
Settlement Archaeology of Kopai River, Birbhum District, West Bengal: A Preliminary Study

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Abstract: *Kopai River is a part of Chottanagpur washout river of Rarh region which has archaeological potential. It has yielded sites ranging from prehistoric to medieval period. The present paper investigated the distribution of archaeological settlements along the middle reaches of the Kopai River and floodplains to understand the site distribution pattern and the nature of sites. The present research also attempts to devise a methodology to investigate an area and emphasize that even in such areas lacking high visibility of archaeological sites or imposing mounds, it is possible to reconstruct in a fairly reliable manner. This work thus is a beginning to understand the river valley and the patterning of its archaeological record.*

Keywords: Settlement, Prehistory, Chalcolithic, Medieval, Kopai River, Birbhum, Mahisdal

Introduction

The *Rarh* region of West Bengal is the region that lies between the Western plateau and high lands bordering Chhotanagpur plateau in the West and the Ganges Delta in the East. Parts of the districts Murshidabad, Birbhum, Bankura, Bardhaman, Medinipur and Nadia constitutes in this region. Present study area falls in the parts of Western *rarh* in Birbhum district. Much of the district has undulating lateritic outcrop. This *Rarh* region has been a potential region for archaeological sites since prehistoric times. Many previous scholars have conducted very extensive work in search of the archaeological settlements of this area. Especially late Prof. Subrata Chakrabarty had done very interesting work in search of Prehistoric settlements. The *Rarh* region has a large number of Chottanagpur fed rivers. The plateau character governs the drainage pattern of Birbhum and most of the rivers have west to east flow, the cross-section of the valley floor(s) being broader in the west, that is the upstream region. Most of the rivers of the district originate from the Santal Pargana highlands and fall into the 'dead delta' zone below the higher land along the Ganga-Bhagirathi bank (Chakrabarti 2002). The flood plains of the rivers are the most conducive areas for archaeological sites. Kopai River is one such zone which yields sites ranging from prehistoric to medieval period. The land surface of this area has been formed as a result of deposition of alluvium degraded from

the western table-land and is composed of reddish earth. The area grades into mild undulating topography very typical of Rarh landscape. Laterite occupies a larger area of this tract which gradually merges on the one side with Rarh area of Murshidabad district while on the other it slopes down to the northern bank of Ajay River.



Figure 1: Hasuli Bank (Confluence of Bakreswar and Kopai)

Study Area

The present work investigated along the middle reaches of the Kopai River and tried to understand the distribution of archaeological settlements and the development of sites from Prehistoric to Medieval period. The river rises near the western boundary of the Birbhum. Kopai River is a well-known name in the riverine landscape of this region. It is a tributary river of Mayurakshi river basin. This river is also known as Sal River. Sal River flows east ward which takes name Kopai near Bolpur. It meets Bakreswar River near Hasuli Bank, Labhpur area (Figures 1-3). After that, this river is name as Kuya River, which enters into Murshidabad. It starts from Khajuri village, Jharkhand and flowing S-E direction over Birbhum and Murshidabad district of West Bengal it joins with the Babla river i.e. Dwarka river near Sabitrinagar of Murshidabad district. Total length of the river is 176.4 km and about 24.64 km is non perennial. The basin area covered by 23°26'18" N to 23°56'30" N latitude and 87°13' E to 88°09'30" E longitudes and covering the area of 1555.2 sq.km. (Das and Mukhopadhy, 2015).

For the present study only middle part of the river is taken. The reason for taking the middle reaches only is because here the river Kopai flows singularly without much bifurcations and joining tributaries or distributaries. Moreover, this area has yielded the site of Mahisdal which is an important chalcolithic site of Western *Rarh* Bengal. The study area covers within the district of Birbhum. The length of the study area covered 46 km and falls in Survey of India toposheets number 73M/10 and 73M/13. The study area fall a small part of Birbhum district.

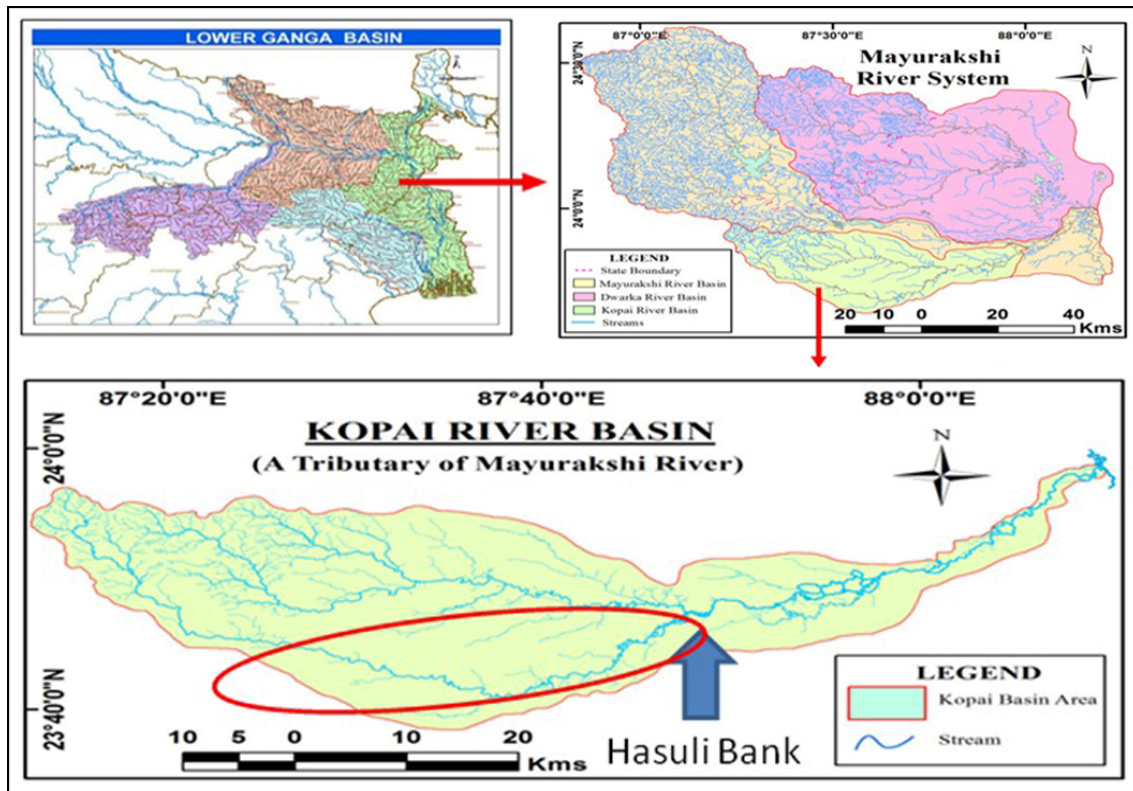


Figure 2: Study Area

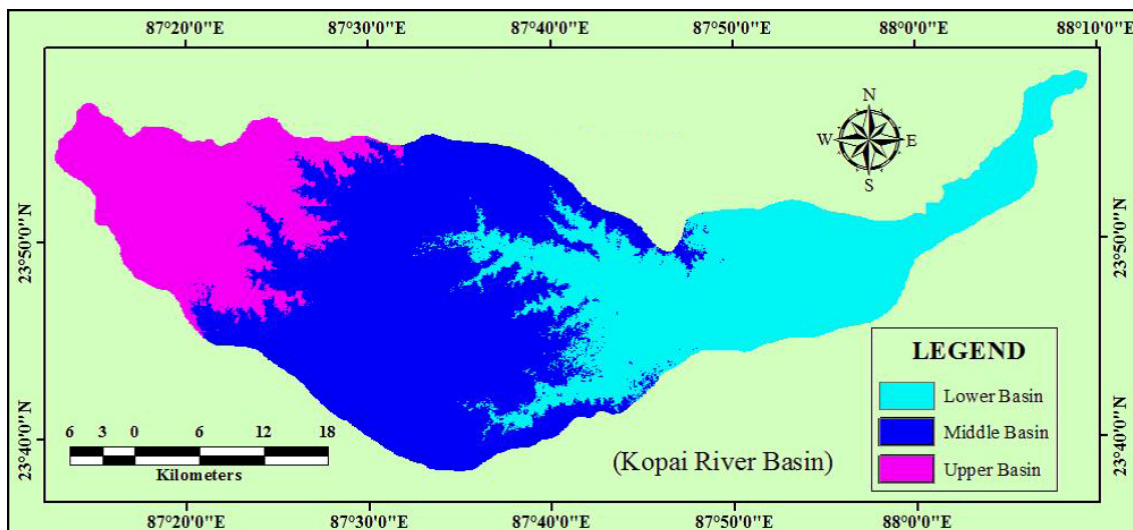


Figure 3: Relief Map of Kopai River Basin (Das and Mukhopadhyaya 2015)

Previous Archaeological Research

The study area has been studied intermittently by many scholars. They are mostly exploratory barring one excavation. Archaeological Survey of India, Eastern Circle explored a few important sites such as Mahisdal, (IAR, 1962-63) Haraipur (Ghosh, 1989, pp. 161-162, IAR 1964-65) and Nanur (Ghosh, 1989:309; *Chakrabarti et al* 1981) in the entire Birbhum district. Amongst this Mahisdal falls directly in the study area. Shri R.P Das of

the Eastern Circle explored the chalcolithic site of Mahisdhal (IAR. 1962-63). Then he excavated Mahisdal in 1964 (IAR 1963-64).

In 1965 the Directorate of Archaeology and Museums, Government of West Bengal, explored the river valleys of the Bakreswar and Kopai in district of Birbhum and obtained a sequence of Stone Age sites yielding Middle and Upper stone age implements of Giridangal formally discovered by the Directorate. While the Department of Archaeology, Government of West Bengal conducted the systematic exploration of this region and revisited these areas, a new site discovered at Chinpai (IAR. 1965-66. P. 58) and from the Maligram, about 5 k.m from Purundarpur, they discovered Middle and Late ages tools. (IAR 1966-67). However these sites do not fall into the micro region chosen as study area. But these sites are part of the surroundings of the micro region which is chosen for the study.

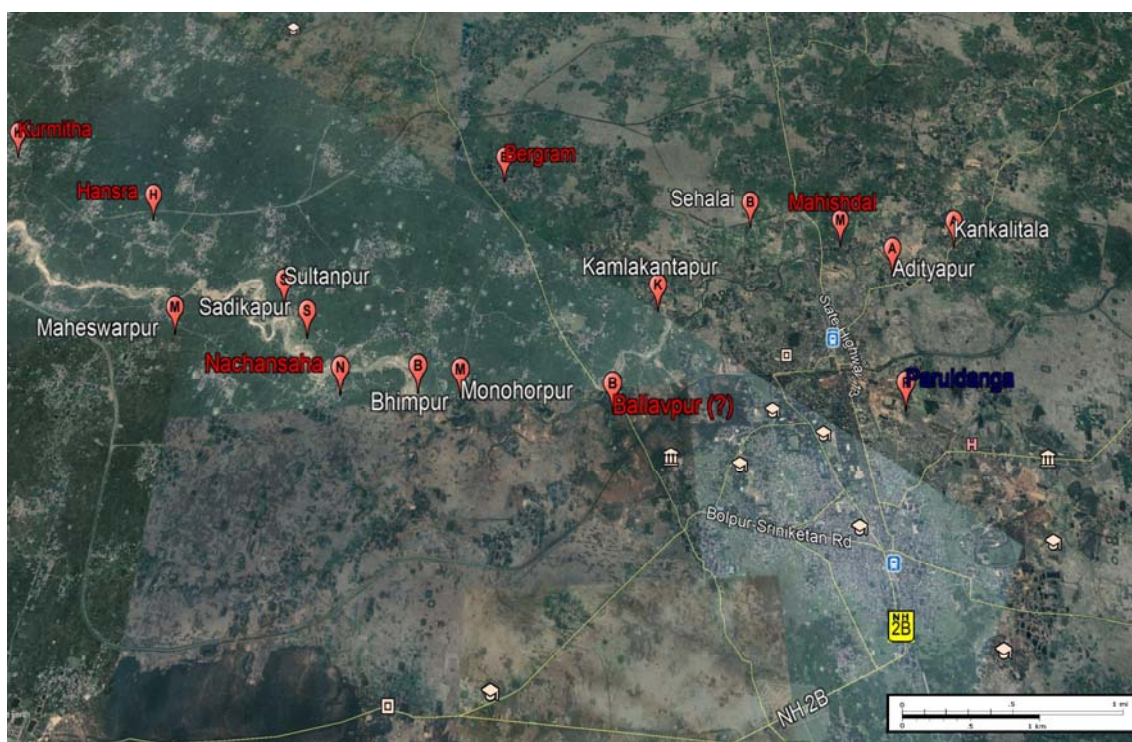


Figure 4: Archaeological Sites in the Study Area

The site of Ballabhpur was earlier explored by the department of Archaeology University of Calcutta (IAR. 1975-76). The culture assemblage found from here are microliths, as well as Black and Red ware ceramics. Prof. Subrata Chakrabarti, Department of Ancient Indian History Culture and Archaeology, Visva Bharati University, carried out investigation in the Birbhum district. He explored and recorded the stratigraphical succession of Paruldanga from blade based Upper palaeolithic industry and Microliths industries. (Chakrabarti 1993, 1998-1999; IAR 1998-99; 1999-2000). Other than Mahisdal, this river flood plain was also extensively explored in search of Chalcolithic settlements in West Bengal (Chakrabarti *et.al* 1993). Some of the important explored sites that were reported are Hansra, Kurmitha, Nachansaha, Paruldanga, Bergram (Figure 4).

Objectives

The aim of this investigation is to study the distribution of sites ranging from prehistoric to medieval period in Kopai river valley. An attempt is also made to understand the origin and development of sites in the region in relation to the landscape with special emphasis in and around Mahisdhal. The main emphasis has been to investigate the locational criteria of the settlements, which involves how and where the site was located and the context of the archaeological record. It also aimed to understand the notion of site, in the present fluvial system with the help of geoarchaeology. And also to investigate the archaeological record that was recovered through exploration, which will help in chronological distribution and patterning of these settlements. The reason for taking the middle reaches is because the river Kopai flows singularly without much bifurcations and joining tributaries. Moreover this area has yielded the very important site of Mahisdal which is an important chalcolithic site of Rarh Bengal. This entire study area has been thoroughly explored (intensively and extensively) and has then been categorized into various levels with respect to their locational criteria and geological landforms. The exploration carried out only basis of field survey. The artefact spread has been random and scatters are found in patches in various parts of the present landscape. Many a times, discovery of sites become a matter of chance due to erosional activities and the modern anthropogenic activities.

Methods

Detail explorations along the study area have been undertaken. Most of the sites are discovered as a matter of chance. There are no well-defined mounds in this region, which could be plotted and archaeological record could be documented. Even the sites are not complete surface sites where the artefact spread can be sampled. So it became imperative to identify the nature and location of archaeological record. This led to detailed examination of exposed river sections; palaeochannels or dried river sections; exposed areas near the confluences of the main river with the tributaries; in lesser order streams where the intensity of fluvial action is quite low; cart track roads and rain gullies; temple mounds; modern house walls and tilled fallow lands. It also involved talking to local people who till the field, dig the soil, and have a firsthand knowledge of the modern village and its landscape. The regular method of gridding the area of artefact spread could not be implemented here. In most cases, there has been random collection of artefacts as and wherever evidenced on surface or in exposed sections. The context and present position of the archaeological record is also photographed and mapped wherever possible. Most of the regular methods of exploratory survey could not be carried out in this context. As the entire research is based on surface exploration, it becomes imperative to understand the assemblage not only in terms of context but also chronology. Detail documentation of artefacts (ceramics) yielded in exploration is done. Descriptive classification of pottery which is the main artefact of the sites has been made. Some preliminary analyses have been done to make observations on chronology. The research is limited to the middle reaches of the river keeping in mind the most important chalcolithic site in this river valley Mahisdhal. The area explored was to investigate the

pattern around this site. So a wide understanding of distribution pattern of archaeological settlements of the entire river had not been achieved in this present work.

Distribution of Sites

This entire study area has been thoroughly explored (intensively and extensively) and has then been categorized into various levels with respect to their locational criteria and geological landforms. The artifact spread has been random and scatters are found in patches in various parts of the present landscape. Due to erosional activities and the modern anthropogenic activities many a times discovery of sites become a matter of chance. For the benefit of understanding the extent of area surveyed, the sites are described here according to the topo sheet number and following the right and left bank of the main river and its tributaries. The following sites described are located on both banks of the river starting from upstream to downstream.

Kurmitha: 73M/10 (23°44' N and 87°31' E) is a chalcolithic site reoccupied in the medieval period. It is located on the left bank of Kopai River few kilometres to the east of Parui on a road that branches off on the left from Bolpur –Suri road via Purandarpur and about 8 k.m from the Hansda. The river passes through the Southern part of the mound with a distance of approximately 3 km. As mention earlier by A. Ghosh it is a Chalcolithic site (Ghosh, 1989). The mound is located almost at the middle of the village. This mound is locally known as Thakurjoli Danga inside the modern village near an Anganwari school. It is subsequently disturbed by the digging of a pond and a village road which cuts through its western edge. The original extent is difficult to determine, but could be approximately one acre. The important remains found from the site through earlier explorations are black and red ware sherds, fine and coarse red wares, microlithic flakes, iron slag. The part of the mound is largely destroyed but possible continuity of occupation still observed (Chakrabarti *et al* 1993).

There is a section or cliff along the eastern side of the village road which cuts through the western of the mound, the cliff being formed by the cutting of the mound at that point by the road. The villagers pointed out an area at the edge of the cliff from where a skeleton now lost, was once recovered. A careful look at the area showed some bones sticking out. Clearance work at the area spot undertaken by the villagers revealed an extended skeleton (5ft. 3 in long) about 1m below the top of the occupational deposit at that point. The skeleton was embedded in compact blackish soil, with both arms flexed at the elbow and with hands placed on the shoulders. The face was partially turned to the west. There were no signs of artefacts except a very limited number of small pieces of red-slipped pottery. The skeleton was found securely within the blackish soil deposit which is in fact the hallmark of the BRW in West Bengal and thus its association with BRW phase may be considered certain. (Chakrabarti *et al* 1993). From the present exploration it is noticed that potsherds are scattered at all part of the barrage of the Thakurjoli pond. But a good number of potsherds are frequently found towards the western part of the pond where previously mention skeletons was found and also towards the west near the Aganwari School potsherds are found extensive manner.

Unslipped variety of red ware found all parts of the Thakurjoli pond. But Red slipped wares and Black and Black slipped wares found western part of the pond and Black and wares found very less in number also in western part. So, from the present exploration Black and red wares type potsherds were found very less in number, Black wares, Black slipped wares are found in moderate manner; but Red ware and Red slipped wares are found in very extensive manner. Microlithic flakes are also missing from the present exploration.

Maheswarapur: 73M/10 (23°69'N and 87°56' E) is a medieval site. It is located near Kurmitha-Panrui road and is 5 km from Nachansaha (a site mentioned) on the right bank of Kopai River. The site is not reported before. The whole village is surrounded by agricultural fields. The mud huts are located on the southern side of the village. The archaeological artefactual assemblage is very scanty. During the course of exploration, artefacts are found from the newly dug up pond and also from the walls of some mud huts. The artefacts mainly potsherds are found from the section of the pond and also scattered on the surface of pond section. The northern section of the pond has yielded lot of potsherds. The site yielded medieval type potsherds- red wares, black on red wares and grey wares and also from the nearby agricultural fields yielded similar type of potsherds mainly red wares. The northern area of the village is extended towards the Kopai flood plain.



Figure 5: General View of Site Hansra

Hansra: 73M/10 (23°42' N and 87°33' E) is a chalcolithic site (Figure 5). It is located west of Bolpur-Suri road on the left bank of Kopai River just 700m away. The area is about 3 acres. This site has yielded considerable evidences of chalcolithic deposit as reported by earlier scholars. Scholars mention about a probable big mound earlier which was cut into five ponds for modern anthropogenic reasons (Chakrabarti *et al.* 1993). Presently the whole area is covered by seven ponds and a field which is known as *Ghosal Danga*. Towards the northern side of *Ghosal Danga* there are five ponds arranged in a linear

manner starting from east to west. The names of the ponds are *Jhop pukur*, *Tanti pukur*, *Jorule pukur*, *Horgore pukur* and *Domgore pukur*. These ponds are presently used by the modern people each assigned to a particular caste community. From the previous exploration it has been mentioned that black and red wares, grey and red slipped wares, microlithic flakes and iron slag were found (Chakrabarti *et al* 1993; Ghosh 1989). A. Ghosh also reported channel-spouted bowls from here (Ghosh 1989). From the present exploration main findings are a lid, black and red wares, red slipped wares, and Black on Red wares etc. Microlithic flakes and iron slag were not found from the present exploration.

Sultanpur: 73M/10 (23°70'N and 87°59' E) is a medieval site. It is located approximately 10 km west from Ballavpur bus stoppage. It is situated on the left bank of Kopai River. The river is flowing towards the southern side of the village just one km away. Due to heavy anthropogenic activities the site is hardly visible. The archaeological ceramics are present only on the house walls of the modern houses. This indicates that probably the earlier mound was present which have been destroyed due to anthropogenic disturbances. The site is discovered during the time of village to village survey by inspecting the mud huts wall. No primary context found of this site. The mainly artefactual assemblage found from here is potsherds of red slipped wares and black on red wares. It is an unreported site.



Figure 6: General View of Site Nachansaha

Nachansaha: 73M/10 (23°42' N and 87°33' E) is a chalcolithic site (Figure 6) reoccupied again in medieval period. The present village is on the edge of the Kopai flood plain on its right bank. It is located about 7km to the west of Surul mor on the Nachan road which

is roughly 13km to the west of Bolpur. The ancient occupation area measures about 2 acres on the northern part of the village. The important findings from earlier exploration in Nachansaha have yielded black and red ware, iron slags, red slipped wares, microlithic flakes and at least one burin in quartz (Chakrabarti *et al* 1993; Ghosh 1989). The habitation area is presently cut into different parts by ponds. The present survey took an intensive investigation of the entire village. Due to heavy anthropogenic disturbances most of the chalcolithic occupations are destroyed. BRW and microlithic flakes were not found from the present study. Near an old Shiva temple which is on a high elevated surface and near cremation ground some potsherds are noticed. A rain gullies is coming from the eastern part of the village and joins with the river. Here in this rain gullies potsherds are found in a frequent manner. But all the potsherds are medieval type potsherds. Mostly medieval type potsherds, like red unslipped wares and Red slipped wares are found and some late type potsherds were also found from here, like-red slipped and basket impression coarser type potsherds found from this site.

Bhimpur: 73M/10, (23°69' N and 87°61' E) is a medieval site. It is nearly 5km from Monohorpur. The village is located on the left bank of Kopai river. The river is about 300m or less to the southern side of this village. In this village, modern mud huts are located on the northern side but on the southern side irrigation fields are located. The potsherds are found near irrigation fields mostly in the dried up irrigation drainage canal. Towards the eastern side of the village there is a Dharmaraja temple and a health centre located where considerable medieval potsherds are found. The main findings from this site are red slipped wares and black on red wares. The size of the pottery scatter area is approximately 2 acres.

Monohorpur: 73M/10, (23°69' N and 87°62' E) is a medieval site. It is located 4km west from the Ballavpur bridge and in the north of Monhorpur Bolpur-Suri Road running through. Site is on the left bank of Kopai River which flows nearly 500 m away. The artefacts are found from here in two contexts- Primary and secondary context. The primary artefacts are found from the edges of the fields. In the secondary context, potsherds are found from a damaged mud house and from a mud house wall. From here medieval potsherds are found but very coarse type mostly red slipped wares. It is located near the middle of the village. The potsherds are found mostly on the section edges of the fields and sometimes in scatters all over the field. Probably this was an ancient mound though it is completely untraceable now. The area approximately extended about nearly 2 acres. This field presently used by the *Santal* community for Dhramraja puja. The field is also destroyed with irrigation work and digging up a pond on the northern side. Potsherds of red slipped ware found in very large quantity. The modern settlement consists both mud and brick houses. A potter's family lived here but presently they left their occupation.

Sadikpur: 73M/10, (23°68'N and 87°63'E) is a medieval site. This village located nearly 10 km west of Amar Kuti, Santiniketan. The Kopai river is flowing towards the eastern side of this village. Remains of ancient occupation have been mainly found from the

sections of a dry up pond. It is located at the beginning of the village. The pond is surrounded by a road on the southern side and the modern settlements are located at this part. On the northern part are the agricultural fields. Towards the western side a *pirtala* existed. The artefacts mainly potsherds of the red slipped wares found eastern, western and northern part of the pond section with the maximum number from western side. Medieval type potsherds red wares only findings from the site. Most of the potsherds are unslipped varieties of red ware. The potsherds are very coarse type.

Ballavpur: 73M/10, (23°69' N and 87°65'E) is a chalcolithic site reoccupied in medieval period. It is located 2km from Sriniketan and near Bolpur-Suri road. Previously this site was explored by the department of Archaeology of the University of Calcutta. They mention about the assemblage of this site as yielding Chalcolithic (?) with some associated with some microliths and Black and Red Ware potsherds (IAR 1975-76). The construction of a Bolpur-Suri road and bridge destroyed the site and modern habitation destroyed the site completely. Shifting of the river course has partially eroded the site. But from the present explorations only medieval type potsherds are found from here mainly unslipped red ware.



Figure 7: Ceramic Scatter at Kamlakantapur

Kamlakantapur: 73M/10, (23°42' North, 87°39' East) is a medieval site. It is located approximately 400m far from the Kopai River and 3.23km away from important excavated site Mahisdhal. It is in the left bank of Kopai River. The river is flowing

towards the eastern part of the village. The main site is located near the Kamalakantapur primary school. It is a flat mound surrounded by the small modern village. Most of modern villagers are agriculturists living in modern mud houses. The western part of the mound is destroyed due to anthropogenic activity as it mainly occupied by modern habitation. Towards the eastern part of the site there is a dried up channel which was probably a rain gully. On the northern part there is a pond and in the southern part there are agricultural fields. The entire ancient habitation area is about 3 acres. The surface of the mound is strewn with pottery (Figure 7). From the surface of the site large number of medieval potsherds is found like red slipped wares, black on red ware and incised decoration potsherds. One interesting evidence from this site is evidence of terracotta animal figurines, mainly horse figurines. A piece of perforated potsherd is also seen from here. The other part of Kamalakantapur is known as *Rindanga*. There is a football playground at the periphery of *Rindanga*. This playground is located very close to Kopai River which is flowing towards the southern edge of the ground. The main artefactual findings from this part are red slipped ware and black on red ware. A few amount of unslipped red wares also found from this area. Some of the potsherds have very bright red slip and thin section. A few specimens of black ware and a single piece of grey ware are also found. The potsherds found from this site are very coarser type. Iron slag is an important finding from this area.

Sehalai: 73M/10, (23°71' North and 87°68' East) is a medieval site. South Sehalai is located 5 km north of the major chalcolithic site of Mahisdhal. It is located on the left bank of Kopai River surrounded by agricultural fields. The villagers are mainly dependent on agriculture for their living. Ancient habitation is evident only on the southern part of Sehalai. The artefacts which are mainly potsherds are found towards the edges of an old pond, which is name as *Kala pukur*. It was probably the ancient mound which was later cut into pond. This pond is located at the middle of the village. This dug out area is a very rich area for pottery belonging to medieval period. From here varieties of potsherds are found like Red unslipped ware, Red slipped ware, Coarse red ware, one piece of Black on Red ware, black ware, small part of chert core (?). Another interesting remains from this site is small pieces of fossil wood.

Mahisdal: 73M/10, (23°42' N and 87°42' E) is the only excavated chalcolithic site of this middle reaches of Kopai (Figure 8). It is in the northern bank of Kopai river The modern village is about ¼ k.m to the north-east of the mound which is about 100m to the north-northwest of the middle stretch of the railway bridge over the Kopai River. The mound has been certainly affected by the bridge construction towards the eastern of the mound. The mound is also destroyed by anthropogenic activity. On the western part of the mound some portion are eroded naturally and on the northern part a playground located. The river is flowing southern part of the mound. From the present exploration it has been observed that northern part of the mound is rich zone for black and red wares ceramics. The black and red ware potsherds are scatter here and also from the present context red slipped and black and red wares are found. The southern part of the mound yielded black wares.



Figure 8: General View of Site Mahisdhal

The site has undergone a small scale excavation long time back. Shri R.P Das of the Eastern Circle of Archaeological Survey of India explored the area Mahisdhal (*IAR. 1962-63*). He excavated Mahisdal in 1964(*IAR. 1963-64*). It is located 3kms from Santiniketan. The extensive site with an area of 230 by 135 m, making it about 7-8 acres in extent, rising some 5 m, had a cultural deposit of only 2 m at its maximum. Excavation revealed two cultural periods without any break, the later characterize by the use of iron. Period I represent the Chalcolithic phase and is free of iron (*IAR 1963-64; Ghosh 1989*). The ceramics (Figure 9) of Period I included BRW, plain or painted in white as well as in black. The painted designs are including- parallel bands, dots, triangles, slanting ladders, bands of various geometric motifs. Other than that are black painted red ware, red wares bearing incised decorations, plain red ware and black ware, sometimes with incised and pin-hole decoration. The common shapes of all the wares included the lipped or channel-spouted bowl with sagger-base. Two structural phases comprising floors of beaten earth with a soiling of rammed terracotta nodules, reed-impressed clay-daubs, burnt husk impressed clay plasters and large quantities of ash were discovered. Other associated finds comprised microliths, a flat copper celt with a convex cutting-edge, terracotta objects, a terracotta phallus, tetrahedral objects probably weights, bone objects including pins, fragments of a decorated comb, bangles and a number of beads of semiprecious stones and steatite. A large quantity of charred rice was found scattered all over the second floor-level of this period.



Figure 9: Ceramic Scatter at Mahisdhal

In period II, the ceramic tradition of the earlier period continued, but the fabric became coarser. A new feature was the occurrence of unpainted buff and grey wares. A new ceramic type i.e., a shallow dish in grey coloured occurred in this phase. A large quantity of microliths, terracotta figurines and iron objects such as arrow-heads, spearheads, chisels and nails as well as large quantity of iron ore and slags were unearthed. Of special interest is small clay sealing with two symbols and fragmentary terracotta figurines of an elephant in motion. The faunal remains of this place include the jungle cat, pig, antlered deer, wolf and also cattle (IAR 1963-64). From present surface exploration similar type of potsherds were found from the excavation; such as Black and red wares, red slipped wares, buff wares, black wares, microlithic debitage etc. are found. Four C-14 dates are available from Mahisdal, three from Period I and one from Period II. The three C-14 dates are 1380 BCE, 1085 BCE and 855 BCE. According to Chakrabarti, the earliest calibrated date range of Mahisdal is 1619-1415 CE. The C-14 date of ‘Early Iron Age’ period is Mahisdal is 690 CE (Chakrabarti *et al* 1993).

Adityapur: 73M/10, (23°71' N and 87°71' E) is a medieval site (Figure 10). It is located nearly 7.4 km north of Santiniketan. Bolpur-Labhpur road passed near Adityapur. It is in right bank of Kopai River. Due to construction of a bridge the site is much destroyed. The river has eroded away a considerable part of the site. The most of the artefacts found near the bridge. The artefacts consist of a piece of stone ware, red wares, and microlithic debitage.



Figure 10: General View of Site Adityapur

Paruldanga: 73 M/10 (23°42' N and 87°43' E) is a Mesolithic site (Figure 11). It is about 4 km north of Bolpur Railway station. The open-air Mesolithic site is situated at a distance of about 1 km from the river Kopai, on its southern bank. Paruldanga is an important mesolithic site of Birbhum. The site was discovered in August 1979 and was subjected to trial excavation in March 1981 (Chakrabarti *et al.* 1982) and in February 1982 (Chakrabarti 1986) by Prof. Subrata Chakrabarti. He further carried out investigation in 1989 and 1993, and these investigations yielded new material that necessitated fresh interpretation of the entire collection from the site between 1979 and 1994 (Chakrabarti 1998-1999).

The Mesolithic – I tools occur here at a depth between 0.26 m and 1.5 m in yellowish red silt and, above it, in the yellowish brown to reddish brown silt at a depth between 5 cm – 7 cm are found the Mesolithic – II tools (Chakrabarti 1993, 1998-1999, 1999-2000, 2001). In the Paruldanga collection the finished tools are outnumbered by debitage, possibly an indication of tool knapping at the site. The finished tools consist of blades, lunates, points, borers, burins, scrapers, notches and retouched flakes. A few pieces of triangles were found from the surface but none found in excavation. The debitage includes primary flakes, cores, unclassified lumps, and core-rejuvenated flakes. The chert is the dominant raw material followed by agate, quartz and fossilwoods employed for tool manufacture at Paruldanga. The technology of tool manufacture is mainly on the production of blades

and flakes. There is evidence of crest forming techniques on cores, indirect punching technique, notching technique, pressure flaking technique etc. From the present study the some pieces of unfinished microlithic tools and microlithic flakes are obtained. The site now completely destroyed by the construction of Helipad and nearby a college.



Figure 11: General View of Site Paruldanga

Prof. Subrata Chakrabati also mentions that in the lateritic uplands in and around Santiniketan, there are atleast five Mesolithic camps – Paruldanga, Syambati, Cheap-Kuthi, Deer Park, Ballabhpur – all located within a 15 km radius of the Ajay-Mayurakshi water divide in the Kopai-Bakreswar valley (Chakrabarti 1998-1999). But from the present study due to anthropogenic activity Microlithics artefacts are completely missing from this site at the present exploration.

Kangkalitala: 73M/10, (23°72' N and 87°72' E) is a medieval site (Figure 12). The site is located near Kangkalitala temple and just near to Kopai river bank. It is very small site and site is exposed due to suddenly collapsed small portion of the area and approximately size of the area just about 60x30m. The artefacts are found only from this area. The main findings from this area are medieval type potsherds. Some of the potsherds are very similar to Kamlakantapur potsherds. The site yielded red slipped wares some of them have very bright slip and thin section, red unslipped wares and one piece of black on red ware (?). Some of the potsherds have incised design near the neck area.



Figure 12: General View of Disturbed Site Kangkalitala

Conclusion

The main emphasis has been given to understand the emergence and the locational criteria of archaeological settlements through the passage of time. In such a riverine landscape, the concepts of settlement size, site hierarchy, central place theory and social organization are difficult to ascertain. The ceramic repertoire adopting an objective methodology indicates a gradual development of the technology, economy and lifestyle of the people in the Kopai river valley. It also signifies simple agrarian society during the Chalcolithic period based on subsidiary mode of hunting and gathering to the multi-mode agrarian economy in the Medieval periods.

The locational criteria of the site are of river course the very important river source in Chalcolithic as well as Medieval period. Interestingly most of the sites are situated on the older alluvium zone of the study area irrespective of Chalcolithic and Medieval periods. The older alluvial soil is very conducive to agricultural purposes and probably that acted as an incentive for the inhabitants to reoccupy the sites again in medieval period. Though the chalcolithic period in Mahisdhal has yielded iron nodules, it did not make any effect on the life of the Chalcolithic inhabitants. The probable forested landscape close to the river and the lateritic outcrops which have been the metal source probably acted as an incentive for the chalcolithic sites to thrive. Later again in the medieval period the sites were occupied with more refined technology which helped the sites to continue for a long time.

The chalcolithic settlers were basically agricultural communities with subsidiary modes of economy. The floodplain provided the best soil for cultivation and the smaller streams and meandering areas provided excellent grazing grounds for cattle. The forested tracts in the middle reaches also provided them with the opportunities for exploiting the

resources as a part of their subsistence system. The medieval sites have been more on the bank than the earlier periods where the river was not just a source of water supply but used for multifarious activities and network exchanges.

Interestingly there are no early historic sites in the study area. The chalcolithic sites have been reoccupied in the medieval period in some cases or have been completely abandoned. The reason could not be fully understood in the present research due to the limitation of working on a small area. However a probable reason could be the river might have been not very functional in the early historic period which could have been detrimental for development of early historic sites in the region.

The settlement pattern in the study area is quite interesting. The distributions of the sites through various chronological periods do not present a uniform pattern. There are few chalcolithic sites which are patterned in a dispersed manner. Four sites Kurmitha, Hansra, Bergram and Mahisdal are situated on the left bank of the river and two sites Nachansaha and Ballabhpur (?) on the right bank. Most of the sites are medieval in nature and patterned on a linear manner on both sides of the river. Four sites named- Sultanpur, Sadikapur, Kamlakantapur and Shihalai are on the left bank of the river and three sites – Maheshwarpur, Adityapur and Kankalitala are on the right bank of the river. These sites are situated on the alluvial floodplain of river Kopai and not on any lateritic bed. The alluvial fill probably provided conducive area for settlements from the chalcolithic times. The chalcolithic people were probably settled when there has been low energy flood regime. One excellent example is of Mahisdal. However, probably the river became a high energy one in the later period which could be harnessed only by medieval inhabitants with the advanced technology and an advanced life style. This could be also one of the reasons that chalcolithic sites in the region could not succeed to early historic period indicating desertion of the settlements. People probably came back in the medieval period when the river though a dynamic one had only recurrent flash floods which did not really wipe out the settlements. The inhabitants probably moved to higher flood plain areas and then came back when it was suitable for inhabitation after the flood water receded.

There is one Mesolithic site named Paruldanga in this region. The site is probably located on a paleochannel of Kopai River. There is exposure of laterites on the basal level on which probably the Mesolithic inhabitants settled. Later the palaeochannel shifted and became part of the Kopai floodplain (Chakrabarti 1999). Finally, the present research has made a preliminary attempt understand the archaeological potentiality of a small study area. This work thus is a beginning to understand the river valley and the patterning of its archaeological record. Mahisdhal is excavated in 1963-64, this site very important for chalcolithic culture. But the excavation is very small scale. The report is also not satisfying if further excavation occurred there may be chance of come to light of further remains. From the present exploration Kamlkantapur is also interesting one. Excavation may be come to light of settlement pattern of medieval people of this zone which will be helpful for further research.

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