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On the Fast Track of the *Periplus*: Excavations at Kamrej — 2003

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The excavations at Kamrej have been undertaken as part of the Indian Archaeological Society's project 'History and Archaeology of Indian Ocean Trade'. The project is being sponsored by the Indian Council of Historical Research. Preliminary investigations reveal Early Historic Kamrej to be an industrial centre (iron making, shell crafting, bead making, etc.) and a trade port having overseas contacts with the Red Sea and Persian Gulf regions. Kamrej has been identified with the settlement of Kammoni mentioned in the Greek sea-guide, Periplus Maris Erythraei, written in the first century AD.

The ancient site of Kamrej (21° 16' 55 N; 72° 58' 01 E), Dist. Surat, Gujarat, is situated on the left bank of the

river Tāpī which falls in the nearby Arabian Sea (Fig.1). The site falls within the precincts of the modern village of Kamrej which is also the headquarters of the taluka of the same name (Map 1).

Kamrej lies on the left bank of the river Tapi, about 15 km upstream of Surat. From the Surat Railway Station, the village of Kamrej is approximately 20 km distant and can be reached by a broad metalled road. To be specific, the road from Surat station joins the Mumbai - Ahmedabad National Highway No. 8 at Kamrej Char Rasta. The village of Kamrej is just 3 km away from Chār Rāstā via a



Fig.1. Arabian Sea at the mouth of Tapi

*Allahabad Museum, Allahabad.

**All other excavators are affiliated to the Indian Archaeological Society, New Delhi.



road connecting Kamrej Chār Rāstā to Bardoli. The latter is famous for the Bardoli *satyagraha* launched by Sardar Vallabhai Patel during the Freedom Movement.

The archaeological deposits at Kamrej are found to overlie alluvial cliffs on the left bank of the river (Plate IA, IC). The river Tapi takes a sharp bend at this place, creating a wide and picturesque waterbody. The main mound, popularly known as *koṭa* (fort), is situated just beyond the habitation limit of Kamrej village. The main mound is marked Plot Number 500 in the map of Kamrej Village prepared by the Panchayat.

The modern village of Kamrej is situated atop the riverine cliffs to the east of the main mound. The inhabited area of Kamrej village, sandwiched between the Bardoli road and the river Tapi, is about 2 x 1 km. The village has a large number of handsome *pucca* houses. The most striking building is the one housing the office of the *Mamlatdar*. It is a double storeyed red brick structure with a commanding view of the Tapi. No cultural deposits were observed in the cliff sections atop which the village habitations are situated. However, within the precincts of the village, particularly close to the riverside, there are houses built on elevated ground at the base of which pottery and brick remnants are visible. The undulating streets of the village also indicate mound formations. There is no doubt that modern Kamrej village reoccupies parts of ancient Kamrej.

HISTORY OF KAMREJ

According to tradition, the mound of Kamrej

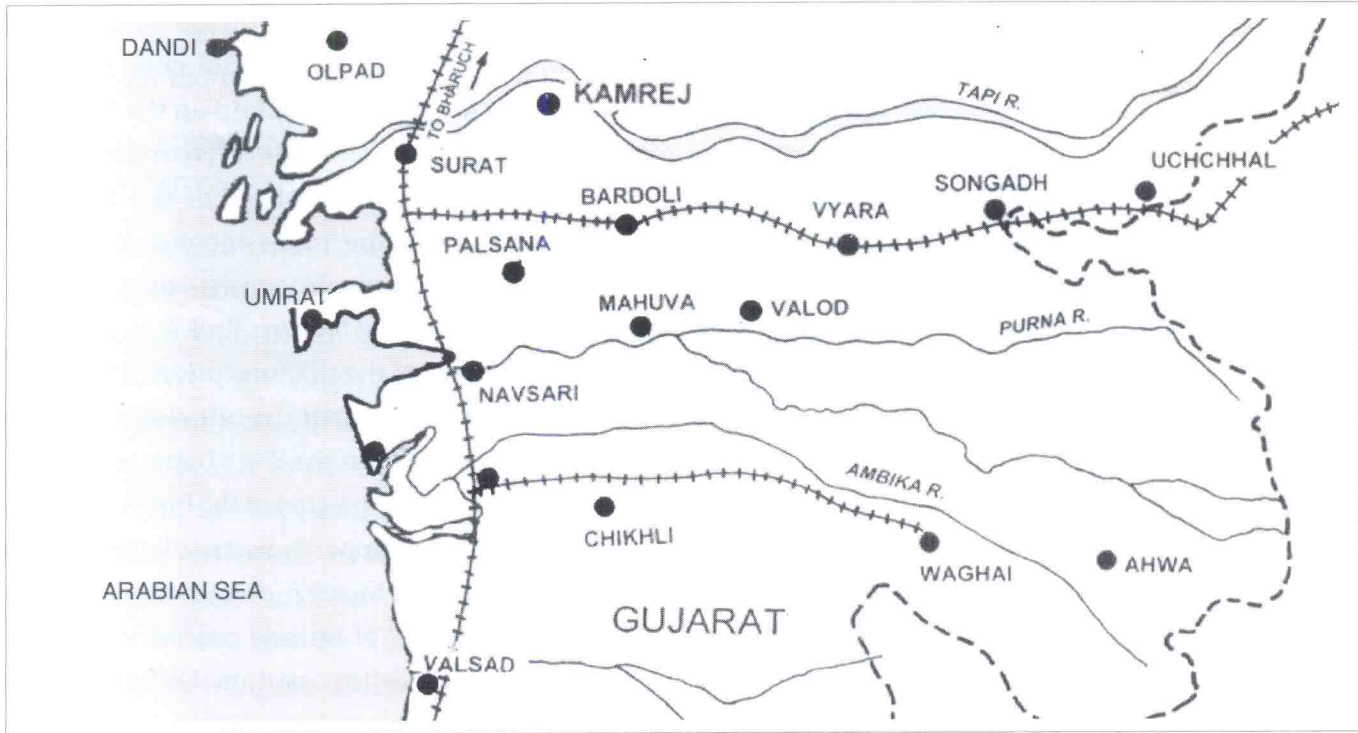
is called Kāmāvati Nagarī. The villagers believe that at some point of time Kāmāvati Nagarī was cursed. The city turned upside down and was consumed by a great conflagration. The place name Kāmāvati Nagarī finds mention in the *Tāpī Purāṇā*. The antiquity of the *Tāpī Purāṇā* is unclear. There are several manuscripts of the 19th and 20th century in circulation. In Kamrej Village, there are manuscripts in Marathi and Gujarati in the possession of some villagers. In Bhairav Village, adjacent to Kamrej, a brahmaṇa owns a Sanskrit version of the *Tāpī Purāṇā*. A printed edition in Gujarati is also available.

The Graeco-Roman records of the early centuries AD indicate the existence of ancient Kamrej. The Greek sea guide, the *Periplus Maris Erythraei*, dated to the 1st century AD, refers to the 'village of Kammoni' (*Periplus* section 43). The *Geographia* of Ptolemy, dated to the 2nd century AD, mentions a settlement called Kammanes on the western coast (McCrinkle in Sastri 1927). The identification of Kamrej with Kammoni/Kammanes is discussed in Gupta (1993: 119–127). An inscription of the medieval period calls the place Kammanija (*Annual Report of the Directorate of Archaeology, Baroda State 1935-36:17-18*), reinforcing the place-name progression Kammoni/Kammanes/Kammanija/Kamrej.

COASTAL GEOMORPHOLOGY AND ESTUARINE ENVIRONMENT

Kamrej is situated in the estuarine zone of the river Tapi. The site lies about 35-40 km





Map 1 showing location of Kamrej and other important places and ancient sites in South Gujarat

upstream of the mouth of the river Tapi. The Tapi debouches into the Gulf of Khambhat (Fig.1). An extension of the Arabian Sea, the Gulf of Khambhat (henceforth the Gulf), is approximately 190 km wide at the mouth and narrows to about 25 km at its head. The major rivers that flow into the Gulf are the Sabarmati, Mahi, Narmada and Tapi. Among these, the Narmada and Tapi are perennial rivers. The Gulf of Khambhat experiences one of the highest tidal ranges in the world (Nayak and Sahai 1983: 152–154). The *Imperial Gazetteer of India IX* records spring tides as high as 33 feet prevailing in the Gulf of Khambhat (Schoff 1912/74–183). Satellite imagery shows the presence of extensive mudflats, shoals and sandbars at the mouth of the

rivers Mahi, Narmada and Tapi (Shaikh *et al.* 1989: 41–48). The tidal range in the Gulf tends to increase on the estuaries. The diverse coastal geomorphology coupled with the highly dynamic marine situation makes the mouths of the rivers in the Gulf extremely treacherous for navigation. The ancient Greek sea-guide *Periplus Maris Erythraei* (1st century AD) provides a vivid description of merchant ships encountering high tides, shoals and adverse wind conditions inside the Gulf.

The Tapi estuary, like the estuaries of the rivers Mahi and Narmada, is actually a submerged river valley extending into the Gulf of Khambhat. The rising sea level after the last glaciation was responsible for the submergence of the old river valleys and



formation of the estuaries along the east coast of the Gulf (Pritchard 1952: 243–280). The available data on sea level changes in western India indicates that sea level rose from – 90 m in 14,500 BP to + 2-4 m in 6000 BP and that a regressive phase (since underway) began around 4500 BP (Mathur 2002: 61–67). The Tapi estuary has been classed as a ‘fully mixed estuary’ as it experiences strong tidal currents and weak discharges of fresh water. This is in contrast to the Narmada estuary further north which being a ‘salt wedge estuary’ has dominant fresh water flows (Nayak *et al.* 1985: 348–353). The coastal landform mapping of Gujarat by the Space Applications Centre (Ahmedabad) using the Landsat TM Data shows in detail the geomorphology of the Tapi estuary (Shaikh *et al.* 1989: 41–48). At the mouth of the river, there is active formation of mudflats of various types: low tidal, inter-tidal and high tidal. The low tidal flats or shoals remain submerged and can be dangerous for approaching watercraft. *The intertidal flats become periodically submerged with the diurnal rise and fall of tides. The high tidal flats do not generally get submerged and remain above the high tide mark. Further inland, the mudflats give way to dunes or stabilized beach sands. The dunes extend along the shores north of the Tapi upto the river Narmada. The dunes indicate the old shoreline as also do the palaeo-mudflats. Patches of relict alluvium occur on the palaeo-mudflats. The new alluvium formations are represented by the cliffs along*

the river Tapi in the estuarine zone. At Kamrej and its vicinity, the alluvial cliffs rise 5 m above the grassy floodplain on the left bank of the river Tapi. Similar cliffs can be seen on the opposite (right) shore of the river. As noted above, the main mound at Kamrej has archaeological deposits overlying an elevated alluvial feature. Prof. S.N. Rajguru, who inspected the cliff formations at Kamrej, is of the opinion that the alluvial sediments deposited close to the river bank (including the alluvium deposited at the base of Kamrej Mound) are younger than those located away from the river. Many high alluvium features in the vicinity of Kamrej are being levelled by mechanised excavators. Unfortunately, the main mound at Kamrej was also subjected to such diggings. The levelling of the alluvial mounds is doubly profitable for the earth-diggers. Large volumes of excavated earth are readily acquired by house and road builders and the land, having being levelled, is then fit for cultivation of crops. Interestingly, the banks of the river Tapi at Kamrej do not have the usual riverine sand but a matrix of millions of stone pellets mixed up with riverine silt and sand. These pellets are usually found on the sea shore and their presence indicates tidal activity in the Tapi bed near Kamrej. Huge pumps have been placed in the middle of the river Tapi at Kamrej by private contractors. The pumps suck the sludge of pellets and silt from the river. The sludge is separated from the water, loaded onto trucks and sold as road filling material.

An intensive geological investigation of



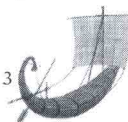
the Kamrej Mound and its environs is planned for the next season.

PROTOHISTORIC AND EARLY HISTORIC SETTLEMENT PATTERN

In prehistoric times, the Tapi estuarine zone was sparsely inhabited by Mesolithic communities migrating from the upper reaches of the Tapi Valley. The Neolithic phase is virtually absent in the region. The Chalcolithic people established permanent settlements in the Tapi estuarine zone. The Chalcolithic settlement nearest the sea is Malwan. The site is located in a basin formed by *nullahs* flowing into the Tapi, at a place less than 2 km from the Gulf of Khambhat. Excavations at Malwan have brought to light a 'Late Harappan to post-Harappan Chalcolithic' culture in Period I levels (Joshi 1989). The other excavated Chalcolithic sites in the Tapi estuarine zone are at Jokha and Dhatva. Both settlements are located within Kamrej Taluka. The Chalcolithic occupations at these sites is recorded between 1500–1000 B.C. (Mehta 1989; Mehta and Chowdhary 1975; Mehta *et al.* 1971). The pottery at the Chalcolithic levels at Dhatva is described by the excavators as a 'mixture of the Harappan, Malwa and Black and Red Ware groups (Mehta and Chowdhary 1975). The pottery from Jokha is also similar (Mehta *et al.* 1971). The Chalcolithic settlements in the Tapi Estuary show that the people made mudbrick structures, were adept at exploiting local agate, chalcedony and jasper nodules to make stone tools, used copper implements, consumed rice and had contact with the

Late Harappan people of Saurashtra. In a way, the Chalcolithic people were the first to create a resource use and exchange network in the Tapi estuarine zone.

There seems to have been a desertion of Chalcolithic sites in the Tapi estuarine zone in the transition from 2nd-1st millennium BC (Mehta and Chowdhary 1975). An arid phase may have been the cause. An increase in aridity is indicated by sterile post-Chalcolithic levels in western India in early 1st millennium BC (Shinde and Yasuda 2001: 100–102). The estuarine sites of Malwan, Jokha and Dhatva show Early Historic-Historic period reoccupation considerably after the settlements were abandoned by the Chalcolithic people. At Jokha and Dhatva, the sites in vicinity of Kamrej, the Early Historic reoccupation is dated to 5th century BC. At these sites, the Early Historic phase continued till the early centuries AD. In particular, Early Historic Dhatva functioned as an exclusive iron manufacturing centre. The Dhatva metallurgists acquired limonite and haematite ores available in exposed laterite beds along the river Tapi. Dhatva shows the most intense activity in the BC-AD transition, with the appearance of brick houses, greater quantities of iron slag deposits and the presence of Roman amphorae fragments. The latter indicates trade with the western world (Gupta 1998a: 87–102). The evidence from Dhatva has strong implications for the investigations at Kamrej. The fact that Kamrej is the largest Early Historic site in the Tapi estuarine zone and a likely port suggests that it was serviced by



the smaller settlements. Howell and Sinha have explored smaller Early Historic sites downstream of Kamrej; at Rander and Variav (Howell and Sinha 1994: 189–199). The Early Historic settlement pattern, site hierarchy and resource use trends in the Tapi estuarine zone need to be worked out in terms of interchange between Kamrej and other sites in the region.

PREVIOUS ARCHAEOLOGICAL WORK

The site of Kamrej was first prospected by archaeologists from the erstwhile Baroda State in the thirties and the report published by the Baroda State in 1935-36. A respected elder of Kamrej village, Thakurbhai Narottam Bhai Patel, who witnessed the visit of the archaeologists from Baroda State told one of us (SG) that large brick walls and revetments were visible on the river facing sections of the main mound. He also informed that the archaeologists from Baroda recovered a good number of coins from the site. In the fifties, Kamrej was prospected by Dr. B. Subbarao and his colleagues from the M.S. University of Baroda (Subbarao 1958). Subbarao identified Kamrej with the settlement of Kammanes listed in the *Geographia of Ptolemy* (2nd century AD). In 1961, the Archaeological Survey of India declared the site to be a protected monument under the Antiquities and Archaeological Remains Act of 1958. The mound of Kamrej was intermittently visited by archaeologists from the Archaeological Survey Circle Office at Baroda and by archaeologists from the Gujarat State Archaeology Department. In

1992, the mound was prospected by Dr. Sunil Gupta of the Allahabad Museum as part of his doctoral research on ancient Indo-Roman sea trade. Gupta identified Kamrej with the settlement of Kammoni mentioned in the Greek sea guide *Periplus Maris Erythraei* (Gupta 1993: 119–127). The site was again prospected in the year 2000 by a team comprising Dr. V. Shinde of the Deccan College, Dr. Sunil Gupta of the Allahabad Museum and Dr. D. Rajgor (Shinde *et al.* 2002: 73–82).

LAYOUT OF THE MAIN MOUND

The main archaeological mound at Kamrej (KMJ) is marked as Plot Number 500 in the map of Kamrej Panchayat. The site has been subjected to large scale illegal excavation by local contractors. The lifting of tonnes of occupational deposit by mechanized excavators has drastically changed the contours of the mound. Fig.2 shows the present contours of the mound. KMJ is roughly rectangular in layout. The mound rises almost 31 m above the river. It is situated between altitudes 9 m and 42 m from the MSL (Mean Sea Level). This mound is 238 m east-west in length and 112 m north-south in width. The spread of the mound along the river is approximately 200 m (Plate IA). The archaeological deposits lie over 5 m high alluvial sections. KMJ forms a bulwark against the rising waters of the Tapi during the monsoon season. The locals say that the mound protects Kamrej village from getting flooded. KMJ may have been a fortified settlement making use of the elevation of



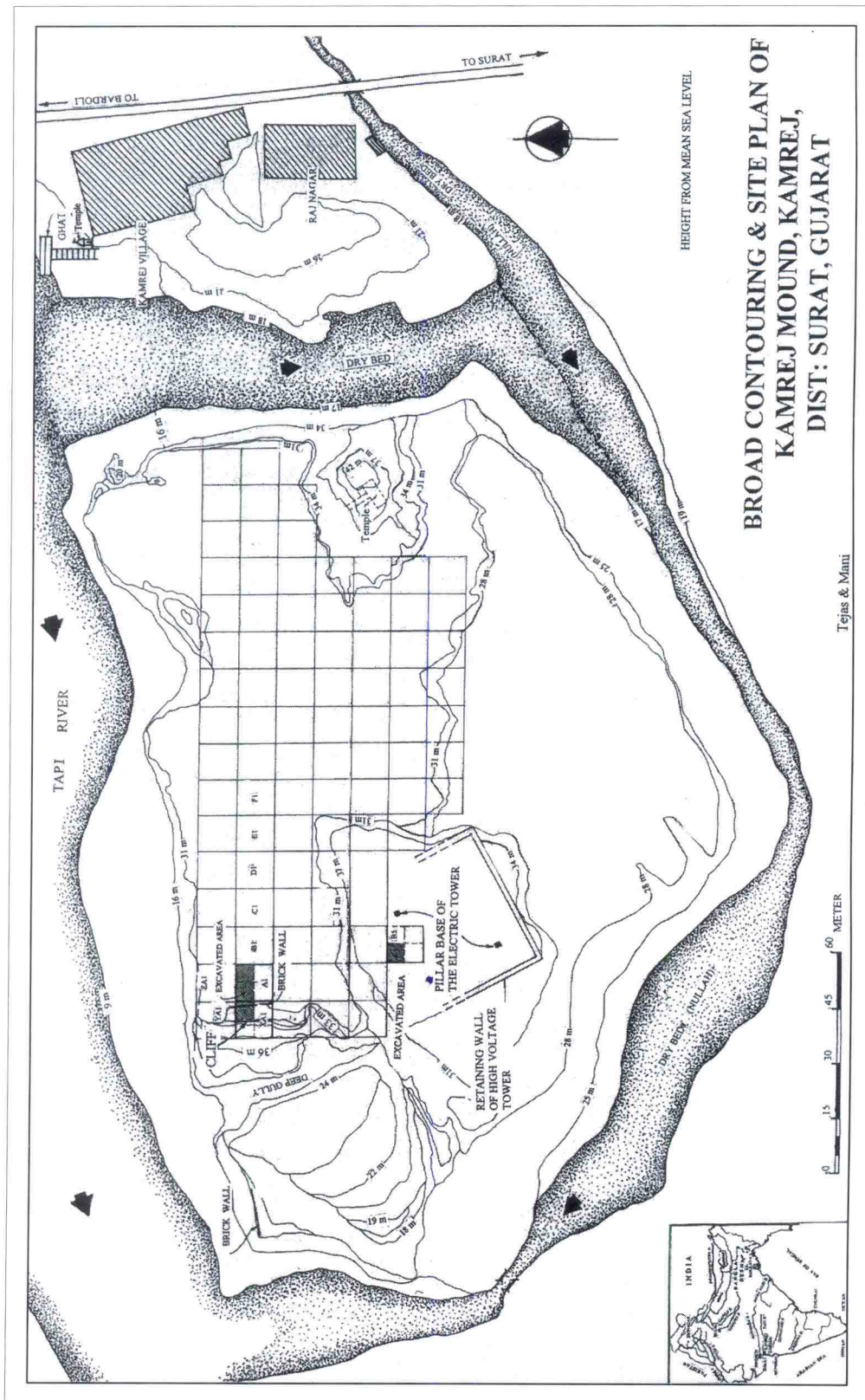


Fig.2. Drawing showing the mound and the excavated areas at Kamrej in 2003



the natural cliff sections and the surrounding water bodies (Plate IIA). The river Tapi flows on the northern flank of the site. A seasonal arm of the Tapi cuts around the eastern flank of the mound. The western and southern flanks of the mound are abutted by a deep nullah which skirts the site and debouches into the Tapi. The nullah and the seasonal arm of the Tapi fill with rain and the rising flood waters during the monsoons, isolating the entire mound for a week. The view of KMJ gained from the river shows the corners to be rounded like bastions. However, this could be a feature created by the erosional activity of the Tapi. The mound has extensive deposits of ashy earth mixed with pottery. At a number of places the exposed sections show pottery kilns and ash lances, indicating that there was an intensive ceramic industry at the site (Plate IIB, IID). The archeological and natural features of the main mound are described in detail below.

OUTER PROFILES OF THE MOUND (Fig. 2)

East Face: The sides of the mound are steep on the east face. The base is skirted by the silted bed of the seasonal arm of the river Tapi. This inflow of the Tapi receives water during the monsoon season and remains flooded for 10 days. The bed of the stream is extremely fertile and is used to grow vegetables. The elevation of the mound on the eastern side is about 15 m from the bed of the seasonal arm of the river Tapi. The natural soil elevations at this side are estimated to be about 8 m from the dry bed, above which is 5 - 7 m of cultural deposit.

There are at least three mound formations opposite the seasonal bed of the Tapi on the eastern flank of the mound. The mound opposite the eastern face of the mound, marked as Bābā Mound has a *dargah* to a Muslim *pir* constructed on it. Prospections of the Bābā Mound indicated that there may have been an Early Historic occupation here, close to the seasonal stream. A nullah cuts between the Bābā Mound and another mound further east which has the tomb or *mazhar* of the Bābā. This feature has been named the Mazhar Mound. Further north-east of the Mazhar Mound is yet another Early Historic mound but most of it has been cut up to make way for the Rajanagar Housing Colony. Remains of the mound indicate Early Historic occupation.

North Face: The northern face of the mound abuts the floodplain of the river Tapi (Plates IA, IC). The north-western and north-eastern corners of the main mound have a rounded bastion like appearance. From the river the bastion-like effect is quite pronounced. Whether the 'bastions' are the result of river action or have been formed by human agency needs to be investigated. The sides of the mound rise sheer about 10 m. The basal elevations, comprising the river alluvium, are 5 m thick above the floodplain. The archaeological deposits overlie the natural mud-sections. The north-eastern corner is heavily eroded by river floods. The layers of river alluvium deposits are clearly visible on the eroded sections. The north-western corner of the mound is better preserved than the north-eastern corner.



The north-western protrusion on KMJ has been named the Cliff Mound. On the inner side of the Cliff Mound is the scraped section called Cliff Section. The Cliff Section (Fig.3) shows three structural phases. Prospections of the outer face of the Cliff Mound (facing the river) indicates that there are structures underlying the sloping sides. In fact, the structural features (parts of fired brick walls) exposed on the Cliff Section are intergral to the structures indicated below the surface on the river facing side of the Cliff Mound. Therefore the Cliff Mound needs to be carefully exposed from outside to uncover the structures. Such an exercise will give an idea of the nature and function of the structures. Also, the relationship of the structures with the river will become clearer.

A deep gully cuts into the site just beside the Cliff Mound (Fig.2). The deep defile is caused by the flood waters of the river Tapi. A prospection of the gully showed that there are parts of fired brick walls exposed on the upper levels of the defile. These bricks measure the same as those exposed on the Cliff Section. The Cliff Section walls belong to the early centuries AD and most likely the ones in the gully are of the same date. It is our hypothesis that the deep gully beside the Cliff Mound represents the old opening into the mound from the river. The gorge with baked brick structures may have enclosed a sheltered water body into which watercraft may have entered at high tide.

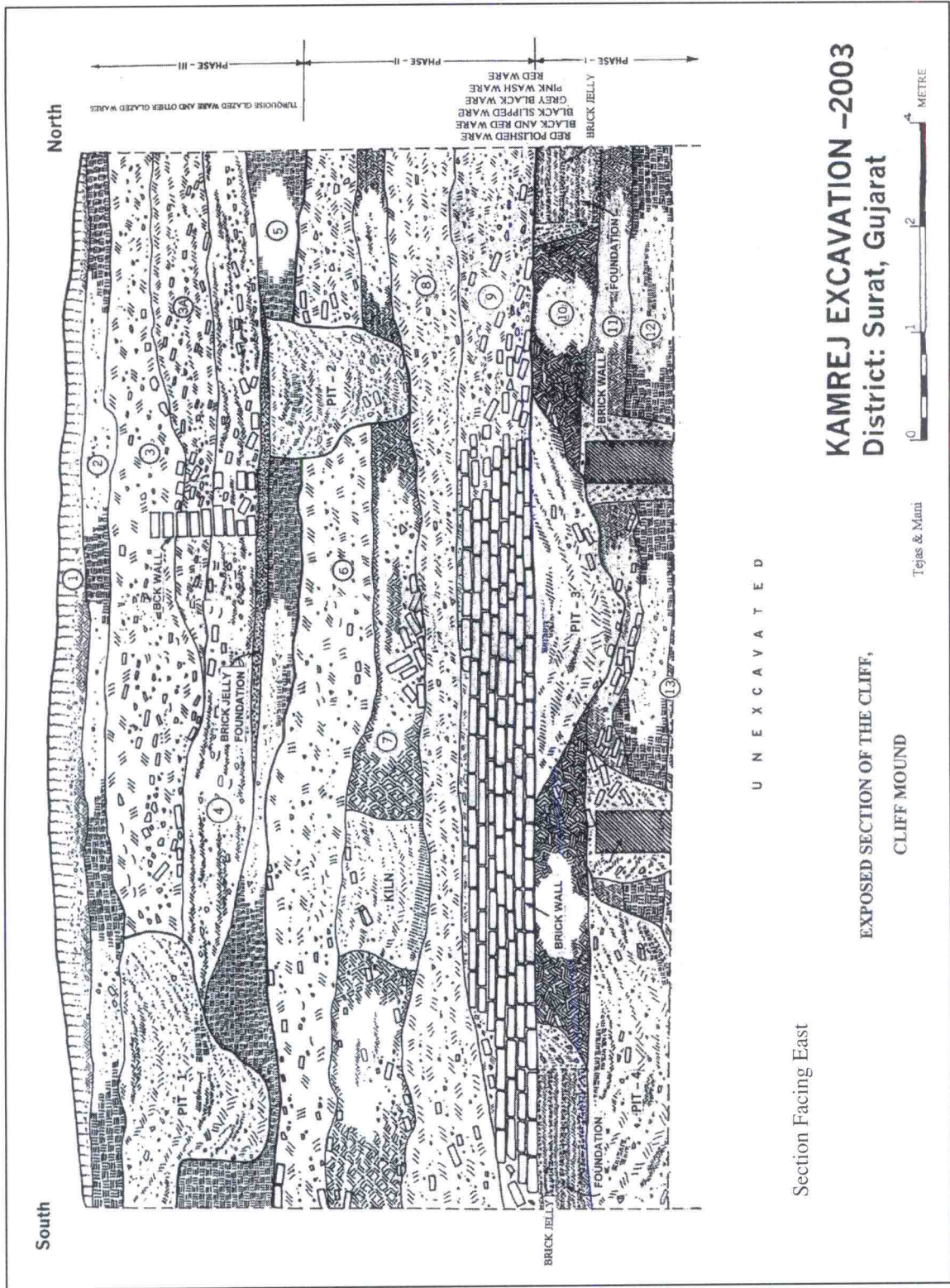
The archaeological deposits extend further south of the Cliff Mound and along the riverbank. About 15 m west of the Cliff

Mound are two brick courses exposed longitudinally in the vast ashy deposits. The walls constitute of inordinately large size bricks. The courses are close to the water level. The presence of these structures belies the notion that archaeological deposits at Kamrej only overlie the high cliff sections. The detailed description of the large bricks exposed near the river Tapi is provided below in the section on 'Structures'.

West Face: A deep nullah flows past the western side of the mound and then takes a sharp turn to skirt the southern side. The nullah debouches into the river Tapi on the northern side of KMJ. The western side of the mound is not sheer like the northern and eastern faces. The alluvial banks, covered with shrubs slope down to the nullah. Prospections of the sides of the mound revealed alluvial cover right upto the top. There is no evidence of pottery on the slopes. However, the alluvial slopes flatten out about 8 m above the nullah level and strike against the occupational deposits on the mound proper. The relationship of the archaeological deposits 'inside' the mound and the alluvial formations making up the sides of the mound has to be properly established.

South Face: The southern side of the mound is skirted by a nullah. The alluvial deposits rise at least 3 – 5 m from the nullah level after which the archaeological deposits are observed. Terraces have been cut into the slope and vegetables like brinjal are grown by the villagers. The nullah has little water in it during the dry winter and summer but





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Fig.3. Section showing various structures and levels excavated at Kamrej in 2003

fills up in the monsoons. In effect the mound is surrounded by water channels on all four sides.

To recapitulate, the river Tapi flows right below the northern face of the mound; the seasonal arm of the river abuts the eastern face and the nullah skirts the western and southern base of the mound. The main mound at Kamrej resembles a *jal durg* or water fortress.

ARCHAEOLOGICAL FEATURES ON THE MOUND (Fig.2)

It may be noted that the present configuration of the mound came about as a result of illegal mechanized digging of the archaeological deposits in the year 2002 by local contractors. Prior to that the contours of the mound were very different. At present about 60 per cent of the surface of the mound has been transformed into flat ground. Examination of the large 'playing field' area showed that it is still archaeological deposit and not natural soil. At three places, there are archaeological features rising from the flat (archaeological) surface. These are at the north-western, western and south-eastern parts of the mound. We have termed these the **Cliff Mound**, the **Tower Mound** and the **Temple Mound** respectively.

Flat Ground: The mechanized excavators used in the illegal diggings on the mound have cut large swathes of the archaeological deposits and created a flat ground over much of the mound surface. There are two elevations of the flat ground. The first elevation is indicated in Fig. 2 by the 31 m

contour line enclosing an area of approximately 75 square metres. The first elevation begins at the base of the Cliff Mound and ends in a steep (almost 90 degree) incline between the Tower Mound and the Temple Mound. The latter alignment has resulted in a long section. The section is indicated in Fig. 2 by the 31–28 m contour lines between the Tower Mound and the Temple Mound. The 3–4 m thick and approximately 90 m long section between the Temple and the Tower mounds shows mostly ashy deposit mixed with potsherds. Part of a fired brick structure (walls?) was observed in a part of the section. Remains of an iron making kiln (thick clay walls of kiln, crucibles and tuyeres) was found in the debris from the section close to the Tower Mound. The 'lower' elevation of the 'flat ground' begins at the base of the 90 m long section and ends at the south-eastern, southern and south-western edges of the mound. The 'lower' elevation is indicated by the 28 m contour line on the southern part of the mound. It encloses an area of approximately 45 square metres. The spread of pottery and other artifacts on the surface of the flat ground indicates that these are still archaeological surfaces and the natural soil is to be reached.

Temple Mound: A high mound rises in 'tiers' above the 'flat ground' on the south-eastern corner of the site. We have called this feature the Temple Mound. The highest point of KMJ (MSL 42 m) is at the top of the Temple Mound. The highest point is approximately 11 m above the flat surface of the mound,



indicated in the site map by the 42 – 31 m contour lines (Fig.2). The Temple Mound is so called because a sadhu has cut a cave into the mound and created a shrine. There are indications of structures underlying the topsoil on the top of the Temple Mound. A conical mound formation was observed by one of us (SG) on top of the Temple Mound on a previous visit to the Kamrej site in 1992. The feature was reported as the remains of an Early Historic iron furnace (Gupta 1993: 119–127). However, Howell and Sinha (1994: 189–199) exploring the mound in 1993 reported the projection on top of Temple Mound as the remains of a Buddhist stupa. A second visit to the site by SG led to the discounting of the earlier view of the projection as a furnace and the possibility of it being a stupa was accepted (Shinde *et al.* 2002: 73–82). Unfortunately, the conical projection on the top of the Temple Mound was flattened by the sadhu who built a thatched roof shelter on top. The feature, or what remains of it, shall be investigated in subsequent seasons.

Cliff Mound: At the north-western corner of the mound is an archaeological feature which has been named the Cliff Mound. It is protruding and rounded and slopes steeply to the flood plain of the Tapi. From the level of the flood plain, the Cliff Mound rises approximately 20 m. The outer surface (facing the river; looking north) is packed hard and indicates the existence of structures just below the surface. This is proved by the cutting on the inside of the Cliff Mound. We found that the Cliff Mound had been cut on

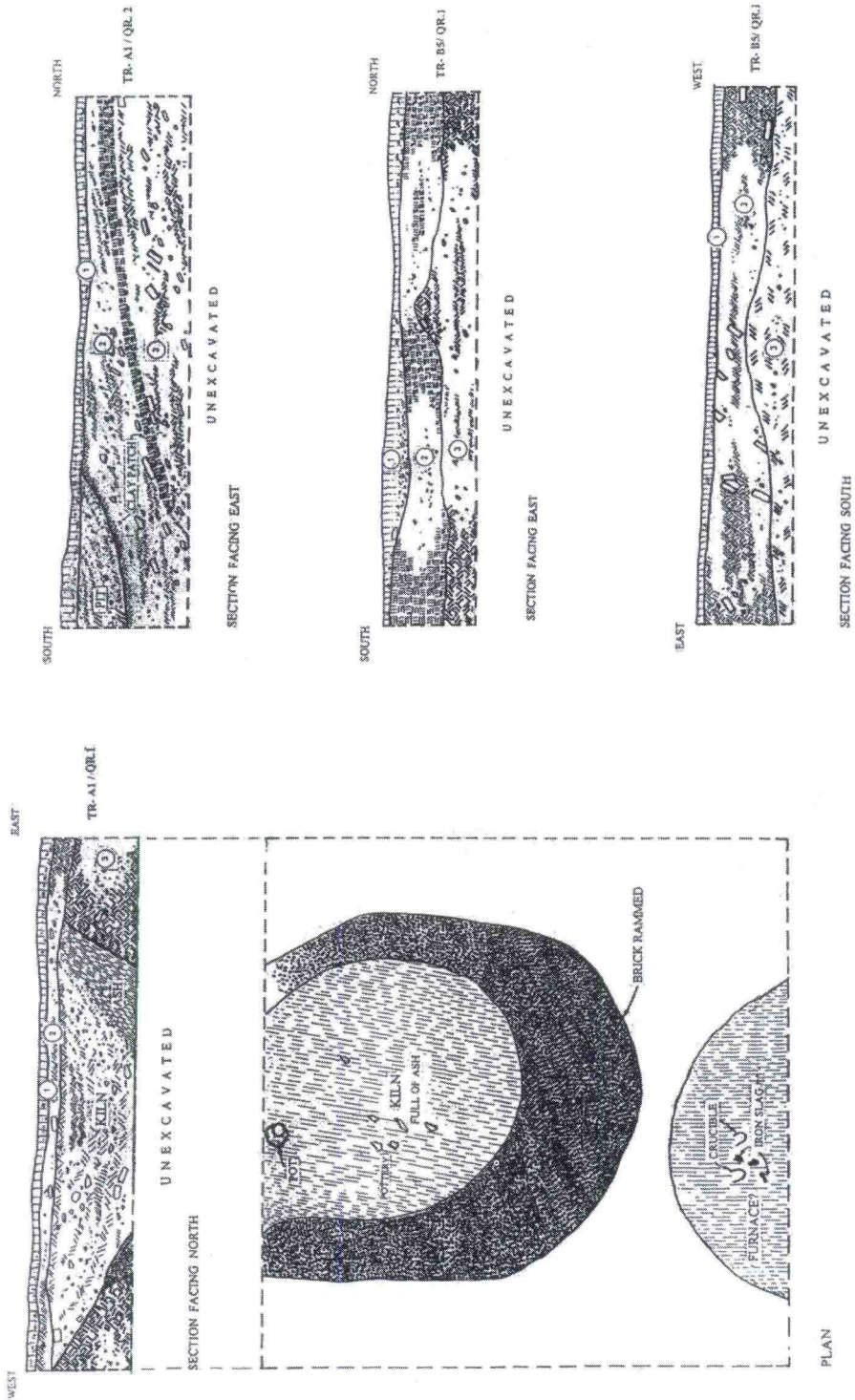
the southern (inner) side by the mechanized excavators. A vertical section has been created as a result of the cuttings. The Cliff Section shows evidence of successive phases of structural activity. Remains of fired brick walls are visible in the section and go deep into the mound. The Cliff Section is described in detail below.

Tower Mound: This elevated archaeological feature is situated close to the Cliff Mound. It rises about 4-5 m from the flat surface of the mound. There is a high tension electrical transmission tower on top of the feature which gives it the name Tower Mound. The base of the tower is demarcated by a low concrete wall which traverses three sides of the Tower Mound top. The fourth side is bare and the mechanized earth excavators have cut up a large portion of this (the eastern) side of the Tower Mound. In fact, the Tower Mound, like the Temple Mound, was formed as a result of the deep diggings and unauthorized lifting of tonnes of archaeological deposit. During a visit to the site in 1991 by one of us (SG), it was observed that there was no chasm between the Temple Mound and the Tower Mound. Previously the archaeological deposits came down in a gentle gradient from the top of the Temple Mound to the base of the transmission tower. Presently the exposed sections reveal high deposition of ashy deposit mixed up with pottery. There are no structures visible on the northern, western and eastern sides of the mound. Brick structures are visible just below the concrete wall on the southern side of the Tower Mound.



KAMREJ EXCAVATION -2003

District: Surat, Gujarat



Tejas & Mani

Fig.4. Plan and sections of the excavated trenches at Kamrej 2003



THE EXCAVATIONS (Figs.2, 3, 4)

Grid lines were established at intervals of 10 m over half the mound area. The trench lines were fixed at 10x10 m square. Each trench was divided into four quadrants: Quadrant 1 (northwest), Quadrant 2 (northeast), Quadrant 3 (southeast), Quadrant 4 (southwest). There was provision for baulks separating trenches and quadrants. The illegal removal of cultural deposit from a large area of the mound made it difficult to establish a field strategy. The rampant damage to archaeological formations left little area where the humus/topsoil was preserved. The priority was to obtain a vertical stratigraphy from humus level/surface to the earliest level of human occupation at the site. It was decided to scrape the Cliff Section and dig trenches at the base of the section so as to get a complete cultural profile of the site. Therefore the main trench A1 was established 3.5 m from the base of the Cliff Section. Subsequently a quadrant (part of Tr. AX1) was opened in this gap. A third trench (B5) was opened on top of the Tower Mound.

CLIFF SECTION (Fig.3)

The somewhat bow-shaped Cliff Section is approximately 17 m long. The Cliff Section does not present a uniformly vertical face. In height it is divided into two parts: from the top there is a vertical drop of 3 m to a 1.5 m high platform-like formation, left out during the destruction of the site by the earth diggers. The 3 m sub-section shows part of a burnt brick wall. The 1.5 m thick 'platform' reveals

two more phases of structural activity. The base of the 'platform' meets the flat surface of the mound.

An exposed area of 10 m length (east-west) and 4.5 m height (3 + 1.5 m) of the Cliff Section was carefully scraped and the layers marked. Twelve layers were demarcated. The description of the layers is as follows:-

Layer 1: This layer is humus; spreading uniformly with an average thickness of 30 cm. It is unconsolidated in nature and dark-brown in colour. It contains very few potsherds. The main components of this layer are clay and *kankar* with scrub vegetation.

Layer 2: This layer also appears uniform in the section, but is relatively thin, only 22 cm in thickness. It is differentiated on the basis of its dark grey colour. It contains small brickbats and potsherds which are comparatively higher in number than the first layer. This layer is semi-compact and is composed of silt. It shows the last desertion of the site.

Layer 3: This layer is approximately 73 cm in thickness. It contains a large number of brickbats. This layer is ashy-grey in colour. It is composed of sandy loose soil, ashy patches with charcoal and bone fragments. A sub-layer 3A is also differentiated within Layer 3 on the northern side on account of the presence of large number of brickbats (dove-tail layer). Layer 3 acts as a sealing layer for Pit Number 1 and the structure – a brick wall moving east-west located in the northern side of the section. This layer represents the remains of a work-area.



Layer 4: This layer is marked on both sides of the wall in layer 3. The behaviour of this layer is entirely different on each side. On the southern side of the wall it is quite thick, 80 cm (maximum) where it is cut down by the brick wall number 1. It is also cut down by Pit 1 in the extreme southern side; here the thickness of Layer 4 is reduced. It is light grey in colour, semi-compact in nature and contains very few brickbats and potsherds. In the northern side of the wall this layer is quite thin as compared to the southern side. In the eastern half it is on average 25 cm thick and light brownish-grey in colour. This layer also marks the remains of a work-place.

Brick Jelly Foundation:- The foundation is red in colour and is made of small brickbats of burnt brick, rammed hard in the earth. It is called *surkhī*. The foundation is provided to the base of the wall. The foundation has a uniform thickness of 10 cm. Stratigraphically, it is sealed by Layer 4, and it rests on Layer 5.

Layer 5: It is a thick and compact layer of grey colour at the base of the brick wall as well as in the base of Pit 1. The maximum thickness is 65 cm. In the southern side of the section, it is semi-compact and just beneath the brick wall it is compact. Very few brickbats and potsherds are seen in this layer. It is disturbed by Pit-2 in the northern side.

Layer 6: This layer is also mostly uniform all over the section with average thickness of 85cm. It is loose in nature, grey-brown in colour and contains very few brickbats and potsherds. This layer is also cut down by

Pit-2.

Layer 7: This layer is compact in nature, its maximum thickness is 82 cm in the south and it gets thinner in the northern side of the section. It is reddish-brown in colour, and it contains clay, sand, brickbats and bricks. A pile of fallen burnt-bricks is noticed in the central part of this layer. It has been provided with pebble soling. A kiln was made by cutting through this layer.

Layer 8: This layer is partially exposed. It continues in plan, hence, thickness cannot be determined. It also seals Structure-2, which is a Brick Wall No.2, extending in the east-west direction.

Layer 9: This layer is parallel to the Brick Wall No.2. This is present only in the northern side of the section. It contains brickbats, loose earth, potsherds and ash in the upper part. It is reddish brown in colour and almost 91 cm thick.

Layer 10: This layer is just beneath structure-2 and is composed of compact soil. There are relatively very few potsherds and brickbats in this layer. This layer appears to be an artificial accumulation of soil packed hard to provide a solid foundation for the structure above.

At the same level as Layer 10, two columns made of alternate layers of compact soil and brick jelly or *surkhī* are noticed just beneath the Brick Wall No.2 of Structure-2 on the southern and northern side. These are cut into Layer 10, so the thickness of this is almost the same as Layer 10: 60 cm. The width of the column in the northern side is 86 cm and the column in the southern side



is 1.3 m wide. This was, probably, a special foundation provided to support brick-pillars as well as a heavy structure (Plate IIE).

Layers 11 & 12: These layers are noticed only in the northern side of the section. Both these layers are made of compact soil, but they are differentiated on the basis of colour. Layer 11 is reddish-brown in colour and contains brickbats and potsherds. Layer 12 is made up of compact earth and is dark brown in colour, devoid of brickbats.

PITS

Pit-1: This is seen in the southern side of the section. It is sealed by Layer 3. It cuts through Layers 4 and 5 but only partially, and it rests on Layer 5. This pit is 2.30 m wide and 1.40 m in depth, composed of very loose soil containing sandy silt, potsherds and brickbats.

Pit-2: This is in the northern side of the section. This pit is sealed by Layer 5 and a brick jelly or *surkhi* layer. This pit has cut down Layers 6 & 7 and Layer 8 partially, on which the bottom of the pit rests. This pit has loose grayish soil with ash and sand. The vertical depth of the pit is 1.30 m and the width on top is 1.20 m and at the bottom it is 70 cm.

Pit-3: This is sealed by the brick wall which belongs to structural phase II. This pit is composed of loose soil of dark brown colour and contains lots of brickbats and silt. This pit is 3.80 m wide on top and 90 cm in depth.

Pit-4: This is located on the southern side of the section. The complete dimensions of

the pit are not known as it is only partially exposed in the section. The width on top is 3.20 m and the apparent depth is 90 cm.

KILN

A kiln has been located in the southern side of the section. It is sealed by Layer 6. This kiln is cut into Layer 7 and continues deep down in Layer 8. The kiln is composed of loose red soil in the peripheral area and grey ash in the core. The samples of charcoal lumps and cotton threads (?) were recovered near this kiln (Plate IB).

Trench AX1/2

The flat area at the bottom of the Cliff, towards the east, was selected for regular excavation. The section facing east of Trench XA1/2 constitutes the platform of the Cliff Section. Layers 10, 11, 12 and partially exposed layer 13 are parts of Trench AX1/2. Two parallel brick walls, running east-west, were exposed. Fallen bricks from both walls were noticed in between them. This structure is sealed by layer 10 and dissects layers 10 and 11 and rests on layer 13.

Trench A1/1 (Fig.4)

Quadrant 1 of Trench A1 adjoins Trench XA1/2. From this trench, the 'flat ground' extends almost 150m to the south. This quadrant was excavated upto a depth of 82 cm.

Layer 1 can be equated to Layer 13 of Tr. XA1/2. But here, being the surface layer of the trench, it is treated as Layer 1 of Trench A1/1. This layer is very thin (7cm) and is composed of silt and sand and is dark grey in colour. Antiquities from this layer include monochrome drawn glass bead; 'hopscotch'



made from pottery; arecanut shaped terracotta beads (or spindles?).

Layer 2 is 11 cm thick, quite compact in nature and light brown in colour, containing very few potsherds. A thin patch of ash is noticed on the plan on the western side of the quadrant of this layer. This area has revealed iron slag in some quantity and a few fragments of crucibles. A terracotta stamp with inscription in Brahmi script of 1st-2nd century A.D. was recovered from this layer. Also fragmented terracotta figurines; shell bangle fragments; worked columella shells.

Layer 3 is quite thick and compact with light grey colour. It is visible on four corners of the quadrant. In the central part of this quadrant there is a huge pit of a kiln made for firing pots which is full of ash, loose sand, potsherds and a few complete pots. The thickness of layer 3 and the kiln is almost the same, 54 cms.

KILN (Fig.4; Plate ID)

A large pottery kiln was excavated in Trench A1/1. The kiln was sealed by Layer 1 and cut into layers 2 & 3. As evident in section and plan (Fig. 4), the kiln is enclosed by a thick wall of fired clay rubble. The firing area was found to be full of pottery of various fabrics and types. Among the conspicuous ceramics were remains of large storage jars.

Trench A1/2 (Fig.2, 4)

It is the adjoining quadrant to A1/1. This quadrant was excavated upto a depth of 76 cm, and it revealed three layers.

Layer 1 has an average thickness of 11

cm. This is dark grey colour and loose in nature. Antiquities: bangle fragment of glass.

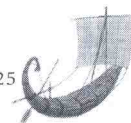
Layer 2 is composed of loose earth, ash and potsherds. This is sloping, very thin in the eastern side (10 cm) and gets thicker towards the west (upto almost 24 cms). Layer 2 and Layer 3 are separated by a thin patch of compact clay which is also sloping from east to west. The average thickness of this patch is 10 cms. Antiquities: fragment of copper vessel; an iron fragment square in section; a polished piece of shell and shell bangle fragment; worked columella shells; 'hopscotch' made from pottery; copper bead; arecanut shaped terracotta beads (or spindles?) in good quantity.

Layer 3 is composed of loose silt, sand, potsherds and brickbats. The maximum thickness of this layer is in the northern side (53 cms). It slopes towards the west and merges with the ground without meeting the other wall section.

A portion of a pit is noticed between Layers 1 & 2 close to the western section of the quadrant. It contains loose soil and ash. The maximum depth of this pit is 21 cm.

Trench B5/1 (Fig.2, 4)

Trench B5 is located on the Tower Mound. The tower is situated in the western portion of the mound. Trench B5, Quadrant 1 was sunk on the eastern part of the Tower Mound. This is a relatively less disturbed area as compared to the other areas of the mound. The Tower Mound is close to the river. The surface of the Tower Mound is about 24 m high relative to the floodplain of the river Tapi. Considering these facts, the location of



the trench at this spot was thought to be appropriate for obtaining an Index Trench. The excavation here could not proceed to the natural soil. Only 63 cm of excavated depth was recorded in Trench B5/1. Three layers were demarcated.

Layer 1, or the humus layer of B5/1 is very compact and is dark grey in colour, containing few potsherds with an average thickness of 10 cm. Antiquities: Fragments of blue and black glass bangles; piece of iron slag.

Layer 2 is compact, with ashy-grey colour. The average thickness of this layer is 29 cm, containing good number of potsherds, brickbats and antiquities as compared to the previous layer.

Layer 3 is also compact soil, but loose as compared to the previous layers. The average thickness of this layer is 20 cm. It is light brown in colour and is composed of clay, sand, potsherds and brickbats. Floor levels or pits were not encountered in this quadrant. Antiquities: fragmented terracotta figurine of animal; fragments of black, yellow and white glass bangles.

STRUCTURES

Cliff Section (Fig.3)

Phase III Structure

Exposed burnt brick wall in Phase III. Breath: 25-26 cm; thickness: 6-7 cm. Most of the part of the wall is destroyed. It is difficult to explain the function of the wall.

Phase II Structures

Remains of a large fired brick structure held up by rammed brick and mud foundations

marks the second phase of the Cliff Section. There are 7 courses of bricks (Plate IIC). The average brick size was found to be 46-47 cm length, 24-25 cm breath and 6-8 cm thickness. Some of the bricks in the lowermost course are rather thick (thickness 8-10 cm) and heavily vitrified. The lowermost course rests upon a compact deposit of soil full of pottery. The almost horizontal alignment of the lowermost course of the wall resting on the deposit indicates that the compact deposit was a packing/rammed mud prepared as a foundation for the brick structure on the upper level of the section. The bricks were joined with thick and coarse lime, or *chūnam*, mortar. The pottery recovered from the compact deposit included shards of the typical Red Polished Ware (RPW) sprinkler generally dated to the early centuries of the Christian Era (Plate VB).

The large size of the structure as well as the solid foundations in the form of rammed earth and columns made of alternate layers of brick-jelly *surkhi* and compact clay, suggest that the structure was large and served a civic function. The artifacts associated with this structure include finished beads of glass and semiprecious stones, iron nails and possibly, cotton thread. It is possible that this structure was used to store finished goods. In the forthcoming season, this possibility can be tested by exposing the structure in plan.

Phase I Structure

The wall in the lowermost level of Cliff Section appears in alignment in XA1/2 and parts of it are seen in the section facing east in A1/1.



It may be pointed out that the brick sizes of the three major wall section on the Cliff and XA1/2 are the same. It is difficult to determine the nature of the two parallel walls belonging to Phase I. Very limited area of this structure is exposed in Trench AX1. Possibly, it served some industrial function. A more clear picture will emerge with further digging.

River Section Structures: The Jetty? (Plate IIF)

Two parallel walls were noticed in the western side of the mound. These walls are at the bottom of the mound, just 2 m above the river level. They are oriented in the north-south direction. In between the walls there is clay deposit bereft of any cultural material. However, there are occupational deposits striking the walls on the 'outside' on either side. The pottery recovered from these deposits is coarse red ware. There was no diagnostic artefact to suggest a firm chronology of the wall. The top of the structure is completely covered by several metres of soil. Hence the exact plan of the structure could not be determined. The wall on the eastern side has 10 courses of burnt bricks and the wall on the western side has 7 courses which are visible. The courses seem to continue as the rest look buried in the soil. The distance between the two walls is 2.50 m. The bricks are inordinately large and measure on an average 60 x 40 x 10 cm. This size is considerably more than the bricks exposed in the Cliff Section. The soil in between the two walls is entirely different from the soil on the outer side. The soil outside the walls is sandy clay, brown in colour and contains pottery. The soil in

between the two walls is light grey in colour, mostly silt deposit devoid of any potsherds.

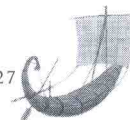
The pottery associated with this structure is mostly coarse red ware, not very diagnostic to define its period. This structure is situated in the lowermost level of the habitation mound. It is just 11m away from the river. The brick size and the use of lime mortar suggest that it was a heavy duty structure. The nature and location of the settlement suggests that Kamrej was an important port-town. It is likely that the two walled structure close to the river was a jetty.

Brick Courses at Base of Temple Mound

Remains of fired brick structures were observed on the northern base of the Temple Mound. The structures seem to be remnants of large walls. Two parallel courses of brick work are visible in the ashy sections. The sections have appeared due to the illegal mechanized excavations. It is evident that walls extended further north, possibly to the very edge of the mound. There are two indicators for this. Remains of a brick wall were observed on an ashy section at the edge of the mound. This section faces the exposed brick section at the base of the Temple Mound. A great amount of brick debris was observed on the open ground between the two sections facing each other. It appears that the illegal mechanized diggings have destroyed portions of the large walls extending from the Temple Mound.

Bricks Exposed in Deep Gully

Courses of fired bricks were observed on the upper part of the deep gully which cuts into the mound beside the Cliff Section. The brick



work was seen on both sides of the defile. The length and thickness of the exposed bricks on the side of the Cliff Mound was 45 cm and 7 cm, respectively. Further exposure of the brick work in the deep gully is required to see the extent of the revetment and to get full measures of the bricks. The brick reveting on the sides of the deep gully indicates that the deep gully along the Cliff Mound may have been a wharf. The defile must have allowed flood waters from the Tapi or high tide waters to enter and small watercraft could operate with ease.

Wall Section in South Face of Tower Mound

A brick wall section was observed on the southern face of the Tower Mound. A careful scraping of the section and collection of artefactual indicators could provide a clue to the date of the exposed wall.

STRATIGRAPHY & CHRONOLOGY (Fig.3)

The excavations were limited this season. The natural soil was not reached in any of the trenches. However, the Cliff Section presented a stratigraphic profile from the humus level down to the trenches sunk on the 'flat ground'. The main trench A1 was sunk near the base of the Cliff Section; approximately 3.5 m from the line where the Cliff Section met the flat archaeological deposit that makes up most of the mound surface.

Stratigraphic connections were established between the Cliff Section and the trenches (AX1/2, A1/1) at the base of the Section. The connection is indicated by the structural feature in Phase 1 which extends

into the quadrants AX1/2 and A1/1 at the base of the Cliff Section. There is continuity of layers from the top of the Cliff Section to the bottom of Trench A1/1. The stratigraphic profile presented by the sequence of layers in the Cliff Section and the trenches XA1 and A1 was studied to obtain a working chronology. The chronological markers comprise of diagnostic pottery, brick size standards, coins, and a Brāhmī inscribed stamp.

The chronological indicators from the Cliff Section and in the adjoining trenches are as follows:-

Phase III: Painted Blue and Turquoise Blue Glazed pottery, found just below the humus (Plate IIIA); the remains of a brick wall with the average brick size 45 × 25 × 6 cms.

Phase II: A thick wall forming the head of the platform exuding from the Cliff Section. The brick size is the same as in the Phase III structure. The pottery from Phase II comprises polished red ware of thick quality, grey-black wares and black-and-red wares.

Phase I: Remains of a fired brick structure below the thick Phase II wall. The brick size is the same as in the Phase III & II structures.

Trenches XA1 and A1: As specified above, the bottom layers of the Cliff Section are synonymous with the excavated section of trench XA1, Quadrant 1. The adjacent sounding, Quadrant 1 of Trench A1 has 3 layers. The terminal layer of the excavation is layer 3 of Trench A1/1. The potteries recovered from both the trenches are classical Early Historic types dating to the early centuries AD. These include the fine Red Polished Ware. A terracotta stamp with



Brāhmī inscription was recovered. Its palaeography is attributed to the 1st-2nd century AD (Plate IIIC). Also, a highly worn copper coin of the same period with beaded border and faint outline of elephant on one side was found (Plate IIIB).

The structural phases mark the chronological sequence of the Cliff Section stratigraphy. Interestingly, the same sizes of bricks were used in all the three structural remains marking the phases in the Cliff Section. The brick dimensions (45 × 25 × 6 cms) conform to the standard of bricks used across northern and western India during the Kshatrapa–Kushana Period (1st–4th century AD) of Indian History (Gupta 1998b: 74–78). While brick size solely cannot be a valid chronological marker, a broad periodic dating on this basis is acceptable. The three structural phases, therefore, represent rebuilding activity within the Early Historic period. It was observed that the Early Historic pottery types tended to get coarser in Phase III. For instance, the fine Red Polished Ware is absent in Phase III. The pottery in Phase III can be attributed to the end of the Early Historic period: 3rd–5th century AD. The uppermost layers of the Cliff Section yielded a batch of glazed wares of possible Iranian origin. These are comparable to glazed wares excavated recently from the site of Sanjan on the western coast between Kamrej and Mumbai. These sherds have been tentatively attributed a date of 9th-10th century AD. With these considerations in mind, the tentative chronology proposed for the excavations so far is as follows:

CHRONOLOGY

Uppermost Level of Cliff Section (Layer 1): 9–10th century AD.

Layer 2 of the Cliff Section indicates desertion after Phase III.

Phase III of the Cliff Section (Layers 3-5): 3rd–5th century AD.

Phase II of the Cliff Section (Layers 6–9): 2nd–3rd century AD.

Phase I of the Cliff Section (Layers 10–13) and layers 1–3 of Trench A1: 1st–2nd century AD.

SUMMARY OF THE RESULTS

The excavations were not extensive and the natural soil could not be reached in any of the trenches. However, a careful study of the archaeological features, sections and the limited stratigraphy provided insights into the nature and function of the site. In particular, the sequence of layers which continued from the Cliff Section into the trenches XA1 and A1, presented a near complete stratigraphic profile. The excavated potteries, artefacts, botanical material and the structural features allowed understanding of the material culture and the chronology of the ancient settlement. The preliminary results indicate that ancient Kamrej flourished in the BC-AD transition. The settlement witnessed intensive structural and industrial activity during the early centuries AD.

The evidence also points to Kamrej being an Early Historic port having overseas contacts. There is high likelihood that the river facing structures at Kamrej, particularly those on the Cliff Mound, may be the remains



of wharfs and storage areas. Of course the structures need to be thoroughly investigated before arriving at a definite conclusion.

The site is uniquely located on the estuary of the river Tapi, close to the sea yet protected from the tides and shoals of the Gulf. The situation of Kamrej is similar to Early Historic estuarine ports such as Bharuch on the Narmada and Hathab near the Gulf of Khambhat.

The overseas contacts of Kamrej are indicated by the presence of foreign ceramics. A shoulder and (bifid) handle of a vessel recovered from the surface has a shape typical of an amphora, the double handled transport jars made in the Mediterranean (Plate IV B). However, the gritty red fabric of the handle piece is dissimilar to amphora made in the Mediterranean region. It is surmised that the handle is part of a locally made vessel modelled on a amphora (Preliminary observation by Dr. Roberta Tomber of Southampton University and Dr. Sunil Gupta of the Allahabad Museum). A ribbed bodysherd from the surface of the Cliff Section can be positively identified as part of a Aqaba amphora (or Ayla-Axum type) produced in the northern Red Sea region between 5th–7th century AD (Gupta 2002: 79–82). Glazed Ware fragments obtained from the uppermost level of the Cliff Section may be imports from the Persian Gulf region.

Kamrej was a manufacturing centre for several commodities. There is evidence of crafting of shell (columella) into bangles (Plate VC), glass and stone bead making (Plates IVC, IVE), extensive pottery making

(especially large storage jars) and iron manufacture (Plate IVF). A fibrous material recovered from Phase II of the Cliff Section and Trench A1/1 seems like cotton thread (Plate IB). The fibre is being analyzed at the Deccan College, Pune. The discovery of good quantity of charred rice close to the pottery kiln in Trench A1/1 is also interesting.

The kiln produced large storage jars and other transport pottery. The kiln was located close to the river Tapi, at the point where heavy structures overlook to the river (Plate ID).

The indications of cotton and food grain dumps/storages in the river facing structures at Kamrej corroborate references in the *Periplus* to cotton and cereal exports from western India to arid West Asia (*Periplus* sections 14, 31, 32). The prolific occurrence of iron slag from the Cliff Section and all the trenches connects with the *Periplus'* information that Indian iron was exported from western India to the Red Sea region. It is possible that the site of Dhatva, located a few kilometers upstream of Kamrej, supplied iron to the port¹. The reference in the *Periplus* to the import of Indian iron from the district of Ariaca is significant as the term connotes the area of Kamrej (*Periplus* section 41).² The context as a whole is suggestive of overseas trade. There are several reasons to identify Kamrej with the settlement of Kammoni mentioned in the *Periplus Maris Erythraei*, the Greek sea-guide which vividly describes the maritime trade between Roman Egypt and India during the 1st century AD.

Though no remains of ancient

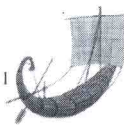


watercrafts were found at the site, indicators of water vessels plying on the Tapi in Early Historic times were recovered. A number of thick iron nails from the excavations were bent almost ninety degrees. These thick iron nails, hammered and bent upwards, are still used to secure the planking of river boats on the Tapi. A piece of burnt rope with the knot still in place was recovered near the Kiln in trench A1/1. This can be compared with a knotted rope type reported from the Roman harbour of Berenike on the Egyptian Red Sea coast (Wendrich and Veldmerjer 1996: 259–269). The point of emphasis is that knotted ropes near major waterbodies signify, among other things, a maritime function. Various types of knots are necessary for binding masts, yardarms, oars, etc. of riverine and deep sea watercraft. Since Kamrej is being excavated with a view that it was an ancient port, it will not be amiss to correlate the excavated material with artefactual data from other contemporaneous ports in the Indian Ocean rim with which Kamrej may have interacted.

The ceramic assemblage is typical of the Early Historic sites of western India (Sonali Gupta: this volume). The main pottery types from Kamrej are also to be found in the Early Historic sites of northern India, signifying the material cultural connections between the two regions. Among the fine wares the Red Polished Ware is present, including the ubiquitous ‘sprinkler’ forms. The Red Ware categories extend to the Coarse Red Ware forms comprising utilitarian vessels. A diagnostic type of Red Ware from Kamrej is

a bowl with flaring sides. These bowls occur in Early Historic sites in western and northern India and are dated to the early centuries AD. Another conspicuous Red Ware form comprises thick storage jars with large rounded rims. These big Red Wares were mostly excavated from the kiln in Trench A1/1. Variations of the Red Ware from Kamrej have been categorized as Plain Coarse and Burnished Red Wares. Among the black wares, the most common was a greyish-black pottery with a thin slip. The vessel types in this particular fabric comprised mainly bowls. A coarser form of grey-black ware, tempered by rice husks, is also a common find at the site. Interestingly, similar coarse ware vessels of everyday use, such as the cooking vessel of *bataloi* type with carinated profile, occur on the Egyptian Red sea coast in contexts dating to the early centuries AD (Personal communication: Roberta Tomber). The possibility of a connection between the two similar but widely displaced wares is being investigated through petrological studies. The basic red ware and black ware categories became coarser in Phase III contexts. To achieve a definite ceramic seriation of the Kamrej pottery requires a larger excavated context.

The excavations conducted during this season yielded a rich variety of artefacts. The bead finds included faceted glass beads imitating precious stones. These ‘imitation’ beads were actively traded across the Indian Ocean and are to be found in far flung sites such as Ban Don Ta Phet (Thailand), Arika-medu (south India) and Tissamaharama (Sri



Lanka). Agate nodules and unfinished agate beads indicate stone bead making at the site. The prolific finds of columella shells in various stages of being finished into bangles leaves no doubt about a rich shell crafting industry at Kamrej. Pieces of a green and blue glass were excavated from Trench A1/1. The provenance of the glass fragments needs to be determined.

The terracotta finds comprised roof tiles, spindles and terracotta figurines. The roof tiles, mainly recovered from Trench A1, are diagnostic artefacts of the early centuries AD. These tiles are ubiquitous in Early Historic sites in western and northern India. A stone sculpture depicting Vishnu was excavated from Trench A1. Two worn copper coins, possibly of the Kshatrapa period, were found along with a stamp inscribed in Brāhmī

script of the early centuries AD. These artefacts came from a localized area of digging: two quadrants of Trench A1. The variety of finds from this trench are striking: iron slag, glass, clay and stone figurines, columella, spindles, cotton fibre (?), Brāhmī inscribed stamp and Kshatrapa coins. Further excavations will show whether the rich artefactual finds are a feature of the site as a whole or restricted to the Cliff Mound area near the river Tapi.

The preliminary findings in the 2003 excavation season at Kamrej suggest that the site was an Early Historic port, having a rich agricultural resource base and thriving iron, bead and shell crafting industries. Ceramic indicators point to Kamrej's long distance contacts with the Red Sea and Persian Gulf regions.

NOTES

¹Dhatva was excavated by archaeologists from M.S. University, Baroda (Mehta and Chowdhary 1975). The diggings revealed a two-period cultural sequence: Period I and Period II. During Period I Dhatva was occupied by a copper-using community from 1500 - 1000 B.C. After a gap of 500 years, Period II Dhatva was occupied by a community of ironmakers sometime in the 5th-4th century B.C. The settlement continued to flourish upto the 3rd century A.D. after which it was finally abandoned. All the three layers making up the Pd.II deposit have yielded iron slag in profuse quantities suggesting that Early Historic Dhatva was a specialised craft village engaged in iron manufacture throughout the period of its existence (Mehta and Chowdhary 1975:48-56). The Dhatvan metallurgists exploited the locally available haematite and limonite ores (Mehta and Chowdhary. 1975:49-50). That Dhatva was producing large quantities of the metal is indicated by the fact that the iron slag deposits found were 'of the order of several thousand quintals' (Mehta and Chowdhary 1975:48).

²In section 41, the *Periplus* refers to the larger territorial entity of the 'country of *Ariaca*.' This 'country of *Ariaca*' is equated with the 'beginning of the Kingdom of Nambanus', i.e., the territory of the Kshatrapa monarch Nahapana (Schoff 1912/74:175). We know that Nahapana ruled over the entire area comprising modern Gujarat, the adjoining Malwa highlands and parts of northern Maharashtra. Keeping this in view we can equate the 'country of *Ariaca*' with present-day Gujarat, the core area of Nahapana's kingdom. The question, however, is: was the 'district of *Ariaca*' a constituent of the 'country of *Ariaca*' or were the terms used in the same general sense, i.e., interchangeably, by the *Periplus* author? There is reason to believe the former. Essentially, the two terms denote two different geographical configurations. There was indeed a 'smaller' *Ariaca* which did not cover the whole of Gujarat. This is indicated by the fact that the word *Ariaca*, like its equivalent *Larika* used by the geographer Ptolemy, happens to be a Hellenistic corruption of the Prakritic *Latica* (Schoff 1912/74:174-175). The geographical term *Latica* (shortened to *Lar/Lata*) specifically denotes the contiguous estuarine areas of the rivers Mahi, Narmada and Tapi. Significantly, the places mentioned by Ptolemy under *Larika* also belong to this coastal tract (McCrinkle in Shastri 1927:33). Thus, in effect, the author of the maritime guide seems to have used the term *Ariaca* in two ways: the 'district of *Ariaca*' referring to the lower Mahi, Narmada and Tapi area and the 'country of *Ariaca*' denoting the extended Gujarat region.



Acknowledgements

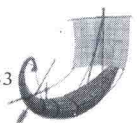
We are extremely thankful to Dr. Shashi Kant Matakari, M.B.B.S. of Kamrej for his all round support to our work and tending to people falling sick or getting injured not only during the work but also after the work. He managed a place in his old house to keep all the belongings of the excavations in safe

custody till we return for excavations again. We are extremely indebted to him and to his wife who always played hosts to us.

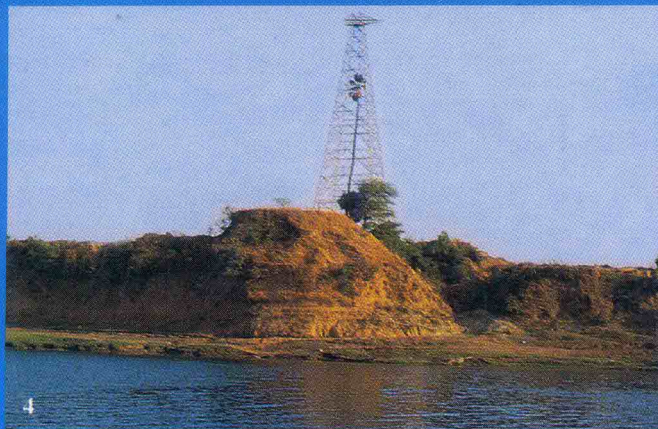
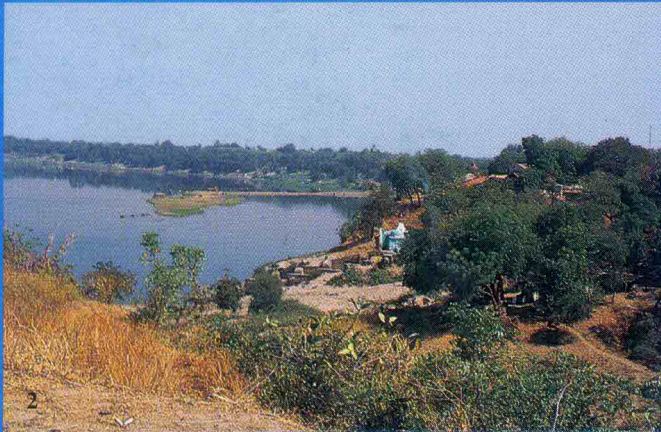
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Views of Kamrej Site and Excavations



1. General view of the section facing east of the cliff mound
2. The Kamrej mound on the R. Tapi

3. The Temple mound at Kamrej
4. The cliff and tower mounds at Kamrej

Kamrej: General Views and Excavated Trenches



A. Kamrej: General view of the mounds



C. Kamrej: The cliff mound on River Tapi



B. Kamrej: Lump of Cotton(?) threads *in situ*



D. Kamrej: An excavated trench with kilns

Antiquarian Remains at Kamrej



A. Kamrej: Brick structure facing Tapi river. 1st-2nd centuries A.D.



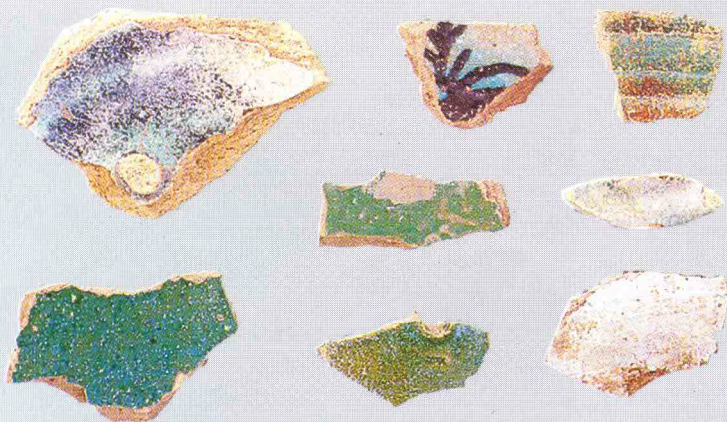
D. Kamrej: Cliff mound: Remains of kilns. 1st-2nd centuries A.D.



B. Kamrej: Burnt brick structures set in coarse lime mortar. 1st-2nd century A.D.



E. Kamrej: Surkhi floors 1st-2nd centuries A.D.



C. Kamrej: Glazed Ware shreds. 9th-10th century A.D.



F. Kamrej: Copper Coin. Early Centuries