6.a. Introduction
This chapter attempts to draw attention to the cultural repertoire of the study area where the entire artefactual assemblage of the explored sites has been discussed in details. While exploring the sites in the river valley, the only form of artefact which was most abundantly found in almost all the sites was pottery; pottery being ubiquitous and very closely attached with the past habitations, is the best source to judge the chronology of the sites. Since this area has scant literary data and was not an extensively explored area, there was hitherto no complete picture of the archaeological record. Isolated sculptures and temples have only been the focus of attention in the earlier explorations which unfortunately does not lend an integrated picture of the archaeological record. The potteries seem to provide the best answers in order to understand the archaeological record. Detailed study of each individual sherd of the explored sites have been attempted to provide a comprehensive database of the ceramic assemblage, which has also enabled the researcher to have a glimpse on the past technological aspects of pottery manufacturing. Besides pottery, the other explored artefacts have also been discussed in brief, but these do not provide a sufficient understanding about the sites. Main emphasis, therefore, has been given on the explored ceramic assemblage of the sites.

It has been rightly remarked by the scholars that, within each society present and past, ceramics are produced, distributed and used in particular contexts which are affected and governed by varying social, political, economic and ideological conditions. The embeddedness of ceramics and of all material products of human labour in the cultural setting in which they are found means, that the analysis of archaeological ceramics can provide considerable information of culture that produced them (Sinopoli 1993).

According to Rice, pottery has a long history and is found virtually in all the parts of the world; its presence is rarely controlled by a particular geological or environmental
situation or conditions of preservation. He states further that pottery is essentially nonperishable and potsherds are virtually indestructible. Since pottery served very ordinary day to day functions it can provide valuable insights into the daily lives of the people who used them. Moreover the study of manufacturing process can provide additional inputs to the human behavior and the history of civilization (Rice 1987).

Typological classification of pottery through its morphological attributes is the oldest and most elementary level of analysis, essential for putting a basic order to the material. It uses the intrinsic criteria of vessel morphology (shape, features of rim, base and body), surface features and finish (colour, slip, wash, burnish, polish and decorations), forming and finishing impressions (striations, joints, undulations) and externally visible “fabric” features (nature of core and firing, inclusions, fineness) to classify the assemblage into “wares” which encompass the functional, stylistic and technological attributes of pottery. Basic ordering is essential for sequencing the cultural materials and phases and in such studies emphasis is more on the typology and decorations. In India, before 1940’s and 1950’s, studies on the Harappan ceramics were prevalent, since the Harappan sites were being excavated in a series by the Archaeological Survey of India. Meanwhile, the Archaeological Departments of Indian Universities and Research Institutes contributed immensely in understanding the prehistory of India and also narrowed the gap between the decline of Harappan civilization and the beginning of the early historical period with new discoveries. In 1940’s and 1950’s, many early historic sites were excavated in north India which yielded evidences of Painted Grey Ware and Northern Black Polished Ware. In-depth studies conducted by Ghosh and Lal in this regard deserve special mention (Ghosh and Panigrahi 1946, Lal 1954). On the other hand, studies based on OCP (Ochre-coloured pottery), BRW (Black and red are), PGW (Painted Grey ware), NBPW (Northern Black Polished ware) have been conducted from time to time and have been related to different culture groups named after the ceramic types. No pottery has drawn the attention and appraisal of as many archaeologists, historians, indologists, anthropologists and scientists as the black and red ware. In this regard, the thorough work done by Singh (Singh 1982) deserves a mention. The in-depth study conducted on the ceramic assemblage of Vijayanagara also deserves a special mention (Sinipoli 1993).
The beginning of New Archaeology in 1960’s and early 1970’s further accelerated the research on ceramics and witnessed introduction of new theories and methods. A number of researches were undertaken in the mean time to give a chronological order to the typological and stylistic variation of ceramics in different regions. Ethnoarchaeology gained momentum in this time and became an essential part of ceramics study. It was subsequently understood that the techniques that potters employed and the choices they made were driven by deeper cultural factors than merely economic and technical constraints (Krishnan and Shah 2005). In Archaeometric studies (Mineralogical and chemical studies of pottery) have been introduced in the recent years and the advanced scientific techniques like X-Ray Diffraction, Emission spectroscopy, Petrographic thin section studies have allowed the ceramic studies to gain new heights. Provenance studies have become much easier with the development of scientific techniques and different computer applications. In this regard the study conducted on the chalcolithic pottery of Balathal by Mishra deserves special mention. (Mishra 2008).

It has to be mentioned that, most of the studies on ceramics have been conducted with the excavated ceramic assemblages. In order to study the explored ceramics, there has to be a different methodology. In case of Bengal, no in-depth study of the ceramics has been conducted so far and in most of the cases is found as a part of the excavated data in the published articles. The study conducted by Datta on the Black and red ware sites and Bandopadhayay on the painted potteries of Pandurajardhibi deserves a mention (Datta 1995, Banerjee 1992). But explored ceramic assemblages, in some problem oriented studies, have been considered of late as significant indicators for understanding the nature of the sites in specific areas of Bengal. In this regard, studies conducted by Panja (1996) and Gangopadhyay (2008) deserve special mention.

6.b. Pottery from the study area

In the present study, the investigator has divided the entire ceramic assemblage of the explored sites into three chronological periods. The excavated site Dihar revealed three chronological phases starting with the chalcolithic (termed as ‘black and red ware phase’ by the excavator) followed by early historical and lastly medieval. The explored potteries have also been placed accordingly. The explored potteries have
been studied typologically in relation to the excavated ones. As mentioned earlier, the explored potteries were mostly collected from the surface, cultivated fields and some from the exposed sections and for segregating these, potteries from an excavated context were highly desirable. The sections were exposed up to the depth of the medieval deposits but not below them. In some of the sites, there were two subsequent layers revealing medieval potteries. But the early historical and the black and red ware pottery samples were collected from the surface where they were found to be strewn over some specific locations within sites. Hence to study the potteries of these sites, the investigator relied on the formal attributes of the individual wares. The excavated assemblage comprised rim, base and body sherd s of different wares simultaneously and the explored assemblage also comprised the same but in lesser amounts. The forms of the explored specimens could be ascertained from the rims and could be related with the forms from Dihar. The surface treatment, fabric and the cores of the individual sherd s were analysed before placing them into proper chronological phases. Due to micro-regional variations in landscape, minor differences were noted in the treatment of individual wares in some of the explored sites. However, the shapes were mostly alike. The differences were evidenced mostly in the case of surface treatment and the fabric. But there is an overall uniformity in the ceramic assemblage of the study area.

Since the early medieval phase at the site Dihar could not be established with substantial evidences, so the ceramic assemblage also had to be placed within the medieval period. At this stage, without any standardized pottery index for this part of Bengal, it is really difficult to talk about the early medieval ceramic assemblage. It also needs to be mentioned, that the ceramics of the former excavation (1982-85), (1990-95) were not available for the study. The use of statistical techniques as well as chemical or minerological investigations could have been possible if the excavated data of the site was published or the full range of artefacts was available for the study. Nevertheless, the researcher is highly indebted to the excavator for his valuable comments, suggestions and observations. Keeping all these limitations in mind, the researcher followed the traditional approach of typologically classifying the excavated samples into three broad divisions (black and red ware, early historic and medieval, see chapter 4 on Dihar for details). The analysis of the ceramic record of the explored sites was also done on typological basis with main emphasis on the different types of
wares and formal attributes of individual wares

Coming to the study area, around one hundred and twenty villages were surveyed in the river valley. Most of the sites in the area have revealed huge potteries (Pl. VII A, IX A, B, C, D, X C, D). These were picked up randomly from the sites and were differentiated on the basis of their varying contexts. In many cases, it was initially difficult to determine whether the specimens occur in a primary or a secondary context. The appearance of the pottery samples assisted in denoting the context of their occurrence. Some basic statistical work helped in analysing the data, but the researcher always had to take into consideration that the data which is currently being studied is only a part of the entire assemblage and is in the form of surface data. Hence, there are limitations in understanding the entire record. Since no sampling techniques could be adopted while collecting the samples, fragmentary sherds were also taken into consideration to ensure an unbiased judgment and to generate a comprehensive database of ceramic assemblage. A detailed list of the pottery assemblage of all the explored sites has been provided in the Appendix. An ethnographic survey, which has been discussed in the ensuing pages, was conducted with the potters of Janta and Ulirara villages in order to gain insights in the current manufacturing techniques of vessels.

The potsherds were arranged in chronology according to the pottery specimens of the site Dihar. The micro-regional variations in the entire river valley helped in judging the nature of the local sources of clay. In most of the instances, it was found that clay used in manufacturing the vessels was collected from the local sources as visually understood from the core (judged by the nature of inclusions) and the surface treatment. After the early historical period, categorization of pottery into early medieval and medieval was difficult because of the lack of any pottery index. A standardized classification of pottery in Bengal will only help, to a large extent, in understanding the categories. On the basis of the studied ceramic assemblage, most of the sites in the study area have been designated as medieval, eighteen sites have been identified as early historic and only three sites have been identified as BRW sites. The pottery description has been given in a chronological order starting with the black and red ware sites followed by early historic and lastly medieval.
6.b.1. Black and red ware sites

The black and red ware pottery is the diagnostic ware of the black and red ware sites in the present study area. Dihar, the only excavated site has revealed black and red ware from the chalcolithic levels till the early historical phase. The black and red ware in India was for the first time suitably recognized in the megalithic context thus betraying a funerary affiliation. It was however subsequently discovered in different spatial, cultural and chronological contexts. Outside India, in Egypt and elsewhere it was reported to be known from still an earlier chronological horizon (Mishra 2009).

The remains found in association with the black and red ware at sites like Lothal (Gujarat), Ahar (Rajasthan), Navdatoli (Madhya-Pradesh), Chirand (Bihar), Pandu raajardhibi (West Bengal), Chandoli and Inamgaon (Maharashtra), Tekkalakota (Karanataka), present totally a divergent picture of the associated cultural assemblage. The problem of the original homeland of the black and red ware has been one of the most vexatious subjects for the scholars (Singh 1982).

Besides the cultural, contextual and chronological ramifications of this ware the technological personality of this ware has also been examined (Singh 1982). It is commonly presumed that this ware is the product of “inverted firing technique”. In this technique of manufacture, the pots are placed in an inverted position in the kiln thereby subjecting the exterior to oxidizing conditions and the interior to reducing conditions. Saw dust or some vegetable matter might have been filled in the pot while firing under reducing conditions. Three different techniques of manufacturing have been postulated by scholars: 1. Single firing technique, 2. Double firing technique where the vessel is fired red first and 3. Double firing technique where the vessel is fired black first. In fact the style, the form of surface treatment, the decorations vary from one region to other (Singh 1982).

The ware has been discovered from all the chalcolithic sites of West Bengal. In fact, it is so typical in the chalcolithic phase that scholars have suggested of considering such sites to be Black and red ware sites (Chakrabarti et al. 1993). It is the typical ware of the chalcolithic period and in this regard, has close affinities with the other chalcolithic sites of eastern India. The ware was first discovered in Bengal from the
This ware has also been reported from the sites Mangalkot, Bharatpur, Mahisdal, Nanur, Dihar, Tulsipur, Baneswar Danga etc (Datta 1995). The typical forms noted in this ware are carinated vases, carinated bowls, *handis* and basins. Besides these regular forms, tumblers, vases, dish-on-stands and channel spouted bowls in black and red ware were also collected from the different chalcolithic sites (Datta 1995). Other than black and red ware, the other wares noted from the chalcolithic levels of the different excavated sites are red ware, black ware, chocolate ware, grey ware and buff ware. The black and red ware has the highest concentration of vessels in the chalcolithic phase.

Coming to the study area, the ware has been discovered in the excavated context from Dihar. The ware has been noted from the earliest levels of the site and is found to continue till the early historical phase at the Hirapur mound at Dihar. The ceramic assemblage of Dihar and its related discussion has been repeated here in order to present the explored potteries in relation to them. The paste of BRW found from Dihar is of fine and well prepared clay. However, the study of BRW specimens, found from Dihar, revealed that the firing technique basically followed the norm of even distribution of heat or temperature thereby creating an oxidizing environment, so as to obtain a sticky surface. The pots are generally placed in an inverted position in the kiln, subjecting the exterior surfaces to oxidizing condition and the interiors to reducing condition. Saw-dust or some vegetable materials might have been filled in the pot while firing under the reducing condition. As a result, the interior surface turns black and the exterior surface becomes red in colour. The section of black and red ware shows a dark grey core formed due to such oxidizing condition. The ware reveals both hand-made and wheel made specimens. The tumblers are mostly hand-made. Husk, mica, quartz, and other tempering materials are very sparingly used in the manufacturing process. Mica particles are also visible on pot surfaces along with sand. The external surfaces of many specimens were found to be glossy and lustrous. Dihar has revealed both coarse and medium varieties of this are (Chattopadhyay et al. 2010).

The prominent shapes noted are carinated vases with flaring rims, tumblers with straight or concave sides, bowls with rounded bodies and incurved rims, carinated bowls with splayed out rims, flat bowls etc. This ware has been traced at the site in
association with metal and also without it. The associated wares at Dihar are red ware, chocolate ware, coarse red ware, black slipped ware and few sturdy red ware vessels. The shapes in these wares are more or less similar to the black and red ware specimens. In case of red ware, the external and the internal surface has been applied with a light slip which varies in colour from red to crimson to orange and sometimes even pink. The vases and bowls have both been recorded in red ware. Carinated vases and bowls are the common shapes noted in the case of chocolate ware. The nature of the slip is pre-fired and the fabric is similar to black and red ware specimens. Black slipped ware specimens found in association with BRW is few and strictly comprises of convex sided bowls with incurved rims. The surface treatment is finer and the sections are thinner in comparison to the other wares noted from the same period.

Fig. 13 & 14: Some important forms (in Black and red ware) noted from the site Dihar (Courtesy: From IAR 1984-85)

In the study area, other than the excavated site Dihar, only three sites have been designated as black and red ware sites. The sites have been placed in this category only on the basis of typological similarity of the collected potteries, with the excavated specimens from Dihar. These black and red ware fragmentary vessels were found to occur on the surface, in a primary context. The proper chalcolithic phase has
been recorded in the area (as evidenced at Dihar) below 2m which can only be revealed through excavation. The exposed sections noted at few sites revealed only medieval potteries because they were not exposed to such an extent.

From the explored sites namely Bhatra, Palasi and Prakash, BRW and red ware sherds of the chalcolithic/ BRW phase have been collected (see Figs. 15, 16, 17 & 23, Tables: 7 & 8). From the site Palasi, portions of carinated vase in black and red ware have been collected. A crimson slip is found to have been applied on the external surface and the internal surface is burnished black. The internal surface has groove marks near the rim (see Appendix, pp-326, Palasi 4). From Bhatra, specimens of fragmentary bowls in BRW were collected with flat bases. BRW fragmentary carinated bowls with splayed out rims have been noted from the site Prakash. These BRW vessels also appear to have been produced through inverted firing techniques. These vases and the bowls have sections ranging between 0.6-0.9 cm. The core is greyish indicating the use of organic matters as evidenced at Dihar. Handmade bowls in BRW have been noted from Prakash. Chattopadhyay has suggested the use of turn­
tables in the manufacturing process of some of the BRW vessels found from the site Dihar (Chattopadhyay et al. 2010).

The associated wares found from the above mentioned sites with BRW are red ware and sturdy red ware. The red ware bowls collected from the site Bhatra have pre-fired slip applied uniformly on both the surfaces of the sherds. The only shape noted in this ware is bowls. These bowls have sections ranging between 0.5-0.7 cm which shows that these vessels are thinner than their BRW counterparts. In some cases where the slip has disappeared, the vessels take the appearance of buff ware.

Some fragmentary portion of jars in sturdy red ware has been recovered from Prakash and Bhatra. These have thicker sections (above 0.7 cm) and are coarser in comparison to the black and red and red ware specimens.

All these specimens mentioned above have typological similarity with the specimens from Dihar (chalcolithic/ BRW levels, 85-200 cm, see fig. 23 for different rim shapes). From these sites, early historical and medieval sherds have also been collected.
The figure (Figure 16, Table: 8) shows the distribution of different forms noted in the chief wares (BRW, Red ware, Sturdy red ware) from the BRW sites of the study area.
Vases are more in the case of BRW and alternatively, bowls are prominent in red ware. Few sturdy red ware specimens noted from the BRW sites of the area mostly comprise jars. Beakers/Tumblers which form an important part of the excavated BRW assemblage in case of Dihar, is completely absent in the explored assemblage. The available data on the ceramic assemblage from the BRW sites is meagre and needs to be cross checked through excavation or trial digs.

**Comparative analysis of different wares: BRW sites of Bengal and that of Dihar**

![Pie chart of BRW sites of West Bengal](image)

Different wares form the BRW sites of West Bengal (*Courtesy: Datta 1995*)

![Pie chart of excavated BRW site Dihar](image)

Different wares from the excavated BRW site Dihar

Fig: 17

This figure 17 shows a comparative analysis of the different wares of the excavated BRW sites in Bengal and that of Dihar. In case of Dihar, we don’t see black ware in
the assemblage; instead black slipped ware occupies its position. It is seen in small percentage in the Manasatala mound area from the ‘BRW with Metal phase’ i.e. the upper levels of the chalcolithic/ BRW phase (see chapter 4). Quite likely, in case of the other BRW sites of Bengal, BRW and red ware occupies the dominant position in the ceramic assemblage. It has to be mentioned that the study is based on the representative assemblage of the excavated potteries of Dihar studied by the investigator. The materials of the former excavation were not available for study.

6.b.2. Early historic sites

At the present stage, understanding of the early historical ceramics of Bengal is still at its infancy. Chandraketugarh can be regarded as the best studied early historical site of Bengal followed by Tamluk, Mangalkot, Kotasur, Pokhanna (IAR refs. cited) and others. But the problem with these sites is that they are excavated year after year, but still there are no general reports about the sites. At the same time, detailed analysis of the ceramic assemblage has never been looked upon as an important aspect of study.

The ceramic assemblage of the early historic sites of northern India is comparatively better understood. The early historical ceramic assemblage of Bengal still needs to be studied precisely and the reports of the excavated sites, in this regard are highly desirable. The early historic sites of north India revealed evidences of PGW (Painted Grey Ware) and NBPW (Northern Black Slipped Ware). NBPW established itself as an Indian fabric with definite cultural associations attached to the beginning of urbanization. NBPW have also been found from early historic sites of Bengal like Pokhanna, Mangalkot, Tamluk, Chandraketugarh etc. The study of this ware gave impetus to the archaeology of trade. Though there are similarities in shapes and fabric between the early historical wares of Bengal and that of north India, but as long as there is a standardized pottery index for Bengal, these affinities are surely, not easy to identify.

The early historical ceramic assemblage of Bengal generally comprises black and red ware, buff ware, grey ware, black slipped ware, red ware and rarely northern black polished ware and rouletted ware specimens noted at very few sites (IAR references cited). Due to the absence of the excavation reports as well as in-depth study on the
early historical ceramic assemblage of Bengal, one has to construct a rough picture from the various published articles. There are regional differences in the location of the sites which is, reflected in the ceramic assemblage. For example, the site Dihar has not revealed any NBPW specimen. But at the same time Pokhanna and Tamluk, lying close to the site, has revealed evidences of NBPW as well as rouletted ware. From most of the excavated early historic sites like Mangalkot, Dihar, Tamluk, Pokhanna, Kotasur, Chandraketugarh and others, black slipped ware has been noted in considerable numbers. Besides these, buff ware and grey ware vessels have also been unearthed from the early historical levels. The continuation of BRW from the chalcolithic phase to early historical has been noted in some of these sites of which Dihar and Mangalkot deserve a special mention (Chattopadhyaya et al. 2010, Ray and Mukherjee 1992).

At Dihar, the early historical phase is characterized by the continuation of BRW and has been identified from the Hirapur (35-84 cm) and the Manasatala (15-67 cm) mounds respectively. In the former excavations conducted by Pal (1992) the early historical level (layers 3, 4) was traced on the basis of cast copper coins, beads of semi precious stones, black slipped ware pottery and terracotta objects. A detailed study of the ceramics was not conducted and only some specific wares were enlisted as early historical. From the recent excavations, the early historical phase besides yielding the aforementioned artefactual evidences also provided substantial evidences of metal working form the Manasatala mound area. In this regard, it has to be mentioned that these early historic assemblages showing continuity of BRW has yielded calibrated dates of 110 ± 141 yrs (BSIP Dates, Chattopadhyay et al. 2010).

In the present study, most of the early historical potteries from the explored sites have been collected from the surface where specific areas within the sites were found to be strewn with potteries. The exposed sections noted at few of the sites did not reveal early historical ceramics except the site Dayalpur and Bhatra. Some specimens were also noted from the exposed sections along the river, in occasional patches and from the adjacent cultivated field areas. The potsherds collected from the surface appear to be in a primary context from their appearance. The study shows that there is an overall uniformity in the early historical ceramic assemblage of the study area with
minor variations in fabric and surface treatment that can be attributed to the micro-regional variations in landscape.

The sites identified as early historical in the study area are Elyati, Hariharpur, Radhamohanpur, Agra, Rautara, Dhangara, Bhatra, Prakash, Mukundapur, Beltha, Chaltakonda, Dumduma, Deuli, Malakarpota, Andra, Balarampur (Dayalpur), Basantapur/Tilabani. The sites of Andra, Dayalpur have been reported as black and red ware sites (Chattopadhaya et al. 2009). The wares collected from the explored sites are red ware, grey ware, buff ware and black slipped ware. From the excavated context at Dihar, early historical phase has been identified in the Hirapur and the Manasatala mound areas. From these two areas, we find the continuation of BRW from the earlier levels. The associated wares at Dihar are red ware, black ware, grey ware, buff ware and black slipped ware respectively. Some sherds of coarse red ware has also been identified from the early historical levels.

The above mentioned wares have been discussed individually as follows (See Fig: 18, 19 & 23, Tables: 9 & 10):

1. Red ware: In the explored early historic ceramic assemblage, red ware forms the dominant variety. The fabric of the specimens varies from medium to coarse. A light wash has been applied on both the surfaces of the vessels which in most of the cases have taken a pinkish appearance. Organic matters and sand has been used in good proportion in manufacture of the vessels. The section of the bowls ranges from 0.5 - 0.7 cm. For the vases and the jars, the section is thicker.

Red ware comprises bowls, vases and jars. The major forms noted are carinated bowls with everted or featureless rims, convex bowls with horizontally splayed out rims, convex bowls with inturned rims and convex bowls with drooping rims (see pp., Appendix, pp-323, Hariharpur 4). Some extant specimens of bowls noted from one or two sites have an abraded external surface due to which it has turned buff in colour and is sometimes mistaken as buff ware. Vases are less common than bowls in red ware. The rims are mostly splayed out or flanged or externally thickened (see Appendix, pp. 323, 327, Andra 3, Basantapur 3). Comparatively, the bowls have a better finish than the vases. Red ware also comprises jars which have thicker sections
in comparison to the other forms. These have internal corrugations and in most of the cases have beaded rims.

Similar specimens in red ware have been noted from the excavated site Dihar (Manasatala, 35-65 cm). Some of the explored specimens seem to be handmade, similar to the site Dihar. Luting marks have also been noticed on some of them. In Dihar, vases and bowls are the prominent forms noted in this ware. But in case of the explored sites, jars have also been noted in this ware. Besides these forms, some fragmentary sherds in red ware have also been noted for which the shapes could not be reconstructed.

2. Grey ware: Grey ware forms the next prominent ware after red ware. But early historical grey ware is different from the medieval grey ware. This difference was also noted in the site Dihar. A light wash in the early historical ones is applied uniformly on both the surfaces of the ware which makes the appearance of the vessels very smooth. The medieval ones have a cruder appearance probably due to the use of substantial amount of sand and other tempering materials. The fabric and the surface treatment of the ware, in the early historical period, are similar to the early historical black ware specimens collected from very few sites. Actually the clay used in the manufacturing is of a very fine quality. Organic matters have been used in considerable proportion and sand has been used, but in very less amount.

The typical forms noted in this ware are mostly bowls, vases and fragmentary basins. Bowls are greater in proportion. Bowls have rounded profile with incurved rims. Sections of the bowls varies between 0.5-0.7 cm. Base portions have also been recorded with string marks indicating its manufacture on a fast wheel (see Appendix, pp.322, Hariharpur 1). Vases mostly have outturned rounded rims. Internal corrugations have been noted on the internal surface of the vessels. Most of the specimens have clear-cut striation marks on the internal surface of the sherds indicating their manufacture on a fast wheel. Besides bowls and vases, one or two fragmentary basins have also been noted in this ware. Rim shapes could not be judged, but have been demarcated due to coarser treatment and thicker section in comparison to the bowls and vases.
Grey ware vessels have been found from the site Dihar in the medieval levels as well as from the early historical levels. Early historical grey ware has been found from 60-84 cm (Hirapur). Unlike the explored sites, no basins were noted from the excavated context (see Chapter 4 on Dihar).

3. Buff ware: Buff ware mostly comprises bowls very much like the excavated site Dihar. No other forms were noted in this particular ware. The bowls are mostly without any slip and have been applied with a wash (see Appendix, pp.323, Andra 5). This ware has only been noticed from the early historical levels in the Manasatala mound area of Dihar (from 65 cm onwards till 85 cm). These bowls have everted, splayed out, flanged, externally thickened or incurved featureless rims. These bowls mostly have a flat base and a convex profile. The base portion of some of these vessels show string marks indicating the use of wheel in the manufacture. Some of them have a rusticated surface and show soot marks, indicating that these might have been used for cooking. Sand has been used in substantial amount for manufacturing the vessels. The sections of bowls vary between 0.5 - 0.8 cm and the fabric is medium. The quantity of sand used as temper in the manufacturing process varies from site to site and the core of the samples show husk and dung impressions. In many cases, it was difficult to differentiate between red ware and buff ware and in such cases, the core of the vessels helped in assessing the actual ware.

4. Black ware: This ware has been found from many sites in the study area. The shapes are strictly confined to bowls and very few jars. The vessels have a burnished external surface but the fabric is not as fine as the black slipped ware specimens. Sand and organic matters have been used in considerable amount in the manufacturing process. Some of the vessels have luting marks near the neck indicating that the specimens were made in parts. The most important forms noted in this ware are bowls and jars. The bowls mostly have outturned, everted, or externally thickened rims (see Appendix, pp. 324, Malakarpota 4). The sections of the bowls vary between 0.6-0.8. The jars have a thicker section. In some cases, the profile was difficult to determine due to the fragmentary nature of the sherds.

From the excavated context, they were noted at the site Dihar from the early historical levels (Manasatala, 20-60 cm, Hirapur 45-80 cm). But unlike Dihar, from the
explored sites, only bowls have been found in this ware substantially. No basins have been recorded, but in Dihar, basins in black ware have been noted along with the other forms. Some of the specimens in this ware have internal grooves and the specimens from Basantapur and Deuli have incised designs on the external surface.

5. Black slipped ware: This ware has been collected from very few sites like Dayalpur, Andra and Dumduma. Bowls are the only forms noted in this ware (see Fig 23 b). The fabric is fine and the sections are very thin (0.4-0.6cm) which indicates that they are finer than the bowls noted in other wares. The surface of these bowls show uniform striation marks indicating its manufacture on a fast wheel. The clay used in these forms is very well levigated. The core is greyish indicating uniform firing. The use of sand in these forms is restricted unlike the other wares. The fine sections of the bowls and the use of well levigated clay, free from impurities show that these specimens might have been used as a table-ware. These were not brought in direct contact with heat or were probably not used for regular applications. The specimens collected from the sites along the Sali river have a better surface treatment than the ones collected from the sites in the Dwarakeswar river valley but are quite fragmentary in both the cases due to thin sections. No other forms have been noted in this ware. This might be attributed to the nature of the clay available in the two areas.

Black slipped ware bowls have been noted in Dihar at the mounds- Kalbhairabtala, Manasatala (15-67 cm) and Hirapur (35-84cm). The specimens revealed from Kalbhairabtala mound at Dihar have the finest quality amongst all. The specimens collected from the sites Andra and Dayalpur are similar to the ones found from the excavated context at Kalbhairabtala. The explored specimens from the sites of Dwarakeswar river valley are not of so fine quality and are more similar to the specimens revealed from Manasatala and Hirapur mounds at Dihar. Besides bowls, no other forms have been noted in this ware.

6. Others: Among the other wares, sturdy red ware deserves a mention. Some specimens in ill fired ware have also been found from some sites. Sturdy red ware specimens have been found from the sites Chaltakonda, Deuli and Radhamohanpur and mostly comprises of fragmentary basins. The core is greyish, gritty and porous in the case of basins. Sturdy red ware vessels have not been found from the excavated
context at Dihar, but similarity in forms has allowed the investigator to include these specimens within the early historical ceramic assemblage. Ill fired ware specimens were few which comprise jars with thick sections and coarse fabric.

It has to be mentioned here, that there are certain differences in the ceramic assemblage of the explored sites in the Dwarakeswar river valley and that of the Sali river valley. The potteries were found from an exposed context in the site Dayalpur, situated on Sali. These sites have revealed black slipped ware, grey ware and red ware potteries. The fabric and the surface treatment of the wares are much better than the ones in the Dwarakeswar river valley. Most important of all, these specimens mostly have thinner sections than the vessels coming from the Dwarakeswar river valley. The forms noted in black slipped ware are mainly bowls with convex sides and incurved rims. But the surface treatment shows highly burnished external surface of the vessels and the sheen is mostly due to burnishing and the fine nature of clay available in these areas of the Sali river. The grey ware vessels mostly have bowls and vases but the red ware comprises all the forms like bowls, vases and jars, as evidenced in case of the explored sites in the Dwarakeswar river valley. The red ware forms have all been treated with a bright red slip very much like the chalcolithic ones noted at the site Dihar. The sites in the Dwarakeswar river valley revealing the same ware and the same forms show a kind of pinkish wash applied on the vessels, instead of a slip. The colour of the wash is also very dull which is restricted to shades of pink. These are some of the minor differences noticed in the ceramic assemblage of the sites situated in two different river valleys. The forms are more or less similar. However, all these differences are absent in the case of the medieval ceramic assemblage which has been discussed in the following pages.

Pie-chart showing different wares in the early historical period

<table>
<thead>
<tr>
<th>WARES</th>
<th>SITES</th>
</tr>
</thead>
<tbody>
<tr>
<td>RW</td>
<td>16</td>
</tr>
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<td>GW</td>
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<tr>
<td>OTHERS</td>
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</table>

Table: 9
The Figure (Fig: 19, Table: 10) shows the different forms noted in the early historical period. Bowls are the most prominent variety noted in almost all the wares of the early historical period. This is followed by vases and jars. Buff ware and black slipped
ware strictly comprises of bowls. The sturdy red ware and ill fired ware considered as a minor variety (placed in ‘others’) have been found from very few sites and chiefly comprises of fragmentary bowls and basins. Bowls and vases are the major forms noted in the early historical phase which continues to dominate even in the medieval period. But in the medieval period, we find many other new forms like cups, pans, lids becoming prominent.

6.b.3. Medieval

Archaeology of the early medieval and the medieval period is a poorly studied field. Scholars have mostly focused on the structural remains or the sculptures of the medieval period. Identification of medieval sites on the basis of epigraphic data has also been successfully attempted. Throughout the country, we find very few studies that highlight the material assemblage of the medieval period.

In the recent years, some problem oriented studies are being conducted by scholars. In this regard the work done by Carla. M. Sinopoli on the medieval ceramics of Vijayanagara (a medieval city of Hindu Rulers) deserves special mention (Sinopoli 1993). She has conducted a comprehensive study of ceramics; since medieval research has largely been oriented towards documentation of urban plans and architecture, this study can be considered to be a significant one where she has thoroughly studied the ceramic assemblage of the site. A number of dimensions of ceramic variability were considered in the analysis. Sinopoli collected sufficiently large amount of samples as to encompass total range of variation in the ceramic repertoire of the site, or region under study. These samples were representative sample of the sites, strata or areas under study. She organized the samples into a classificatory system that recorded information on ceramic variations relevant to particular research questions.

She collected samples from the Noblemen’s Quarter, East Valley and the Islamic Quarter (excavated areas). Stratified systematic partially aligned random sampling methods were used to analyze the samples from the East Valley. The surface ceramic densities in the Islamic Quarter area were quite as low as compared to the East Valley; sherds visible were fairly small. She aimed at a descriptive classification
followed by the interpretation of vessels using direct evidences, vessel morphology and technological information. She also aimed at understanding the relation between ceramics and human data and finally tried to build up ceramic chronology of the site. On the basis of surface colour, surface treatment, information on vessel wall thickness, she formed categories of ceramic wares namely plain ware, burnished ware and coarse ware. Sinopoli studied the ceramic assemblage of Vijayanagara taking all the intricacies of the vessels into consideration, in order to understand the economic and social organization, to locate the activity areas and also the production and distribution mechanisms of the vessels. The heuristic division of the site into discrete zones on the basis of architectural and topographic features is supported by her ceramic analysis. This work no doubt provides valuable insights into the life of all who lived there, rulers and ruled (Sinopoli 1993).

In Bengal, such studies have not been undertaken as yet. The excavation reports of the early medieval/medieval sites like Jagjivanpur which are still unpublished do not give us any idea of the ceramic assemblage of this period (the terms-early medieval and medieval have been used simultaneously because the present status of research do not permit us to differentiate between the two periods on the basis of material assemblage). The emphasis has always been more on the exotic items of the material record like terracotta plaque or seals; there has been no attempt to understand the “less exotic” aspects like pottery or organic remains. The excavation report of Moghalmari (Datta et al. 2008) helps us to some extent in having an idea of the ceramic assemblage of the site. But both of them are structural sites due to which emphasis was more on the exposed structures.

The work done by Dr. Sheena Panja on ‘the Archaeology of Early Medieval Settlements in Bengal’ (Panja 1996) also deserves a mention because she has put forward the problems in understanding the surface record of the early medieval period. She has focused on the problems encountered during the survey of early medieval sites and has asserted that a holistic understanding of sites is an absolute necessity. She has tried to perceive the difference between a ‘site’ and a ‘find spot’ and has taken the entire gamut of archaeological material into consideration. Her work is mainly based on North Bengal and she has mainly used ceramics as the chief criteria to understand the nature of habitations. She used the typological aspects of
potters to understand the shape, fabric, colour, temper, and glaze and has tried to 
build up an evidence of “early medieval pottery assemblage” which is exceptional. 
She has studied the excavated pottery from Jagjivanpur and Pichli (Malda district) to 
use them as an aid to understand the explored potteries from different sites of North 
Bengal.

In south western Bengal one of the most important medieval sites is Mangalkot. The 
excavation of the site undertaken by Calcutta University under the supervision of 
Amita Roy and Samir Mukherjee has been published in the form of an article (Ray 
and Mukherjee 1992). In this report, the medieval phase of the site is said to be 
disturbed and we find only the mention of few specific wares as medieval. But this 
does not facilitate in having a holistic knowledge of the site. The protohistoric and the 
early historical phases have, no doubt, received more attention from the scholars.

Having no standardized pottery index in hand, the task of organizing the medieval 
ceramics of the study area seemed to be difficult initially. The medieval potteries from 
the site Dihar helped in placing the explored specimens into an order. Moreover, 
potteries were also found from an exposed context, which helped to relate them with 
the ones collected from the surface. The explored sites, which have been designated 
as medieval in the present study, might also possess an early historical or chalcolithic 
level, which at the present stage could not be ascertained. It has been attempted by the 
researcher to make the pottery collection a representative one for each and every site. 
Uniformity was noted in the medieval ceramic assemblage of the explored sites and 
that of excavated site Dihar that helped in ascertaining the potteries into proper 
chronology.

The sites which have been designated as medieval in the study area are Banshi/ Banki 
(Bankura I), Rajagram, Bhabur, Ekteswar, Bahulara, Sonatopal, Shuklai, Gamidya, 
Radhamadhabpur (Nilbaridanga area), Agra, Bikrampur, Patpur, Joykrishnapur, 
Thakurpur, Naer, Janta, Rautara, Hinjuri, Bagdahr, Mukundapur, Salkota, 
Balarampur, Baikunthapur, Gosianpur, Beltha, Rautkanda, Salda, Gokulnagar, 
Madhuban, Gopalnagar, Banshi (Joypur Thana), Chandipur, Basubati, Hati, Ranahat, 
Balarampur (near Hugli), Panna, Laugram, Patragnati and Pantrai and others. These
sites have been designated as medieval on the basis of the evidenced archaeological record (chiefly ceramics, please see Chapter 3 for details).

As mentioned earlier, the medieval ceramic assemblage of the study area shows uniformity in shape, fabric and forms. Most of the forms noted could be related with the excavated pottery collection of Dihar (see Figs: 20, 21 & 22, Tables: 11, 12 & 13, see Fig: 23 for rim shapes). Red ware specimens dominate the ceramic assemblage throughout. In this period, the ceramic assemblage shows more varieties. The chief wares noted are red slipped ware, red ware, grey ware, black ware, fragmentary ill-fired ware and others (Coarse red ware, Porcelain, sturdy red ware). All these wares show uniform striation marks that indicate their manufacture on a fast wheel.

The red slipped ware and red ware specimens were more or less ubiquitous and could be located in most of the sites. It seems that these varieties were used more by the people. Moreover, these wares comprising strictly utilitarian forms were probably subject to more breakage and decay which in turn increased their proportion in the ceramic record. But minor variations noted in the wares have been discussed in the following pages.

1. Red Slipped ware: This ware has been collected from almost all the medieval sites. Red slipped ware of the medieval period is dissimilar from the red slipped ware found from the earlier levels (BRW/chalcolithic phase or early historical phase). The medieval sherds are found to have been applied with an oily slip sometimes on both the surfaces and sometimes only on the internal surface. The slip is post-fired in nature. If applied on both the sides, then the slip on the internal surface is applied from the rim and on the external surface, from the neck. Such reason for application could not be ascertained but might be considered as an effort to decorate the vessels or to control the porosity of the vessels. The ethnographic survey conducted with the potters also did not help in getting the answer because in the modern context, slip is generally applied on the external surface.

In the black and red ware/chalcolithic levels, the specimens of red slipped ware showed that the slip was applied uniformly on both the surfaces of the vessels. But in these, the application of slip is different. There are good variations in shapes but the
common form noted is a vase with externally sharpened and flanged rim, concave neck and a flaring body (see Appendix, pp.322, Pantrai 2). The rim is found to differ in some cases but the body of the vessels retains the same form. In some, the rim and the internal surface are found to have corrugations or faint groove lines. The rim on some occasions is triangular or beveled, oblique and the carination in the neck is prominent in some. The same profile of the vases was also found during the early historical phase in red ware, where the rims were outcurved and flanged. The same form continues but the surface treatment is different. In some cases, the flange takes the form of an external ledge (see fig 23 for rim shapes).

The bowls are also prominent in this ware. In case of bowls, the body is flaring and the rim varies from out curved featureless, flanged to rounded and sometimes beveled also. Deep bowls have also been recorded with incurved rims. In the case of shallow bowls, the rim is found to be beaked or beaded and the body is flaring. Some have an external ledge also (see Appendix, pp. 326, Palasi 3).

Of these two major forms noted in red slipped ware, the vases are better manufactured. The section of vases varies between 0.6 -0.8 cm, the core indicates uniform firing and the inclusions added for the manufacture are smaller in size than the other forms. Some vases have incised decorations on the external surface and internal corrugations also. Comparatively, the bowls have thicker sections varying between 0.7-0.8 cm. The fabric of the bowls is coarser. In all probability, they were more in use than the vases. The sites which are located in the zones having lateritic outcrops mostly show small particles of the local stone as inclusions in the sections of the pottery and in such instances the section thickness of the vessels is slightly higher than usual. Some specimens reveal greater use of sand and mica. On the other hand, the sites situated near the alluvium zone show finer sections indicating the use of well levigated clay in vessel manufacturing.

The bowls have very few incised decorations on the external surface, on the rims or near the neck. The base portions of the bowls indicate that most of them have been manufactured on wheels. String marks have been noted indicating the use of a string piece for lifting the vessel from the wheel. Some bases again have rusticated surface indicating its regular use due to which the string marks are presently not visible.
These bowls mostly have flat bases. In few instances the external surface of the vessels has a blotchy appearance. The slip easily flakes off from the surface of the vessels indicating a post-fired slip. Ethnographic studies show that the use of salt in the manufacturing process gives a blotchy appearance to the vessels.

Bowls and vases are followed by jars, basins and cups, which are undoubtedly lesser than the bowls and vases. The jars mostly have splayed out rims with carinated necks (see Appendix, pp.322, Pantrai 4) and the basins have beaded or externally splayed out, drooping or clubbed rims (see Appendix, pp.327, Dharapat 3). Cups are newly introduced in this period but some specimens were quite fragmentary. These cups were found to possess fine sections with slightly everted rims. Uniform striation marks have been noted on the internal surface of the vessels. The base portions have string marks (see Appendix, pp.330, Gosainpur 1). The fabric is medium. The cups were utilised probably for consuming liquids as used in the recent days. The cups are still manufactured by the potters of the adjacent villages. In the excavated context, the rim portions of these cups were also recovered, which were mostly everted; but from the explored sites, only base portions have been recovered. These flat bases of the cups have been segregated from the bowls on the basis of section thickness because in case of cups, it ranges mostly between 0.3-0.4 cm. But the bowls comparatively have a thicker section.

At Dihar, red slipped ware from the medieval levels revealed mainly vases and bowls (20-85 cm, Mabhabanitala). The forms and the rim shapes are more or less similar. The associated wares (medieval phase) with red slipped ware at Dihar are mostly grey ware, coarse red ware and black ware. The other wares collected from the explored sites and which have been placed in the medieval category (associated with red slipped ware) have been discussed below.

2. Red ware: This ware forms the next prominent ware. These specimens were collected from few sites like Chaltakonda, Deuli, Basantapur, Dejhat, Malakarpota, Patraganti, Andra, Dayalpur. Red ware is found since the chalcolithic/BRW phase of the site Dihar. In the BRW phase, these were treated with a pre-fired red, orange or crimson slip uniformly applied on both the surfaces of the vessels. The early historical ones show the application of a pinkish wash. In the medieval period, these specimens
are applied with an ochrous wash which easily comes out on hand. Though there is a difference in surface treatment, the older forms continue and bowls and vases are the dominant ones in the red ware assemblage. In the medieval period, basins are newly introduced in this ware. In Dihar these specimens were found mostly from pre-Malla (early medieval) levels but few were found to be continuing from the chalcolithic / BRW phase with a pinkish pre-fired slip.

The forms noted in this ware are bowls, vases, jars and basins. The fabric is similar in all these forms. However, the basins and jars have thicker sections. Basins, vases and bowls are found to have been applied with a light red ochrous wash. The external surface in some of the cases shows an abraded appearance. The bowls have globular body and have carinated, splayed out or flanged rims (see Appendix, pp.322, 324, Pantrai 6 and Parikshapara 2). Fabric varies from coarse to medium. The section of the bowls varies between 0.5-0.7cm showing that it still retains the same characteristics since the earlier periods. These specimens are uniformly fired as indicated from their core. Vases are similar to the bowls in texture and surface treatment. Vases have everted or flanged rims.

Basins in red ware have a thicker section (0.7-0.8cm) and mostly have straight sides or slightly rounded sides and horizontally splayed out rims (see Appendix, pp. 325, Bikrampur 1). Sometimes these have an external ledge. Jars have outturned thickened rims and a coarser texture than the other forms. From the excavated context, red ware specimens of the medieval period have been found in lesser amount than the rest of the wares (25-60 cm, Mabhabanitala).

3. Grey ware: Grey ware forms the next major ware after red slipped ware and red ware. The grey ware of the medieval period is quite different from the specimens of the early historical levels. The surface of the medieval grey ware vessels is micaceous and the sections are thicker than those found from the early historical levels. The striation marks are very prominent in the specimens of the early historical period indicating the use of a fast wheel in manufacturing. Moreover, the specimens in the early historical period seem to have been treated with a thin wash which makes the surface look even and smooth. But in the medieval grey sherds, the surface treatment is coarser and the striation marks are not so prominent. Most of the vessels have
internal corrugations in the form of decorations. Bowls are common in the early historical levels but in the medieval phase, bowls are accompanied with vases, dishes, basins and fragmentary lids.

During exploration, the grey ware pottery samples collected from the explored sites were mostly in the form of surface scatters. Only at the site Parikshapara, some fragmentary grey sherds were noted in the sections. They occur in the medieval context at the site. From the site Pingrui, a singular specimen of fragmentary lid in grey ware was collected from the sections along the river (see fig 23.). This fragmentary lid has internal corrugations and has a comparatively thinner section than the rest of the medieval varieties. This singular specimen seemed to be earlier than the rest of the medieval sherds and was found to be similar to some of the specimens of lids in grey ware found from the early medieval site of Moghalmari (West Midnapur, Datta et al. 2008). Though there are regional differences, but the shape and the surface treatment is similar to the Moghalmari specimens. However, further probing is essential in this regard. A general description of the forms noted in grey ware from the explored sites is as follows:

Bowls and vases are common in this ware. Grey ware (medieval) also comprises dishes, basins and lids. Grey ware bowls have also been noted from many explored sites. The section in the case of bowls is thinner than the vases and basins. But the fabric is medium. Two types of bowls have been noted. The first one has featureless, externally thickened rim and a rounded body (see Appendix, pp.324, Malakarpota 2) and the second is a shallow bowl with a rounded body, incurved rim and with an external ledge (see Appendix, pp.329, Elyati 2 & 4). Very few carinated bowls have also been noted in this ware (see Appendix, pp. 327, Dharapat 2). The bowls, unlike the other forms, does not have a micaceous surface. Instead sand has been used in good proportion that can easily be made out from the surface of the bowls.

The vases have different types of rims and body shapes. In the most common form, a vase is found to have splayed out sides and a flanged rim. The fabric is coarse and section is thick (0.8 cm). A light wash is found to have been applied on both the surfaces of the specimen which comes off easily. The thickness decreases from the rim towards the body. In some other forms noted from the explored sites, the rim is
found to be horizontally splayed out and flanged but the sides are straight. In many specimens, corrugation marks have been noted on the internal surface of the sherds. In one or two specimens, black patches are seen on the external surface (soot-marks) which indicates that the vessels might have come in contact with fire.

The basins have thick sections and their appearance is very crude. These forms have micaceous surface and the core indicates the use of small stone particles, sand and organic matters. These basins are noted with horizontally splayed out rims or externally thickened rims. The core is greyish in most of the cases but in some specimens, black patches have been noted which might be due to the organic content.

Some dishes with concentric groove lines have also been noted in grey ware. These specimens being very fragmentary did not reveal much detail. Dishes have also been noted in some of the sites. These specimens mostly have convex sides and incurved rims. Striation marks have been found on the internal surface indicating its manufacture on a fast wheel. One fragmentary lid in grey ware has been noted from Pingrui (Fig. 23 c).

The excavation at Dihar has revealed similar specimens of grey ware vessels from the varying depths (42-76 cm, Mabhabanitala). At Mabhabanitala, Dihar terracotta lamps in grey ware have been noted in good numbers. The explored site early historical site Chaltakonda has revealed similar terracotta lamps in grey ware. But during exploration, these were mostly collected from the surface.

The grey ware pottery assemblage from the explored sites reveals their utilitarian nature and lacks any kind of sophistication. The shapes are also very regular and common. At the early medieval site of Moghalmari (Dantan, West maidnapur), many grey ware vessels were noted but these were mostly associated with the ritual and religious activities, since they were mostly associated with the religious complex (MGM1). In comparison, the habitation areas of Moghalmari (MGM2, MGM3) revealed large quantities of red ware sherds (Datta et al. 2008). In Dihar also, at Bhabanitala, grey ware lamps and other grey ware vessels were noted in large numbers but they cannot be exclusively related with religious activities. In other mounds, like Hirapur and Kalnaairabtala, grey ware vessels were also noted but the
forms were utilitarian and can be related to household activities. So it can be considered that grey ware vessels were used both as utilitarian and ritual objects in Dihar as well as the other explored sites.

Decorations in grey ware specimens are confined to some incised designs on the external surface of the sherds and some internal corrugations especially in the cases of the jars.

4. Ill Fired ware: Ill fired ware specimens were used for storage purposes. These specimens are largely ill fired, devoid of any slip and manufactured at random without any specialisation. In fact, in present potter’s villages, these type of vessels are still manufactured which have been used for feeding the cattle. Basins are the typical forms noted in this ware which mostly have nail headed, clubbed, flanged or beaded rims. The section is thick (0.7-0.9 cm) and coarse. Sand has been used in good proportion to make the vessels more durable and resistant to heat. In most of the cases, they are devoid of any slip. Paddle impressions are very common in these wares and the striation marks are very difficult to make out from the appearance of the vessels (see Appendix, pp.322, Hariharpur 2). Basins are followed by jars and vases. Some of the forms were fragmentary making it difficult to make out the original shapes. Vases have been recorded with flanged rims but are very few. Jars have comparatively a coarser fabric and have outturned externally thickened rims (see Appendix, pp.328, Gamidya 3). Basins and jars in ill fired ware have more or less equal section thickness ranging from 0.7-0.9 cm.

Ill fired ware vessels have been noted in Dihar but in very few numbers. These specimens mostly have paddle impressions on the external surface. Since this ware has been collected from sites during exploration, the absence of this ware in the excavated context is a bit surprising.

5. Black ware: Black ware mostly comprises bowls with very coarse texture. This is followed by jars and basins. The rim in the case of black ware bowls is found to be incurved and featureless. The body is globular in most of the cases. In some specimens, the rim is found to be externally thickened and rounded. Such specimens have a faint carination near the neck. The section of the black ware bowls varies
between 0.6-0.8 cm. Jars and basins have comparatively a thicker section. The core is gritty and porous and shows different types of inclusions. Organic matters, sand and mica have been used as tempering materials. These forms lack any kind of sophistication and are restricted to utilitarian forms. The bowls have turned black in most of the cases due to ill firing, over which a black oily thick slip has been applied on both sides of the vessels. The nature of the slip is post-fired, similar to the red slipped ware vessels. It easily fakes off from the surface. The external surface in many cases has a blotchy appearance. The surface of the bowls is uneven and the striation marks are difficult to determine.

The original surface, which is pale black, is visible in some of these black ware specimens. These vessels must have been manufactured under a reducing condition. It seems that the specimens of black ware which were discarded by the potters due to improper firing and finish were applied with a thick black slip and used in different purposes. No decorations have been noted in the black ware specimens except some paddle impressions. Some of the vessels in this ware also appear to be hand-made. At Dihar, the medieval black ware fragmentary vessels have been collected from the two mound areas (Mabhabanitala and Kalbhairabtala, 20-80cm). The shapes are also similar but in the excavated context, jars and basins in black ware were not encountered.

Vases in black ware have mostly outturned or splayed out rims (see Appendix, pp.322, Pantrai 1). The fabric is similar to the bowls. Jars are of coarser fabric and have heavily beaded rims. Some of the specimens were found to have internal corrugations on the surface. Pan (fragmentary) with handle has been noted form a single site. The external surface of this specimen is found to be applied with black slip whereas the internal surface is black but devoid of slip. One or two basins have also been noted in this ware (see Appendix, pp.322, Hariharpur 6).

6. Others: One of the other wares noted in the medieval sites is coarse red ware which is completely devoid of slip or wash and comprises good quantity of sand as indicated by the surface and the core of the fragmentary vessels. The easy availability of sand might have helped the people to utilize it in considerable amount for vessel manufacturing. Besides them, sturdy red ware vessels have been noted
from two sites which comprises of jars applied with a fine wash and having clubbed rims. These vessels are found to continue till the present days.

The last type noted at few sites is porcelain vessels. At the site Basubati, two sherds in porcelain were noted with ring stand and having white and blue floral designs on the surface. Porcelain was also noted in the sites Basantapur, Gosainpur, Ranahat and Baikunthapur. But these sherds were fragmentary and were all collected from the surface in association with the other medieval wares.

The sites in the Sali river valley, namely Andra and Dayalpur, revealed similar types of wares and similar fabric and surface treatment in almost all the wares. The concentration of red slipped ware, grey ware seems to be more than the rest. The dominant forms like bowls, vases and jars are found in the red slipped ware assemblage of these sites also. Cups which were found in this period from the sites in the Dwarakeswar river valley have been found from these sites also. Grey ware comprises fragmentary bowls, dishes, lids and basins with a coarse fabric and similar micaceous surface. Rest of the wares like black ware, red ware have been found but comparatively in lesser amount than the above mentioned wares. Hence, in this period, uniformity has been noted in the ceramic assemblage of the sites in the two river valleys unlike the early historical period.

Pie-Chart showing the distribution of different wares in the medieval period

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Table: 11
Distribution of Red ware, Grey ware and Black ware in the three periods.

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<td>3 Sites</td>
<td>15 Sites</td>
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</table>

This graph (Fig. 21, Table 12) shows the continuation of some of the wares in the three chronological periods (BRW-Black and red ware phase, EH: Early historical and M: Medieval). The continuation is seen chiefly in the case of three wares- red ware, grey ware and black ware. It is very true, though, that the nature of the slip and surface treatment in these wares undergo minor changes during the three periods but
the wares continue to exist even with minor variations. Grey ware in the medieval period becomes coarser due to the use of sand and the black ware which was devoid of any slip in the early historical period is found to be applied with a post-fired slip on both the surfaces of the sherds. Red ware remains more or less the same. Initially it was treated with a pinkish slip which takes the form of an ochrous wash in the subsequent periods but the shapes do not change in the medieval period. Red ware again takes a new appearance with the application of red oily post-fired slip in the medieval period and becomes red slipped ware. However, some specimens are devoid of any slip and have been placed in the category of red ware in the medieval period. Black ware also has a post-fired black slip in the medieval period which was devoid of slip in the earlier periods.

**Different forms noted in the medieval period from the explored sites**

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<td>IFW</td>
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</tr>
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Table: 13

The figure (Fig: 22, Table: 13) shows the different forms noted in the medieval period. Bowls, jars and vases are the most common forms noted in the entire assemblage. From this it is evident that bowls are the most prominent variety noted in
all the wares; red slipped ware having the highest amount. This is followed by vases but these are mostly restricted to red slipped ware. Red ware forms follow more or less the red slipped ware pattern. Grey ware comprises bowls and vases but dishes, basins and lids are the other forms noted. Ill fired ware comprises basins in highest amount. Black ware also comprises highest amount of bowls followed by the other varieties. The sturdy red ware considered in the last group mostly comprises jars. Cups are only noted in red slipped ware. The prominence of bowls and vases in more or less all the wares is quite evident from the above graph.

Fig 23 a: Rim shapes of BRW potteries
Fig 23 b: Rim shapes of early historical potteries

Fig 23 c: Rim shapes of medieval potteries
6.b.4. Miscellaneous objects:

Besides pottery some other artifacts were collected from the sites during the course of exploration which are as follows:

1. A cylindrical terracotta object (5 cm in length, diameter is 1.5 cm) from Rajagram (surface scatter). The object is devoid of any perforation. The actual use of the object could not be ascertained but might have been used as a game object. This was found on the surface of the mounds in the eastern part of the village (PI. XIII A).

2. Fragmentary sherds of Glazed ware from the site of Baikunthapur. These were found strewn over the surface near the mounds, on the southern part of the village.

3. Porcelain sherds from the site of Basubati, Baikunthapur and Basantapur. One of the fragmentary sherd collected from Basubati has a ring base. But the complete shape could not be reconstructed. All these samples were collected from the surface.

4. Terracotta flesh rubber was collected from the site Elyati. Both the surfaces have hatched designs on them. It was collected from the cultivated fields.

5. Hopscotch (1 cm diameter) in red ware was collected from the site Deuli (Kumardang area).

6. Pottery disc (0.9 cm diameter) in grey ware was collected from the site Balarampur.

7. A mother goddess figurine of iron was found from the village Sirsara (see PI. XII A). The figurine was collected from the surface within the village. The figurine measures around 5 cm and has a bun on the head indicating that it might be a female figurine. It has folded hands and pinched eyes.

8. A terracotta sling ball was collected from Balarampur. The ball is without any perforation and the diameter is 2 cm. This was collected from the cultivated fields; Terracotta ball (Fragmentary, 4 cm diameter) was also recovered from Patlapur (Pl.XIII B).

9. Fragmentary terracotta objects noted at the site Birsingha (elephant or horse, Pl. X A). These were collected from the surface near the temple complex of the village.
6.b.5. Observations:

There is an overall uniformity in the ceramic assemblage of the explored sites and that of the excavated site Dihar. Medieval potteries show more uniformity in style, fabric and surface treatment. The proportion of early historical and black and red ware sherds collected from the explored sites is less than medieval sherds. The number of black and red ware sherds collected from the explored sites is negligible which makes the analysis work much difficult for the early phases. However, the sites designated as early historic or black and red ware have medieval pottery specimens too. The similarity in the wares, forms and their surface treatment is more in case of the explored sites situated near the excavated site Dihar. Since there are micro-regional differences in the landscape, sites lying at a considerable distance from Dihar or on the local lateritic outcrops show somewhat different fabric due to the different nature of the inclusions. However, the shapes are uniform.

The forms noticed in different wares are mostly utilitarian in nature and red ware forms the most consistent variety throughout. The most prominent forms noted throughout the three chronological periods are bowls, vases and jars. The absence of any table-ware or deluxe ware indicates that the area, probably had concentration of rural settlements. Only exception is the black slipped ware specimens that have a very fine section and very fine surface treatment. From the evidences, it is apparent that these settlements used the earthen vessels for day-to-day activities like cooking, storage, consumption, serving, feeding the cattle and so on. In fact, presently most of the villages use vessels in the same way; only difference is the use of metallic vessels instead of earthen ones. Earthen vessels are still used in the village for feeding the cattle. The proliferation of settlements during the medieval time period is well understood from the nature of the archaeological record. Though the pottery specimens collected from the study area represents their utilitarian nature related to house hold activities, but the occurrence of fragmentary lamps in grey ware and red ware at the site Chaltakonda, Dihar and Malakarpota indicates their relation to some form of religious activities.

Despite this uniformity, there are some micro-regional variations in the ceramic record. The potsherds collected from the Kushadwip area were placed in the medieval
period but these specimens bear less similarity with the excavated or the explored specimens. The concentration of red ware is highest. However, the soil used in the manufacture of the vessels is completely different and hence, the red ware vessels also have a yellowish tinge. Moreover inclusions like sand and small lateritic particles (Kushadwip stands on lateritic outcrop) have been used to make the vessels more sturdy and durable. In most of the cases, local soil was used for manufacture as indicated by the fabric of the vessels. The forms are however, similar to the ones noted in red ware and from the other explored sites.

A slight change in fabric was also noted between the pottery samples of the upstream areas and that of the downstream areas of the river. The fabric of the potteries collected from the downstream area is finer due to the presence of alluvium in this zone. The upstream areas have ridges and hillocks with local outcrops of stones, due to which the core of the vessels are also gritty and porous. The specimens of potteries collected from the sites on the Sali River have the finest quality. The clay seems to be of a very fine quality and very well levigated. The black slipped ware specimens are the finest and have the best surface treatment of all the wares and forms. The minor differences noted in the ceramic assemblage of the two areas seem to have disappeared during the medieval phase where there is a kind of homogeneity has been noticed in the ceramic assemblage.

Few fragmentary porcelain sherds and glazed ware sherds have been collected from the sites of Basantapur, Baikunthapur and Basubati. A single specimen of porcelain vessel from the site Basubati has a ring base but the upper part of the vessel was not available for study. These have been collected from the surface.

The ceramic assemblage indicates a gradual development in technology and economy of the people in the Dwarakeswar river valley. In all probability, these settlements had specialised potters for manufacturing the vessels in the medieval period. There is a lot of improvisation in shapes and style and uniformity, as well in the entire ceramic assemblage during the medieval period. The sections of the vessels become finer with the passage of time indicating improvisation by the potters in manufacturing techniques. A general improvement is seen in various forms and also in the surface treatment of the vessels, but at the same time the forms indicate strictly the utilitarian
nature of the vessels. Some of the forms might have been used in association with religious activities (terracotta lamps). Besides the general forms like jars, bowls and vases, many new shapes like cups, dishes, lids and basins are encountered in the medieval period (see appendix for details). The old shapes continue, however.

In many sites fragmentary sherds occurring in a primary context have been noted besides the medieval temples but it needs to be ascertained, whether the presence of temple and potsherds can at all be correlated and whether they belong to the same time period. For this confirmation, the occurrence of sherds needs to be verified in a stratigraphic context. From few sites, the potteries have been collected from a secondary context which had an abraded appearance. As a result of which, determining the actual fabric, colour and surface treatment was difficult. In such cases, the rim sherds helped in determining the shapes. Due to the effect of transportation, they were mostly fragmentary.

Votive terracotta horses and elephants are largely used by the villagers dedicating them to Dharma Thakur, who is considered to be the sole protector from all kinds of evil. Some fragmentary mother goddess and animal figurines have been noted at Dihar (depth: 20-90 cm approximately) which might have used for the same purpose and this particular practice is believed to have been observed through ages might have originated from an early period. Some fragmentary animal figures were also noted at the site Birsingha during exploration. But since they occur on the surface, their proper age could not be judged and being fragmentary, their stylistic characteristics could not be judged with certainty. It has to be kept in mind that, handicrafts and trade were important occupations in Mallabhum and Bishnupur and its adjacent areas were the largest centres of handicrafts and trade within Mallabhum (Sanyal 1987). In the present context, it has been noticed that the potters also manufacture elephants and horses for religious purpose and some specimens for interior decorations. In this regard, the villages Panchmura and Sanbandha deserve special mention wherefrom the materials are exported to international markets. Whether this practice can be considered to be a part of a long observed tradition needs to be corroborated through more survey work and comprehensive ethnographic data.
In some of the villages like Hariharpur, Krishnanagar, Uliara, Janta, Balarampur, Banshi, and Chandipur, the present potters were found working on the current forms of vessels. Some forms like cups, jars, handis and round bowls still continue to dominate the ceramic industry. These vessels are mostly used for religious purposes or for feeding cattle and storing grains or for carrying water. While exploring the sites, all these current technological aspects of pottery making seemed to be interesting and the investigator wanted to gain insights in these current trends. Hence, she conducted an ethnographic survey with the potters in order to learn about the techniques and find out whether any parallels can be drawn with the help of the ethnographic data.

6.c. Ethnographic survey with the potters of the villages Uliara and Janta

Ethnographic data provide a means for linking contemporary behaviours to the material implications, and by extension, help us to consider relations between materials and behaviours of the past thereby. The links between present ethnographic cases and past archaeological cases are made through analogical arguments and can be established as ethnoarchaeology. In archaeology, analogical reasoning involves making connections from known contemporary phenomena to past phenomena. One of the vital approaches to ethnographic analogy is the “direct historical approach” (Steward 1942). This approach assumes historic continuity within a region between prehistoric and contemporary populations, and assumes therefore, behavioral continuity in the way things were done and in material forms. The direct historical analogy is generally considered to provide the highest possibility of being correct because the conditions of time, space and the cultural affinity of the groups who produced the two sets of compared data are most analogous (Mohanty and Mishra 2002). In the recent years, many scholars have worked on ethnoarchaeology and of late, specially, ‘ceramic ethnoarchaeology’ has gained a special place in archaeological research (Mohanty and Mishra 2002). These ceramic ethnoarchaeological works have emphasised on documenting the technological and the social intricacies of pottery manufacturing. In this regard studies conducted by Allechin (1978) and Kramer (1994) deserve special mention. But it has to be kept in mind that ethnoarchaeological research is still at its infancy in case of Bengal. This type of work needs precise database on the basis of which the analogical arguments
could be based. Moreover, the data should be generated over a considerable period of time through close observations, should be comparable and should be free from biases.

Performing ethnographic studies are comparatively easier and can provide valuable insights into the research data. Sometimes, ethnographic research also may enhance our knowledge of past societies, or of technological specialties. This is not ethnoarchaeology, but at times, the links among archaeology, ethno-history and ethnography are so intimate that it is impossible to tease them apart. The present study of the potters of Uliara and Janta villages have, no doubt, helped in understanding the process of present manufacturing of vessels which in turn has helped the researcher to understand the mechanism operating behind the entire process. During the course of exploration, since some of the forms like cups, storage jars and small globular bowls were found to be produced till today by the potters, a clear understanding of the present manufacturing process was necessary. From the survey, it could be realised that the basic techniques have remained unchanged to a large extent and have been handed over from one generation to another. The use of traditional wheel, the dabber and the anvil, use of local soil, Rangamati and sand from the bed of Dwarakeswar seemed to be quite interesting, which is also reflected in the archaeological record. Hence, this study can be considered as a general comparative approach, which was adopted in order to derive knowledge about the past.

The survey of potters of the villages Uliara and Janta was carried out by the author in January and February 2010 during the course of final field work. The man objectives of survey were to understand the manufacturing technology of modern pottery in order to find any existing parallels between the recent and the old manufacturing techniques.

The survey was conducted with the potters of the villages, Uliara and Janta respectively. Uliara falls within Uliara Gram Panchayat and Bishnupur Police Station. Janta falls within Radhanagar Gram Panchayat and Bishnupur Police Station. The village Uliara stands on the left bank of the river Dwarakeswar and has more than twenty families of potters whereas the village Janta also standing on the left bank of the river has around twenty two families of potters living within the present village.
The village Janta lies adjacent to Dihar and is not as developed as Uliara. People practicing other professions also reside within the villages. These potters do not manufacture the vessels throughout the year. It is a part-time profession. They make the vessels mostly during dry seasons. For the rest of the year, these people mostly practice cultivation.

The habitation area and the workshop of the potters are adjacent to one another. In the courtyard area of the modern houses, the unbaked vessels are often found left for sun drying. The wheel is situated in one of the rooms of the workshop or in a corner of the courtyard which is comparatively darker than the rest of the areas. In one of the rooms of the workshop, clay is stacked and covered with large plastic sheets. Besides clay, sand, colouring materials, baskets and pots are also found within the room. The kiln is situated in another corner or the backyard of the house. The collection of clay, kneading, mixing and turning the vessels on wheels are generally done by the male members. But firing the vessels, painting them or carrying the finished products are done simultaneously by the males and the females. The female members are well conversant with painting of the vessels. The children of the family help in the process occasionally.

The manufacturing process can be divided into some stages which are as follows:

1. Collection and processing of clay: The clay is generally collected from the sources which lie within one kilometer of the village. The potters of Uliara village collect the clay from the village Prakash which has good concentration of entel mati and the sand from the bed of river Dwarakeswar. The potters of Janta village collect the clay from nearby Dhangara village and sand from the bed of the river Dwarakeswar. During the collection of clay, the potters also collect red soil (rangamati) and a yellowish kind of soil noted at a few specific villages. The rangamati is collected from the nearby village Gosainpur. These piles are carried by bullock carts mostly. After bringing them they are stacked at a specific corner. They are cut in strips and then sieved and made free from impurities. The potters believe that longer the clay is stored, better will be the quality of the pots. After sieving, they are mixed with the tempering materials and the final paste is prepared. Generally sand and dung are used for the preparation of the paste. They are mixed with clay in a specific proportion as to
increase its plasticity. This proportion is mostly defined by the potters depending on the quality of the clay. This mixture is next soaked in water and left for one or two days before final kneading. The quality of the paste depends upon kneading which is done both by the males and females. The clay is stamped both by feet and hand and sometimes beaten with a wooden block. This kneaded paste is again kept for a day before finally placed on the wheel. Before placing on the wheel, it is again kneaded by hand. The kneading process is done with great care since this ensures the quality of the vessels and if not performed carefully, the pots are likely to develop cracks after firing.

2. The use of wheel: The potters use clay wheels with two pairs of iron rods crossing each other at right angle in the middle. The diameter of the wheel is about 86 cm (Pl. XI A). The centre of the wheel is made of iron plate and on the reverse side, a rounded stone with a notch in the middle is fixed. The wheel sits on this pivot with this notch. The circular rim of the wheel is made of clay and packed with bamboo strips. The wheel rotates and depends on the bearing system. A depression is noticed on the floor where the wheel is placed. The pile of clay ready for wheel throwing is checked once again before placing on the wheel. A small pile is taken and placed on the iron disk before shaping. The potter uses some water on the iron disk before placing the clay pile. The wheel is first rotated by the hand and then by a stick (about 1m) that is placed in the notch on the edge of the wheel and rapidly turned by force. When the wheel gains momentum, the stick is kept aside and the potter starts moulding the lump of clay to a desired shape. The wheel is rotated from time to time and the potter uses some water on the clay lump in specific intervals.

The process of moulding includes specific steps like centering, pressing, hollowing, thinning and thereby shaping up the body and different types of rim. After shaping up the lump, the vessel is lifted from the wheel by a piece of thread. This needs much skill otherwise the vessel becomes disfigured.

3. Post-wheel process: After shaping up the vessels, it is left to dry for some time or few hours to help them to reach a leather hard condition (Pl. XI C). Dabbing is done in order to give the vessels the required shape from the basic structure made on the wheel. For dabbing, the dabber and the anvil is used by the potters. The dabber is
locally called *pitna* and the anvil is called *bole*. The *pitna* is used in the right hand and the *bole* is used in the left hand of the potter. The potter sits in a squatting position and while dabbing, the vessel is placed on a gunnysack in a tilting position. The dabbing process starts from the base and is continued till the desired shape is reached. The vessels lose their striation marks in this process. If cracks develop, they are mended with slight water. Sand is used while dabbing so that the dabber does not stick to the surface of the vessels. After dabbing, they are polished with a small round stone. They are left to dry properly before the final slip is applied on the vessels.

The red soil (*rangamati*) is pounded and mixed with water to make the red slip which is applied on the external surface of the vessels till the rim and on a little portion of the rim on the internal surface. Besides this, a yellow kind of slip is also prepared by the potters but the process of making it was not disclosed. After applying the slip, it is left for drying and some of the vessels are decorated with specific paints available in the markets. The red and the black paints are the common varieties used in the process. The vessels take a blackish appearance after decoration, but after firing, the vessels turn red. If some other colour is desired, the process of applying the slip and the firing is controlled accordingly. But during survey, it was noticed that most of the vessels have a reddish appearance showing that red ware vessels are still much in demand.

4. Firing: Firing of the vessels is a specialized task. As mentioned earlier, the kiln is situated in the backyard of the house. Open firing and closed firing methods are both used to make red ware and grey ware vessels simultaneously. Firing is performed on any day when the pots are ready and the climate is suitable. Open firing method is simpler than closed firing techniques (Pl. XI B, D). Generally dry *Sal* leaves collected from the vicinity and cow dung cakes are used as fuel during firing. The kiln has perforations in the base portion to allow dissipation of the smoke. The vessels are piled up on the top of one another in a specific order. The gaps are covered with dry leaves and cow dung cakes. Some broken pots are also placed in the top of the vessels to vent out the smoke. The fire is initiated from a specific corner of the base portion of the kiln with a burning stick which gradually spreads. For controlling the heat, sand or soil is sometimes thrown inside the kiln. If the wind flow is strong, then it is guarded by some cloth. After firing, the kiln is allowed to cool down overnight. As the smoke
gets exhausted and there is sufficient air supply, full combustion occurs and the pots turn red in colour.

Closed firing process is done in the same way and in this process black or grey pots are manufactured. The arrangement is more or less the same except that the mouths of the vessels are sealed with dung cakes and dry leaves to restrict the flow of air. In this type of firing a lot of cow dung cakes are used which generate plenty of smoke in absence of sufficient air. This process of firing takes lot of time to get over. As the supply of air is restricted, the smoke generated inside gets stored making the pots black.

The vessels are usually not painted after firing. But in some specimens used during marriage and as ritual objects are nowadays applied with artificial paints. Regarding the forms, it can be said that Kalsi, handi, bati (bowl), katora (small bowl), small cups and dedicatory horses and elephants are manufactured by the potters of both the villages. These vessels are used for storing, cooking, carrying, drinking, eating and for religious purposes also. The forms which are used as ritual objects or as marriage objects are usually more decorated than the normal utilitarian forms.

Red ware vessels are the most common forms noted. In archaeological context also, it has been noticed that the red ware and the red slipped ware forms the dominant type of ware in all the sites of the study area. The easy availability of the red soil (lateritic soil or rangamati) might have led to such a practice in the area. It has to be mentioned that in situ occurrences of anvils/platforms bearing the stain of red pigment probably indicate that they were used to prepare the red slip for manufacturing vessels of red ware. These anvils were encountered both at Manasatala and Hirapur mounds at the excavated site Dihar (Chattopadhyay et al. 2010). Besides this, the impressions left by the use of dabber and anvil on the modern vessels are exactly the same as noticed on the storage jars in red ware or grey ware and even black ware of the excavated context. However, grey ware or black ware forms are very rare in the modern context. Some of the modern vessels are made in parts and luted afterwards with the main body. In the excavated and explored pottery assemblage, some samples showed signs of luting. The decorative objects like horses and elephants, produced by the same potters, are sold off to distant markets which have good demand. The other forms are
sold off to local markets, farthest of which is Bishnupur. Some are left for self-consumption.

The male members of the *Kumbhakar* family of Uliara village and the Pal family of Janta village were interviewed for the present survey. These potters irrespective of their surnames prefer to be known as ‘*Kumbhakars*’ which is actually related with their profession. The survey was conducted mainly in order to gain insights in the current manufacturing techniques and to find any parallels with the old technology of manufacturing. The medieval pottery samples seemed to be very familiar to the potters. The black and red specimens of Dihar were also showed to them. The potters from both the villages were confident about the red colour of the external surface but regarding the lustrous internal surface, they expressed doubts. They claimed that the luster was due to polishing of the vessels. In the present situation the demand for red ware has remained unchanged. The easy availability of red soil probably has led to the abundance of red ware and red slipped ware specimens in the area since early days (since the chalcolithic period). The manufacturing technique is practiced more or less in the same way through many generations of the potters and the basic arrangement has remained unchanged to a large extent. Only in case of more developed commercial villages like Panchmura, better equipments and electronic devices, especially electronic wheels are used to produce the vessels.

Having given an overview of the archaeological record of the explored area and a detailed description of the ceramic assemblage, it is now imperative to understand the settlement pattern of the area by concentrating on the explored sites that have been identified chiefly on the basis of these explored ceramics. It is quite improbable that the site Dihar ranging in occupation from the chalcolithic times to the medieval have survived alone in the river valley. The sites lying in the vicinity must have helped the site to flourish throughout. So, in the following chapter (Chapter 7) the relationship between the explored sites and the excavated site Dihar has been discussed. In the course of discussion, the settlement patterning of the study area has been evaluated, taking in account the landscape settings of the entire study area.
Notes

1. Cultural materials of any kind can be broadly divided into the following-assemblage, types and attributes. A pottery type, for example specifies uniformity of material, technique and style. In other words, ‘A type represents pottery made up of the same material and methods, influenced by the same stylistic tradition and used for the same purposes’ (Shepard 1976). A type can be separated from another by means of its discrete nature or difference in attribute patterning. A ‘type’ of ceramic is called a ware. A number of types form an assemblage. These types can be studied on the basis of attributes, which are mostly the physical traits on the basis of which artefacts are distributed (Wheat et al. 1958). The present study is based on the formal attributes of the individual wares. However, the functional attributes have also been taken into consideration wherever necessary.