CHAPTER 5:
NATURE AND CONTEXT OF THE SITES

5.a. Introduction
In this chapter, an attempt has been made to investigate the context of the explored sites. The archaeological record without proper contextual reference leads to an inaccurate understanding of sites. The data from the present study area has limitations, since there is only a single excavated site in the entire river valley and a large part of archaeological record, in this area, has been documented from the surface. Besides the surface remains, artefactual evidences in the form of potteries have also been found from the cultivated fields, river sections as well as the mound areas, where they lie in a buried context. Geographical parameters governing the landscape of the study area have been considered to be primary in this endeavour.

Direct interpretation of behaviour from the archaeological record in terms of single events and episodes is not possible as the accumulation of the archaeological record takes place subject to a host of post-depositional processes, both natural and cultural. The chief task of the archaeologist is to identify these processes through a series of operations in experimental archaeology, ethnoarchaeology and geomorphological studies. So it was imperative to understand the site formation processes that have affected the formation and preservation of the sites in the present study area. The investigator has tried to group the sites according to the varying contexts and study the associated soils and sediments to understand the geological and geomorphological processes that have occurred through ages and shaped up the present landscape. The survey methodology was devised accordingly, covering both the low density and high density scatters within individual sites (see chapter 3 for survey methodology).

5.b. Site Formation Processes: Methodology to understand sites

Archaeological sites can be defined as places where significant traces of human activity are identified and in order to reconstruct past human activity at a site, it is crucially important to understand the context of a find. The difference between a
'find-spot' and a 'site' needs to be understood while undertaking surveys. Context is usually defined as a four-dimensional spatial-temporal matrix that comprises both a cultural environment and a non-cultural environment and that can be applied to a single artifact or to a constellation of sites (Butzer 1982). Pottery, stone artefacts, and archaeological features at a site can be weathered, sometimes to the extent of being destroyed. Artefacts can also be moved and redepósited. Artefacts that are found in the exact position where they were last used or affected by human behavior are designated as being in primary context. In contrast, archaeological artefacts that have been dislodged from the primary context by biologic or geologic agencies are designated as being in secondary context (Rapp and Hill 2006). The artefacts coming from sites situated near the river valley are often subject to displacement due to the effect of flood waters and even surface run-off. In the present study area, it has been observed that from some sites, potteries were also found in a secondary context in the rain gullies.

Scholars have argued for the assessment of archaeological finds in terms of systemic context and archaeological context, which can be evaluated through site formation processes. During each stage of site formation, a set of cultural (C-Transforms) and natural processes (N-Transforms) may occur, leading to specific and identifiable material manifestations (Schiffer 1972, 1976). These material manifestations are directly related to environmental conditions, the geomorphological context and the nature of activities performed. According to Schiffer’s approach, artefacts in a systemic context undergo cultural transformation, hence it is necessary to investigate the life history of materials, determining how consumable artefacts were procured, maintained, prepared, used, consumed and recycled before they were discarded. Moreover, once incorporated into the archaeological record, the way in which natural processes “distorted” cultural pattern has to be understood. Cultural and environmental regularities are considered of utmost importance for sorting out the operation and result of diverse processes. Hence, in order to understand the sites in totality, the finds in association with the soils and sediments are necessary to be noted in order to get an idea about the archaeological context of the finds.

For better understanding of the major aspects of site formation, archaeologists have initiated research programmes in ethnoarchaeology, geoarchaeology and experimental
archaeology (Paddayya and Petraglia 1995). Geoarchaeology implies archaeological research using the methods and concepts of earth sciences. The range of techniques that have the potential to be applied to geo-archaeological goals is derived from several sub disciplines and is therefore almost unlimited. The principal aim of such studies is to select those procedures that, within the constraints of available financial and human resources will yield the results most critical to proper evaluation of a particular context (Butzer 1982). From a geo-archaeological perspective, artefacts that form archaeological sediments are a special kind of geologic deposit. They are a biostratigraphic deposit. Sediments and soils provide a matrix in which the deposits associated with the artefacts may be described. Geomorphic and sedimentologic studies offer the tools to determine the appearance of ancient landscapes (Herz and Garrison 1998). In this regard, the paramount role of geology in archaeological studies, today, can no longer be debated.

While understanding the formation processes of archaeological record, it is desirable to identify the finds in a stratigraphic context. But during exploration in the present study area, the materials which were either buried or exposed on the surface had to be studied and understood from a different perspective. For this, it is vital to understand the geoarchaeological aspects that reflect the nature and context of the sites. Extensive surveys were conducted in order to check every location within individual sites. The sites have been categorised according to the varying contexts from which the artefacts were found. The soils and sediments could only be studied in the case of the sites having exposed sections. For interpreting the landscape, geological maps and Geographical Information System has been used as tools.

5.b.1. A brief overview of studies on Site Formation Processes

The application of geoarchaeology in India, is still in the process of development and needs to be conducted at a much larger scale. The use of specified techniques and a holistic understanding of the site formation processes have been more prevalent in the domain of prehistoric studies. Traditional emphasis was placed on documenting culture-stratigraphic relationships, with many sites occurring in secondary or derived context. Of profound importance for palaeoanthropological studies in India, archaeologists began to recognize that primary sites existed in various geographic
areas and in frequencies they were much greater than previously acknowledged (Paddayya 1978). Intensive investigations were undertaken in the Hunsgi and Baichbal valleys, Karnataka where over one hundred Acheulian sites have been identified (Paddayya 1982). The prehistoric investigations in the Raisen district of Maharashtra and the middle Son valley also deserves mention in this regard (Petraglia 1995). Considering that formation processes are very different in open-air sites and rock-shelter contexts, scholars have also focused on actualistic studies that have been conducted to analyse extant systems so that the material results of processes can be observed. Special reference needs to be made to the prolonged palaeoenvironmental and geomorphological studies undertaken by scholars like R.V. Joshi, S.N. Rajaguru, Pappu and Deo (Paddayya 1994). The realization of processual perspective in the recent years has introduced radical changes in research strategies. The vertical, river-course oriented field studies have given way to a lateral approach in which areas lying away from major rivers have been taken up for intensive surveys. These surveys accord special attention to the study of primary sites and their locational settings, and the recovery of biological materials from the sites (Petraglia 1995).

In Bengal, some recent attempts have been made by scholars to understand the archaeological sites of the different micro-regions encompassing the western uplands, alluvial regions of north, south and central Bengal (Sheena et al. 2002). Scholars have made an attempt to understand the relationship between changing landscape and archaeological sites from the late Pleistocene to the mid-Holocene period in selected regions within West Bengal. This study revealed that in the late Pleistocene, early hunter-gatherers occupied the present sub-humid parts of the western uplands which were then relatively arid. During the middle to late Holocene, a low energy flood plain environment dominated in the alluvial parts of West Bengal, while in the last 200-400 years there has been the prominent development of sandy levees. This study revealed that the chalcolithic to early medieval occupation occurred in a low energy flood environment where sites were not exposed to catastrophic floods but only “nuisance” floods (Sheena et al. 2002). The archaeological settlement pattern as evidenced by the scholars seems to be a diverse one governed by low energy intensity floods and vagaries of shifting rivers.
Roychoudhury has recently made an attempt to study the past dynamic landscape of the Ajay River Valley and the past settlement pattern through geoarchaeological methods of analysis (Roychoudhury 2002). Similarly Gangopadhyay has based his study on some preliminary observations of the artefacts and natural site formation of the early historic sites in Rupnarayan-Hugli Estuary (Gangopadhyay 2008). From these studies, it is evident that sites located in different sub-regions of Bengal have to be perceived according to the immediate landscape and have to be understood within a regional perspective. Studies on site formation processes are still at its infancy and needs to be practiced on a much wider scale. The investigator has tried to adopt same methodology and understand the different geological and geomorphological aspects that have affected the sites in the river valley.

5.b.2. The nature and context of sites in the study area.

Before a detailed discussion on the methodology adopted for studying the context of the sites is initiated, it is important to discuss the nature of sites in the study area. The explored sites in the study area can be placed into two or three categories on the basis of the varying contexts of the archaeological finds. Some sites have been identified from the archaeological record found from the surface. Again, a group of sites have been identified on the basis of the archaeological record collected from the cultivated fields. The third group of sites has been identified from the exposed sections noticed near the rivers or in the peripheral areas of the mounds. In the third instance, archaeological artefacts are still buried under the existing mounds. These three types of data have been studied with different methodologies keeping the limitations and the objectives in mind. The investigator tried to study the site sedimentary contexts, the spatial extent of the artefacts in the individual sites and the morphology of the artefacts in order to study the context of the sites in the river valley.

Artefacts in the form of ceramics were noticed from the surface in most of the sites lying close to the river and also away from the river on local lateritic outcrops (where artefacts become dispersed). From these surface scatters, it was difficult to determine whether they were exposed from the beginning or were buried with layers of deposited sand which was somehow exposed due to the effects of deflation, surface run-off or tillage. The first group of sites having such scatters had a more or less
uniform spread of potsherds which were found to be concentrated on the mounds, near the ponds or beneath some old banyan tress as well as in different locations within the sites. Such areas were found to be strewn with potteries. The morphology of the pottery samples helped in ascertaining whether they were dislodged from their original context. In a few instances, they were found to bear signs of abrasion and patination indicating their secondary context. Some rolled specimens of potsherds were also recorded from some of the sites. Unfortunately, most of the early historical ceramic wares and the specimens of black and red ware were collected from the surface. They were not found in any exposed section unlike the medieval wares. The spread of the potteries in most of the sites were obliterated by ponds, modern houses, cart-tracks and hence, no sampling techniques could be adopted to record the finds intensively. Moreover, these sites are mostly inhabited by the present population and hence quite a few sites are buried below the habitations, because of which the extent of the occupational debris could not be estimated.

A second group of sites was identified on the basis of the collected potteries from the cultivated fields. In some of the sites, where samples were collected from the cultivated fields, the potteries were found to have an abraded surface and were quite fragmentary. This may have been due to the effect of ploughing. Scholars have identified factors that must be considered when using plow zone archaeological material for analysis (Lewarch and O’Brien 1981). The artefacts in such a context are generally subject to (a) lateral displacement, (b) vertical displacement, (c) changes in class frequencies, (d) alteration of form and content of features, and (e) changes in condition and preservation of artifact assemblages (Lewarch and O’Brien 1981). But with all these problems, scholars have considered the study of surface phenomena with several useful generalizations, such as isomorphism of surface to subsurface assemblages conditioned by depth of deposit, erosional regimes, and cultural features (Lewarch and O’Brien 1981). The potsherds collected from the cultivated fields in the present study area, were no doubt slightly disturbed due to lateral and vertical displacements, with some changes in appearance where the slip was washed off. Still in others, they were found to be quite fragmentary. In such cases, the samples were cross checked with the rest, collected from other locations within the site or had to be collected from the freshly ploughed areas. But, it was observed that, due to the use of traditional plough in most of the villages, the extent of each dig is not more than 6 - 8
cm. Some villages, having developed infrastructural facilities switched to more improved mechanism of tillage, thereby disturbing the archaeological record. The practice of crop rotation in the villages helps in checking soil erosion but with specialised irrigation methods noticed in some villages, the original context of these field areas has suffered large-scale disturbance.

The third group, which comprises only a few sites, was identified on the basis of the pottery from the exposed sections. These exposed sections enabled the researcher to study the geological deposits in association with archaeological artefacts. The sections mostly revealed medieval potsherds. The artefacts of the earlier periods like black and red ware or early historical phase generally come from the lower levels of a site; but exposed sections extending to the base of the habitation deposits were scarce and hence, the sections revealed only medieval pottery.

The present channel pattern has helped the researcher in forming a picture of the erosion and depositional activities of the river and partly the effect of floods (both catastrophic and nuisance floods) on the sites\(^1\). The channel pattern is said to be dynamic in both space and time because it is controlled fundamentally by the distribution of erosive forces and resisting forces along channel boundaries and in this case, the meandering channel of Dwarakeswar is not an exception. River systems are generally sensitive to changes in climate, tectonic changes, vegetation and human landuse patterns. In rapidly migrating channels, much material can be lost due to lateral bank erosion, whereas floodplain aggradation can bury and therefore obscure archaeological features (Clevis et al. 2006). In the present study area, both the events have been responsible to a large extent in shaping the landscape. Thus archaeological record is not a complete record of human activity, but a filtered record modulated by geological processes.

As mentioned earlier, a major part of the archaeological record has been noted from the surface. Surface survey has its own limitations as mentioned earlier (see chapter 3 for details). Nevertheless from the appearance of the potsherds, it was possible to determine whether they occur at all in a primary context. Secondary context of the potsherds was determined in few sites where they were found with an abraded or patinated surface; probably these were transported from the interior parts of the
village through surface-runoff. The study is thus largely based on field observation of
the potteries, soils and the channel form of the river (both present and past). The
excavated site of Dihar was considered to be a significant marker in order to
understand these sites. The potteries collected from these sites were all typologically
related with the excavated potteries. Though there were some differences in surface
treatment occurring to due to abrasion in case of the samples in secondary context, but
the forms were identical. The potteries coming from the rest of the explored sites, in a
primary context, were comparatively easier to assess and were studied in the same
manner.

From sites like Dejhat, Palasi, Patlapur, Prakash, Malakarpota, Banshi, Chaltakonda
and many more, ceramics of the three chronological periods were collected from the
surface. In most of the cases, the finds belong to a primary context and were found in
association with sand (greyish in colour). All these sites fall within the older alluvium
zone. From sites like Rajagram, Patlapur, Salkota and Mukundapur, potteries were
found from a secondary context. These specimens were found with an abraded and
patinated surface. The sides of the potsherds were rolled and less angular. The red slip
in most of the cases was found to have disappeared from the surface turning buff in
colour. These potsherds were mostly collected from the rain gullies and must have
been washed out and deposited from the elevated lands within the sites. For sites,
located on the local lateritic outcrops, away from the main river, determining the
chronology was a bit difficult because the fabric of the potteries does not bear much
resemblance with the ones found from the site Dihar. From all these sites, the
ceramics were collected in association with lateritic pellets and sand. These areas,
with undulating ridges and valleys exhibit different grades of resiliﬁcation process of
the lateritic outcrops, through which the lateritic pellets are formed. Soils in these
areas are well drained, susceptible to rapid external drainage or run off and are ﬁlled
with lateritic pellets. These pellets have been grounded and used as inclusions for
pottery making as understood from the pottery samples collected from these areas.
The core of the potsherds reveals minute stone particles and due to the absence of
pure clay, the surface of the potteries is also very rough with a different surface
treatment.
Coming to the third group of sites with exposed sections, it should be mentioned that all of them revealed medieval potteries and the associated soils and sediments could be studied unlike the earlier group of sites. It has to be stated that, the researcher could only clear out the vegetation and bushy outgrowths from the exposed sections. The exposed sections encountered in some of the sites are a result of both natural (erosion) as well as anthropogenic factors (Pl. VIII D). Fluvial processes have the potential to obscure, expose, or even destroy portions of the archaeological record (Clevis et al. 2006) and Dwarakeswar is not an exception in this regard. The samples of potsherds and soils collected from the exposed sections of the sites have been studied in accordance to the changes in colour, texture and the associated artefacts, which helped in putting the finds to a chronological framework. The pottery samples collected from the layers were kept separately with the associated soil samples. But no scientific analysis of the soils could be undertaken. In understanding and depicting the nature of the soil, local terms have been used to describe the soil types. The soil was compact and hard in some cases due to pedogenesis and it was not so easy to expose the potteries or bricks by clearing out the exposed section. In some of the sites (like Prakash, Chandipur, Patlapur etc.), potsherds were traced in the exposed river sections but were found to be in disturbed patches due to the exposure to natural factors like erosion.

From all these evidences it seems that the sites in the river valley have been subject to both erosional and aggradational activities due to which a considerable part of archaeological evidence is either exposed in some sites, or buried in some. Moreover, anthropogenic factors have also brought a change in some. In the following pages, detailed discussion on eleven sites with the exposed sections has been presented with an overall observation of the nature and context of the archaeological record as revealed from the sites.

Geographical Information system has been used in the present study for drawing the site maps and also for demarcating the older channels and the lesser order streams. The maps and the imageries have been geo-referenced and produced by mainly ArcGIS, Erdas Imagine Softwares. Detailed schematic drawings of the exposed sections of sites and site maps have been prepared for a better understanding of the record.
Moreover the soil and physiographic maps of the district have helped in understanding the immediate landscape of the sites.

5.c. The Investigated sites

A. Pantrai (73M/12, 87°34'30"E, 23°5'4"N)

This is a habitational site, standing on the left bank of the river at 40 m above MSL. It is situated within Indas Block and Amrul Gram Panchayat. The entire village is divided into two sections- Opor Pantrai and Niche Pantrai. Archaeological record in this village has been observed as scatters and in buried context as well.

The village stands on the levee of the Dwarakeswar river over which a habitational mound is situated in the southern part of the village. This mound is locally known as Damodar dhipi (see map 7). In instances like these, it is very difficult to differentiate between a mound and a levee since both of them stands in a slightly elevated position in comparison to the surrounding land mass and in this case has merged with each other. The archaeological record was found buried in this mound area. But the peripheral areas of the mound have been eroded to a large extent by erosive action of the river as well as anthropogenic action, revealing the archaeological record. The Damodar temple (late medieval) standing on the top of the mound has helped in the preservation of the mound.

During survey, artefacts were found to occur in and around this mound area as scatters and also in the exposed sections of the mound. The concentration of artefacts extends from the mound area in the southwest, till the Thakur para area of the village. But leaving aside the mound area, no other exposed sections were noted. The collected samples of pottery were all found in association with a fine layer of sand, both on the mound as well as the surrounding areas. However, the concentration of sand as well as potsherds was found to be decreasing towards the Thakur para area. From the rest of the village, modern potsherds were noted. The potteries collected from the Damodar dhipi and the Thakur para areas were all medieval. From the nature of artefact distribution, it seems that the medieval settlement was confined to the southern part of the site, near the river. Already a large part of the mound is
destroyed and it seems that the river has progressed more towards the site in the recent days.

During exploration the mound rising about 2m from the ground level was thoroughly investigated. The exposed section of the mound in the north western part was quite impressive. From this part soils have been removed by the villagers for some construction purpose. This section was taken up for study. Samples of pottery were collected from this exposed section. The sections revealed profuse amount of potsherds most of which were medieval.

The exposed section was cleared and taken up for further study. The horizontal width of the section was 2m 70 cm and the vertical profile was 2m 40 cm. The whole section was divided into four layers, from the top according to the change in soil colour and artefact concentration (Pl. VIII A, Fig: 3).

Layer I: The first layer (approx. 45 cm) was demarcated as surface humus, devoid of any cultural material excepting few fragmentary potsherds.

Layer II: The second layer (approx. 44 cm) was of Entel mati as locally called i.e. hard compact clay, dark grey in colour without any evidence of sand. This layer was completely devoid of any cultural material and can be considered as sterile.

Layer III: The third layer (approx. 107 cm) showed the concentration of do-ansh mati i.e. soil having equal proportions of clay and sand. This soil is generally considered to be very fertile and suitable for agriculture. In this layer a good concentration of medieval potsherds were noted.

Layer IV: The fourth layer (approx. 74 cm) showed the same type of soil composition but was differentiated from the third due to some changes in the appearance of potsherds. The potsherds in this layer had an abraded appearance in comparison to the preceding layer. The sherds in this layer were found to have been applied with an ochrous slip on both the surfaces (similar specimens were noted at the site Dihar from the pre-Malla or early medieval phase; see chapter 4 for details).
The continuation of the cultural materials in the lower levels was difficult to assess because the exposed area revealed only the above mentioned layers. For looking into the earlier periods, trial digs are necessary.

From the study of these finds it is evident that the site is completely medieval, at least to the extent to which the section has been exposed. The habitation in this part of the site in the medieval period was continuous but a break was noticed as seen from the sterile layer. The sterile layer seems to be low intensity flood deposit. The amount of sand was negligible in the layer. The potteries collected from the sections (layers III and IV) were all placed in the medieval category. The nature of the soil in both these layers was similar pointing to the fact that the nature of the soil was similar throughout the medieval period. The last layer yielded potteries which were typologically similar to the ones collected from the early medieval phase (Pre-Malla) of the site Dihar. Since, at this stage it is difficult to comment on early medieval pottery of Bengal, they have been placed in the medieval category. Anthropogenic factors have helped in the preservation of the site and at the same time, natural factors have destroyed the site to a large extent. The temple standing on the top of the mound has prevented the villagers to level out the mound completely. But unfortunately, the present channel of the river being closer to the mound area, has led to the destruction of a large area on the southern part of the mound. Episodic erosional and aggradational activities have shaped the present landscape of the site.

![Diagram of Pantrai excavation layers](image)

**Fig: 3**
Map 7. Site Map: Pantrai
The site lies on the left bank of the river at 40m above MSL. The site falls within Bishnupur subdivision, Mongalpur Gram Panchayat and Indas Police Station. The site can be approached through Indas. On the opposite bank of this habitational site stands the site Malakarpota (early historic site) which has been mentioned in one of the earlier chapters (Chapter 3). The name of the village is spelt as ‘Parikshapara’.

According to the villagers, Parikshapara was originally under the administration of a legendary king Parikshit, of some unknown lineage. In the course of initial survey, a continuous rampart wall (medieval period) and a moat was traced running through the western part of the village (Pl. V A). The rampart was quite obviously constructed for protecting the village from the floods of the river Dwarakeswar and the village can actually be considered as ‘Parikhapara’ (Parikha meaning rampart). From this site, the archaeological record was traced both from the surface as well as from the exposed sections (see map 8).

The village stands on the levee of the river and the modern floodplain areas lying adjacent to the rampart have largely been converted into agricultural fields. Agriculture is practiced on a large scale throughout the village. The rampart stands at the western and peripheral part of the village which is adjacent to the river. The rampart wall rises about 4m from the ground level. All along this rampart wall, potteries were traced, both in embedded form and also from the surface. The ceramics collected from this area were entirely medieval. It seems in all probability the rampart was built during the medieval period because the associated potteries found from this area were medieval. Adjacent to the rampart wall, small mounds were noted with scatters of pottery. The concentration of pottery was less in the interior parts of the village.

The mounds noted next to the rampart, in the northern part of the village, have been interrupted by a cart-track that has divided the area and hence, parts of these mounds fall within the adjacent village Behar. The main big mound, in the northern section of the village is locally known as ‘Pir Babar Dhibi’. In the central portion of this mound, a small pit has been dug, probably by the villagers, in order to locate a big stone pillar which was visible from the surface. However, the actual significance could not be
ascertained. In the south western part of this mound, some potsherds were noted in an exposed context. This exposed section was cleared and taken up for further study. Besides this area, no other exposed section was noted within the village. The rest of the potteries were all collected as scatters (in association with a fine layer of sand) from the rampart area and from the north eastern part of the village.

The vertical profile of this exposed section was only 80 cm and the horizontal width was 109 cm. The total section was divided into three layers from the top (Fig: 4).

Layer I: The first layer (approx. 7 cm) was of surface humus showing the concentration of fragmentary brick bats and few potsherds.

Layer II: The second layer (approx 35 cm) was demarcated on the basis of a change in the soil colour and the texture. The second layer had compact dark grey soil (*entel mati*) and negligible amount of potsherds (recent potsherds) probably deposited from above due to vertical accretion. Some small rodent holes were noticed in the layer.

Layer III: The third layer (approx. 38 cm) had the same type of soil (*entel mati*) but with some amount of sand. The concentration of potsherds was more than the preceding layer. The collected specimens of potteries were all medieval.

From the study of the section, it was felt that the sterile layer (layer II) noted at the site Pantrai (mentioned earlier), composed of hard compact, dark grey silty clay is similar to this second layer noted at Parikshapara (layer II). This deposit noticed in Layer II might be considered as a low regime flood deposit (hard compact, dark grey silty clay with very low amount of sand) very much like the deposit noticed in Pantrai that might have led to the abandonment of the area for a short period of time. As mentioned, a fine layer of sand was noticed in association with the potsherds found as scatters. From the fine nature of the sand, it seems that the floods which affected the site were of low intensity which is further corroborated by the nature of deposit noticed in Layer II of the exposed section. Presently, the fine layer of sand noticed beyond the rampart wall proves that flood water still now inundates the area.
Map 8. Site Map: Parikshapara
The village needs immediate attention since the extent of artifacts in form of potteries is quite significant and moreover, the village having an undisturbed mound in the northern part can surely be considered for excavation. On the basis of all these evidences, the site has been placed in the medieval period.

C. Pingrui (73M/4, 87°11'25"E, 23°11'56"N)

Pingrui, a habitational site is located on the left bank of the river between 80 m and 60 m MSL. The village falls within Nikunjapur Gram Panchayat and Bankura Subdivision. The village can be approached through Nikunjapur. On the opposite bank, lies the village Nischintapur. Presently, the erosive action of the river is more pronounced in this village as a result of which large portions of the river sections have already been eroded. On the opposite bank, sedimentation is more active because of the development of large lateral bars, indicative of the modern flood plains of the river.

The concentration of artifacts in the form of ceramics was mostly noted in the sections of the river as well as scatters in the adjacent areas. Some isolated scatters have also been noted in the Karmakar para, Mallick para and the Dom pukur area (see map 9). The village stands on the levee of the river Dwarakeswar. The village is prone to
severe floods every year and the flood water reaches the te-matha area within the village. Large portions of the village are inundated regularly. According to an ethnographic survey conducted by the present researcher, the flood in the year 2008 was quite severe and almost all the villagers had to shift to higher lands crossing the te-matha area of the village. Hence, most of the dwellings presently in this area are impermanent structures.

During exploration, pottery samples were collected from the river sections. Large tracts of land have already been eroded by the river which revealed ceramics and other forms of archaeological record in the river sections. The samples of potsherds collected from the river sections have been placed in the medieval period. But some specimens seemed to be earlier than medieval. These specimens had similar forms and surface treatment as those collected from the excavated context at Mabhabanitala, Dihar. However, the concentration of artifacts at this particular site is less in comparison to the other explored villages. This might be due to the fact that already a large part of the archaeological record has been lost due to intensive erosional activities of the river.

The vertical profile of the exposed section was 174 cm and the horizontal width was 116 cm; the total section was divided into three layers from the top. (Pl. VIII B, Fig: 5).

Layer I: The first layer (surface humus, approx. 58 cm) was composed of compact soil and had some amount of sand in it.

Layer II: The soil in the second layer (approx. 55 cm) was of semi-compact nature which revealed an alignment of bricks together with mud mortar including lime and minute stone particles. Eight courses of bricks were visible in the layer. Both the layers were devoid of any potsherds. The texture of the soil (do-ansh type; equal proportions of sand and clay) in the second layer was similar to that of the first.

Layer III: The soil in the layer (approx. 61 cm) was also semi-compact with yellowish sand in composition (do-ansh type; equal proportions of sand and clay). But unlike the above layers, this layer showed concentration of potsherds.
The alignment of bricks as noticed in the section was not noted in any other spot within the village. The measurement of the bricks is as follows: L: 35cm, B: ?, T: 5cm (Breadth could not be ascertained, since the bricks were found in an embedded condition). Unlike the other sites, this section did not reveal any sterile layer where a temporary abandonment could be noted; hence the medieval occupation at the site can be considered to be continuous. The layer II noticed in the exposed section was quite interesting but it revealed the partially exposed brick wall. No potsherds could be collected from this layer.

The ceramic assemblage collected from the interior parts of the village was mostly in the form of scatters and does not bear much similarity with those found from the sections. Few potsherds, collected from the exposed sections (in river sections), bear an abraded surface due to the effect of water. But the samples collected from the interior parts of the village were absolutely fresh and were all medieval. The deposits evidences on the top of the brick wall have definitely helped in protecting the bricks. Layer II bears evidence of being a stable deposit hence the structure could be laid on it. Natural factors have already destroyed much of the record. Moreover, anthropogenic factors have also destroyed the site, because the adjacent areas of the river have been dug out completely and converted into agricultural lands. These cultivated fields have also revealed evidences of some potsherds of the medieval period. Presently, due to the recurrent floods of the river and due to the cultivated fields in the area, there has been a general shift in the present habitation pattern towards more interior parts of the village.
Map 9. Site Map: Pingrui
D. Bhatra (73M/8, 87°19'12"E, 23°7'0"N)

The site stands on the left bank of the river at 60 m above MSL. This site, lying just beside the Dwarakeswar bridge, can be approached through Bishnupur. The modern village has been split into two parts with the construction of this bridge. On the eastern part of the bridge, lies a modern Siva temple adjacent to a very old banyan tree and in this part of the village, the Telepara and Sahapara are situated. It is a habitation site revealing black and red ware, early historical and medieval potteries. It was thus felt necessary to study some exposed sections in the site. But unfortunately, the exposed section noticed near the river revealed only medieval potteries.

When the site was explored in 2007, there were no lateritic boulders against the river sections and as a result these sections could be studied conveniently. But unfortunately, in 2009, it was found that lateritic boulders were placed against the sections of the river in order to protect the village from floods. Large tracts of land within the village including the modern flood plains of the river have been converted.
The village falls within Radhanagar Gram Panchayat, Bishnupur Subdivision and Bishnupur Police Station. Towards north of the village, lies the site Joykrishnapur.

The village stands on the levee of the river Dwarakeswar. Bhatra was surveyed earlier by local antiquarians and as a result it finds mention in the writings of Sri Manick Lal Singha who has considered this site within the complex of sites centering around the main site Dihar (Singha 1991). While exploring, the potsherds were mostly noted in scatters within the village in Gopal Sayer area, Mukhujje pukur area (see map 10) and in the river sections locally called Jirulir para area. In this site also, the habitation mound at Jirulir para and the levee have merged with one another. The river sections revealed some of the potsherds in exposed context indicating the presence of an extant habitation mound in the area which has already been eroded to a large extent. Besides these exposed sections, some rain gullies were also noted adjacent to the Jirulir Para area from where potteries were found as scatters. Some black and red ware sherds belonging to the chalcolithic period and some early historical sherds were collected from the site (river section area as scatters) during the course of exploration. These sherds were found in association with a fine layer of sandy silt. The rest of the specimens collected were mostly medieval. The concentration of artefacts was highest in the Jirulir para area. An exposed section in this area along the river was selected for further study.

The section taken up for study is described as follows. The vertical profile of the section was 170 cm and the horizontal width was 180 cm (Fig: 6). This section was inclined and was a bit difficult to study since no scraping could be done. However it was divided into three layers from the top, on the basis of the change in soil colour and the associated artefacts.

Layer I: The first layer (approx. 22 cm) was composed of surface humus and had some fragmentary brick bats and modern potsherds.

Layer II: The second layer (approx. 78 cm) was composed of both sand and clay, but sand evidently being of greater concentration than clay (Bele matî). This layer revealed very few fragmentary sherds.
Layer III: The third layer (approx. 70 cm) was composed of semi-compact soil but with good proportion of sand (do-ansh type). Considerable amount of potsherds were found to be uniformly distributed throughout this layer. These specimens were mostly medieval.

Below this layer, a small patch in the river section was noticed with few early historical potteries. The deposit seemed to be disturbed because it was found in a patch. This might be due to the fact, that the lower levels of this area were not completely exposed after layer III. Further investigation is very necessary by arranging some trial digs in the site. From the above section, it can be surmised that Layer II is a flood deposit and is hence, devoid of artefacts. This deposit had good amount of coarse yellowish sand indicating it to be a high intensity flood deposit. This deposit indicates that after the medieval period, there was a break in occupation due to the high intensity floods of the river.

Natural factors have helped in exposing the artefacts (in river sections) in the site but at the same time, destroyed the site to a large extent. The village is presently also inundated by the flood waters of the river as evident from the fine nature of sand traced throughout a large part of the village. The texture of sand collected from the section was very coarse. Potsherds collected from the section were all medieval. But while exploring the site some early historical and black and red ware specimens were found as scatters, especially near the river section area (Jirulir Para area). From their visual appearance, it could be ascertained that they belong to a primary context since they had a fresh appearance. Since the site lies adjacent to Dihar, it is necessary to investigate the actual cultural sequence of the site by arranging trial digs at the site. Anthropogenic factors have destroyed the site to a huge extent. Lateritic boulders placed against the river have destroyed the natural sections as well as the artefacts.
Map 10. Site Map: Bhatra
E. Basantapur/ Tilabani (73M/8, 87°21'1"E, 23°6'18"N)

Basantapur/ Tilabani lies on the left bank of Dwarakeswar, at 60 m above MSL and just next to the site Dihar. It falls within Uliara Gram Panchayat and Bishnupur thana. The site can be approached through Dihar. There are five to six paras within the modern village namely- Poddar para, Tamli para, Morol para, Bagdi para. A cart-track divides the entire village into two parts. The eastern part falls within the village Tilabani. The same cart-track road leads to the other villages like Silimpur, Prakash, Penera etc. Three late medieval temples (Radhamadhab and Siva) are situated within the village.

The site is surrounded on all the sides by a dry channel of the river Dwarakeswar. The main river flows through the western part of the site. The former channel has dried up to a considerable extent. Some amount of water is found to be present in local patches which have been converted into ponds or swamps and agricultural lands by the local villagers. In these areas, rice cultivation is practiced.

From this habitational site, archaeological record was found both from the surface and from the exposed river sections as well. During exploration in the north western part
of the site, an isolated mound was noticed locally called Goswamir Ding, standing at about 1m higher than the surrounding lands. The Dwarakeswar flows just next to this mound. During monsoons these areas are completely inundated and as a result, some portions of the mound are eroded by fluvial action of the river. In order to protect the area and avoid flood waters, lateritic boulders have been placed along the river sections. There is still a dilapidated temple standing on the top of the mound. A portion of this mound has already been dug out for cultivation and a part preserved in order to protect the temple. The temple has helped in this instance to protect the habitational mound from complete leveling. From these peripheral sections, potsherds were noted which are mostly medieval. Moreover porcelain sherds have also been collected as scatters from this mound area. Besides this mound area, along the river sections towards Tilabani, some stray occurrences of potsherds were noted (see map 11). These scatters were exposed by the flood waters of the river. From this location, a terracotta ring well was found exposed near the river sections. The well has a diameter of about 75 cm. In order to denote the actual time period of the well, the surrounding areas had to be scraped out which was not feasible.

While studying the exposed sections within the village, the exposed river section near Tilabani was not taken up because the materials in this area were in the form of stray occurrences and in order to expose them on the cliff sections, a substantial part of the section had to be scraped. The Goswami Ding section was small, convenient and hence taken up for further study.

The section measured 122 cm vertically and about 139 cm horizontally. This entire section was divided into three layers from the top on the basis of soil colour and concentration of artefacts (Fig: 7).

Layer I: The first layer (approx. 4cm) was composed of surface humus.

Layer II: The second layer (approx. 57 cm) was of Do-ansh mati (equal proportions of sand and clay) of light grey colour which showed the concentration of brick bats and potteries (medieval).
Layer III: The third layer (approx. 61 cm) was composed of yellowish coarse sand and clay (*Ble mati*; sand concentration is higher). This layer had no concentration of potsherds. This layer can be considered to be a flood deposit of considerable depth. The presence of coarse yellowish sand in the layer indicates that the nature of flood was catastrophic and the habitation of the subsequent medieval period was established on this flood deposit. In the lower levels, earlier deposits might be encountered if the site is subject to excavation.

Few fragmentary sherds in black ware noted on the surface of the mound seems to be early historical from the nature of the slip and fabric (see Appendix for ceramic details). It is highly probable that the site might possess an early historical phase in the lower levels which were unfortunately not exposed. The nature of the terracotta ring well needs to be studied in details, because the early historical site of Pokhanna (North-west Bankura, on the bank of Damodar), which lies close to the study area, revealed similar early historical terracotta ring wells in the cliff sections of the Damodar river. It must be mentioned here that, Tilabani has also been reported as a findspot of Puri-kushan coins, but having no contextual relevance, it is difficult to ascertain the nature of such finds (Mukherjee 1991). At this stage, the site, at best, can be regarded as medieval.

From the nature of the evidences gained from the site, it can be surmised that the habitation at the *Goswami ding* area was earlier than the habitation noted in the river section area at Tilabani. This is just an assumption on the basis of typological observation of the pottery samples. Tilabani did not yield any early historical potsherds. Anthropogenic factors here have helped in preserving a large part of the mound at *Goswamir ding* area. But natural factors like erosion and deposition have acted from time to time and modified the site. The medieval habitation was established on the high intensity flood deposit, characterised by coarse yellowish sand. In the present situation, the settlements have shifted to comparatively higher lands within the village due to the danger of floods. It is necessary to ascertain the importance of the dry channel in the development of the site. The presence of the late medieval temples has been taken into consideration while studying this site which has helped, further, in determining the chronology of the site. Since it is adjacent to Dihar and has yielded early historical evidences, it necessitates further probing.
Map 11. Site Map: Basantapur
The site lies on the right bank of the river at 40 m above MSL and can be approached from Brahmanari through Bagdcha. The modern village falls within Mirzapur Gram Panchayat and Kotulpur Police Station and has about three paras namely Hindu para, Muslim para and Mete para. There are two temples within the village; of which one is medieval dedicated to Radhadamodar. Stylistically, the temple (ek ratna) seems to be late medieval and is decorated with terracotta panels depicting different scenes from the epics (see map 12). But sadly, this is in a dilapidated condition and is in urgent need for conservation. The other temple lies on the western part of the village near the entrance. This temple is recent and is locally known as Dayal Das temple.

During exploration, some scattered and deserted mounds were located near the Dayal Das temple locally known as Vaishnav danga. From this area potsherds were collected both as scatters in association with a fine layer of sand and from the sections in the peripheral areas of the mounds. The potsherds collected were mostly medieval.
which was further confirmed by the occurrence of porcelain sherds and fragmentary glass bangles. Adjacent to this mound, lies a large pond called *Khirki pukur* in the vicinity of which stands a small dedicatory shrine. In this spot, beneath a tree lies a fragmentary sculpture of *Manasa* which is regularly worshipped by the villagers and people offer votive figurines of horses and elephants on the fulfillment of their wishes.

Adjacent to the *Radhadamodar* temple within the village, there is another late medieval temple. Near the river section area in the north western part of the site, medieval potsherds were noted as scatters. The recurrent floods in the river have helped in exposing large tracts of land in this section. On the opposite bank of the site lies the village Kolagram. The erosive action of the river is more pronounced at Basubati and the depositional activities are more pronounced at Kolagram as understood from the lateral bars which have developed along the village Kolagram. It seems that the *Vaishnav Danga* area of Basubati was occupied since the medieval times, but due to the floods of the river, this area was abandoned and the habitation shifted to the interior parts of the village. Large tracts of the village are still inundated by the flood waters as indicated by a fine layer of sand over the area in which the archaeological record was found as scatters (from the surface of the mound).

An exposed section was cleared in the northern part of the *Vaishnav danga* mound where a portion was already dug and this exposed section was cleared in order to study the cultural debris. The horizontal width of the section was 114 cm and the vertical profile was 64 cm (Pl. IX A, Fig: 8). The entire section was divided into three layers from the top.

Layer I: The first layer (approx. 7 cm) was of surface humus and revealed mixed assemblage of potsherds as well as fragmentary brick bats.

Layer II: The second layer (approx. 45 cm) revealed medieval potsherds in association with soil composed of both sand and clay (*do-ansh mati*). This layer is similar to the second layer as observed at the site Basantapur.
Map 12. Site Map: Basubati
Layer III: The third layer (approx. 12 cm) was composed of *entel mati* (compact clay grey in colour) which had a faint yellowish tinge. This layer was completely devoid of any archaeological artefacts and hence, was sterile. The amount of sand was negligible and can be considered as a low-regime flood deposit. The presence of fine sand in the layer indicates that the nature of flood was of low frequency and the subsequent medieval period was established on this stable pedogenised flood deposit. In the lower levels, earlier deposits might be encountered which could not be studied from the present exposed section.

The site is actually in a sad plight and in the coming years the *Vaishnav Danga* area, lying closest to the river within the site might also get eroded by the river. Aggradational activities of the river have helped to some extent in preserving the archaeological record since potsherds have been found buried under a fine layer of sand at specific locations within the site. The findings of porcelain sherds and fragmentary glass bangles were some of the other remains found from the site. The presence of a late medieval temple in the village further helped in ascertaining the chronology of the site.

![Fig: 8](image)

**G. Baikunthapur (73M/8, 87°23'37"E, 23°7'0"N)**

The site is situated on the left bank of the river Dwarakeswar at 40 m MSL. The site can be approached through Hinjuri. The road leading to Hinjuri divides the entire
The modern village falls within Uliara Gram Panchayat, Bishnupur Subdivision and Bishnupur Police Station. The river Dwarakeswar flows through the south eastern part of the village. But a dry channel flows almost through the middle of the village. During a major part of the year, the channel remains dry but during the monsoons, this channel is filled up with water and it inundates the entire village (See map 13).

The site is situated on the levee of the river Dwarakeswar. Large tracts especially in the southern part of the village are covered by a thick layer of sand indicating active aggradation of the river in these areas. Hence most of the artefacts were found in a buried context during exploration. Some scattered mounds are located in the south eastern part of the village locally known as Purano Bakul. The southern part of the village is sparsely inhabited due to the danger of floods and in this part of the village the modern flood plains of the river, lying adjacent to the Purano Bakul area have largely been converted into agricultural lands.

Potsherds were also collected from the peripheral areas of the mounds as scatters and some from the exposed sections. According to the villagers, while removing the soil from these mound areas, many artefacts have been found by the villagers. Majority of the artefacts (potsherds, fragmentary terracotta objects, mullers) belong to the medieval period. Besides the Purono Bakul area, scatters of potsherds were also noted in the Bamun para area within the village (see map 13). Unfortunately a large portion of the Purono Bakul area has already been removed by the villagers. All these factors have largely destroyed the original context of the mounds and as a result, a considerable part of the archaeological record is already lost.

In one of the exposed sections of a huge mound in the Purano Bakul area, the section was studied and pottery samples were collected. The horizontal width of the section was 79 cm and the vertical profile was 110 cm (Fig: 9). The section was divided into two layers from the top.

Layer I: Unlike other sites, the surface humus could not be differentiated because this layer in the section was quite disturbed due to bioturbation activities. But since no other exposed sections were noted within the village, this area had to be taken up for
further study. This layer (approx. 38 cm) revealed mixed potsherds (modern and medieval) in association with sand and clay in equal proportions (do-ansh maiti). It was found to be affected by the rodent activities and penetration of the tree roots. Post depositional activities (bioturbation and rodent activities) have largely affected the materials in this layer. There has been displacement of the artefacts and as a result some of them have probably been deposited in the following layer due to effect of vertical accretion.

Layer II: The following layer (approx. 72 cm) also revealed medieval potsherds but in very few numbers, probably due to vertical accretion from the above layer (probably due to rodent activities). The composition of the layer was of clay with substantial amount of sand (bele maiti). No difference could be made out between the layers except the nature of soil. The former layer had more or less equal proportion of sand and clay. But, in this layer, the proportion of sand is much higher and the nature of sand is coarse. Potteries were typologically uniform in both the layers but the concentration was very less in the second layer. No break was noticed between the layers.

The second layer is surely a flood deposit, and the presence of sand indicates that the flood must have been of high intensity which led to a temporary abandonment of the site. Over this flood deposit, the medieval people might have initiated their habitation again. Anthropogenic factors have caused damage to the site by destroying the huge mound standing at the Purano Bakul area. The second layer witnessed in the exposed section can be equated with the high intensity flood layer evidenced at the site Basantapur. The nature of the soil at both the sites is equal characterised by high proportion of coarse yellowish sand.
Map 13. Site Map: Baikunthapur
H. Dhangara (73M/8, 87°20'52"E, 23°7'46"N)

Dhangara is situated on the left bank of the river Dwarakeswar at 60 m above MSL close to Dihar (about 2 km). It falls within Radhanagar Gram Panchayat and Bishnupur Police Station. A modern road running towards Hinjuri divides Dhangara and Dihar. The modern village of Dhangara lies adjacent to a dry channel of the river Dwarakeswar through which water flows only during the monsoons. Some areas of this channel being swampy have retained water for long and as a result rice cultivation is practiced on a large scale. The river Dwarakeswar flows through the southern part at a distance of about 3.5-4 km from the site.

During exploration some scattered mounds were noted in the south eastern part of the village near the Sadhu Pukur area (locally known as Siva tala). Some architectural ruins, probably constructed during the medieval period were also noticed. These ruins mostly comprise fragmentary terracotta plaques, usually found on the walls of the temples. The colour of the sandy soil in these areas was light greyish. The peripheral areas of some of the mounds have been dug out by the villagers. The mound soil
being compact and cementing in nature is generally used for construction purposes. From these areas, some potsherds were noticed in the sections. Early historical potteries were mostly collected from the surface of these scattered mounds. Some were also noticed near the peripheral areas of mounds and ponds in the form of scatters. The site is early historical as well as medieval as understood from the nature of the explored ceramic assemblage.

But unfortunately the early historical pottery samples could only be collected from the surface. These belong to a primary context as understood from their appearance which was fresh and showed uniformity with the ones found from the rest of the early historic sites in the area. Besides this Siva tala area, from the Tentul pukur area also concentration of archaeological artefacts in the form of potteries was noted. Near the Siva tala area, there is a pond called Sadhupukur from the sections of which potsherds were noted but the context was disturbed due to the construction of the pond. Hence, this area revealed a mixed assemblage of potsherds. Presently, all these areas are slightly deserted since the main habitation area lies more on the north eastern part of the village (see map 14). A small shrine dedicated to lord Siva is seen adjacent to these mounds and pujas are held regularly in the shrine.

An exposed section in the peripheral area of the Sivatala mound was taken up for study in order to relate the potsherds contextually. The horizontal width of the section was 102 cm and the vertical profile 79 cm (Fig: 10). The entire section was divided into four layers from the top.

Layer I: The first layer (approx. 14 cm) was of surface humus with very few potteries.
Layer II: The second layer (approx. 28 cm) was composed of compact clay (entel mati with less concentration of sand). This layer is completely devoid of any archaeological materials and hence can be considered as sterile.

Layer III: This layer (approx. 33 cm) had the concentration of semi-compact soil (do-ansh mati), medieval potteries and fragmentary brickbats.

Layer IV: The nature of the soil (do-ansh mati, approx. 4-5 cm) was found to be similar to the former. The appearance of the potsherds collected from this layer was
slightly different since these specimens had an ochrous slip applied on the surface and were found to be similar to the ones collected from the last layer observed at the site of Pantrai (Similar specimens were found from the *Pre-Mallai* early medieval phase at Dihar).

The second layer of the section is sterile and is devoid of any archaeological artefacts. This layer is a flood deposit but of low intensity which is indicated by the fine nature of the sand. In this particular site, erosion has occurred at a much lesser scale than aggradation. Presently, the intensity of erosion at the site is less, since the main river is at a considerable distance from the site. It is necessary to detect the actual nature of the dry channel (*Kana-Nadi*) passing through the vicinity of the site. The exposed sections of the site are a result of anthropogenic activities and not due to natural erosion. Since the site lies very close to Dihar and has revealed early historical ceramics, it is necessary to evaluate the actual nature of the site by taking trial trenches and by cross-checking whether any relation can be established between them.

Fig: 10
Map 14. Site Map: Dhangara

Legend
- Dry Channel
- Ponds
- Settlement
- Cultivation
- Cart tracks
- Roads
- Mound
- Scatters

1 centimeter equals 33.696653 meters
I. Gosainpur (73M/8, 87°23'11"E, 23°0'14"N)

The site lies on the right bank of the river at 60 m above MSL where the topography is entirely different from other villages. This might be due to the fact that the site falls in a lateritic zone and hence, the nature of soil is also different. Leaching of these outcrops has resulted in the formation of lateritic pellets in the area. The modern village falls within Dwarika Gram Panchayat, Bishnupur Subdivision and Bishnupur Police Station. From the satellite imageries, a dry channel of the river has been traced out which is confined to the western part of the village and is linked with the main river. Presently the area gets inundated regularly during the monsoons by the flood waters of Dwarakeswar.

The main river channel was probably confined more to the north as understood visually from the satellite imageries and has recently shifted to the south, thereby presently inundating the site. But it may be surmised that in the past, the dry channel of the river might have helped the ancient people with the availability of water and associated resources. The topography of the site is entirely different, more specifically in the western part due to the presence of undulating ridges covered by lateritic pellets. The western part, due to such a landscape does not have any habitation but only a solitary temple (Nag Mandir). The main village starts from the Kayastha para area (see map 15). A nursery stands in the vicinity of this area.

While exploring the site, profuse amount of potsherds were found as scatters on these low mounds near the Nag temple area and from the exposed peripheral areas of these low mounds. Close to the Bamunpara area, lying in the northwestern part besides the river, some scatters were noted revealing the same kind of potsherds as collected from Nag temple area.

In the south eastern part of the village, there is a continuous cart-track leading to the site Mulkari (mentioned in Chapter 3) and on this way, adjacent to the Bauri para area, an exposed section was noted. This was actually an elevated tract of land; whether it is an extant form of a natural mound is difficult to ascertain from the current condition of the area. No cultural materials were collected from this location.
but only the geological section was noted. This portion was dug for using the soil for construction of cart-tracks within the village.

The geological section (2m 30 cm) in this area was very interesting (Pl. X B). This section revealed four layers showing the alternate bands of yellowish and whitish soil. This section was studied in order to cross check the cultural debris located in the Nag temple area with the soils and sediments of this geological section.

Layer I: The first layer (approx. 62 cm) was yellowish and sandy with lateritic pellets.

Layer II: The second layer (approx. 52 cm) was composed of compact clay whitish in colour which had some concentration of Kaolin.

Layer III: The following layer (approx. 37 cm) was similar to the first, composed of yellowish sandy soil.

Layer IV: The last layer (approx. 79 cm) was composed of pure clay, compact in nature and whitish in colour due to the concentration of Kaolin, similar to Layer II. Soil samples were collected from these four layers. The second and the last layers revealed the concentration of china-clay. The yellowish sandy soil can be related to floods that might have occurred at specific intervals due to which same type of deposit have been encountered twice in the geological section.

Besides this, an exposed archaeological section was cleared and studied near the Nag temple area. This section revealed good amount of potsherds. The horizontal width of the section was 137 cm and the vertical profile was 155 cm. The entire section was divided into three layers from the top (Pl. IX D. Fig: 11).

Layer I: The first layer (approx. 31 cm) was of surface humus, the nature of the soil and the composition was similar to the first layer, as observed in the Bauri para area. The soil is slightly sandy, yellowish in colour having concentration of lateritic pellets.
Layer II: The following layer (approx. 96 cm) was composed of greyish soil with some amount of sand (*do-ansh mati*) showing the concentration of mixed potsherds (modern and medieval).

Layer III: The next layer (approx. 28 cm) was again similar to the first, composed of yellowish sandy soil with lateritic pellets and having the concentration of very few medieval potsherds.

Anthropogenic factors have not affected the site to a huge extent. Since this village stands on a local lateritic outcrop, the soil was quite hard and impermeable where erosion occurred at a much lesser scale but was subject to rapid surface run-off. This might have led to the leaching process of the lateritic outcrops. The medieval potsherds were found both in association with the soil having lateritic pellets and semi-compact clay witnessed in the section of the nag temple area. This surely needs further investigations and based on only visual examination, it was difficult for the investigator to understand the nature of the deposits. From the potteries, it is definite that the site is medieval. The evidence of Kaolin in the geological section is also interesting but necessitates further sedimentological probing.
Map 15. Site Map: Gosainpur
J. Dharapat (73M/8, 87°17'49"E, 23°7'58"N)

The site stands on the left bank of the river Dwarakeswar at 60 m MSL. The modern village falls within Ayodhya Gram Panchayat and Bishnupur Police Station. From the satellite imageries, it can be said with some certainty that the site stands adjacent to a dry channel of the river Dwarakeswar which flows down to Dhangara, Dihar and Basantapur as the Kana-Nadi. This was actually the earlier channel of Dwarakeswar. This dry channel is devoid of water for most of the year excepting the monsoons when they are inundated with substantial volumes of water.

This site has already been reported as medieval due to the presence of a Sikhara temple of Orissan style which, though not protected, is in a fair state of preservation. This temple is dedicated to an idol called Shyam Chand thakur, founded by one Advesh, a medieval Raja of Dharapat. We can find evidence of transformation of an earlier Jain figure into a Vishnu image that testifies to the prevalence of Vishnu worship after the decline of Jain influence in the locality. It may be assumed from all these evidences that Dharapat was an important centre of Jainism till the twelfth century when it was taken over as a site for Vishnu worship (see chapter 3 for details).

This habitational site in the course of exploration yielded a good amount of potsherds mostly in the form of scatters from the Rathpara area in the north western part of the village (see map 16). A few isolated mounds are situated in this area from where the potsherds were collected. Large portions of these mounds have been dug out for cultivation. From the peripheral parts of a mound located in this area, some potsherds were noted in exposed sections and were taken up for further study. Besides this, some scatters of potsherds were also noted in the Lohar para area near the Shyam Chand temple. The potteries collected from both these locations show typological uniformity and can be placed in the medieval category.

Besides the Shyam Chand temple, some other late medieval temples are also situated in the village which further indicates the chronology of the site. In recent years, the site has largely been destroyed due to anthropogenic factors. The construction of brick factories near the site has largely affected the original context of the site. Most of the mounds have been dug out and the soil has been utilised in the brick factories. The
modern flood plains in the river valley being fertile have largely been converted into agricultural fields.

The exposed section in the *Rauthpara* area was cleared and was taken up for further study. The horizontal width of the section was 91 cm and the vertical profile was 104 cm. This entire section was divided into four layers from the top (Pl. IX B, Fig: 12).

Layer I (approx. 7 cm) was surface humus and had the concentration of brick bats and recent potsherds.

Layer II (approx. 32 cm) was composed of *entel* soil (compact clay, dark grey in colour) and had a concentration of mixed potsherds (medieval and modern).

Layer III: The third layer (approx. 12 cm) was composed of loose clay (*Bele* type), whitish in colour due to the presence of coarse sand. This layer was devoid of any cultural artefacts and showed many small holes probably indicating rodent activities. This layer was sterile and was a flood deposit. One or two potsherds (mixed) were noted in the layer probably due to the effect of vertical accretion caused by the rodent activities.

Layer IV: The last layer (approx. 53 cm) was composed of semi-compact clay (*dohansh* type). The potsherds found from layer IV were all medieval.

This section was quite interesting since it revealed two phases of occupation in the medieval period with a sterile layer in between. The colour of the soil in the layer III (sterile) was whitish and the soil was composed of coarse whitish sand and clay. The flood was evidently of high intensity otherwise the occurrence of coarse sand in the layer is quite improbable. The potsherds collected from the *Lohar para* area is typologically similar to the potsherds seen in Layer II of the *Rauthpara* section. Adjacent to the *Rauthpara* section area, some dilapidated architectural remnants were also noted.

The site has been destroyed to a large extent by the construction of brick factories and through sand quarrying from the bed of the river Dwarakeswar. Moreover the mounds
Map 16. Site Map: Dharapat
which were located in the first season’s fieldwork could not be located in the following season. Probably, they were been dug out completely and the soils have been used in the brick factories. It is known from the local sources that the vassals of the suzerain Malla Rajas of Bishnupur inhabited this village and the Shayam Chand temple was constructed by them. In some records, the site is reported as being still of an earlier period (historical as given by Chattopadhyay et al. 2009), but during the course of intensive survey no early historical or black and red ware sherds were encountered.

Sirsara (73M/4, 87°9'32"E, 23°13'45"N)

Sirsara stands on the left bank of the river Dwarakeswar near the confluence of Dwarakeswar and Gandheswari at 80 m above MSL. The village falls within Santor Panchayat, Onda Police Station and Bankura Subdivision. The village is mostly dominated by tribal population engaged in iron smelting (Aguri cast). Two late medieval temples, dedicated to Gopal (Krishna) and Siva are situated within the village.

During the course of exploration from the Anguri para area, a small mother goddess figurine of iron was collected. This figurine was approximately 5 cm in length, has
folded hands and a bun in the head portion indicating that it might be a female figurine. The figurine has pinched eyes (Pl. XII A). Since the figurine was collected from the surface, it is very difficult to note the actual context of the find. In all probability, the figurine belongs to the medieval period. The Anguri people practice making iron implements and in all probability the figurine was also produced by them and might have been discarded due to some reasons. The site was surveyed extensively and an exposed section was also noted within the site. But the section being very much disturbed did not provide sufficient understanding of the archaeological record and the associated geological stratigraphy. The mother goddess figurine collected from the village is exceptional but has to be defined on stylistic grounds because the specimen could not be related to any particular context. Besides these, some stray occurrences of potsherds were noted in some areas of the modern village. On the basis of the present evidences, the site can only be considered as a ‘find-spot’, but not a site.

5.d. Observations

Out of one hundred and twenty explored villages, exposed sections revealing potsherds were observed at a very few sites. Of these, eleven sites were selected for further study, in order to study the cultural debris and the associated soils and sediments. The nature and context of the sites were tried to be ascertained through this understanding. The ancient mounds (mostly medieval) in most of the sites have been leveled and large areas have been brought under cultivation. The river sections in many instances did not reveal any artefact and were considered only for the study of geological deposits. So, in this regard the researcher was left with very few alternatives.

Since the exposed sections could not be scraped, the analysis was done accordingly to the artefactual remains and observations of the associated sediments. The change in the colour of soil, change in soil texture, concentration of artefacts and the changes in the appearance of potsherds were considered to be the main criteria behind the demarcation of layers. Major help was taken from the local farmers in ascertaining the type of the soil.
The concentration of artefacts was not constant in all the sites. Since the sections could not be scraped, in most of the cases, they were inclined and irregular. The vegetation was cleared from the sections to make them visible. The first layer in most of the sites comprised of surface humus mixed with brick bats and recent potsherds. The rest of the deposits in all the sites have been subject to frequent transformations by the episodic erosional and aggradational events. Some deposits have been pedogenised for a considerable period of time which enabled them to be more stable and compact and as a result, past habitations developed on them. These flood deposits together with the archaeological record have been subject to bioturbation, rodent activities and further decaying by the effect of surface run-off and other natural factors. These natural features coupled with anthropogenic factors have resulted in vertical accretion due to which some of the artefacts have been deposited in the lower layers as well. Man-made causes have also destroyed the sites to a large extent. Construction of brick factories, modern houses, ponds, cart-tracks and metalled roads has changed the original context of the sites. Since the occurrences of artefacts in the sites were obliterated by the above mentioned factors no sampling techniques could be adopted. In some instances, structures like temples have helped in preserving parts of the extant mounds.

Dwarakeswar river and its tributaries seemed to have played an important part in the formation of settlements in the past. Man seemed to have lived on the active floodplains and banks next to channels. The meandering river produced abandoned beds and levees bearing fertile alluvial soils on which some of the sites have been found to survive. The sites were subject to both high intensity and low intensity floods as understood from the cultural sequence of the sites. The gaps in the occupational levels were much less in the instances of low intensity floods than those, caused by high intensity floods. The deposits in the former case were devoid of any artefact or sand. The deposits in the case of high intensity floods were of considerable depth and were filled with very coarse sand. This was due to the fact that the sites were occupied soon after the low intensity flood waters receded. But in case of the high intensity floods, habitations resumed after a considerable period of time and hence these deposits were of greater depth than the low intensity ones.
From the evidences, it is quite evident that the sites in the upstream areas were more prone to high intensity floods due to the sharp gradient and as a result were accompanied with considerable volumes of coarse sand. The intensity of the floods decreased with the gradual fall of the gradient. The sites lying in the upstream areas have all deposits showing the evidence of catastrophic floods (deposits have large volumes of yellowish or whitish sand and are sterile) as evidenced at Basantapur, Dharapat, Baikunthapur and Bhatra. As the river progressed towards the lower stage, the carrying capacity of the river decreased and the gradient became gentler. In these sites, the specific flood deposits were found to comprise layers of fine sand. Such low energy floods with low channel velocity indicate that the settlements could come up without being devastated completely by the floods. In all the cases it was found that after temporary abandonment, sites were reoccupied. In the case of catastrophic flood deposits, the inhabitants established their occupation after a considerable period of time, when the deposits were stable enough to support habitation on them.

Besides the river, some dry channels were also found in and around the sites. The satellite imageries have helped in indicating visually that the former course of the river was confined more to the north and the present channel, due to lateral shifting has moved towards south. But corroborating this with archaeological evidence was difficult and ascertaining the time period of the palaeochannels is equally difficult at this stage. This definitely needs further probing. In the case of the excavated site Dihar, it was seen that the habitational mounds were concentrated along the banks of the palaeochannel of Dwarakeswar locally called kana-nadi. This same channel was flowing in the past through the sites Dharapat and Dhangara and must have helped the past settlements like Dihar with the supply of water and other aquatic resources. Actually in many instances it is seen that people avoid residing on the banks of the major rivers; instead habitations are concentrated on smaller channels or on the tributaries of the major rivers which give them the required water supply and also help in preventing the devastating floods of the river. Similar instances can be cited from the chalcolithic sites of central India and Deccan (Shinde 1994).

According to geologists, the major shifts in channel patterns also depend on the underlying lithology. Due to some major and minor tectonic adjustments, the river might have shifted towards the south and the main meander scrolls and oscillations
noted throughout the course of the river can largely be attributed to this. The development of the meander scroll in the river near the site Dihar can actually be attributed to the underlying lithological control (personal communication with geologists of Geological Survey of India).

Besides these natural factors, anthropogenic factors have also caused some changes in the nature of the archaeological record. Soil biota such as earthworms, ants, among others, continuously mix and displace particles, including artefacts, through burrowing and mounding, which tend to displace larger objects downward and smaller objects upward. Additional displacement occurs through tree uprooting, which tends to translocate objects. Hence, as a result of bioturbation, any artefact dropped onto the surface of the soil is subjected to translocation process soon after it hits the surface (Balek 2002). In the sites Dharapat and Baikunthapur, this effect could very well be realised. In the rest of the sites also, this effect of vertical accretion was evidenced to some extent.

The sites Pantrai and Dhangara revealed two layers of medieval potteries. The lowest layer yielded potsherds in red ware with a typical ochrous wash. These specimens bear resemblances with those collected from the early medieval phase at Dihar (Pre-Malla phase). The site Dharapat also revealed two phases of occupation during the medieval period with a phase of temporary abandonment. On the other hand, the evidences from Gosianpur, Madhuban and Mulkari (Madhuban and Mulkari did not have exposed sections, but studied from the surface) show that leaching of the lateritic outcrops have resulted in the formation of lateritic pellets and as a result the entire soil profile shows a reddish-yellow tinge. This might be due to the process of soil formation where reddish yellow soils with lateritic pellets are derived from the lateritic outcrops.

Micro-regional variations throughout the river valley have resulted in formation of the sites in different ways. For example, the exposed sections in the present study were mostly confined to the sites situated closer to the river valleys. But it was equally necessary to understand the sites like Kushadwip, Birsingha (standing on lateritic outcrops) which lie away from the main river and which revealed completely different
types of potsherds as surface scatters. But unfortunately no exposed sections with artefacts were available for study in these sites.

Sites like Basantapur, Dharapat, Bhatra, Parikshapara, Pingrui needs to be assessed through further investigations since these sites have revealed substantial evidences of occupation in the medieval period. The site Pingrui in all probability belongs to an earlier period but due to the absence of standardized pottery index and necessary details, the site has been placed in the medieval period. Sites like Andra, Dayalpur (along the river Sali, a tributary of Damodar, please see Chapter 3) also revealed exposed sections which could be cleared and studied. The site Dayalpur revealed an early historical deposit in an exposed context. It is very unfortunate that the sites like Chaltakonda, Dumduma, Prakash, Palasi etc. (see chapter 3) having substantial early historical evidences did not reveal any exposed sections.

From the above discussion, an idea about the occupation and abandonment of the sites followed by re-occupation of the sites in the medieval period could be gained. But similar picture of the early historical or still earlier periods could not be achieved from the data and here lies the greatest limitation of the present study. Nevertheless, at the present stage, from all the available evidences it is clear that the river was the life-line of the past habitations. Most of the sites were found to be situated along the river bank due to the availability of older alluvial soil which is extremely fertile and were probably used by the people to a huge extent. The concentration of sites is thus seen to be highest in these areas.

In all probability, the past people were accustomed to the regular floods of the river and also adopted suitable measures to combat the floods like building moats and ramparts as evidenced at Parikshapara. At the same time, it is the resourcefulness of the river that indulged the people to settle along the river banks. Even in the case of the excavated site Dihar, no permanent dwelling structure was evidenced in the course of excavation. In Pingrui, a regular brick alignment (in all probability, part of a structure) was noticed in the river section, the foundation of which was established on the stable deposit. The mounds having temples on them (most of them are late medieval) are much better preserved than others because the permanent religious
structures have led the people to leave out a part of the mound from digging. The mounds seen in most of the sites are medieval.

Modern population still resides on the banks of the river. Only when there is a major overbank flow, they move to safer places. Ethnographic survey reveals that the inhabitants of the villages shift to higher lands for safety with all their belongings and try to avoid such areas within the village which are easily prone to floods. During such movements the villagers also carry their cattle along with them. In many situations specific measures have been adopted for combating the floods like making ramparts as evidenced at Parikshapara or by placing lateritic boulders against the river section as noticed presently at Bhatra and Basantapur. Numerous diverging channels and tanks have been constructed for rain water harvesting purpose. Most of the canals are linked to the main river Dwarakeswar to channel the extra runoff water and also to ensure adequate supply of water. It is actually the resourcefulness of the river, which led the past people to resettle on the same areas on the flood plains of the river valley.

Within specific limitations, the researcher has tried to understand the man-land relationship of the study area by adopting a convenient methodology. The flood deposits have all been studied according to field observations only which definitely needs further introspection. In future, it is necessary to conduct micro-level studies of site settings (geology and soil conditions, relief, drainage, vegetation and other site features) and laboratory analysis of soils and sediments in order to strengthen the present understanding. There is scope for undertaking experimental work in the field to monitor the effects of various geomorphic and anthropogenic agencies that have affected the sites in certain ways. Nevertheless, it is understandable that the river Dwarakeswar played a dominant role in shaping up the environment and man accordingly adapted and acted upon this environment to meet his specific needs.

In the following chapter, based on all these evidences, the artefactual assemblage from the explored sites has been discussed. Potteries form the main artefactual evidence gained from the sites. The potteries have been studied typologically in accordance with the excavated potteries from Dihar and a comprehensive database of the ceramic assemblage has been prepared.
Notes

1. Available information shows that both high intensity and low intensity floods of Dwarakeswar river have hit the district from time to time. Sudden freshets are common which occur specially in the monsoons. The commonest form of floods experienced in the district is locally called *Huraph - ban*. Most of the Bankura rivers have steep and stable banks in their upper reaches which allow sudden discharges to move on downstream where the low sand and clay banks fail to contain them and thus floods occur (Banerjee 1968, Hunter 1975, O’Malley 1995). During the rainy season of 1865, there was a relatively severe flood in the Dwarakeswar, which inundated large tracts of riparian lands in Onda, Bishnupur, Patrasyaer and Joypur P.S. There were floods of moderate intensity in the years 1928, 1930 and 1931. There were several such minor floods in the forties which were on the whole, beneficial to agriculture. But the flood of September1965 destroyed many houses and damaged standing crops in the Bishnupur, Sonamukhi, Patrasyaer, Joypur, Kotulpur and Indas thanas. Similarly the flood that visited Dwarakeswar in October 1959 occurred at a time when the Damodar was also in flood and the combined fury of the rivers caused widespread havoc in the area lying between them. Large areas were affected rendering about 20,000 persons homeless in 163 villages, demolishing 1,000 houses and damaging wholly and partially crops standing on about 607 hectares of Land. Four bridges were partially wrecked and two lines lost. Silabati (a tributary of Dwarakeswar) and its tributaries are less prone to the floods in comparison to that of the Dwarakeswar (Banerjee 1968).

2. Since the soils and the sediments could not be tested scientifically, the analysis was done by visual interpretation and by testing the texture of the soils. Major help was taken from the local villagers who helped in identifying the soils and even informed the investigator regarding the crops which can be cultivated with such soils. The terms *Bele mati, Do-ansh mati, Entel mati* are the local terms which are used by the villagers in the district. The investigator has thus used these local terms in order to describe the deposits. In order to explain the terms in section drawings, help has been derived from the geologists (personal communication with Sujit Dasgupta, Geologist, GSI, 2010). *Bele mati* is sandy silt, *Do-ansh* having equal proportions of clay and silt has been defined as semi-compact clay and *Entel* having only clay and negligible quantity of sand is compact clay.

3. Regarding the present channel pattern and the meanders and oscillations observed throughout the course, the investigator consulted geologists from the Geological Survey of India (Kolkata Circle, 2007). This helped the investigator in understanding the underlying lithological structure of the area. They also informed that to the south of the present study area, there is a fault line lying close to the river Kangsabati. The major meander loops of the Dwarakeswar river, specially the one near Dihar might be attributed to the effect of subsequent tectonic adjustments rather than erosional activity of the channel. However this assumption needs further probing.