hub while the proper wheel portion is broken and missing.

The tradition of making terracotta wheeled toy carts is considerably old in India. They are traced right from Harappan civilization and continued even upto historic-IV. But as for the present specimen is considered, it seems to belong to historic period-II, as it came from the site of above mentioned period.

(8) **Pottery Discs**:

Twenty six specimens of unperforated pottery discs were obtained from different site of the district. As already mentioned above that the notable feature of these objects is that they were found in all periods right from proto-historic period to historic period-IV. All of them are usually made from the waste pottery sherds.

These specimen vary in size ranging between 30 to 22 mm.
in diameter and thickness between 8 to 22 mms. Attempt have been made to make them circular to some extent. There were probably products of partime activities of the children.

To date these objects is a difficult task in absence of clear cut stratified data, and hence they have been arranged to Historic period very broadly as they have been obtained from all the Historic sites of Gujarat.

(9) **Miniature pots**: (Fig.13: 22 to 23)

During exploration of Khakharra-II and Suryaveder-II two miniature pots in red polished ware were recovered. One of the specimen is broken and has sagger base and short neck. (Fig.15:123). The other one has a long neck. These pots are very small to consider them as ink-pots. However, these seems to have served as scent bottles.

**III. Shell Industry**

Large number of shell bangles, laddles, ring fragments were obtained during exploration of the district, hence indicating large and small scale industries at number of places. Shell bangles and other shell objects are found from Chalcolithic period down to historic period IV. However, the manufacture of shell artificats from historic period III and IV seen to be very limited. Such types of shell objects have been obtained from number of sites like Rangpur, Lothal, Somnath, Kanewal, Surkotda etc. (Chalcolithic period) and Nagar, Anamali, Timbarua etc. (Historic period). It being a local sea product of the district, hence its being used for decorative and similar other purposes is quite natural.
However, it is interesting to note that the shell industry of Gujarat has completely vanished.

Large number of chank slices and their stems with sharp cutting marks indicating 'factory site' nature of these sites. Large number of sites yielded the shell manufacturing waste. But the huge quantities of waste material and finished products came from Nageshwar and Boyt in Okhampur Taluka. The material obtained is very significant on account of ample material afforded for studying the typological and technological aspects, as well as to reconstruct the different stages of manufacture of finished artifacts from shell down to finished product during different periods.

However, before discussing the shell industry itself, it is important to look more closely at the raw material used and how accessible it was to ancient fishermen. Only two species of shells were used as raw material; *Tubinella pyrum* (Lam) or the sacred Sankha and *Chicoreus ampaus* (Linn) or Great Murax. Both of these are marine species and are found in Gulf of Kutch. The major collection areas for *T.pyrum* at present is Foshatra bay, which is only 3 to 10 km north of the Nageshwar site.43

The *Tubinella pyrum* is very thick sturdy gastropod without any exterior protuberances. The centre columnella is solid complicated is suitable for the manufacture of various heavy solid objects. The shell prefers to live on sandy bottoms or sandy areas between coral reefs or rocky areas. The depth at which they occur ranges from the intertidal zone to shallow littoral zone, 3 to 10 fathoms.
T. pyrum rolls up with current from the deeper waters during the winter months. The present fishing season continues from October till January. The T. pyrum found in the shallow zones near the coral reefs are often interlaced with bore holes from boring clione sponges or other boring organism. However, shells collected from deeper waters or beds which are regularly fished are free from bore holes. In other words, each new influx of shells to be collected before they are exposed to predations of the various boring organisms living in coral reefs. The Chilocus camora on the other hand live primarily in rocky areas or coral reefs, consequently these shells are generally found perforated by numerous holes, especially at the apex and the anterior portion.

The fragments T. pyrum collected from Nageshwar and Beyt were selected from the absence of worm holes and were therefore selected from the absence of worm holes and therefore most probably were collected regularly from deeper beds. This is suggested by the fact that only 16 out of 120 fragments examined, show bore holes. The C. camora fragments examined, show bore holes. The C. camora fragment however, show 15 to 18 having bore holes and the 3 fragments without holes came from the interior parts of the shell, which would not normally exhibit such features even, of the exterior were laced with holes. Thus on the basis of this data one can suggest that ancient fishermen were using boats and were diving in deeper waters to collect the T. pyrum, while they were wading and collecting the C. camora from the rocky areas and coral reefs during low tides.
The chank industry of the district can best be studied under two heads viz.:

(1) Chalcolithic chank Industry,
and (2) Historic chank Industry.

(1) Chalcolithic Chank Industry:

The presence of vast quantities of shell manufacturing waste from Nageshwar, Kota, Singach, Morpur, Haripur, Aara etc. suggest that these sites were important centers for the manufacturing of shell artifacts during Chalcolithic period. The existence of manufacturing waste in huge heaps at Nageshwar suggest that the village was mostly inhabited by craftsmen, who specialised in making shell objects and possibly was not solely for personal use of the inhabitants. The suggestion is that the site (Nageshwar) was a center of production, which was established near the source of the raw shell, and this site supplied raw shell, bangles and other finished artifacts to other towns and villages in adjacent regions.

The preliminary survey of the shell fragments indicate that *T. pyrum* was more commonly used than *C. ramosus*, but it must be noted that the *C. ramosus* fragments are much more plentiful in the Chalcolithic sites of the district than has been recorded from any other Harappan site. Both species of shell were used for the manufacture of shell were used for the manufacture of bangles, while *C. ramosus* was also used to make ladle or dippers, which is found at most of the Harappan sites. The manufacturing waste from the *T. pyrum* is identical with that found at all the major Harappan sites and indicate that the same manufacturing
technique was used. At there major sites only few waste fragments from the *Crepidula* have been found, so that the technique of manufacturing has not been fully understood. However, at Hageshwar a complete range of manufacturing waste was obtained, so that it was possible to understand the process on this species, which was some different from that of *I. pyrum* (Fig. F. 7 to 9). The main difference is that the apex of the shell was not perforated but the columella was freed from the shell whors by breaking the septa from the anterior end, through the shell orifice. This process does not affect the finished product at all but it does exemplify the ingenuity and technical skill of the Harappan artisans.

A detail study of the shell waste from the major Harappan sites has provided some insight as the size and form of saw used in cutting the shell. The data from Hageshwar serves to further substantiate these findings. The saw appears to have been heavy, with convex cutting edge. The edge might have been denticulated and the thickness of cutting edge might have been between .5 to .75 mm and between 60 to 180 mm wide. From other Harappan sites we have examples which have been down to the depth of 250 mm, so the suggestion would be that the width of the cutting edge was between 200 and 300 mm. The saw was undoubtedly made of copper, as this was only metal known to the Harappan and it was certainly within technical capabilities of the Harappan metal-smiths to produce a saw, which would easily cut through the shell, since the hardness of the fresh *I. pyrum* shell
is between 5 and 6 on the Moh's scale of hardness. The bangle fragments which were collected from the Nageshwar basically represent the major style found from other Harappan sites. The thinner type of bangles have a single ridge and rough triangular section, (Fig. F.12 B), while the wide bangles have slightly convex or rectangular section (Fig. F.12 B). The incised chevron motif is identical with that found at other Harappan sites and is invariably located at the closure point of the shell circlet (Fig. F.12 B). The _T. pyrum_ bangles range in width from 4 mm to 2 mm and the _C. ramosei_ bangles range from 9 mm to 22 mm.

**Table No.1**

<table>
<thead>
<tr>
<th>Species</th>
<th>Unworked</th>
<th>Partly ground</th>
<th>Finished</th>
<th>Not determined</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>T. pyrum</em></td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td><em>C. ramosei</em></td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>6</strong></td>
<td><strong>2</strong></td>
<td><strong>6</strong></td>
<td>1</td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Only one fragment of finished laddle (Fig. F.12 B; 14) was found, but several fragments of unfinished laddles were found (Fig. F.12 B).**

**Table No.2**

<table>
<thead>
<tr>
<th>Species</th>
<th>Unworked</th>
<th>Partly ground</th>
<th>Finished</th>
<th>Not determined</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>C. ramosei</em></td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td><em>T. pyrum</em></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>3</strong></td>
<td><strong>2</strong></td>
<td><strong>1</strong></td>
<td>-</td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

Besides, bangles and laddies, a large variety of shell artifacts such as inlay pieces, beads etc. were used at other Harappan sites. Further survey or excavation at Nageshwar and Kota will probably reveal the presence of these objects, especially since these are produced from the waste pieces left from the bangle manufacture.

(2) **Historic Chank Industry:**

From almost all the early historic sites of Jamnagar district the shell manufacturing waste was obtained. Moreover, a very large collection of shell manufacturing waste, finished bangles and ring fragments were made from Beyt, (Okhamandal Taluka) indicating huge factory site nature. However, the presence of shell manufacturing waste from other sites testifies the development of local shell industries at other sites as well.

The preliminary survey of the shell waste indicate that *Lavrum* was more extensively used and the use of *Caricosus* slowly died out with the passage of time. The technique of manufacturing and saw seems to have remained more or less same, and possibly similar type of saw used as in Chalcolithic period. But the bangles became more decorative and possibly laddies or dippers went out of fashion. The bangle and ring fragments obtained from the district basically represent the same style found from other historic sites of Gujarat, like Somnath, Amreli, Valabhipur, Nagra etc. Mostly the decorations are geometrical designs or bands and ridges. The *Lavrum* bangles range in width from 4 mm to 22 mm, while that *Caricosus* range between 9 to 22 mm.
Out of 41 bangle fragments collected 6 have ridges in the centre and 12 are decorated with incisions and perforations, while the rest are simple ones. Following is the description of different types of shell artifacts obtained during exploration of the district:

**Table No.3**

<table>
<thead>
<tr>
<th>Species</th>
<th>Unworked</th>
<th>Partly worked</th>
<th>Finished</th>
<th>Decorated</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>T. pyrum</em></td>
<td>5</td>
<td>8</td>
<td>34</td>
<td>12</td>
<td>59</td>
</tr>
<tr>
<td><em>C. Ramosus</em></td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7</td>
<td>11</td>
<td>36</td>
<td>12</td>
<td>61</td>
</tr>
</tbody>
</table>

(1-3) Fragments of shell bangles with rectangular section

(Fig. F.12 C: 1-3).

(4, 5) Fragments of plain bangle with ridge in the centre having pentagonal and squarish sections, (Fig. F.12 C: 3-4).

(6, 7) Fragment of bangles with two ridges having the central portion sealed off, (Fig. F.12 C: 6 and 8).

(8) Fragment of a bangle prepared in a three-dimensional stylized creeper-like shape with each lobe having triangular leaf-like projection, (Fig. F.12 C;7).

(9) Fragment of a grooved bangle with single rhomboid, motif decoration, with rectangular section, (Fig. F.12 C;9).

(10) Fragment of a bangle with parallel vertical incised lines having more or less squarish section, (Fig. F.12 C;12).
- 525 -

(11) Fragment of a bangle with vertical incised lines having more or less squarish section, (Fig.F.12 C:10).

(12) Fragment of a bangle with incised parallel vertical lines and two horizontal incisions having squarish section, (Fig.F.12 C:13).

(13) Fragment of a bangle having double groove and looped edge with dot on every loop scooped up lenticular in section, (Fig.F.12 C:15).

(14) Variant of 10. But a thicker variety.

(15) Fragment of a bangle with convex incisions and two vertical strokes on the upper surface having rectangular section, (Fig.F.12 C:16).

(16) Fragment of ring with circular section, (Fig.F.12 C:14).

IV. INSCRIPTIONS:

Most of the inscriptions obtained from the Jammagar district are engraved on copper and stone. If we consider inscribed coins and potsherds then silver and clay may be included. Most of the epigraphs consists of land grants and dedicatory writings.

(1) Inscribed Pot-sherd:

The earliest evidence of writing of the district is on a pot-sherd reading (",", "") of Nandana, (Fig.F.23). It has been obtained from Reyt in 1936 by Hirand Shastri. The letters of this pot-sherd is an example of early Brahmi and has been dated to 200 B.C. on palaeographical evidences.
The stone inscription found from Gunda, which is situated about 13 km north-east of Bharwad. It records the construction of a well at Gunda ancient Rasopadra village by an Abhir sanapati Rudrabuti, during the reign of Swami Rudrasinh in Saka year 103 (181 A.D.). The inscription is specially valuable because it gives the name of the son of Swami Chashtana and the father Rudradama, which is illegible in Junagadh inscription. The inscription also shows that those earlier monarchs bore the title of Swami, and what is singular, alternate generation bore the title of Mahakshatrapa and Kshatrapa respectively.

The inscription is a sepulchral stela of 3D M3. The single line engraved breadth-wise contain the word Vanijaskarva, meaning of Vanijaka. The four lines engraved lengthwise record that this stela was erected by the son of a merchant (Vanijaka) on the 5th day of the dark half of Vasakha in the year 122 (200 A.D.).

From the very few details in these two records, we can say that not only the rulers, who were foreigners, but their generals and the members of the public made public benefactions, such as building of the dam at Junagadh or the construction of a well at Gunda.

The record further tells us that though the Sakas had introduced their own era, they still followed the ancient Indian method
of dating by the tithi of the two halves of a month and nakatras. Probably every tithi was not suitable or regarded as suspicious because the Gunda inscription records the construction on the pahurta of Rohini nakatras. Lastly, the name of the general as well as the ruler suggest they were followers of God Rudra (Rudrabhuti, - Simha - daman). However, from the prevalence of Buddhism and Jainism in and around Girinagara (Junagadh) and place name like Vasal (from ancient Vasati; or habitation of Buddhists or Jains), about 12.9 km north of Dwarka, we might postulate the existence of Buddhism and Jainism in the Jamnagar district during Kshatrapa period, when both these faiths were patronised.

(iv) Six Saindhava Copper Plate Grants From Gwali\textsuperscript{53}

Early in the eighth century appear the Saindhavas who until recently were known from only three records: a clay seal from Vals\textsuperscript{54} and the Dhinki\textsuperscript{55} and Harvi\textsuperscript{56} copper plates; of which one is proved to be a forgery; and of the other only the second half is available. The six copper plates obtained in 1936 near Gwali in the course of digging along the road side. It is these which provide the history of the Saindhava and incidentally of Western Saurashtra or the Jamnagar district. The Saindhavas illustrate what has been happening in the history of Western India over and over again owing to some pressure, political, economic or even diesthetic - the rulers of Sind moved down to Kutch and then crossed over to Western Saurashtra.

The twelve copper plate found at Gwali contain six records. It consists of three plates, (of one and EDE and F of two each).
All of them records the grants made by the rulers of Saïndhava family, which is known to have ruled at ancient Bhutambilika or modern Ghumli from 674 to 920 A.D. The original name of the capital is uniformly spelt as Bhutambilika in records. Following is the short description of each grant:

A. Grant of the Time Of Saouka-II (Gupta) Samvata 510

The grant has been engraved on a set of three copper plates, which have been hold together by two rings passing through two holes near the edge. The character of the record are proto-nagari and the language of the record is Sanskrit and its style is of the courtly poetic.

The colophon at the end of the record give the name of composer as Kapila, son of Vikhata, who was ornament of Saka, Gujarat, Saurashtra were under the Saka rule for more than three centuries and this must have resulted in the settlement of large Saka population in these province. These records show that even four centuries had elapsed since the disappearance of Saka rule, the Sakes retained some individuality of their own and could be distinguished from general public. Though a Saka, Kapila, the composer of the record show a remarkable command not only over the Sanskrit language but also over the difficult Kavya style.

The copper plate record a grant of village made in the region of the Saïndhava's Aggeke-II, son of Krishnraja. The actual grantor is however, Jèka, the uncle of ruling king, who was a minor when the grant was made. The grantee of the record was Madhava son of Kalyana, who was a Rigvedic Brahman, of the
Semkritya gotra and a resident of Soneshvara, which has been identified with famous Somnath. It also records the grant of Dhankatirtha and Gulamika villages of the district Pachchahtri. Dhankatirtha is Dhank, 40 km east of Ghumli. The headquarters of the territorial division Pachchahtri is identified with Pachchahtri 9.7 km west of Ghumli.

B. Grant of Kim Jäka-I. 89

This grant has been engraved into two sets of copper plates, which have been inscribed on one side only. The plates have two holes near the edge, intended for two rings to secure them together. Only one of these rings is preserved and its ends have been soldered together and impressed with a seal with the amb lion of the fish, which was the insignia of the dynasty.

The character of language and the composer are similar to Charter A. The charter records a village grant made by Mahasamanta Jäka-I, son of Ränska. He is identified with the same person who has issued charter 8 as regent for the nephew, Anguka I, who was then the dejüre kings. In the genealogy of this grant, however, there is no reference to Anguka or his father, who was the elder brother of Jäka I, both of whom are expressly mentioned as the occupants of the Saíndhava throne in Charter IX.

The present charter is not dated, but has been dated to 513 G.E. (834-35 A.D.) by the editor.

The grantee is a Samavedin Brahmana of Vastagotra, Shattamnswälika by name, who was the son of Kulachandra. The revenue of the village Dashipadraja were arranged to him for religious
rites and sacrifices. Dadhipadraka is probably Deola village, 9.7 km west of Ghuzali.

G. Incomplete Grant of King Rāṇaka: 60

This charter might have been originally engraved on two plates but only the first of them has been discovered.

The record contain a grant of Mahāsamanta Rāṇaka, who was a son of king Agguka and grandson of king Krishnerāja. The charter records the donation of the village, Bhatalika situated in the district of Pachchhatri. The name of the donor does not appear in the plate. The present charter is not also dated but since the grantor was son of Agguka II, who was a minor in 513 G.E. It has been presumed that it may have been issued in G.E. 530 (849 A.D.).

D. Grant of Rāṇaka of Subordinate Saṁdhava Branch:

G.E. 63661

The grant has been engraved on a set of two copper plates. The composer of the record in Vakula son Vithaka. The grantor of this charter was Mahasamanta Sri-Rāṇaka, who was a grandson of King Jālka I of Charter A and B through the son of Agguka. The village granted by the charter are Pinnalaguda, situated in the district of Survannamanjari, half of its revenue were assigned to a group of temples dedicated to Hari, Haridavasa (the Sun) Vinayak and the divine mothers, the indentification of this village is difficult.
E. Grant of King Agyuka III; G.S. 567

The present grant has been engraved on a set of two copper plates and the fish emblem appearing at the end of the charter. The language of the charter is ornate Sanskrit and the composer is Jñānīha son of Madhava.

The present charter records the grant made by Kahanamantadu pati Agyuka-III of the main Saindhava house, who was a son of the Chāmundarāja and grandson of Jaika-I.

The date of the grant is given in words in its penultimate verse, which states that it was made on a new moon day when five hundred and sixty seven autums have elapsed according to Gupta era. Hence the date can be 936-7 A.D.

The donees of the grant were two brothers Rudra and Sagara, sons of Guhesvara, who were Vajurvedin Brahmans of Vatra gotra residing at Gomutrika situated in district of Karyavatarkanchalha. The village granted was Harishansaka situated in district of Suaranmanjarī.

F. Grant of King Jaika-III; Gupta Sañvat 569

This record has been engraved on a set of two copper plates which has been held together by two rings. The fish symbol, the insignia of the dynasty is not encribed. The language and the character are similar to those of E issued by the father of the present donor.
The grant recorded in the charter was made by Mahāmāṁata-
dhipati Sri Jāika-II, son of king Agunaka, who has issued Charter E. The present Charter E. The present charter gives the longest genealogy, giving back to the 7th ancestors of the donor. It has been already discussed in Chapter II. We may only add here that the members of the collateral families founded by Krishnarāja, brother of Jāika-I and by Agunaka, brother of Chāndarāj II are omitted from the genealogy. It has been dated to 915 A.D.

The charter records that the revenue of the village Chhampensaka were assigned to Mahājāwandana and other to spent for Nana-mathika, which have been founded by a merchant named Nana, hailing from Bhillama or modern Bhirmal. The village Chhampensaka that was granted is probably the name of modern Chavand, situated 18 km north of Junagadh.

(v) Copper Inscription Of Bāskaldēva: 64

The discovery of Bāskaldēva's copper plate from Gumli indicate the rule Bāskaldēva during 989 A.D. The name of the dynasty to which he belonged is not mentioned in his record, it is hardly possible to regard him as a later member of Saindhava dynasty, because in that case he would have traced his descent from the earlier rulers of the land. It may also be noted that there is difference between the two grants. Saindhava kingdom was called Aparā-Surastra (Shatra) mandal and Bāskalā's kingdom was called Swava-Surastra (Shatra) mandal. Although both indicate the district round Shūtabill. This was indicate that
this area was renamed after Saîndhava's and possibly suggest Back-skaladeva did not belong to Saîndhava dynasty and possibly was of Jethwa dynasty.

The records refers to the grant of village to Vojurvedi Brahma of Anahilpura.

V. COINS

Sites like Dhrafa, Kalavad, Chandravad-II and Findrava revealed few coins of Kostrapa, Gupta and Saîndhava rulers. All of them are surface finds. Though they are few in number they provide their identity in the region of the Jamanag. Prior to this few coins of Saîndhava were noted by Mehta and Subramanyan.

Kostrapa Coins:

A silver coin has been found from the Dhrafa village of Jamjodhpur Taluka.

I. Coin Found From Dhrafa: (Fig. F.26-27)

(1) A coin of Visavagha:

Roundish, weight = 2.211 grams, Diameter = 1.4 cms

Obverse - Bust of the King, facing right.

Reverse - Chaitya with three arches, surmounted by crescent.

Legend - Räja-Nakaksha(trapa)........ pu(trasa)

.......................(vi) Svasena.

II. Gupta Coin:

A silver coin have been found from the Kalavad village of Kalavad Taluka in the possession of villager.
(2) A Coin of Kumar Gupta:

Obverse - Bust of King facing right.
Reverse - Winged Peacock.
Legend - Maharaja (dhir) Jasrī Śrī - Kumaraguptah.

III. Saindhava Coins:

During exploration of the Pindara village Shri R. Subra-

hmanya could obtained seven Saindhav coins. These copper
coins which are circular in shape have the representation of a
long trisula or trident in the centre, to its left two curved
lines the purport of which is not clear. On the reverse of
these coins there is a representation of fish with dapped
circle.

As the emblem of Saindhava was fish and this is but
natural as they claim to be the Lords of Western ocean
(Surastramandalamandanoparasa - mudradhipati).

As already mentioned above, that seven coins were obtained
by Subrahmanya and the description of these coins is as follows:

<table>
<thead>
<tr>
<th>No.</th>
<th>Weight</th>
<th>Size</th>
<th>Obverse</th>
<th>Reverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22 gr.</td>
<td>.53&quot;</td>
<td>Faint representation of a portraiture</td>
<td>Fish symbol within a dotted circle.</td>
</tr>
<tr>
<td>2</td>
<td>16 gr.</td>
<td>.43&quot;</td>
<td>Trisula symbol and to its right three letter vertically written.</td>
<td>- do -</td>
</tr>
<tr>
<td>3</td>
<td>15 gr.</td>
<td>.50&quot;</td>
<td>To the left two lines forming part of two concentric circles extent.</td>
<td>- do -</td>
</tr>
</tbody>
</table>
### Gadhya Coins

One Gadhya coin was found in the possession of a villager of Chandravad. It is of copper. The details are as under:

<table>
<thead>
<tr>
<th>No.</th>
<th>Weight</th>
<th>Size</th>
<th>Obverse</th>
<th>Reverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>13 gr.</td>
<td>.41&quot;</td>
<td>To the left two lines forming parts of two concentric circles extent.</td>
<td>Fish symbol within a dotted circle.</td>
</tr>
<tr>
<td>5</td>
<td>6 gr.</td>
<td>.37&quot;</td>
<td>— do —</td>
<td>— do —</td>
</tr>
<tr>
<td>6</td>
<td>3 gr.</td>
<td>.29&quot;</td>
<td>Coins in 3 rows</td>
<td>Not clear</td>
</tr>
<tr>
<td>7</td>
<td>1/2 gr.</td>
<td>.33&quot;</td>
<td>Brahmi letter 'bha'</td>
<td>— do —</td>
</tr>
</tbody>
</table>

#### Gadhya Coin

One Gadhya coin was found in the possession of a villager of Chandravad. It is of copper. The details are as under:

- **Shape**: Round
- **Weight**: 4.555 gm. approx.
- **Obverse**: Bust of the king, having two rows of dots ornamentation.
- **Reverse**: Five altar with four rows of flames, one above the other, crescent.

These coins were current in Gujarat, since Saindhava and Maitrak period. There are difference of opinions regarding the origin and the name of the coin. It is said that they were originally Huna imitation of Sasanian coins. The name of Gadhya is said to be derived from the Sanskrit Gardhabhiya meaning the ass dynasty. According to Wildford, Gardabhi is the name of a Sasanian dynasty and he identified him with Varahaman Bur. Smith ascribed the term with a clear profile to the 8th-9th century A.D. The Gadhya were current in Gujarat and Malwa upto the beginning of the Muslim rule. Hence the rough chronology suggested is as follows:
(1) The coins with clear profile may be ascribed to 8th-9th centuries A.D.

(2) A transitional form with rough profile, but clear perceptible features like the nostril, mouth and chin to the 10th-11th centuries.

(3) The degenerated forms of the high button type, which lasted upto 13th century.

The present coin seems to belong to 8th-9th centuries as the profile of the coin is very clear.

VI. METAL OBJECTS

The metal objects recovered from the district belong to Chalcolithic and Historic period. Most of these objects were recovered from Dwaraka and Lakhabaval during excavations. However, few metal objects were also recovered during present investigations also.

**Chalcolithic Metal Objects**

**Copper Pin:**

The exploration of Kaleshwar-II (Kaleshwar Taluka) revealed a broken copper pin. The lower portion of the pin is broken, while it has a circular knob at the top. (Fig.F.21:1).

**Gold Object:**

The excavations of Lakhabaval (Jamanges Taluka) revealed a gold ornament with exquisite figure work, (Fig.F.22) either on ear-rings or head ornament.71
Historic Metal Objects

The excavation conducted by team of archaeologists from Deccan College, Pune, obtained large number of metal objects from Dwarka. However, a few metal objects were also obtained during present exploration. Following is the description of the objects:

Historic Period-I:

Copper:

Only one copper head-scratcher belonging to this period excavation at Dwarka.72

Historic Period-II:

Bronze:

The exploration of Khakheda-I (Kalyanpur Taluka) a bronze handle of a bell was obtained, (Fig.F.21;3). The handle is carved with god-bird, the garuda. It has strong affinities to the bronze handle found at Rangaahal73 on the base of typological affinities and other explored antiquities from the site suggest a date of historic period-II.

Lead:

A lead ear-stud was recovered during exploration of Dhara, (Jamjodhpur Taluka). It is a lead strip, which has a conical stud and a circular portion attached to it, (Fig.F.21;2). This part is decorated by a series of concentric incised circle. The centre is made hollow probably for a semi-precious stone. Such types of lead ear studs have reported from Nagara in period-II.74
Historic Period-III:

During excavations at Dwarka a bronze jingle bell with two holes for suspension were obtained belonging to this period.75

Historic Period-IV:

Large number of metal objects belonging to this period have been reported from the excavation at Dwarka and the present exploration. Following is the description of objects material-wise:

Silver:

1. Hair pin of folded silver strip. 35 mm length.76 (Dwarka).
2. Ornament. A shell-shaped hollow piece with two brass attachment welded to it on either side.77 (Dwarka).
3. A silver ring with arabic inscription, (Fig.7.21:4), from Dhrafas.

Copper:

1. Ring with open ends. Thickness of the wire is 3 mm. (Dwarka).78
2. Turning shovel, upper part broken, 29 cms in length, from Dwarka.79
3. Lid of a casket. In fragmentary condition with corrosion for decoration from Dwarka.80
4. A complete ring from Dhrafas, (Fig.21:5).

Iron:

Iron objects were found from excavation at Dwarks only.
Following is the description:

1. Semicircular flat object with rounded bell-like end and one side and flattened one on the other. (1)
2. Blade, thin and tapering, perhaps a knife. (2)
3. Arrow head: Tang slightly broken, square in section. (3)
4. Folded iron sheet with one end flat and sharp. It could be a pole. (4)

VII. STONE OBJECTS

Minor antiquities of stone like mortars, rings, discs etc. were obtained during exploration of the district. They have been tentatively dated on the bases of associated antiquities and typological similarities.

Historic Stone Objects:

Chalcolithic Stone Discs:

Only three specimens were recovered from Rajvada and Kalmavod-IV of Kalmavod Taluka belonging to this period. They vary in diameter and thickness. The diameter range between 3.7 to 4.7 cms, while thickness ranges between 5 to 9 mm. Attempts has been made to make them circular to some extent, usually, Chalcedony and agate has been used as raw material. They are perhaps products of pass-time activities of children.

(1) Mortars: (Figs.C.14-15)

Number of mortars were located standing or in semi-buried conditions at various historic sites. But the concentration of such stone mortars was observed on the western parts of the district (Kaliyapur and Okhmandal Talukas). Number of stone
mortars have been displayed at Dwarka, which has been brought from some of the sites of this taluka. They have been obtained from Nageshwar, Kalyanpur, Dhavrad, Tober etc.

Each mortar is carved out of single stone slab and are mostly similar in size. Following is the dimensions of these mortars:

- Length: 1.8 meters
- Circumference: 3 meters
- Circumference of to middle: 2.4 meters
- Depth of the hollow: 72 cm.

However, to these mortars is a bit problematic. But tentatively they can be dated to historic period in general.

(2) Carnelian ring:

A broken carnelian ring was recovered from Batiya of Kalyanpur taluka, (Fig.F.20;1). Such types of carnelian rings have been obtained from number of sites belonging to historic period-IV.

(3) Stone discs:

Seven specimens of circular stone discs were obtained from different sites of Jammagesar district. The stone discs came both chalcolithic as well as historic period sites. Hence they have been studied separately.

To date these objects is difficult task in absence of clear cut stratigraphic data and hence as they came from
Chalcolithic sites, it is very reasonable that they belong to this period only.

**Stone Discs:**

Four specimens of discs were recovered from Fatehpur I and II, Khijadad, and Limdi and are produced from sandstone. They also vary in size and thickness ranging between 4.3 to 6 cms in diameter and between 5 to 11 mm in thickness. Attempts have been made to make them circular and also seems to be the past-time activity of the children. These objects are dated to historic period in general as the associated antiquities of these stone discs is of historic periods.
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