CHAPTER 2:
THE STUDY REGION

The present study is based on the Dwarakeswar river valley flowing through district Bankura. In this chapter, an attempt has been made by the researcher to discuss about the present landscape, physiography and topographical features of the study area. In this regard, the geology, geomorphology and the topography of the district have been highlighted and discussed in this chapter. The present landscape of the study area helps to a large extent in understanding the backdrop in which the sites thrived and survived in the area.

The river Dwarakeswar flows almost through the middle of the district and is the second most important river after Damodar. The middle stage of the river was selected on the basis of personal communication with the geologists (per. communication with geologists of GSI, Kolkata Circle, 2007). The upstream areas of Dwarakeswar river have mostly the concentration of prehistoric sites. Since the researcher aimed at understanding the later cultural periods, the middle stretch of the river was selected as the preferable study area. Dihar, the only excavated site in the entire river valley, is situated in the middle stretch of the river. In this chapter, an attempt has been made to present an overview of the region by discussing the geology, geomorphology and topography of the study area. Besides this, a brief discussion on the historical background of district Bankura has been included in the chapter.

Since the study area constitutes a considerable part of district Bankura, references have been drawn in accordance to the district data. In discussing the geology, geomorphology, topography and history of the area, the whole district had to be taken into consideration. The gazetteers, census records, geological maps, soil and physiographic maps have been consulted for the relevant data.

District Bankura lying between 22° 37'N and 23° 54' N latitudes and between 86° 36'E and 87° 46' E longitudes is bounded on the north/ north east by district Burdwan from
Map 1: Map showing District Bankura and the Study Area

Map showing the Study Area
which it is separated by the natural barrier of the Damodar river. On its south-east, lies the district Hugli, on the west, lies Purulia and on the south lies the district of Midnapur. The district according to the census of 1961, has a total area of 6,871.21 sq. km. and a total population of 16,64,513 persons (Banerjee 1968).

The head quarters of the district is located at the municipal town of Bankura. The district has two sub-divisions: Bankura lying to the west and Bishnupur lying to its east. There are 3,847 mauzas in the district grouped into nineteen Police Stations (P.S.) of which thirteen falls in Sadar and six in Bishnupur subdivision. The Police Stations within the former are Bankura, Onda, Taldangra, Simlapal, Raipur, Ranibandh, Khatra, Indpur, Chhatna, Gangajalghati, Saltora, Mejhia and Barjora and those in the later are Bishnupur, Joypur, Kotulpur, Indas, Patrasayer and Sonamukhi. There are twenty two blocks in the district. The study area comprises parts of Bankura I, Bankura II, Onda, Bishnupur, Joypur, Kotulpur, Indas and Patrasayer blocks (see map 1), which falls within Bankura as well as Bishnupur subdivisions.

The district forms an intermediate tract lying between the flat alluvial plains of Bengal in the east and the undulating uplands of the Chotanagpur plateau in the west. The study area comprises a large part in and around Bishnupur. The entire Bishnupur subdivision is more or less flat with the highest elevations of 40 m at some places; rest of the blocks falling in the eastern part of the district is mostly flat. The middle part of the district has undulations which increase considerably in the western part. The terrain here is highly undulating marked by the presence of numerous hillocks (Dhaldanga, Bankura area) which shows the extension of the Chotanagpur plateau in this area. The district may be divided broadly into three topographic regions:

a. The hilly tract to the west
b. The connecting undulating tract in the middle part of the district
c. The alluvial plains to the east- one merging indistinguishably into the other.

The study area falls in the second and the third topographic zones (see map 2).

The district is also physically divided into two portions by the Dwarakeswar river, which traverses its whole breadth from north-west to south-east. The general course
Map 2: Google Imagery of the study area

Red Line in the Map indicates the Explored Area

Sonamukhi

Dongalia River

Sareswali

Dihar-Bankura

Banshabhera River

Bankura
of the stream, with many subordinate windings, is about twenty degrees south of east, being rudely parallel with the Damodar, which forms the northern boundary of the district. Along its western boundary, the district runs into the immense area of metamorphic rocks (gneiss, hornblendic schists, etc.) which cover the country between Bankura and Hazaribagh in Chotanagpur (Hunter 1973). Over the last few decades, the hilly tracts of Bankura in particular have been so much denuded of noble forest growth that the government has planned to bring large areas under planned afforestation schemes. Extensive areas of the district are under the coverage of Sal forests which provides a magnificent view of such areas. The district also yields a spectacular view due to the presence of *Maitha* and *Palas* trees (Banerjee 1968). Hunter also stated, that the old military highroad from Calcutta to the North-Western Provinces passes through the centre of Bishnupur town (through the middle of the district), from which another main road branches off southwards to Midnapur. This ancient route was first traced by Beglar (1872-73).

2.a. Geology

Bankura is a district mostly consisting of undulating uplands and forming a continuation of the Chotanagpur plateau in the west. The eastern part has a wider plain of recent alluvium, while gneiss and schists of archaean age are found in the extreme west. Laterite interspersed with associated rock of sands and gravels forms the most characteristic geological feature in the district. Laterite is a porous, pitted and clay like rock essentially composed of hydrated oxides of aluminum and titanium. Generally, it is reddish brown in Gondawana system forming the southern part of the Raniganj coal fields; it occurs in the extreme north of the district between Mejhia and Biharinath hills. Coal (Wolffram), an economic mineral has been traced at Ranibandh and Khatra and the china-clay variety occur at Kharidungri and Jahria-Kacha (Khatra PS), Dalambhija, Raipur, Harighargunj, and Radhamadhab-Kunjagarh (Raipur P.S.) and Monipur, thirty two km south of the Bankura town and parts of Bsihnupur P.S. Hunter (1973) stated that in the extreme west of the district iron is abundant; and in several parts good clays can be had for brick-making, or for the manufacture of ruder kinds of earthenware.
Of the other economic minerals,

1. Garnet occurs as surface detritus near Lepan, Chhendapathar, Dhanjor (P.S. Ranibandh) and Baradi Hillock (P.S. Raipur).

2. Sporadic occurrence of brecciated haematite–quartzite rocks (iron-ore) have been recorded from Porapahar and other places in the Archaean tracts.

3. Concentration of Kankar found at Marasol (P.S. Raipur). These are locally burnt for lime.

4. Galena (lead-ore) have been reported from Kama and Banka-Kacha (P.S. Ranibandh).

5. Dolomite limestones are present in the neighborhood of Harirampur (P.S. Khatra) to a depth of about 15 m.

6. Mica bearing pegmatites in various parts of Chhatna, Indpur, Gangajalghati and Khatra P.S.

7. Steatite can be obtained from certain places of Raipur and Ranibandh Police Stations. Besides these quartz veins have also been noted at places.

8. Kaolin has been noted in some areas of Gosainpur, Mulkari area within Bishnupur P.S.

Groundwater: The isolated patches of laterite and sandstones of the Gondawana and the Tertiary form good examples of aquifers. The level of ground water varies from place to place in the district. It is from 2.5 m below the surface in the rainy season, from 19-21 m in winter, and from 25-25.5 m in summer (Banerjee 1968).

2.a.1. Quaternary geology

Detailed work on the quaternary alluvial deposits was done in the basins of the Gandheswari, Dhankora, Dwarakeswar, Adali, Gaighata, Chopahari and Tiluri rivers which is confined to the north-western part of the district. These areas were taken into consideration while studying the prehistoric sites situated in the north western part of the district (Chattopadhyay 1992). However in the present study, the quaternary geology has been mentioned in brief. In all these river basins there are generally three alluvial terraces and they are so consistently present that they form a feature of the valleys (Dassarma D.C. and S. Biswas 1978). Three alluvial terraces occur in this area bordering the majority of the streams. These are the remnants of former valley floors.
and were formed mainly due to climatic fluctuations which caused the streams alternatively to fill and erode their valleys. The Quaternary deposits, related to past and present flood plains of these rivers, occur in the form of three terraces namely Bamundiha, Bansol and Gusbana on the bed rocks of either Archaean, Gondawana or a much dissected Pleistocene lateritic mass.

The highest and the oldest terrace is a multiple-fill terrace underlain by three alluvial fills and a palaeosol. The oldest fill consists of thoroughly oxidized grit and sand showing a deep red brown colour. The succeeding fill is comparatively much less oxidized and consists of cemented conglomerate at the base followed by grit, coarse and medium grained sand and silt. A pedocalcic palaeosol generally blankets all these earlier formations. The next terrace is one-fill terrace and comprises sand and silt. The lowest terrace becomes prominent only in the lower reaches of the rivers.

Fig 1: Quaternary geological section in north-west Bankura


A large collection of Pleistocene to early Holocene fossils referable to *Palaeoloxodon*, *Crocuta*, *Panthera*, *Bos*, *Bubalus*, *Antilope*, *Gazella*, *Sus*, *Govilais*, etc. has been found for the first time from these deposits. The abundance of dominant 'grass feeders' is perhaps due to a luxuriant vegetational cover of the valley flat which dwindled in the succeeding climatic regimes. The beds are also implementiferous.
The palaeoclimate, derived from geologic and pedologic data, shows alternations of relatively moist to dry conditions. Alluviation and dissection of the valley fill are found mainly to be the result of climatic oscillations.

2.a.2. Soil

The district provides a connecting link between the Chotangapur plateau and the alluvial plains lying in the east. In general, greater portion of the district towards the east is covered by laterite and alluvium, whereas towards the west are exposed ancient metamorphic rocks like gneiss and schist and rocks of supra-Panchet, Panchet and Raniganj series belonging to the Gondawana system. The relief comprises of hills in the form of monadnocks and undulating plateaus grading into the more or less flat alluvial plains (Banerjee 1968). The study area in particular has mostly the concentration of alluvial and lateritic soils (see map 3). The lateritic soils have wide distribution in the south central to the south western part of the district including a large part of the present study area. Such soils are distinguished from the red soils by the occurrence of ferruginous concretions in a definite layer, whereas in the red soils they are distributed throughout the profile. The older alluvial soil is confined to the river valley areas. The older alluvial soils show profile development whereas the young alluvial soils show very little profile development and are refreshed with silt deposits during floods. According to texture the soils have been classified as heavy clay (Entelmati), Loam (Doansh) and Sand (Belemati). The study area has largely the concentration of these three types of soils, if classified according to texture. Various classifications of the soils have been attempted according to the colour of the soil or according to the composing materials (Banerjee 1968). However, the lateritic and alluvial soils are commonest in the area and in the large tracts bare of vegetative cover features of soils erosion are visible even to the untrained eye.

2.b. General Features

2.b.1. Hills

The north western part of the district which is an immediate extension of the Chotanagpur plateau has the concentration of numerous hillocks and forest clad spurs throughout the landscape of which two hills Biharinath (447.8 m) and Susunia (439.5
Map 3: Soil map of District Bankura

- **SCALE**: 1:1,000,000

- **REFERENCES**
  - **ENTISOLS**
    - Younger Alluvial Soil
  - **ALFISOLS**
    - Older Alluvial Soil
    - Red Gravelly Soil
  - **ULTISOLS**
    - Red and Yellow Soil
    - Lateritic Soil
    - Red Sandy Soil
m) stand out as prominent, due to their heights. These hills have been reported as important palaeolithic find-spots of which Susunia deserves special mention. However, no hills are recorded in the study area. The Susunia hill area has the concentration of highest number of prehistoric artefacts within the district. The earliest epigraphic record of the district is also found from the Susunia hills.

2.b.2. Rivers

The principal rivers of the district flow from north-west to south-east in courses approximately parallel to each other, the general gradient being from north-west to south-east. They are all hill fed streams rising from the western uplands having only a seasonal flow of water immediately after the rains. In summer, they mostly dry up with only a trickle meandering across the broad sandy beds. During the monsoons, however, water level rises abruptly after the heavy rains. The chief rivers of the district are Damodar, Dwarakeswar and Kangsabati. In the western part of the district, the rivers flow between well-consolidated banks formed chiefly of kankar with laterite rocks cropping up here and there. Towards the east, however, as the streams approach the flat alluvial plains, the banks are composed of vulnerable sand and clay.

The most important river of the study area is Dwarakeswar, on which the present study is based (Pl. VIII C). The archaeological sites along the river Sali (a tributary of Damodar) have also been taken into consideration in order to draw a comparative analysis between the sites of Dwarakeswar and Damodar.

The Dwarakeswar river

Next to Damodar, the Dwarakeswar is the second northernmost river in the district. It rises in the northern part of Hura P.S. of Purulia district, and flowing in a southeasterly course, enters Bankura district near the village Dunda in Chhatna P.S. Thereafter, it pursues a tortuous course through Bankura, Onda and Bishnupur P.S. and proceeds to separate the thanas (Police Stations-P.S.) of Patrasayer and Indas in the north from Joypur and Kotulpur respectively in the south and leaves the district near the village Naga-Tentul in Indas P.S. and enters the Arambagh subdivision of Hugli district. The Dwarakeswar flows approximately through the middle of the
district (107.2km) and divides it into two halves. In the lower course, below its confluence with the Silabati (district Hugli), it is known as Rupnarayan which eventually falls into the Bhagirathi not far from Diamond Harbour.

Besides the Silabati or Siali, there are some other tributaries of Dwarakeswar especially to the west of Bankura town, of which the Arkusa, rising in the north west of Indpur P.S., joins the Dwarakeswar near the village Harrulia in Chhatna P.S (see map 4). It also receives the waters of Gandheswari, one of its principal tributaries, near Sanbandh on the outskirts of Bankura town (Pl. V C). The Berai, another important tributary, joins the main river near Chakdaha in Bishnupur P.S. The Dwarakeswar being an old river has many beds throughout its course over which, the river had flowed some time or other in the past. These are locally called Kana-Nadis, which receive a small amount of water only during the rains. The bed of Dwarakeswar, especially in its western stretches, is fairly deep and composed of clay and sand mixed with Kankar, with lateritic crops cropping out here and there. The Dwarakeswar runs for about 107. 2 km within the district and at certain points, has a width of as much as 336 m (400 yards). Its fall, however, is less than that of Damodar and its current is hardly perceptible from the end of November till the beginning of June. But during rains, it is subject to heavy floods and is often an impassable torrent (Banerjee 1968).

Occasional flash floods occur during the monsoons when it spills over the banks at low places, particularly in downstream areas. Due to unrestrained felling of trees and burning of the already denuded forests on its banks and also because of periodical cultivation of waste lands without proper attention to soil conservation, the catchment area of Dwarakeswar already suffers from heavy erosion. The Sankrit word Dwarakeswar means Lord of Dwarka, which is an epithet for Krishna. The river being an old one, we find references of it in the Kavikankan Chandi and other Bengali medieval texts. We find mention of the river in the account of Beglar, where he mentions that one has to cross the river at Ekteswar, to continue on the old route which passes from Tamluk to Pataliputra. According to him, this route passed through Bishnupur area, followed by Bahulara, Sonatopal, Rajagram and finally Ekteswar, where one has to cross the river in order to proceed further. He further adds that the same route also leads to the north-western provinces of India (Beglar 1872-1873).
Map 4. River Dwarakeswar and its Tributaries
Tributaries of Dwarakeswar

The Gandheswari

The Gandheswari rises in the region northwest of the Susunia hill in Chhatna P.S. and flowing in a south westerly course, drains a large part of Chhatna and Bankura thanas before it joins the Dwarakeswar, a few miles downstream from the Bankura town. Its total length is about 32 km. The river is often subject to sudden floods particularly during the monsoons. The river is considered to have been the richest locality of palaeolithic find-spots (Krishnaswami 1959-60, see Pl. V C).

The Berai

The Berai is a small tributary of the Dwarakeswar rising in the Onda P.S. and joining it from the south after traversing about 30 km across Onda and Bishnupur thanas. The point of confluence is near the village Chakdaha, some three km north of Bishnupur town. On the opposite of this confluence point, lies the site Dihar.

The Silabati

The Silabati, popularly known as Silai, is the largest tributary of Dwarakeswar. It rises in the Puncha P.S. of Puruliya district and entering Bankura near Salanpur in Indpur P.S. It flows in a south- easterly course through the Indpur, Taldangra and Simlapal P.S. before leaving the district a little to the east of Dhuliapur. The total distance traversed by the river is 56 km; the bed of the Sialbati in its upper reaches is composed of well exposed rocks. It is possible that the passage of the river over such a rocky bed has contributed to its name, Sila, the Sanskrit word standing for stone. One of the important tributaries of Silabati is Joypanda. After the confluence of Silabati with Dwarakeswar, this river is known as Rupnarayan, on which the archaeological site Tamluk is situated. Rupnarayan eventually drains into the Bay of Bengal.
The Amodar

Amodar rises in the Joypur P.S. and flows in a south easterly course for about 27.2 km within the district, leaves it near the village Haldiin, Kotulpur P.S. and enters the Arambagh subdivision of Hugli district, flows through the district and before entering Midnapur district, it meets the Dwarakeswar on the eastern boundary of Ghatal P.S. The study area comprises the flood plains of the Dwarakeswar river valley including the parts drained by the tributaries Birai, Amodar and a part of the Gandheswari also.

2.b.3. Floods and flood control measures

Available information shows that both high intensity and low intensity floods have hit the district from time to time (Banerjee 1968, Hunter 1973). Sudden freshets are common which occur specially in the monsoons. The commonest form of floods experienced in the district is locally called Huraph – ban. Most of the Bankura rivers have steep and stable banks in their upper reaches which allow sudden discharges to move on downstream where the low sand and clay banks fail to contain them and thus floods occur.

According to the West Bengal Flood Enquiry Committee, there are great differences in elevations between the sources and estuaries of rivers which create serious problems in their lower courses, chiefly because of the heavy sediments carried by the rivers which raise the heights of the river beds in comparison to the surrounding lands and the excess water spills over the banks and makes them vulnerable to inundation.

During the rainy season of 1865, there was a relatively severe flood in the Dwarakeswar, which inundated large tracts of riparian lands in Onda, Bishnupur, Patrasyaer and Joypur P.S. The Gandheswari, a tributary of Dwarakeswar, experienced a flood in 1922, in which rushing flood waters submerged the low lying areas of the town and demolished the dilapidated building of the Ramkrishna Math in the Doltala locality. These were floods of moderate intensity in the years 1928, 1930 and 1931. There were several such minor floods in the forties which were on the whole, beneficial to agriculture. But the flood of September 1965 destroyed many houses and damaged standing crops in the Bishnupur, Sonamukhi, Patrasyaer, Joypur,
Kotulpur and Indas thanas. Similarly the flood that visited Dwarakeswar in October 1959 occurred at a time when the Damodar was also in flood and the combined fury of the rivers caused widespread havoc in the area lying between them. Large areas were affected rendering about 20,000 persons homeless in 163 villages, demolishing 1,000 houses and damaging wholly and partially crops standing on about 607 hectares of land. Four bridges were partially wrecked and two lines lost. Silabati and its tributaries are less prone to floods in comparison to that of the Dwarakeswar (Banerjee 1968).

In 1959, The West Bengal Flood Enquiry Committee recommended large scale afforestation in the Dwarakeswar catchment area with a view to controlling the floods in the river as also construction of certain check dams, including one at Sukhnibas, for flood control and irrigation. The Forests and Irrigation Departments of the Govt. of West Bengal are now engaged in implementing these proposals.

The total volume of discharge of the Dwarakeswar recorded at the Dwarakeswar railway bridge near Bankura town, from August and September 1948 was 3, 93, 000 acre-ft and the corresponding figures recorded at the same point for the period from July to November 1949 was 2, 31, 022 acre-ft. The average annual run-off of water measured at the same point for the monsoon months of the period from 1948 to 1951 was 6, 33, 000 acre ft (Banerjee 1968).

2.b.4. Flora:

The eastern part of the river valley has been largely brought under cultivation specially, rice cultivation due to the fertile soils brought down by the Dwarakeswar rivers. In and around the villages of the river valley, there are the usual growth of semi-spontaneous, often sub-economic, shrubs and small trees of considerable extent. The common plants are ash-sheora (Glycosmis Arborea), bel (Aegle marmelos), sajina (Moringa oleifera), besides chikum (Trema orientalis), shiora (Steblus asper) and dumur (Ficus Hispida). Some other varieties are notably Pipal and Banyan with red cotton tree (Bombax Malabaricum), Mango (Mangifera Indica), Khejur (Phoenix Sylvestris) and tal (Borassus flat belifer) occur in large amounts. Hedges and waste places are covered with creepers and weeds like varenda (Jatropha gossy pifolia) ban
okra (Urena lobata), alkushi (Macuna prunita), dhutra (Datura metel). The roadsides are often covered with grasses of taller and thicker varieties. The upland areas of the river are mostly covered with a scrub jungle of Kul (zizyphous mauritiana or jujube) and similar other plants as also palas (Buted momsperrma) babla (Acacia Arabica), kuchial (strychnos nuxvomica). The scrub jungle gradually merges with the forests where Sal (Shorea robusta) is plentiful (Banerjee 1968). The Dwarakeswar river valley has extensive areas, especially in its middle reaches, which practice large scale rice cultivation. The availability of water and new alluvium has enabled these areas to undertake large scale cultivation. Some areas of the river valley are covered by extensive Sal forests, due to which these areas could not be surveyed extensively. Tracts of land are being dug out at an alarming rate for practicing agriculture throughout the river valley. Canals and tanks have been constructed for irrigation purpose and most of these are connected with the main river for the supply of water (O’Malley 1995, Banerjee 1968).

2.b.5. Fauna

The fauna of the district is rather poor both in the number of species and in the size of population. Such a condition has been brought chiefly by continuous denudation of forests, destruction of the natural habitat of animals.

Wild cats are common in the forest areas. The jackal (sial) and the fox (khel sial) are familiar all over the district except in thickly populated areas. The sloth bear (bhalluk) is found in small numbers in forests, such as Susunia hills. The Indian civets (bham, khatas, gandhogokul) are familiar in the vicinity of human habitations and they are also a menace to the poultry. The Indian mongoose is common animal in the villages. Of the game animals, pig (bon-suar), hare (khargosh) is usually common. The other familiar animals are langur (hanuman), squirrel (kathbiral), porcupine (sajaru). Rats, mice are the common creatures associated with the human habitations. Various kinds of bats and pipistrelles (chamchika) are also common.

Birds: The numerous species of birds found in the district may be conveniently classified into game and non game birds. Of the game birds, pandubi is common in ponds and tanks. Ducks and geese mainly migrate from the northern countries in the
winter. A few resident ducks are also seen of which cotton teal (*bali hans*) is common. The Indian peafowl (*mayor*)-the national bird of India occurs in hospitable places. The red jungle fowl (*banmurgi*) which used to be plentiful decades ago, is now very rare. The grey partridge (*titir*) is common to the district.

Of the non-game birds found in the district, the following are worthy of mention. Vultures (*shakun*), eagle (*sapmar*), falcons (*laggar*), owls, swifts (*batasi*), swallows (*ababil*), shrikes (*karkataa*), various kinds of thrushes (*doel*), drongas (*jinga*). Pigeons and doves are also common.

Reptiles: The gangetic mud turtles are frequently met with. Garden lizards, yellow monitors, python (*mayal*), cobra (*keute*), Russels viper (*chandrabhora*), rat-snake (*dhamna*), blind snake and wolf snakes are common.

Fishes: Most important food fishes are the carps like *rohu*, *katla*, *mrigel* and *kalbose*. Besides the Murrells like the *lata*, *sal*, *sola*, *gajar*, *chela*, *bata* and *ilis* in the large rivers in season deserve mention. Additional varieties found are Anabus testudineus (*koi*), Plaemon sp (*bagda*), Mystus sp (*tangra*) etc. Several kinds of crabs are also found and they are important items of food. Some animals that have vanished or are vanishing at an alarming rate include tiger, deer, wild elephant, and marsh crocodiles.

**Fauna: Archaeological context**

From the Susunia area (north-western part of the present study area), a number of fossils have been identified by scholars belonging to 40,000 B.C. through Radio-Carbon Dates. Some of the prominent ones are of wild buffalo (*Bubalus Palaeoindicus*), ox (*Bos nomadicus*), elephant (*Palaeoloxodon nomadicus*), horse (*Equus nomadicus*), lion (*Panthera cf. leo*), hyena (*Crocuta cf. Sivalesus*) (Chattopadhya 1992). Datta (Datta 2002) has suggested that the animal types retrieved from the fossil vertebrates suggest three different zones in the region under study, during Pleistocene times. These are A. Hot, dry open highland with grasses, bushes, scrubs and isolated trees which he has categorized as Zone A. B. Warm humid riverine landscape with swampy grassland and moderate forest coverage: Zone B and C. Dry and semi arid land with patches of grasses and bushes near small hills: Zone C.
On the basis of all such evidences and their detailed study, he suggests that the forest coverage is less in the Gandheswari river valley in comparison to Tarafeni.

2.b.6. Forests:

Forests cover about 1, 404 sq km throughout the district, which comes to 20.4 % of the total area of the district. Bankura forests are distributed more or less evenly throughout the district except in the north-eastern and north western parts comprising Saltora, Mejia, and Kotulpur P.S. In general, the uplands are forest clad and the low lying areas with fertile soil have been brought under cultivation. However, there are extensive belts of forests concentrated in some areas of the district.

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Table 1: Forest coverage of the district (After Banerjee 1968)

The study area constitutes a part of the Bishnupur, Sonamukhi, Joypur and Bankura forests. The climax vegetation in Bankura forests is ‘Northern Tropical Dry Deciduous- Dry Sal’ according to standard classification of the Forest type of India.
Sal (Shorea Robusta) dominates throughout with associates like asan (Terminalia tomentosa), bahera (Terminalia belerica), piasal (Pterocarpus marsupium).

Large scale deforestation has resulted in scattered occurrences of the forest cover. The West Bengal private forests act, 1948 and the afforestation schemes adopted by the Forest Division of Bankura has helped in recent years to control the felling of trees and hence they are in a more stable condition and are likely to contribute much more to the development of the district than before (Banerjee 1968).

2.b.7. Climate

The climate of the district is characterized by an oppressively hot summer; high humidity nearly all the year round and well distributed rainfall during the monsoon months. The cold weather starts from the middle of November and lasts till the end of February. The period from March to May represents the summer. The south-west monsoon occurs from June to September and the interval from October to the first half of November constitutes the post monsoon period.

The average annual rainfall in the district is 1,303.7 mm. June to September, constitutes about 78% of the annual precipitation. The summer heat is particularly oppressive due to the high moisture content in the air. Occasionally the maximum temperature rises to about 47°C or 48°C. December is the coldest month in the district with a mean daily temperature of 12°C or 13°C. Relative humidity is generally high throughout the year. Nor’westers or Kal baisakhi often bring relief in the oppressively hot and uncomfortable days. These invariably lead to a sharp decrease in temperature (Banerjee 1968).

2.b.8. Land-use patterns

The land-use pattern undergoes a pronounced change from the west to east of the Dwarakeswar river valley with varying soil conditions. Eastern alluvial tract is the seat of cultivation and most of the area is double cropped. Rice cultivation is largely practiced in almost all the villages especially in the eastern part of the river valley. Sugarcane and potatoes are also grown on alluvial tracts. 90% of the net cropped area
of the district is under rice cultivation, which forms the principal food crop. Winter
paddy is grown throughout the district, whereas summer paddy is grown in relatively
higher lands in the western part of the study area. Pulses and oilseeds are raised in
private plot for one use only. Maize and sugarcane is also grown at places. Sol or
Bahal type of lands with loamy or clayey soils with ample surface moisture is suitable
for cultivation of paddy and summer vegetation. Yield of paddy is also very high in
such lands. Lateritic soils are common in the western and north western part of the
river valley generally covered by sal forests except for small cultivated patches within
them. However large areas of forests have been brought under cultivation in the recent
years (Banerjee 1968).

Having given an overview of the landscape and the topographical features of the
district as a whole and the study area in particular, it is now worthwhile discussing
about the history of the district.

2.c. A brief history of the region

In order to note the historical background of the study area, it is necessary to draw
references from the history of the district. The history of Bankura can be traced back
to 1865, when V. Ball, the renowned geologist reported the finding of a palaeolithic
tool, made of quartzite near the Biharinath hill in the district (Banerjee 1968).

In 1962, under the leadership of Dharani Sen of the Department of Anthropology of
the University of Calcutta, principally in the Dwarakeswar valley, a large number of
palaeolithic tools and implements were gathered (Sen et al. 1963). In the
Dwarakeswar river valley to the south and south-west of Bankura town, implements
have been discovered from the villages of Ajita, Bhutasahar, Dhalbanga, Damodarpur,
Manjura, Uparsol, Krishnanagar, Nunniabad and Chikchika. Microliths in Bankura
district was first reported by H. C. Chakladar in 1952 (Chakladar 1952). Krishnaswami
also discovered a large number of microliths tools and implements
from twenty four places situated either in the Kangsabati, Kumari or in the
Dawrakeswar basins. All these tools were found at the junction of red alluvium, the
archaean bedrock and modern greyish loam. Pottery of any variety was conspicuous
by its absence (IAR-A review, 1959-60). The neolithic context at the site could not be
ascertained. The Dwarakeswar river valley has very few explored sites. Besides these 
earnier traces of habitation, many historical and medieval temples have been reported 
throughout the district but these do not have precise locations and no contextual 
references (IAR references cited).

The earliest historical reference to the country of which Bankura forms a part is found 
in the Jaina Acharang Sutra. The Sutra tradition according to some scholars dates 
from the sixth century BC or the fifth century BC. i.e. approximately from the time of 
Vardhamana Mahavira, it being assumed that parts of it were written around third 
century BC. According to the forest book of the Jaina scriptures, the twenty fourth 
Tirthankara Mahavira traveled in Subba (= Suhma) -bhumi and vajja (=Vajra) - 
bhumi in the country of the Ladhas = (Radhas) (Sen 1942). The country was pathless 
and rugged, the terrain was heavily forested, villages were situated far apart and the 
people were inhospitable. They would not give any alms to monks but would incite 
instead fierce dogs after them (Banerjee 1968).

During the period under review, Ladha or Radha or Rarh was more or less a socio-
opolitical geographic concept with not a very well defined set of boundaries, like what 
it was between third and thirteenth centuries AD, when the terms Uttara Radha 
Mandala or Dakshin Radha Mandala tended to assume more or less definite 
boundaries. The portion on the north of the river Ajay (including a portion of the 
district of Murshidabad) is Uttara Rarh and that on the south is Dakshina Rarh. The 
present study area, in all probability, constituted a part of Dakshin Rarh (Sen 1942).

The earliest evidence related to the ancient history of the district is contained in a 
short inscription in the Susunia hills about 19 km N.W. of Bankura. The language of 
the inscription is in Sanskrit and the script is the eastern variety of the Gupta alphabet. 
Relatively, the inscription has been ascribed to the fourth century A.D. The 
inscription reads “Chakrasvamina Dasagrenatisita Pushkaranadhipati Maharaja 
Shri Simhavarmanasya putra Maharaja Shri Chandravarmana driti”, which means 
that the function or the institution is being performed or dedicated by the chief of the 
servants of Lord with discus, being Chandravarmana, son of Simhavarma.
Various scholars have put forward their judgment regarding the identification of Chandaravrama of Susunia inscription (Shastri 1982, Dixit 1990). But the most plausible identification seems to be with Chandravarman, whom Samudragupta defeated and slewed as mentioned in the Allahabad Prasasti of Samudragupta. Two observations are important in the context of the inscription

1. As the inscription reads ‘Chakrasvamino(e) Dhsagramo-trisrishtah” which means that the village Dhosagrama was donated to Chakrasvami.

2. This inscription also furnishes the earliest record of Vishnu worship in Bengal. Chakrasvamin (the wielder of discus) is a well known name of Vishnu and it is more than apparent that Chandravarmana was a worshipper of Vishnu. The representation of the chakra or the discus on the wall of the cave probably indicated that it was originally intended to be used as a temple of Vishnu (Majumdar 2005).

After this we come to know about the Rarh when Sivakara I, the fourth king of the Bhuma-kara dynasty of the Utkals, invaded and conquered the Rarh country and married Jayavati, daughter of the king of Rarh. During the time Dharmapala was ruling over Bengal and since Pala records do not mention of any confrontation of Dharmapala with any Utkala king, it can be deduced that Pala empire until then did not include lands to the south of Damodar. Dharmapala’s son Devapala, on becoming the king, led a victorious expedition against Utkala and thoroughly subdued the kingdom (Badal Pillar Inscription, cited by R.C. Majumdar in History of Bengal, 2005).

Two years from 1021 to 1023 A.D. saw Rajendar Chola’s invasion of Bengal. A Chola inscription refers to Tandabutti, Takkanaladam, Uttiraladam and Vangal – desa denoting respectively Dandabhukti, Dakshina Radha, Uttara Radha and Vangala (Hultzeh 1981). It has been reasonably inferred from the inscription quoted above, that the Cholas attacked and overthrew Dharmapala of Dandabhukti, Ranasura of southern Radha (Rarh) and Govindrachandra of Vangala in that order, before they fought with Mahipala and conquered Uttara-Radha (Rarh). Ranasura of Dakshan Radha (Rarh) must have been a ruler belonging to the Sura family of Mandara, identified with Mandaran of Arambagh subdivision of Hugli district. Mandaran has been identified with Sarkar-Mandaran of Ain-i –Akbari (Banerjee 1968).
Along the course of the river there still exists at Sonatopal, Bahulara, Dihar and Deulbhirya a number of fairly large temples, in varying stages of dilapidation, which scholars ascribe to the tenth, eleventh and twelfth centuries A.D. There are evidences of large shrines once standing at Te-Deuli, Dharapat, Rautara, Laer, Radhanagar, Salda, Joypur and Moynapur, which were constructed probably between tenth and sixteenth centuries A.D. The Kangsabati and the Kumari river valleys similarly yielded important sites at Kendua, Chitgiri, Loadi and Paresnath which once contained temples of considerable size according to the explorations carried on in this region. On the basis of all these evidences, it has been conjectured that there were independent and semi independent principalities in the Dwarakeswar and Kangsabati river valleys in the tenth, eleventh and twelfth centuries AD with more or less stable polities (Banerjee 1968). The fact that many of the shrines were built with laterite which was hard to obtain locally and had to be quarried and transported from distant places indicate a stable polity which encouraged such prolonged efforts (Banerjee 1968). It has been rightly remarked that the temple building and maintaining activities could have not been sustained without some sort of political stability and continuity under local rulers.

The expedition in Radha (Rarh) sometime before 1135 A.D. of the Orissan king Ananatavarman Chodganga during the rule of Kumarapala, son of Ramapala is well known from historical records. Subsequently under the rule of the Senas, a substantial portion of Dakshin Radha (Rarh) was under their control as indicated by the Deopara inscription (Majumdar 2005). From around fourteenth or fifteenth centuries, the Mughals subdued the frontier principalities through successive invasions but finally accommodated the local Rajas in their administrative system. Mughal authorities did not interfere with the internal affairs of the principalities. Mallabhum emerged as the most famous among the autonomous, semi-independent principalities in Bengal (Sanyal 1987). It appears that Mallabhum spread over the entire tract between the Damodar on the north and the Silai on the south, comprising the whole of the Bishnupur subdivision (the present study area) and the contiguous western portion of the Sadar subdivision of Bankura district, the portion of Midnapur district between the river Silai and the Bishnupur subdivision and a small part of the Hugli district bordered by Ghatal on the east of the Bishnupur subdivision. The main centre of Mallabhum was Bishnupur, covered by this Hindu dynasty (Malla dynasty) which
was found in the eight century and continued till eighteenth, when it was revived by the ravages of the Marathas, and by the famine of 1770 which depopulated its territory (Banerjee 1968). However, there are differences regarding the actual dates of the origin of this dynasty. Hence, before the medieval period, we do not have any direct historical references coming from the area. From this period onwards, we have definite historical records. Before the medieval period, we have to take resort to indirect literary evidences in order to know about the present study area. The history of Bankura thus remains incomplete without the mention of Vishnupur Raj: The Mallas of Mallabhum.

The Malla Rajas after whom, these principalities were named maintained a very strong and well organized army, conquered territories and were great patrons of learning and culture. It is mainly under this patronage that Bishnupur, the capital of Mallabhum, had become a great centre of Sanskrit learning, architecture, terracotta, sculpture, paintings and classical music. Raghunath Singh is the supposed founder of the dynasty and claims origin from the kings of Jainagar near Brindaban. The interesting story is mentioned in Hunters ‘Annals of Rural Bengal’. He is otherwise known as Adi Malla who reigned in Laugram for thirty three yrs and is known today as Bagdi Raja, a designation which seems to show that the district was then inhabited by the aboriginal races (O’Malley 1995). Bandopadhyaya in Bankurar Mandir states that Adi Malla’s date of birth is AD 695 and according to the family chronicles, Kalu Malla, Kau Malla and Jhau Malla the fourth, the sixth and the seventh kings respectively, must have lived during the ninth, and the tenth centuries of the Christian era, when still such names were unthinkable in a royal family claiming descent from north Indian Kshatriya ancestors (Banerjee 1968). However, there are discrepancies regarding the actual dates of Adi Malla.

Bishnupur which is situated about thirty miles west of Laugram (first capital of the Rajas), might have been acquired by the Mallas in course of their expansion towards the denser forests in the uplands on the west. It may be reasonably inferred that the Mallas had entrenched their power in the more centrally located arid uplands around Bishnupur which, owing to its location in the dense forest between the Dwarakeswar and the Silai, was much less vulnerable to external aggressions from the plains on the east than Laugram. From there the Rajas appear to have gradually pushed forward the
borders of the domains by annexing the territories of their neighbours on the north, west and south until they established their control on the entire tract of what came to be known as Mallabhum (Sanyal 1987).

The legends of the Malla rajas credit them with extensive conquests and subjugation of the kings of neighboring territories. According to the Akbarnama, Dhar Hambir, the then Raja of Bishnupur had joined the forces of the Mughal General Man Singh in his expedition against the Pathans in north Orissa. The story of the extensive campaigns has been penned down in the famous novel Durgesh Nandini by Bankim Chandra Chattaopadhyay. Dhar Hambir who was the 48th ruler of the dynasty ruled between 1586 and 1596, corresponding to the time of Akbar. Bishnupur gained status as a seat of Sanskrit learning since the days of Bir Hambir. The Shyam Rai, Jor Bangla and the Kalaachand temples set by him in 1643, 1655 and 1656 A.D. testify to the sculptural excellence reached during this period. During the rule of Bir Singh II, the Mallas held effective authority over a major part of the territories, now forming the district of Bankura. Tradition say that he introduced the worship of Madan Mohan in his capital city and erected the structures known as Ras Mancha where all the deities of Bishnupur used to be established during the annual Ras festival. He is even credited with the introduction of the worship of Kalachand, another Vaishnava deity, in Bishnupur. He is also credited with the excavation of the eight big tanks, a few ek-ratna laterite temples in Bishnupur, a sikhara temple at Bikrampur in Onda P.S (1659) and two at-chala temples at Tejpal and Sarakhon (1676) in Taldangra P.S. Durjan Singh who appears to have ruled from 1678-1694 built the Madan Mohan temple in Bishnupur (Banerjee 1968).

The colonial records (Colonel Gastrell’s record) says the ‘the city of Bishnupur was once strongly fortified by a long connected line of curtains and bastions, measuring seven miles in length, with small circular ravelins covering many of the curtains. Within these outer lines of fortifications and rest of the city, lies the citadel. The remains of these defences still exist. The Raja’s palace was situated within the citadel’. Hunter reported that during his time, there was a very insignificant pile of brick buildings, surrounded by ruins. He reported numerous old temples which stand in the interior of the citadel (Hunter 1973). Mrinmayee was the Adhisthatridevi of Mallabhum. Characteristically Mrinmayee is similar to the tribal Thakurains of the
Garjhat principalities of Orissa. *Ind puja* and *Gajan* were the festivals of the common people which were celebrated outside the Rajas fort. It was easier for the *Rajas* to transform the worship of *Mrinmayee* according to the Puranic idioms and thus conceal the tribal or folk origin of the deity as far as possible (Sanyal 1987). But on the other hand, the religious and cultural activities of the *Rajas*, particularly the elaborations, which were made almost entirely with the *Gauriya Vaishnavism* idioms, were interwoven with the political and administrative policies that the *Malla Rajas* had evolved for dealing with the autonomous local forces. The organized and canonical aspects of *Gauriya Vaishnavism* involved elaborate and intricate *Puranic* rituals and encouraged concentration of resources at the centres of social power. The congregation of such widely divergent characters and the description of the exploits of the *Malla* kings, values and aspirations in the *Mangala* poems, definitely make them a veritable source of social history (Sanyal 1987). In the present study area, we find the concentration of quite a few medieval temples built by the *Malla* kings of which the ones at Dihar deserve special mention. However there are contradicting views regarding its actual construction period. Handicrafts and trade were important occupations in *Mallabhum*. The artisans and the trading castes were concentrated in the manufacturing and trading centres of Bishnupur, Rajagram, Lakshminagar, Sonamukhi, Barjora, Patrasayer and others. Bishnupur itself was the largest centre of handicrafts and trade within *Mallabhum* (Sanyal 1987).

The decline of the *Malla* power had actually started from the time of Raghunath Singh II and the process was accelerated by a succession of Maratha raids and the rise of big neighbouring *zamindars* like, the *Burdwan Raj*. Some of the later rulers were Gopal Singh, Krishna Singh and Chaitanya Singh. The battles with the Marathas continued for nine long years, mostly in the districts of Bankura, Birbhum, Burdwan and Midnapur. The inscription on the *Radha Shyam* temple built by *Chaitanya Singh* in 1758 A.D. would testify that he continued to be the king at least from that year till the *Mallabhum* estate were sold away for arrears of revenue.

The successive years witnessed the advent of the East India Company and struggle between the British and the local inhabitants. The land of the *Raja* of Bishnupur thus came under the control of the East India Company in 1765, only after the company acquired the *Diwani* of Bengal, Bihar and Orissa from the emperor Shah Alam. In
1770, Bengal met with a famine which severely affected the economy and led to the unavoidable sufferings of the rural society and Bankura was no exception to this. Bankura district also formed a part of the *Jungle Mahal* in the eighteenth century lying between Birbhum, Midnapur and the hilly country of Chotanagpur. These areas were placed under the jurisdiction of an officer called the Magistrate of the *Jungle Mahals*. Probably due to the extensive jungles, the district remained tranquil and free from disturbance during the revolt of 1857 (O’Malley 1995).

It is very unfortunate that due to scant literary data the researcher had to draw references from varied sources in order to understand the history of the study area. Moreover, epigraphic data in the present study area is very scant. Susunia inscription is the only one coming from the entire district. It is due to all these shortcomings that the researcher had to take recourse to archaeological surveys in order to know the history of the past settlements. In general, a major part of the district comprised dense jungles and was chiefly inhabited by the tribal population, as a result of which the whole district was a little secluded from the entire process of development and growth. But at the same time it has to be considered that during the medieval period, when large parts of Bengal were ravaged by the Islamic conquests, the *Malla Rajas* of Bishnupur could retain their individuality (Hunter 1973) and they braved all the odds and brought the entire area under a common administrative set-up. They ruled independently for a substantial period of time in this part of the country.

Due to the scant literary data of the study area, the researcher had to depend primarily on extensive field information to gather evidences regarding the existing archaeological sites. In the following chapter, all the explored sites of the river valley (reported as well as newly discovered) have been discussed that provides an understanding of the emergence and existence of past settlements in the river valley. However, it was important to study the sites in the backdrop of the above mentioned historical development, which has enabled to construct a fair picture about the study area.
Notes

1. While discussing the historical background of the study area, the entire district had to be taken into consideration because the study area forms a considerable part of the district; hence indirect information had to be gathered in absence of specific literary data on the study area. However, from the medieval period onwards, we get sufficient historical data of the study area. The epigraphic records, medieval vernacular literature, census data and the district gazetteers have been consulted in order to understand the historical background of the area.