Paleolithic Transitioning: An Analysis of the Prehistoric Site Banargarh of Kharagpur Hills, South Bihar

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ABSTRACT: The Kharagpur hills in Bihar are the cradle of Paleolithic occupation. A detailed exploration has been conducted in these regions which reported 11 new Paleolithic sites. This paper discusses one of these found sites of Banargarh, where an endeavour has been made to understand the complete cultural sequence and transition from the Acheulian to Upper Paleolithic phase.

INTRODUCTION

In the context of the Indian Paleolithic age and culture, several discoveries had been made since the 1950s. One of the key similarities amongst all these finds was that mostly they were constituted in secondary settings. In such a setting, the artefacts would have been carried by water bodies traversing long routes from those locations where they had been made before being deposited as a component element of river sediments.

Artefacts from river deposits did not provide a comprehensive picture of the nature and composition of lithic enterprises due to their secondary setting. Extensive statistical analyses of such insufficient data might lead to questionable cultural judgments as the cultural remains that would have been found from such deposits might have undergone several stages of modifications due to the possibility of multiple sedimentation cycles. Thus, equating cultural sequences with geological successions could be fallacious. These flaws had led to a gloomy belief that little more than stratigraphy and tool typology can be learned about the Indian Paleolithic society.

This mindset would have inspired eminent historians and archaeologists (Wheeler,1960:34, 63) to use dismissive names like stones and more stones for chapters dealing with stone age civilization in a broader context. But later in the 1970s, scholars like Jerome Jacobson (Jacobson, 1970, 1975, 1985) had given significant ideas about the need to understand the undisturbed primary sites to understand the earliest occupations by the prehistoric men.

In this background, it becomes imperative to have thorough research into the undisturbed primary sites in a given habituated area. Primary sites were the crucial source of their contextual remains.

Field study began to examine themes of culture and lifeways of even the most distant cultural periods in the 1970s. Paleolithic sites were discovered in Madhya Pradesh's Adamgarh (Joshi, 1978) and Bhimbetka (Misra, 1975-76) caves, Tamil Nadu's Gudium (Allchin and Allchin, 1968), and Andhra Pradesh's Kurnool area (Murthy, 1985) had given the scientific community documentation of the quarrying zone and industrial platforms. In recent Paleolithic studies, such as those at Chirki-Nevasa in Maharashtra (Corvinus, 1968, 1968-69, 1970a, 1970b, 1973), Hunsgi (Paddayya,1976, 1977a, 1977b, 1985), and Isampur (Paddayya and Petraglia, 1997), the pattern of diffusion of cultural traits has got increasing attention.

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Kharagpur Hills and Their Geological Attributes

Kharagpur hills are the hills located in the districts of Munger and Jamui in the Southern Bihar situated at the flanks of the Vidhyan ranges. These ranges are shallow and located in the east of Kharagpur town.

These ranges are spread over a vast expanse that measures around 40 kilometres in length in the north-south direction and 55 kilometres of breadth in the east-west. These hills are located in the densely forested region with an abundance of vegetation that constitutes valleys with patches of cultivation as well as a series of numerous hot springs as Wadell (1890) had recorded such as that of Bhimbandh, Sitakund and Rishikund.

Figure 1: Map showing Kharagpur hills in Bihar and studied 11 sites including Banargarh

As the hill ranges extend northward towards the Munger town, low jungle covers the area to its north and there is another hill range to the south-west known as Gidheswhar range, named after its highest peak, geologically called the Gidhour hills.

The major river basins intersecting across these hills are the river Maan, Anjan and Morweand several other small streams. The Maan river is a subsidiary of the Ganges, which drains the eastern territory while the other rivers are branches of the river Kiul which drains the western region of the area.

These major rivers are mature that coexist with several other small and immature streams such as Dokra Nala and Bangalwa Nala. The former flows towards the southern direction to the south-east and south-west, later changing the course to its north to merge with the Ganga, whereas the latter runs northward draining the peripheral hill ranges.

Figure 2: Map of India showing Bihar

The presence of two different drainage systems shows that the area has undergone geomorpholog ical changes in the early Quaternary period. This is likely because the Kharagpur Hill tract is located contiguously in a valley, and the only sediments that have been deposited there are from the Middle Pleistocene and younger (O'Malley,1926). Sherwill (1852) reported the existence of enormous tribal settlements that of the Koras and the Santhals in and around the Kharagpur hill region.

Several varieties of quartzite, phyllite, slate, sericite, schist, intrusive granite, quartz vein, and laterite are the principal rock types found in the Kharagpur hills. The Quaternary sediments covering the hills of the Kharagpur are known as the Jamui Formation.

The multitudinous alluvial infill of the Jamui Terrace, referred to as the Jamui Formation, represents the oldest continental quaternary deposits in the region, according to Passoe (1964), what is known in Indian geology as the Older Alluvium. The thickness of colluvium and residual deposits increases up to 4m in the narrow pedimentary zone bordering the hills of Kharagpur and Gidheswar and the scattered inliers within the Jamui Terrace. In the pediplain area bordering the region of Kharagpur Hills, the soil is much thinner than the colluvium deposit and consists mainly of red-brown silt and clay.

Predicated on the natural history shreds of evidence, the upper Jamui formation's lithological and sequential equivalent has been attributed to an age range of Upper Pleistocene to early Holocene (Dassarma *et al*.,1976, 1977).

Since no fossils have been identified in quaternary strata from this region yet, the age can only be approximated utilizing sequential lithological, pedological and climatological investigations. Based on vertebrate fauna, the earliest continental quaternary deposits in the Narmada Valley, which are geologically similar to the lower Jamui formation, have been dated to the Middle Pleistocene (Dassarma *et al*., 1977). As a result, the Jamui formation in the Kharagpur hill region is tentatively dated to the Middle to Upper Pleistocene, with the Early Holocene in the region.

THE SITE BANARGARH

The prehistoric site of Banargarh is located east of the Banargarh village between longitude and latitude of 86°25' E and 25°3' N respectively in Haveli Kharagpur Block of Munger district, South Bihar. The village is located on the main road from Laxmipur block to Bhimbandh. It is located approximately 25 kilometres south of Haveli Kharagpur block and 48 kilometres south of Munger district in the southern Bihar.

The studied site is situated within a densely forested region predominant with Sal *(Shorea robusta)* vegetation and the medium to large sized deciduous trees of Mahua *(Madhuca latifolia)*, relatively on a flat plain. In its west, flows Tharghatiya Nala in the south to north which meets the Maan river to the north.

Vast expanses of agricultural fields area unit can be seen unfolding in the south of its geographic

location, near the villages of Bhimbandh and Banargarh. The famous hot spring originates from the base of the Mahadeo hills which is situated around 1 km west of the Banargarh site. The Bhimbandh region is famous for this hot spring which is a very popular picnic spot. Geologically it appears that the site is an extension of the Mahadeo hill flanks but it lacks considerable data to demonstrate.

Laterite blocks with a height of 20-60 cm are found in the centre of the site. The antiquities are found primarily scattered around laterite aggregates and red soil. Previously, tiny hematite pellets covered the

impmenetiferous layer, but severe erosion has revealed the bedrock in several locations in huge sections. A relatively uniform mixture of pink to grey quartzite constitutes the principal rock outcrops.

The homogenous variety ranging from pink to grey quartzite constituted the primary rock outcrops. These were the easy source of raw materials for manufacturing the stone tools and the artefacts are spread over an area of two squared kilometres. The implementiferous layer was formerly covered with fine hematite rocks, but substantial erosion has exposed the bedrock in many places in large patches. The site depicts the exploitation done by the ancient men for tool making purposes. it consisted of several different types of debitages that can indicate a possibility of the site being a primary manufacturing zone.

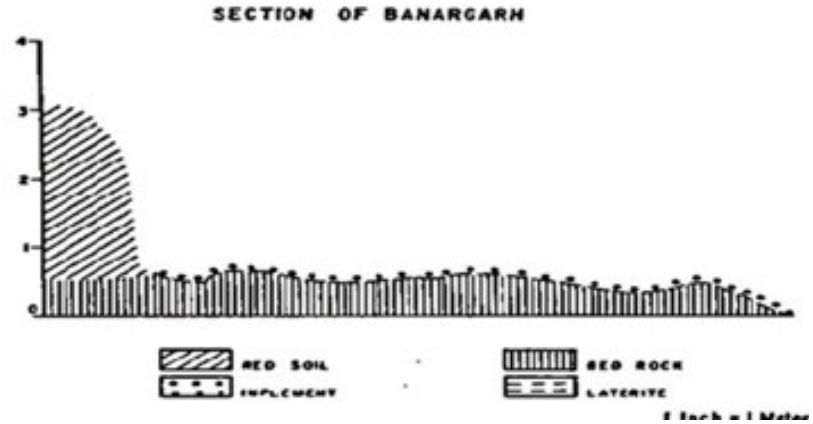

Figure 3: Stratigraphy of the site Banargarh

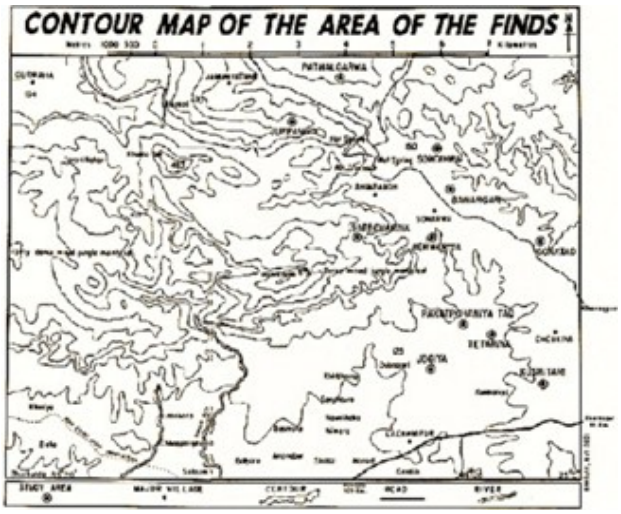

Figure 4: Contour map of Kharagpur Hills

Figure. 5: A view of the site Banargarh

CURRENT RESEARCH AND METHODOLOGY USED

The analysis of the existing knowledge on the Kharagpur Hills had suggested that there lay certain concerns about the Paleolithic civilization that flourished in this area. This raised several questions and therefore a detailed investigation on this topic was undertaken.

The primary objectives of this comprehensive investigation were to get intricate details on the hallmarks of the Paleolithic culture and also was intended to comprehend the post- Pleistocene cultural scenario that emerges in this region. Four seasons of fieldwork were being conducted yielded the discovery of 11 rich primary, open-air Paleolithic sites. These sites were as follows: Pathalgarwa, Rakatrohniya Tad, Adhwariya, Satbehariya, Jogiya, Kushitari,Tetariya, Goratad,Banargarh,Sohdihwa, and Jurpaniya.

The present paper aimed to give a meticulous description of one of all the discovered and studied sites, the prehistoric site of Banargarh. Apart from only reporting the sites, an attempt had been made to understand the geo-chronological context. Another aim of the present study was to describe the area of investigation, and the physiographical contexts of these Palaeolithic sites along with the typo-technological account of the cultural types that had been discovered.

We had to lift practically all of the putative human made artefacts because all of these locations were in the open air. On the one hand, the smaller sized flake and blade tools were pushed into narrow surface gullies in several cases and on the other hand, the larger and bulkier specimens were not being displaced. This irregularity of tool distribution due to natural consequential disruptions made random sampling impossible. As a result, if simply random collection had been used, there would be a risk of skewed representation. Due to the same set of constraints, artifact distribution and aggregation of debitage and completed tools could not be depicted.

All of the gathered specimens were transported to the nearby local area where we were located. These were then cleaned and numbered. Following that, items were packed and delivered to the department. After recording their technical characteristics and numbering them in the entire collection, several huge flakes were eliminated as transportation of heavy specimens in greater volume would have been tedious from a far-off location from Delhi. The study was concluded by analysing and classification of tool types and generalising the overall aspects of the prevailing culture in this prehistoric area.

TOOLS AND TYPOLOGICAL FEATURES

This location yielded a total of 483 specimens. There were 179 cores and 304 flakes among them. Table 1 and Table 2 depict the primary breakdown of the various types of cores and flakes. The cores are

flaked bifacially consisting of circular shallow scars.

One of the key distinguishing features in a blade core that has been found from this site contained significantly meticulous symbols of blade beds traversing through its length. Rare instances of Spheriodical nucleates have also been found. The flakes ranged from small to medium-sized, mostly laminar with a negligible crest like characteristics.

A meagre number of Clactonian flaking (Fig.6.) has also been reported. A range of several types of side scrapers has been found includingsingle side scrapers, convergent side scrapers, double side scrapers, canted side scrapers and transverse side scrapers.

Apart from these noted types, there is an array of different peculiar combinations such as burin-cum-transverse side scraper, side scraper-cum-denticulate, and bifacially retouched single side scraper which is less known from the Indian Lower Palaeolithic context. The bifacially retouched single side scraper (Fig.16) is a slender, extended flake with obvious retouchings along with one of the borders on the dorsal side, and a succession of flat shallow flakes scraped from the ventral surface as if to thin out the specimen.

One such intriguing concoction is as shown in Figure 17, burin-cum-transverse scraper, which is a medium-sized thick flake with a scraping border created opposite the bulbar end and a prominent burinated edge on the bulbar tip (Fig. 17, part 1). Figure17, part 2 depicts another essential form of such integration of different typological characteristics. On a tiny thick flake with a triangular cross-section, this is a side scraper-cum-denticulate. Side scraper retouchings may be seen on one border, while clear denticulation can be seen on the other.

Another distinct variety of this industry is a large number of nearly circular plano-convex specimens known as carinated end scrapers. A hard hit causes a spherical depleted core to fracture into a semi-spherical fragment. A considerable number of retouchings are supplied practically vertically from the flat beneath the surface along with one of the flake's edges (Fig. 18,1).

The site also yields the peculiar Upper Paleolithic type – End scraper in a blade. The blade was robust and extensive. The dorsal surface of this blade has a raised mid-rib extending down the long axis. A sequence of steep retouching was administered along one of the blade's terminal ends using the ventral surface as a striking platform (as shown in Fig. 18,2). As a result, steep retouchings appear to be a common aspect of this industry.

In addition to the above typological features, Figure 19. depicts a conventional blade and a retouched blade, which has been restored in the usual manner despite being partially damaged. Perfect circular discoid cores are rarely recorded and prominence can also be given to the lesser finds of blades and blade fragments, comprising of series of blade beds which shows that this was purposively created. Total industry size – 483 tools.

TABLE 1

Total number of cores found from Banargarh during the study

Cores	Absolute Number	Percentage	
		Out of Total Cores	Out of Total Industry
Flake Core	39	21.7	8.0
Discoid Core	02	1.1	0.4
Blade Core	13	7.2	2.6
Amorphous Core	04	2.2	0.8
Nucleate	08	4.4	1.6
Finished Types	113	63.1	23.3
Total	179	99.7	36.7

TABLE 2

Total number of flakes found from Banargarh during the study

Flakes	Absolute Number	Percentage	
		Out of Total Flakes	Out of Total Industry
Simple Flake	106	34.8	21.9
Retouched Flake	49	16.1	10.1
Levalloisian Flake	09	2.9	1.8
Clactonian Flake	01	0.3	0.2
Psuedo Levalloisian Point	01	0.3	0.2
Blade	11	3.6	2.2
Blade Fragment	04	1.3	0.8
Core Trimming Blade	03	0.9	0.6
Core Trimming Flake	01	0.3	0.2
Finished Types	119	39.1	24.6
Total	304	99.6	62.6

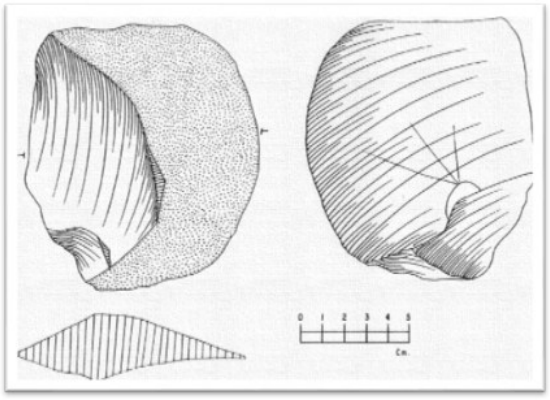

Figure 6: A Clactonian like flake from Banargarh

TABLE 3

Tool types from Banargarh

Types	Absolute Number	Percentage Out of Total Types	Percentage Out of Total Industry
Handaxe	37	15.9	7.6
Diminutive Handaxe	03	1.2	0.6
Unfinished Handaxe	18	7.7	3.7
Broken Handaxe	09	3.8	1.8
Cleaver	23	9.9	4.7
Broken Cleaver	19	8.1	3.9
Chopping	03	1.2	0.6
Proto-Cleaver	01	0.4	0.2
BifacialS.S.S.	03	1.2	0.6
BorerCumS.S.S.	01	0.4	0.2
S.S.S.On Backed Knife	01	0.4	0.2
Borer Cum ConvergentS.S.	01	0.4	0.2
Single Side Scraper	35	14.9	7.2
Double Side Scraper	04	1.7	0.8
Convergent Side Scraper	09	3.8	1.8
Transverse Side Scraper	02	0.8	0.4
End Scraper	10	4.3	2.0
Carinated End Scraper	05	2.1	1.0
Canted Side Scraper	04	1.7	0.8
Burin Cum Transverse Scraper	01	0.4	0.2
Thumb Nail End Scraper	01	0.4	0.2
Side Scraper Cum Denticulate	01	0.4	0.2
Notch On Levalloisian Flake	01	0.4	0.2
Point	05	2.1	1.0
Borer	02	0.8	0.4
AtypicalBorer	01	0.4	0.2
Notch	01	0.4	0.2
A.TypicalPoint	01	0.4	0.2
Denticulate	04	1.7	0.8
Notch On Levalloisian Point	02	0.8	0.4
Backed Knife	08	3.4	1.6
Bifacial Point	01	0.4	0.2
Retouched Blade	04	1.7	0.8
Burin	02	0.8	0.4
Disc	08	3.4	1.6
Truncated Blade	01	0.4	0.2
Total	232	98.2	47.1

SOME DEPICTIONS OF TOOL TYPES FROM BANARGARH

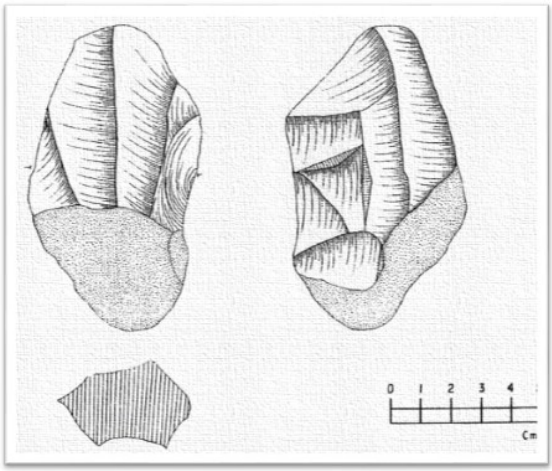

Figure. 7: A blade core with pebble cortex

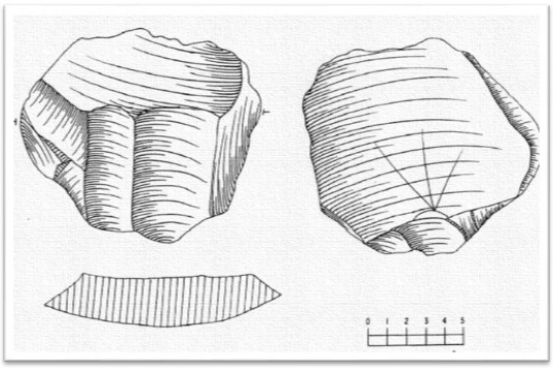

Figure 8: A simple flake with blade beds visible on the dorsal surface of the site

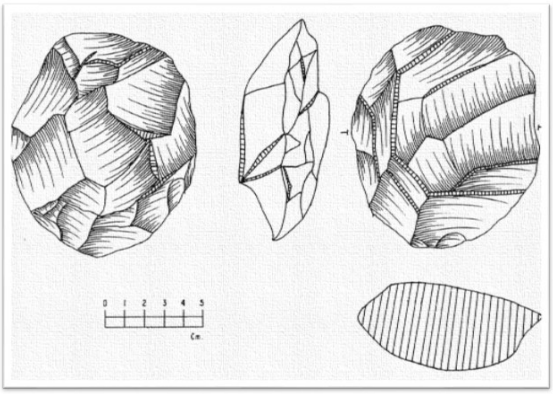

Figure 9: A rectangular shaped discoid core

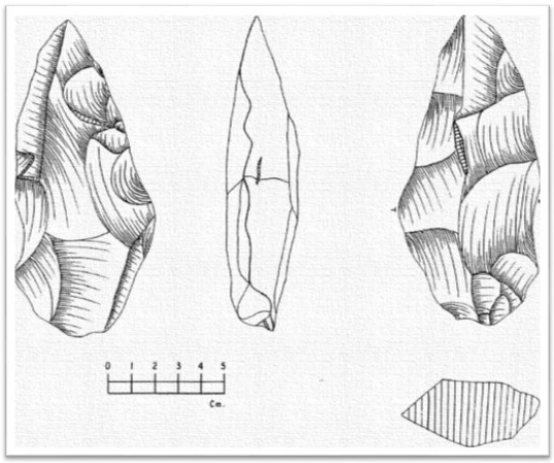

Figure 10: An elongated and narrowed handaxe

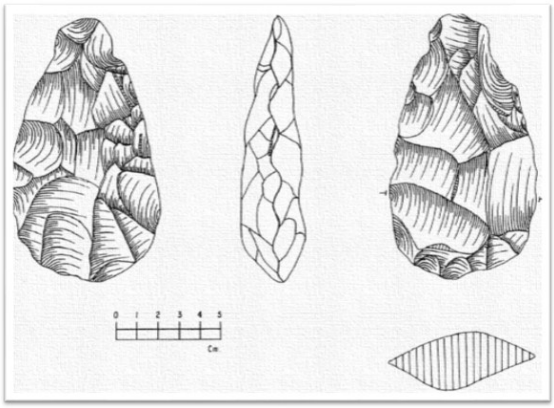

Figure 11:A lozense shaped handaxe showing extensive working

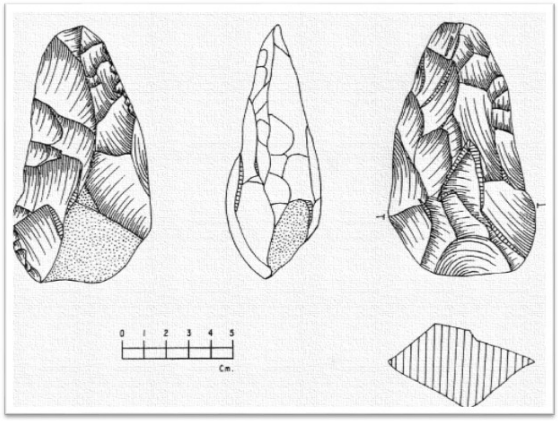

Figure 12: A simple highly regular shaped handaxe

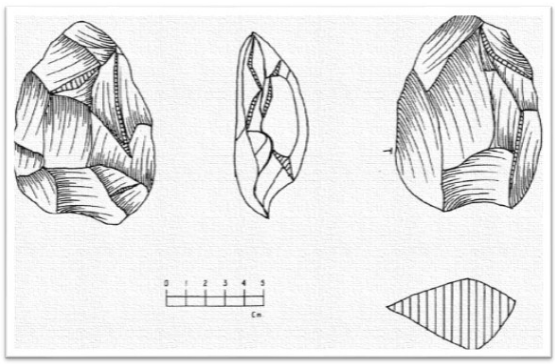

Figure 13: Adiminutive handaxe

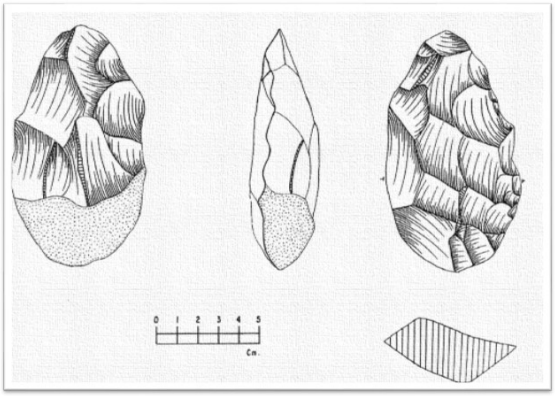

Figure 14: Handaxe with pebble cortex

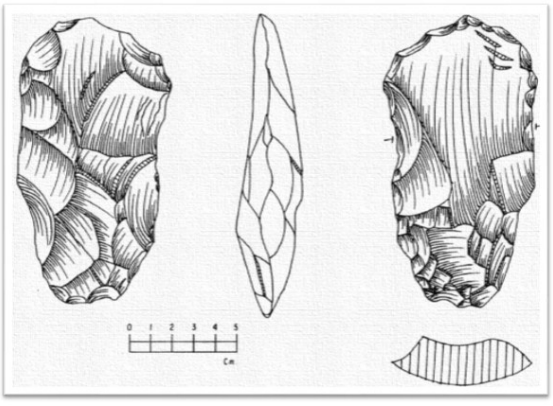

Figure 15: A bi-facially worked cylinder cleaver

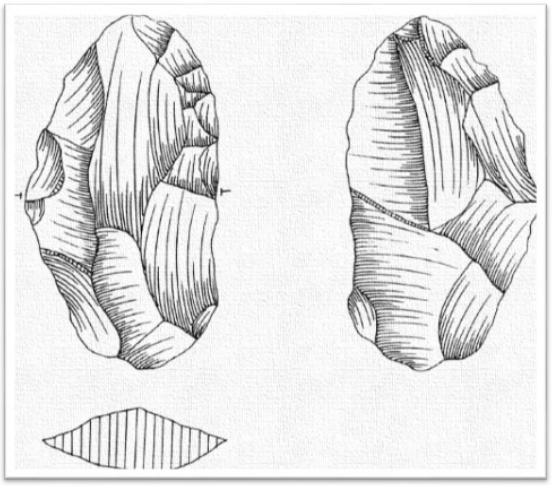

Figure 16: Bi-facially worked alternate side scraper

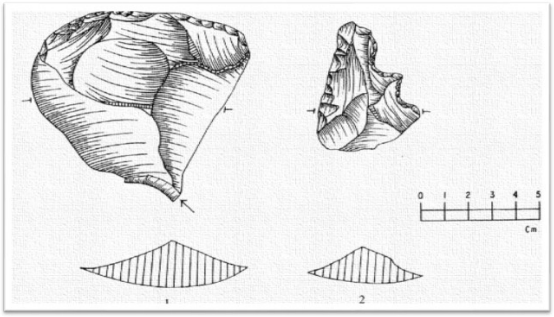

Figure 17: Flake tool types
(1) Combined specimen showing sidescraper cum burin edge
(2) Denticulate cum single sidescraper.

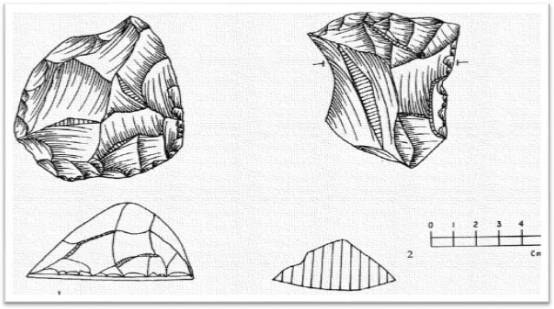

Figure 18: Blade tool types
(1) Carinated end scraper (2) End scraper

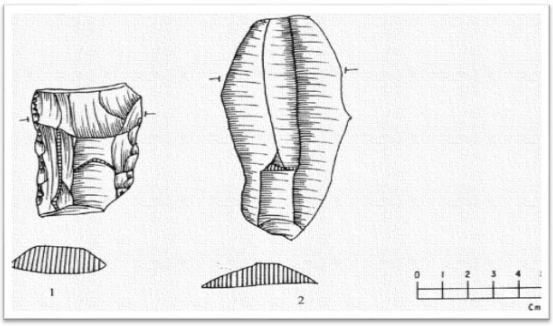

Figure 19: Blade tool types
(1) Retouched Blade (2) Simple blade.

DISCUSSION AND CONCLUSION

Through a thorough investigation and analysis of the site, it can be concluded that Banargarh shows a distinct transition from Acheulian that gradually diffuses into emerging Upper Palaeolithic culture. This industry is dominated by bifaces and the side scrapers follow the next.

The bifaces seem to be cylindrically hammered that are ultimately shaped by a series of retouchings. Amongst the entire tool assemblages that are reported from Banargarh, the bifaces show a range of morphological variations. The typo – technological understanding of Handaxes portrays that they belong to the late Acheulian industry in both its form and techniques. Medium-sized cleavers can be found here that have been prepared through controlled flaking.

The studied site of Banargarh, which is a part of the eastern zone of Bihar prehistoric industry shows the intersection of several cultures on one hand we are finding handaxe, cleaver culture and to its contrary, on the other hand, we are also able to locate advanced flake and blade tool types.

This hints us at two different possibilities of the existence of ancient man. One theory suggests that man may have lived at the same particular time but exploited different cultures.

The other theory depicts that they might have followed one after the other in chronological order. Therefore, it is imperative to look into the cultural succession from a different perspective and not merely adhere to the traditional view of the singular line of cultural evolution that core tools necessarily imply only Lower Palaeolithic culture, flake tools represent

the Middle Palaeolithic and blades comprise of the Upper Palaeolithic.

The current analysis contends that these terms have a rigorous chronological meaning in addition to having a typological connotation as shown above and therefore the traditional outlook may not always be as beneficial as previously supposed. The cultural evidence from Kharagpur Hills depicts punctuated equilibrium.

The sole site in the eastern cluster that varies significantly from the other reported sites is Banargarh. Despite this, the assemblage's exquisite laminar and bifacially worked side scrapers and elongated blades with steep retouching suggest a lean toward far more sophisticated technology than what one would expect in Upper Acheulian.

Furthermore, the presence of a considerable number of small handaxes suggests a younger cultural rank for this group.Thus,one can very indisputably argue the site of Banargarh has a graded advancement in Acheulian industries that gradually transitions nearly impeccably into the Upper Palaeolithic phase.

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