

RECORDS OF GEOGRAPHICAL CHARACTERS OF ARCHAEOLOGICAL SITES EXPLORED FROM THE MEDINIPUR DISTRICT, WEST BENGAL, INDIA

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Abstract

Humans are component elements of physical environment and settlement subsistent pattern of the people are govern by morphogenic evolution of landscape from the early time. Location of any archaeological site is deeply rooted with the local geography in any region, because the history of country is inseparably connected with its geography. The primitive people settled since ancient times on the natural landscape with the favorable geographical environment and sometimes adverse circumstances forced to abandon the settled areas. In this way, the traces of ancient human settlement take position in the natural landscape as archaeological remains. To understand the biodiversity, history, culture and even human behavior are needed to have a clear idea about the geographical environment of any region. Therefore, identification of archaeological remains with respect to local geographical environment is drastically significant. The cultural evolution of Midnapure district was began about 1,50,000 years ago, a substantial amount of Stone Age tools were discovered from the bank of river Subarnarekha, Kanshabati and Silabati, which demonstrate the antiquities of this land.

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Archaeological remains;
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1. Introduction

This research work is the summarized result of archaeological, historical and geographical data's of the entire study area, which were occupied by early peoples in the past. Archaeology is a discipline, which deal with human activity of the past time, whereas geology and geomorphology explain the physiographic and environmental phenomena's of the landscape. In this situation, geoarchaeology can play a central role as a breeze between those disciplines for the better understanding of the physiographic and cultural co-relation of the archaeological sites, because human's activities have left several fingerprints on our natural environment (Bandopadhyay & Mukhopadhyay, 2015). Each archaeological site should be judge in allied to the natural environment, because human are a component element of natural environment and their life and activities are conditioned and governed by it (Jain, 2014). Actually entire Medinipur district has been split into two separate administrative districts from 1st January of 2002 as west or 'Paschim' and East or 'Purba' Medinipur. Most of the lateritic western part is known as "Rarha" region (Fig, 1), actually it is the extension of Chhotonagpur plateau (Chattopadhyay, Sengupta & Chakraborty, 2005). In other hand the eastern part is known as littoral tract (Fig, 1), which lies at the head of the Bay of Bengal (O' Malley, 1995). The Subarnarekha is the river of 'Rarha' Bengal and it is one of oldest river in India. (Chowdhury, 2008). So many Paleolithic and Mesolithic sites were found from the bank of this river, viz, Bararangameta, Chhototurki, Ghorapincha and Ganganir math etc. Except Subarnarekha, too many archaeological evidences of the Paleolithic Mesolithic and Neolithic period were also found from the bank of Kanshabati and Silabati River (However, most of those are located in highland area. Relatively new ages archaeological evidences were found from the littoral tract part of the Purba Medinipur district, such as so many Chalcolithic, early historic and historic evidences were found from Tamluk, Natshal, Bahiri, Panna, Tilda and Arjuni. The main aim of this study is a systematic arrangement of archaeological sites with a physiographic view because History is around is the achievement of man (Nag,et.al 2007) and the man is an intellectual element of this landscape.

2. Research Method

The present work is deeply depended on the extensive literature review for the Archaeological identification of places in the study area, especially the information's are used from different "IAR" (Indian Archaeology: a review), published by Department of Archaeology, Govt. of India. Field study played an important role to examining the present geographical situation of the archaeological sites and tracking GPS records. Fieldwork was conducted during winter of 2012, 2013 and 2014. Geographic information system (GIS) Technique is used for placing archaeological sites on the present map. District planning maps of paschim Medinipur and purba Medinipur published by National Atlas and Thematic Map Organization (NATMO) in 2006 and 2008 are used for mapping purpose and collecting physiographic data (Rainfall, soil & vegetation)

of the study area. Images are joined using mosaic tool of 'Erdas Imagine'9.1 to get total coverage of the study area map. The ASTER (Advanced Space Borne Thermal Emission and Reflection Radiometer) elevation data with 30 m resolution (GCS WGS84) of 2011 is downloaded from the website of the Earth Explorer (<http://earthexplorer.usgs.gov/>) and it is also processed through 'Erdas', using AOI and subset tools. All unrectified raster and vector data are projected in UTM (Universal Transverse Mercator) assigning datum of WGS84 (World Geodetic Survey, 1984) using the project raster tool of ArcGIS 9.3 software to overlap these data accurately. The contours of elevation are generated using ASTER data and the spatial analyst tool of ArcGIS 9.3. Data are used from the website of central Groundwater Board (CGWB), Govt. of India (www.cgwb.gov.in), of the district of paschim Medinipur and purba Medinipur for better understanding the general geology and geomorphology of the study area. In addition to the field, survey collecting of archaeological data and taking photographs of archaeological evidences from different museum located in the study area was also very helpful.

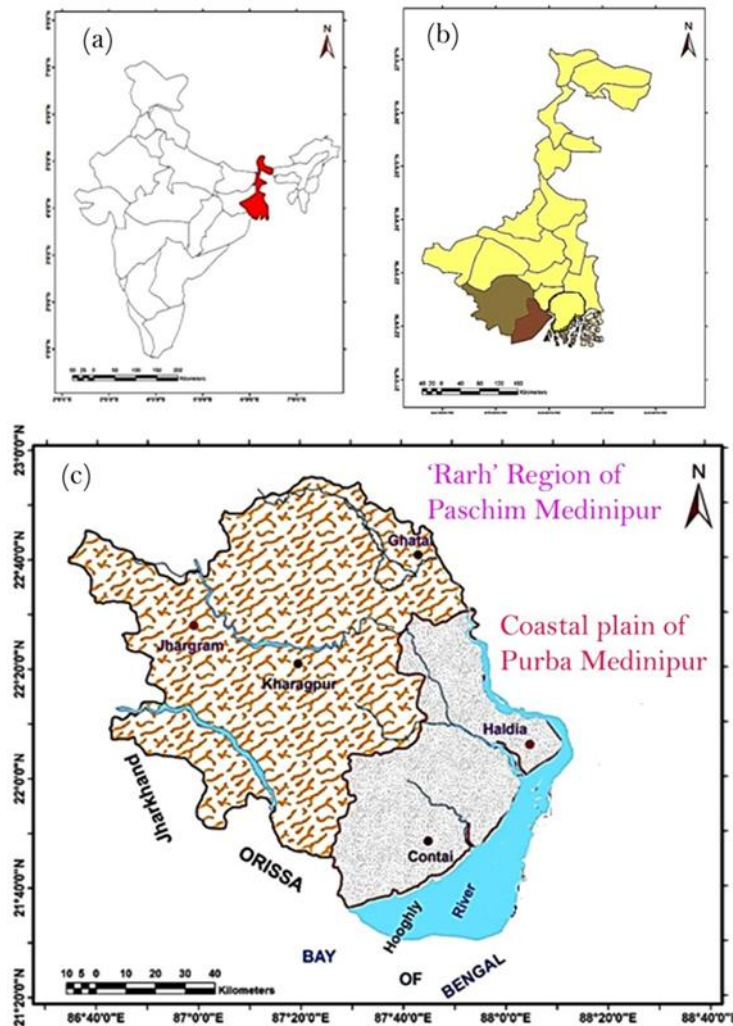


Figure. 1: Map of the study area – (a) location of West Bengal in India (b) District of PaschimMedinipur&PurbaMedinipur in West Bengal (c) 'Rarha' region and Coastal plain of Paschim&PurbaMedinipur District.

Table. 1 Geographical Catalogue of Archaeological Sites of 'Rarha' region and Littoral Tract of Medinipur (Paschim and Purba)

Name of the site	Identification no on map (Fig.2)	Archaeological periods	Latitude and Longitude	SOI Topographical sheet no	Elevation A.S,L in meter	Morphogenic surface	Annual rainfall in millimeter	Types of soil	Nearest river/shoreline	Name of the block, district and state	Nearest town/city	Geo-archaeological Description
A (sites catalogue)	Amjuri	Lower Paleolithic, middle Paleolithic and Mesolithic	22°10'N, 86°52' E	73J/16	~ 72	Older alluvium upland (Sijua surface, <i>lower Pleistocene to early Holocene</i>)	Above 1600	Older alluvium	Subarnarekha (7 km NE)	Gopiballabpur- I, PaschimMedinipur and West Bengal	Gopiballabpur (8.09Km)	Various archaeological evidences of lower, middle and upper Paleolithic and Mesolithic periods were found from this site. The place is located above the 60 meter contour line on the south bank of the river Subarnarekha, actually mentioned site is located on the valley top position of subarnakha river (chattopadhyay, sengupta and Chakraborty, 2005).

C (sites catalogue)	B (sites catalogue)
Bamandihi	Astajuri
3	2
Lower Paleolithic	Lower Paleolithic, middle Paleolithic
22°39'30"N, 86°47' E	22°39'N, 86°15'20" E
73J/16	73J/14
~ 128	~ 164
lateritic upland (pre-quaternary Lalgarth surface, <i>lower Pleistocene to middle Pleistocene</i>)	lateritic upland (pre-quaternary Lalgarth surface, <i>lower Pleistocene to middle Pleistocene</i>)
1400 – 1600	1400 – 1600
Red sandy	Red sandy
Terafeni	Terafeni
Binpur- II, PaschimMedinipur and West Bengal	Binpur- II, PaschimMedinipur and West Bengal
Belpahari (11 km S)	Belpahari (10 km SE)
The archaeological site is located on the south bank of river Terafeni. Different lower Paleolithic evidences were found from here. This is a valley top area of river Kanshabati, evidences were found embedded in the laterite or placed in scree – deposit (IAR, 1961 -62).	The archaeological site is located in south bank of river Terafeni, which is a tributary of river Kanshabati. The lower Paleolithic, middle Paleolithic and Mesolithic evidences were found from this site. Choppers, hand axe, cleavers, scrapers etc. were found embedded in the lateritic or placed in the scree deposits (IAR, 1961 – 62). This is a denudation hill area with densely forested environment.

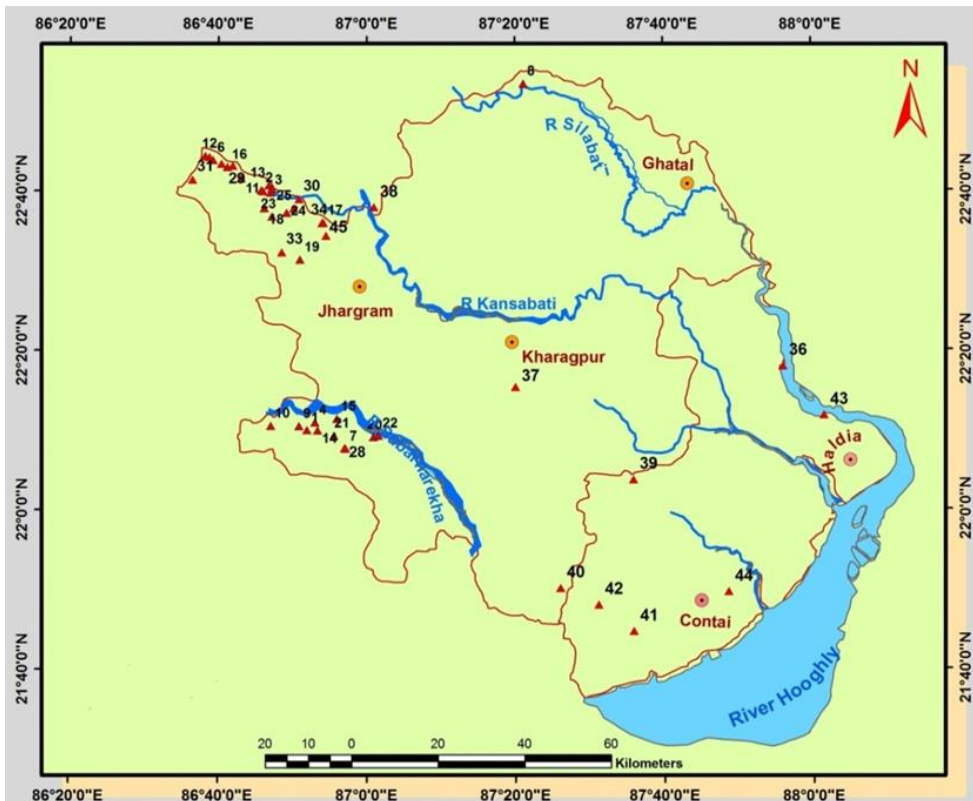


Figure. 2: Showing the archaeological sites of PaschimMedinipur (Paschim&Purba) with identification number.

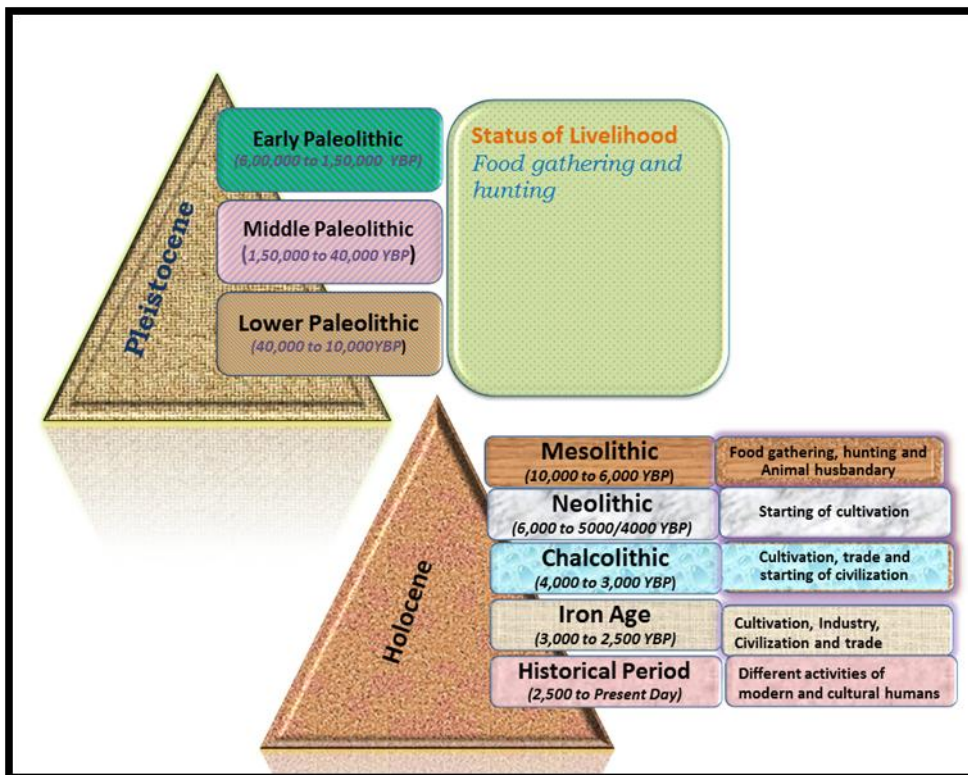


Figure. 3: Chronology of Archaeological Records of the Study Area Comprising with Geological Time Scale. After: Jain (2008), Allison, A J and Neimi, T. M(2002), Mukhopadhyay&Biswas (2013), NATMO(2008).

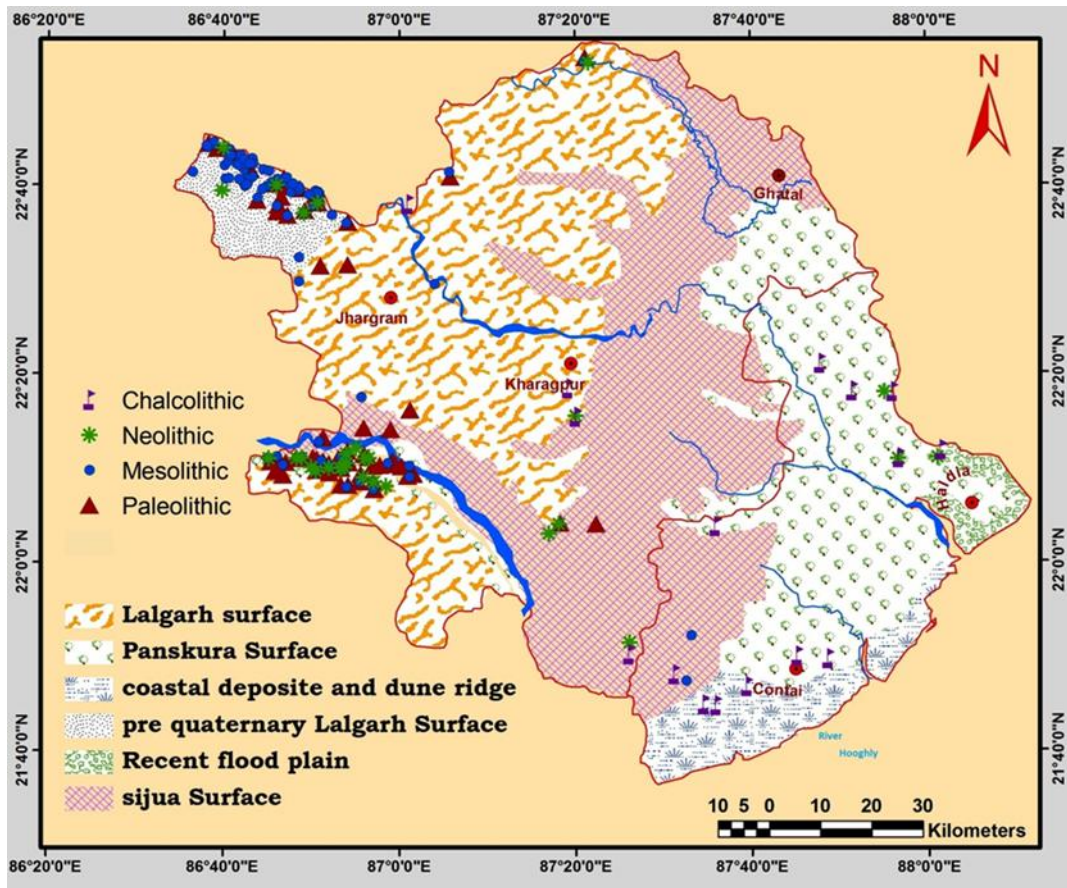


Figure. 4: Geological map (after, Chattopadhyay, Sengupta & Chakraborty, 2005) of Medinipur (Paschim & Purba) District, superimposed by Archaeological Places separated by different periods.



Plate 1



Plate 2

Source: Rajani Museum, Ramnagar, Purba Medinipur (Plate 1 & 2)

E (sites catalogue)	D (sites catalogue)
Chakadoba	Bankati
6	4
Lower Paleolithic, Mesolithic	Lower Paleolithic, middle Paleolithic, Mesolithic
22°45' 50"N, 86°38' 48" E	22°11'N, 86°53' E
73J/9	73J/16
~ 239	~ 46
lateritic upland (pre-quaternary Lalgarh surface, <i>lower Pleistocene to middle Pleistocene</i>)	Older alluvium (Sijua)
1400 – 1600	above 1600
Red sandy	Older alluvium
Terafeni	Subarnarekha (6 km north)
Binpur- II, PaschimMedinipur and West Bengal	Gopiballabpur- I, PaschimMedinipur and West Bengal
Belpahari	Gopiballabpur
<p>the site is located on the upper catchment area of river Terafeni. Actually this is a denudation hill tract with densely forested environment. From this place hand axe, large scraper etc. were found and some of them were found in situ in the detrital laterite while others were exposed through erosion of the detrital laterite.</p>	<p>the site is located on the south bank of river Subarnarekha. Various lower Paleolithic, middle Paleolithic and Mesolithic evidences were found from here, the place is located below the 60 meter contour line of the valley slope region of river Subarnarekha.</p>

G (sites catalogue)	F (sites catalogue)
Dhuliapur 45	Chhotaturki 7
Lower, middle and upper Paleolithic, Mesolithic 22°38' 6"N, 86°50' E 73J/14 ~ 112	Lower Paleolithic, Mesolithic 22°7' 45"N, 86°57' E 73J/16 ~ 77
lateritic upland (pre-quaternary Lalgarth surface, <i>lower Pleistocene to middle Pleistocene</i>) 1400 – 1600 Red sandy Subarnarekha (6km NE)	lateritic upland (Lalgarth surface, <i>lower Pleistocene to middle Pleistocene</i>) above 1600 Lateritic Subarnarekha (6km NE)
Binpurr- II, PaschimMedinipur and West Bengal Belpahari	Gopiballabpur- I, PaschimMedinipur and West Bengal Gopiballabpur
A Quaternary alluvial fill forms a distinct terrace at a height of about 7 meter above the present river bed level of the terafeni, the section is exposed on the high bank of river terafeni. Few lower Paleolithic artifacts have been recovered from consolidated gravel layer and Microlithes were recovered from colluvium gravel layer (Basak, Badam, Kshirsagar and Rajaguru, 1998, IAR, 1975-76)	Chhotaturki is an archaeological site is located on the valley top area of Subarnarekha river. This is a erosional laterite surface from where different lower Paleolithic and Mesolithic evidences were found.

I (sites catalogue)	H (sites catalogue)
Ghorapincha	Ganganir Math
9	8
Lower Paleolithic, middle Paleolithic, Mesolithic	Lower Paleolithic, Mesolithic
22°10'N, 86°50' E	22°53'N, 87°21' E
73J/16	73J/13
~ 83	~ 50
lateritic upland (Lalgarh surface, <i>lower Pleistocene to middle Pleistocene</i>)	lateritic upland (Lalgarh surface, <i>lower Pleistocene to middle Pleistocene</i>)
above 1600	1400 – 1600
Older alluvium	Lateritic
Subarnarekha	Silabati
Gopiballabpur- I, PaschimMedinipur and West Bengal	Garbeta- I, PaschimMedinipur and West Bengal
Gopiballabpur	Garbeta
Ghorapincha site is located on the valley top area in the southern bank of river Subarnarekha, many number of lower Paleolithic evidences such as, scraper, hand axe were found from secondary lateritic layer dominated by quartz and quartzite in between 2.81 to 5.35 meter depth from ground level (Dasgupta, 2007).	The Ganganir math archaeological site is located on the ancient terrace of Silabati river valley. There is a eroded field of badland topography. Achulian hand axe and tools of middle and lower stone age along with a Neolithic Celt were found from this pace (IAR, 1960- 61)

L(sites catalogue)	K(sites catalogue)	J(sites catalogue)
Kashmar 12	Kashijhora 11	Hatibari 10
Lower Paleolithic, Mesolithic 22°46'N, 86°38'10" E 73J/9 ~ 222	Lower and middle Paleolithic, Mesolithic 22°40'N, 86°43' E 73J/10 ~ 189	Lower Paleolithic, Mesolithic 22°12'42"N, 86°44' E 73J/12 ~ 65
Lateritic upland (pre-Quaternary Lalgarh surface, lower Pleistocene to middle Pleistocene) 1400 – 1600 Red sandy Terafeni Binpur- II, PaschimMedinipur and West Bengal Belpahari	Lateritic upland (pre-Quaternary Lalgarh surface, lower Pleistocene to middle Pleistocene) 1400 – 1600 Red sandy Terafeni Binpur- II, PaschimMedinipur and West Bengal Belpahari (24 km East)	Lateritic upland (Lalgarh surface, lower Pleistocene to middle Pleistocene) above 1600 Red gravelly and Older alluvium Subarnarekha (3 km NE) Gopiballabpur- I, PaschimMedinipur and West Bengal Gopiballabpur (8 km west)
The site is located on the upper catchment area of river Terafeni. Many upper and lower Paleolithic and micro lithic evidences were found from here. This is a denudation hill region characterize with boulder and conglomerate	Middle Paleolithic, micro lithic along with upper Paleolithic blade was collected from the eroded patch.	This notable site is located on the bank of river Subarnarekha, different lower Paleolithic evidences like, side chopper, hand axe, end chopper were found from this place. Except those some Mesolithic evidence also found. The tools of early stone age were recovered from the localities like, cliff section, terraces and valley slope area of Subarnarekha river. The Kashijhora site is located on the upper catchment area of river Terafeni.

M (sites catalogue)

Kattara I & II

13

Lower, upper Paleolithic, Mesolithic and Neolithic

22°40'N, 86°46' E

73J/14

~ 134

lateritic upland (pre-Quaternary) Lalgarh surface, lower Pleistocene to middle Pleistocene

1400 – 1600

Red sandy

Terafeni

Binpur- II PaschimMedinipur and West Bengal

Belpahari

Kattara site is located on the valley top area of river terafeni (Chattopadhyay, Sengupta & Chakraborty, 2005). A nullah flows past in this place, the lithic ware collected from the west bank of this nullah, from the slope of a rocky terrain in the eastern bank. Tools like, knives, scraper, borer belonging to the upper Paleolithic time- and some broken Neolithic Celts and ring stone were collected. The site is located amidst a valley lying between two hills and deposit found here partly rolled materials fallen from the hills and partly filled by the nullah, which is a tributary of the Terafeni. There is a land erosion probably due to seasonal rain (IAR, 1983 -84)

O (sites catalogue)	N (sites catalogue)
Laljal	Kayasole
16	14
Lower, middle Paleolithic, Mesolithic	Lower, middle Paleolithic, Mesolithic
22°46'N, 86°41'E	22°09'57"N, 86°53'25"E
73J/9	73J/16
~ 256	~ 65
lateritic upland (pre-quaternary Lalgarh surface, lower Pleistocene to middle Pleistocene)	lateritic upland (Lalgarh surface, lower Pleistocene to middle Pleistocene)
1400 – 1600	above 1600
Red sandy	Lateritic
Terafeni	Subarnarekha
Binpurr- II, PaschimMedinipur and West Bengal	Gopiballabpurr- I, PaschimMedinipur and West Bengal
Belpahari	Gopiballbpur
Actually Laljal is a name of the hill. A prehistoric place cave was discovered in this place (Chowdhury, 2009). The cave at Laljal had ever been used by the stone age man; a piece of conch – cell bangle and few partly fossilized pieces were collected from the cave (IAR, 1981 – 82).	The kayasole is located on the western side of river Shyamatarangini, a tributary river of Subarnarekha, different lower Paleolithic evidence like, scraper, hand axe were found from these place, and this is a valley top area of Subarnarekha river.

Q (sites catalogue)	P (sites catalogue)
Murasole	MohanpurSatbanti
18	17
Lower, middle Paleolithic, Mesolithic	Lower, middle Paleolithic, Mesolithic
22°37'50"N, 86°46'E	22°36'N, 86°54'E
73J/14	73J/14
~ 140	~ 81
lateritic upland (Lalgarh surface, <i>lower Pleistocene to middle Pleistocene</i>)	lateritic upland (Lalgarh surface, <i>lower Pleistocene to middle Pleistocene</i>)
1400 – 1600	1400 – 1600
Older alluvium	Older alluvium
Terafeni	Terafeni
Binpur- II, PaschimMedinipur	Binpur- II, PaschimMedinipur and West Bengal
Belpahari (4km west)	Silda (6km west)
chopper, hand axe and scrapers were found embedded with in the secondary laterite which is underlain by Achaean bed rock and overlain by radish soil. A beautiful Acheulian hand axe was found at Murasole with in secondary laterite. A large number of microliths also found, some of them <i>in situ</i> with in radish soil covered by recent alluvium (IAR, 1964 – 65).	this site is located between the area of Terafeni river and teraferni main cannal, and this is a valley slope portion of river Terafeni. The section of the gullies shows the succession of bedrock, mottled clay, compacted detrital laterite with small laterite gravel and thin yellowish sandy deposit. Lower and middle Paleolithic stone tools were and microliths were collected (Chakraborty, 1993).

S(sites catalogue)	R(sites catalogue)
Patina	Parihati
20	19
Lower, middle Paleolithic, Mesolithic	Lower, middle Paleolithic, Mesolithic
22°9'N, 86°57'E	22°31'20"N, 86°51'E
73N/4	73J/16
~ 73	~ 82
lateritic upland (Lalgarth surface, <i>lower Pleistocene to middle Pleistocene</i>)	lateritic upland (Lalgarth surface, <i>lower Pleistocene to middle Pleistocene</i>)
Above 1600	1400 – 1600
lateritic	Red gravelly
Subarnarekha	Kanshabati
Nayagrami, PaschimMedinipur r and West Bengal	Jambani, PaschimMedinipur and West Bengal
Nayagram	Jhargram
The Parihati site is located just beside the tributary channel of river Subarnarekha and the area is located in the junction of valley top and valley slope area of Subarnarekha river (Chakraborty, 1993). Lower – middle Paleolithic and microliths were found in the river cliff zone of Subarnarekha valley (Chakraborty, 1993).	An eroded lateritic upland is spread behind the local toad side market and the section shows a clear succession from the surface downward. Another mantle of yellowish sand. Compacted detrital laterite matrix with small laterite noodles and block of primary laterite. Lower, middle Paleolithic and microliths were collected in this area (Chakraborty, 1993). Paleolithic hand axe, scraper and microlithic debitage, notch, pointer were found.

U (sites catalogue)	T (sites catalogue)
Saheri	Rangametia
23	22
Lower, middle Paleolithic, Mesolithic	Lower, middle Paleolithic, Mesolithic
22°36'45"N, 86°47'15"E	22°9'N, 87°1'30"E
73J/14	73N/2
~ 65	~ 57
lateritic upland (pre-quaternary Lalgarth surface, <i>lower Pleistocene to middle Pleistocene</i>)	lateritic upland (Lalgarth surface, <i>lower Pleistocene to middle Pleistocene</i>)
1400 – 1600	Above 1600
Red sandy	lateritic
Terafeni	Subarnarekha
Binpurr - II, PaschimMedinipur and West Bengal	Gopiballabpur - I, PaschimMedinipur and West Bengal
Belpahari	Gopiballabpur
Saheri is located on the valley top area of river Terafeni. Hand axe, scraper and many other lower Paleolithic evidences were found. Different microliths also found from this denudation undulating hill track (Chattopadhyay, Sengupta and Chakraborty, 2005. IAR, 1960-61).	This site is located on the east bank of a small tributary of river Subarnarekha. This is a valley slope area. Some quartzite and pebble tools were collected from this area (IAR, 1962 – 63).

W (sites catalogue)	V (sites catalogue)
Chamargora	Sildah
27	24
Mesolithic	Lower, middle Paleolithic, Mesolithic
22°44'50"N, 86°41'2"E	22°37'N, 86°49'E
73J/10	73J/14
~ 212	~ 114
lateritic upland (pre-quaternary Lalgarh surface, <i>lower Pleistocene to middle Pleistocene</i>)	lateritic upland (pre-quaternary Lalgarh surface, <i>lower Pleistocene to middle Pleistocene</i>)
1400 – 1600	1400 – 1600
Red sandy	Older alluvium
Terafeni	Terafeni
Binpurr - II PaschimMedinipur and West Bengal	Binpurr - II, PaschimMedinipur and West Bengal
Belpahari	Belpahari
	The stratigraphic section of Silda is following – 1) sterite granite bed rock, sometime decomposed gneiss. 2) strite course gravel 3) stretite clay silt 4) implemented ferrous, detrital laterite, yielding two hand axe and fossilize animals bones 5) laterite gravel with stone fragments on an implement ferrous level of quartz with microlithic tools embedded (IAR, 1975-76). Microliths comprising blades, knives, and scraper were found mostly on the high ground of Silda. The Chamargera site is located on the upper catchment area of river Terafeni. This denudated hill area was produced many microliths also.

Z (sites catalogue)	Y (sites catalogue)	X (sites catalogue)
<p>Kakrajhora</p> <p>31</p> <p>Mesolithic</p> <p>22°41'25"N, 86°36'30"E</p> <p>73J/10</p> <p>~ 176</p> <p>lateritic upland (pre-quaternary Lalgarh surface, lower <i>Pleistocene to middle Pleistocene</i>)</p> <p>1400 – 1600</p> <p>Red sandy</p> <p>Terafeni</p> <p>Binpur - II, PaschimMedinipur and West Bengal</p> <p>Belpahari</p> <p>The site is located on the upper catchment area of river Terafeni. Many number of Mesolithic evidence were found and there is a denudation hill track with eroded lateritic slope.</p>	<p>Enthela</p> <p>30</p> <p>Mesolithic</p> <p>22°39'N, 86°50'50"E</p> <p>73J/14</p> <p>~ 101</p> <p>lateritic upland (pre-quaternary Lalgarh surface, lower <i>Pleistocene to middle Pleistocene</i>)</p> <p>1400 – 1600</p> <p>Red sandy</p> <p>Terafeni</p> <p>Binpur - II, PaschimMedinipur and West Bengal</p> <p>Belpahari</p> <p>The site is located on the south bank of river Terafeni. Microliths coming from a hill slope coming down to the river bank (Chakraborty, 1993). Many debitage, blade and burin were found from the valley slope of river Terafeni (Chattopadhyay, Sengupta and Chakraborty, 2005.).</p>	<p>Domohani</p> <p>29</p> <p>Mesolithic</p> <p>22°44'15"N, 86°42'5"E</p> <p>73J/9</p> <p>~ 198</p> <p>lateritic upland (pre-quaternary Lalgarh surface, lower <i>Pleistocene to middle Pleistocene</i>)</p> <p>1400 – 1600</p> <p>Red sandy</p> <p>Terafeni</p> <p>Binpur - II, PaschimMedinipur and West Bengal</p> <p>Belpahari</p> <p>The site is located on the upper catchment area of river Terafeni and this is a denudated hill track. Detrital laterite surface is a major character in this region. Many number of micro lithic evidence were recovered from here.</p>

C1 (sites catalogue)	B1 (sites catalogue)	A1 (sites catalogue)
Tilda 37	Tamluk 36	Orgonda 35
Neolithic, Chalcolithic 22°15'30"N, 87°20'E 73N/7 ~ 1	Neolithic, Chalcolithic 22°18'N, 87°56'E 73N/15 ~ 1	Mesolithic 22°37'50"N, 86°50'10"E 73J/14 ~ 120
Older alluvium upland (Sijua surface) 1400 – 1600 older alluvium Kangsabati	Older deltaic alluvium (Panskura surface) above 1600 Younger alluvium Rupnarayan	lateritic upland (pre-quaternary Lalgarh surface, lower <i>Pleistocene to middle</i> 1400 – 1600 Red sandy Terafeni
Pingla, PaschimMedinipur and West Bengal Kharagpur	SahidMatangini, PurbaMedinipur and West Bengal Tamluk	Binpurr - II, PaschimMedinipur and West Bengal Belpahari
Tidah is located on the southern bank of river Kangsabati and northern bank of river Keliaghai, this is an older alluvium flat, from where different neolithic and black-red ware collected.	Tamluk is a archaeological site located on the bank of river Rupnarayan. From a upper Holocene surface characterize by the silt, clay and sand aggraded flood plain meander belt and delta fan related to the present day river regime Terafeni (Chattopadhyay, Sengupta and Chakraborty, 2005.). Evidence of Neolithic to pal-san period was discovered from this place. Cast copper coin, rulleated ware, ill fired pottery and different terracotta were collected (IAR, 1954-55).	This site is located on the Terafeni river and Terafeni main channel on the valley top area. Some microliths and few ring stone were also recovered from this place (IAR, 1961 – 62).

E1 (sites catalogue)	D1 (sites catalogue)
Amarshi	Sijua
39	38
mesolithic, Chalcolithic	Neolithic, Chalcolithic
22°3'42"N, 87°35'55"E	22°38'N, 87°1'E
Not available	73N/7
~ 12	~ 66
Newer alluvium plain (Panskura surface)	lateritic upland (Lalgarh surface, lower Pleistocene to middle Pleistocene)
above 1600	1400 – 1600
younger alluvium (Entisols)	older alluvium
Keliaghai	Kangsabati
Patashpur - I, PaschimMedinipur and West Bengal	Binpur - I, PaschimMedinipur and West Bengal
Egra	Jhargram
This site is located on the south bank of river Keliaghai. This is a flat alluvial plain, and not far from Bay of Bengal. Few microlithic flakes and a scraper, terracotta sculpture and a set of medieval sculpture were explored (IAR, 1965-66).	chalcolithic black and red ware found from the bank of river Kangsabati (IAR, 1968-69). and a Brocken part of human jaw was discovered, which was located in the depth of 13 th meter from the ground surface in the transition layer of lower Pleistocene and early Holocene, c14 date of this material was 10,000 YBP (Dasgupta, 1981 & Sur, 2008).

G1 (sites catalogue)	F1 (sites catalogue)
Negua	Debidaspur
42	41
Chalcolithic	Chalcolithic, Early historic
21°48'41"N, 87°31'3"E	21°44'50"N, 87°35'43"E
73 O/9	73 O/9
~7	~ 10
older alluvium upland (sijua surface)	Older deltaic alluvium (coastal deposit and dune ridge surface).
bellow 1600	above 1600
older alluvial (Alfisols)	coastal alluvial (Entisols)
Rusulpur/Bay of Bengal	Rusulpur/Bay of Bengal
Egra - I, PaschimMedinipur and West Bengal	Egra- II, PaschimMedinipur and West Bengal
Egra	Egra
Negua is located on the south western side of river Rusulpur and the area is very near to Bay of Bengal, many number of early potteries including basket pottery were found, these are dated as 4000 YBP, and these is a older beach ridge and dune complex region.	Debidaspur site is located on the southern flood plain region of river Rusulpur, the place is very near to Bay of Bengal. Many numbers of early historic potteries were discovered. Physiographically it is an older beach ridge and dune complex region characterize with reddish to yellowish brown fine to medium sand overlain by yellowish brown fine sand.

I 1 (sites catalogue)	H1 (sites catalogue)
Bahiri	Natsal
44	43
Chalcolithic, early historic	Chalcolithic, early historic
21°44'54"N, 87°49'7"E	21°12'14"N, 86°1'30"E
73 O/13	73 N/15
~ 5	~ 5
Older deltaic alluvium (Panskura surface)	Older deltaic alluvium (Panskura surface)
above 1600	above 1600
coastal alluvium (Entisols)	younger alluvium (Entisols)
Rusulpur	Rupnarayan
Contai - II, PurbaMedinipur and West Bengal	Mahishadal, PurbaMedinipur and West Bengal
Contai	Geokhali
<p>There is a older deltaic alluvium flat surface dominated by ancient sand dunes. Bahiri is located on the southern bank of river Rusulpur and 12 km away from the coastal line of Bay of Bengal. The early historic antiquities were recovered from a low lying flat mound in the village. Notable evidences are terracotta figurine, 'Yakshini' sculpture etc. (Chakraborty, 2001).</p>	<p>Natsal is located on the western bank of river Rupnarayan, most important archaeological evidences discovered from here are fragment of copper Celt, many number of black and red ware of Chalcolithic period (Roy, 2004).</p>

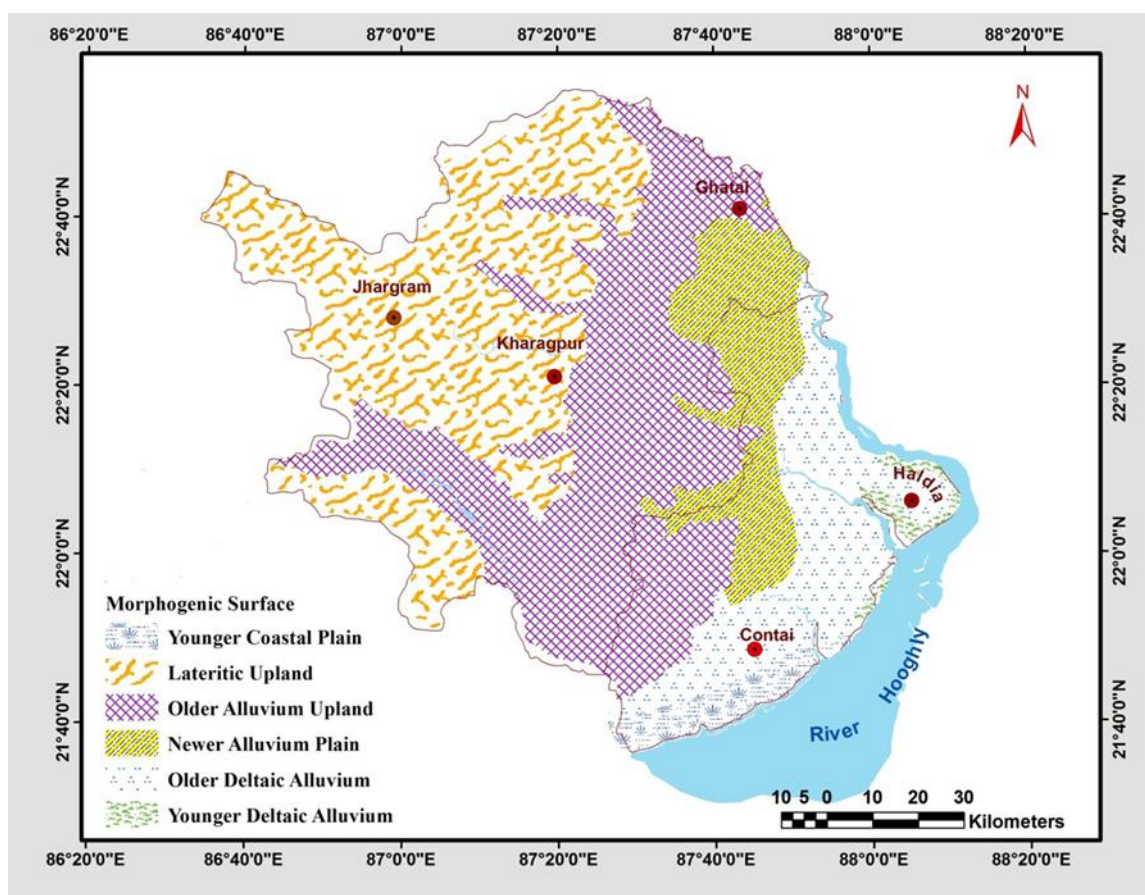


Figure. 5: Morphogenic Surface Map of Medinipur (paschim&purba), modified after Chattopadhyay, Sengupta&Chakraborty (Ed), 2005.

3. Results and Analysis

From the ancient time, there is a special relation between the characteristic of human inhabitant with local environment. Favorable environment always help to select the perfect area of settlement, similarly adverse circumstances always hindered in settlement subsistence pattern. Peoples of pre-historic period likes the elevated area of the river bank, from where they can get a perfect panoramic view of the entire area, which helps for hunting. For these reason, Paleolithic and Mesolithic sites can be found in the Lalgar surface (Fig, 7) of the ‘Rarha’ region along the river banks. The ancestry of human culture in the area can be traced back to the earliest cultural phase i.e. Paleolithic, without any doubt. In this earliest Stone Age or Paleolithic age, man was hunter-gatherer, savage and used crude stone tools. Cultured evolution in this district has never been ceased from early Paleolithic to modern period, cultural evolution has been started in this district from about 150,000 years ago (Maity, 2004). A large amount of Paleolithic and Mesolithic artifacts have been discovered from the areas located near Subarnarekha, Terafeni, Silabati and Kanshabati river in the lateritic upland (Fig.5) of western part of Paschim Medinipur district, these are the eminent evidence of the existence of prehistoric people in that area. The Paleolithic period cover the period of Pleistocene (Fig, 3) or the ‘Ice age’ dated from 2 m.y.a (million years ago) to 10.000 YBP, it was an age when a large of world covered by the ice sheet and climate was extremely cold and arid (Jain, 2015). In other hand, no Paleolithic evidences were found in the coastal part of

Purba Medinipur but immense evidences of Neolithic (Plate 1 & 2) and Chalcolithic period are already discovered. There is a drastic change in their livelihood is found in those period. Actually they did not practice hunting and gathering like the people of Paleolithic people, yet there main livelihood was cultivation and trade. For these reason the predominant of the evidences of Neolithic and Chalcolithic period are found in coastal plain region. Most of the Palaeoliths collected from open land and forested parts seem to be of the period of Lalgargh formation (Fig.). Lateritic uplands (Fig. 5) of Paschim Medinipur located in the western side played a vital role in tracing the prehistoric sequences as well as prehistoric lithic assemblages especially in the Paleolithic period of this part of study area. At the primary phase, the human folk inhabited forested open air sites of hill slope in the western side of the paschim Medinipur district, where freshwater and raw materials for tool making were available in plenty, Cut wood stumps and abundance of fossil woods points out to a good forested tract on these region that offered hunting-gathering activities of the ancient human folk in that time. And later, they migrated to the river valleys and there has been no convincing evidence of stratigraphic separation of lower and middle palaeoliths in these valleys. The ancient human folk migrated towards river valleys around the beginning of the Middle Palaeolithic stage (Chattopadhyay, 1992). It is presumed that the human folk during this cultural stage moved towards the alluvial plains of eastern sides or moved out of the lateritic upland (Fig,5) for a temporary phase or permanently. In paschim Medinipur Upper Palaeolithic industry did not develop gradually from middle Paleolithic industry but are the product of some specialized group of immigrant people (Datta, 1991). Evidence of this culture available in many sites of this district strongly suggests it as migrant culture having some unique regional characters, It belongs to the closing part of Pleistocene (Datta, 1991). A large number of microliths were recovered from places located in paschim Medinipur districts. Microliths on quartz, chert and chalcedony were recovered from both the surface in association with pottery and from beneath alluvial deposit without any pottery (Ghosh, 1961). Chakrabarti (1998) opined that the microlithic objects associated with sandy deposit on surface of the lateritic conglomerate indicate post-Pleistocene aridity while conglomerate indicates wet conditions. The Neolithic culture may be regarded as one Stone Age culture associated with food production, along with practice of agriculture as well as animal husbandry. Location and spatial distribution of the Neolithic spots in entire Medinipure region revealed that the Neolithic people preferred high plateaus and terraces, above flood plain as well as fertile alluvial plain near the rivers for their dwellings and cultivation.. In large part, the Neolithic culture was succeeded by the Chalcolithic Ware culture leading to the emergence of urban consciousness, planned settlement, developed architecture, newer arts and bigger trades. Datta (2005) stated that by the middle of second Millennium B.C. the south western part of West Bengal (viz. the districts of paschim and purba Medinipur, Puruliya, Bankura, Bardhaman, Birbhum etc.) was colonized by chalcolithic agricultural communities. The sites are lying in distinct geomorphological unit's (Fig,5) viz., lateritic upland , and older alluvial upland

and also in older deltaic alluvium, the laterite belongs to the Lalgah formation, the lateritic soil is less suitable for cultivation. The alluvium developed over the Lalgah formation is a thick sequence of sand and sandy loam soils. The older sediments have been designated as the Sijua formation (Fig,4) and older deltaic alluvial (Fig,) plain with characteristic of silt, clay, sand and flood plain, delta fan related to the present day river regime have known as Panskura formation (Fig,4). Both the soils of Sijua and Panskura formation (Fig, 4) are more suitable for cultivation. The available evidences of prehistoric to early historic and medieval period from the entire Medinipure region demonstrated a gradual techno cultural shift from food gathering period to food production period. In the early Stone Age period man relied upon hunting and collecting for their living. Various tools of this stage were used for different purposes, human economy and subsistence pattern remained similar through its expanse. Subsequently, during the Neolithic stage there has been a substantial change in economy and culture. With the lack of a clear-cut habitation site of Neolithic culture the process of change could not always be thoroughly understood. Various Chalcolithic sites could however, draw a much clearer picture of the human economy and ecological set up of the area during this phase of culture. Various fluvial processes might have brought down remains of older cultures to comparatively recent geological sediments that might have caused certain confusions about artifacts of human cultures.

4. Conclusion

The above discussion revealed that, the ancient people of entire Medinipur region have been moved gradually from the western hilly terrain towards the eastern fertile plain with the progression of cultural activity and with the advancement of surface.

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