Jogiya: An Acheulian Site of Kharagpur Hill, South Bihar

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ABSTRACT: Acheulian is one of the important and older traditions in Indian Prehistory. There are several sites that have been discovered so far, but none of these sites have enabled us to give complete sequence of this tradition. Jogiya is a new Acheulian site in south Bihar where I have tried to find out the complete sequence as well as variation within the tradition.

INTRODUCTION

It has been argued that as archaeologists we are faced with the methodological task of isolating extinct socio-cultural systems, as the most appropriate unit for the study of evolutionary processes, which results in cultural similarities and differences. If we view that culture originates out of man's attempt for extra somatic means of adaptation then, we must isolate and define the ecological setting of any given socio-cultural system and study in detail, with regard to the adaptive process or coping situation, which were presented during prehistoric time in terms of biological and social dimensions (Binford,'64). I believe the isolation and study of cultural system rather than aggregate of cultural traits, is the only meaningful approach to understanding cultural processes (Steward,'60:173-174). A cultural system is a set of constant or cyclically repetitive articulations between the social, technological and ideological extra somatic, adaptive means available to a human population (White,'59:8).

A decade after, it was suggested that the 'regional approach' or the detailed and systematic study of the regions can be more appropriately expected to reflect cultural systems (Bhattacharya,'96). The extent of such regions will vary because, it is recognized that cultural systems differ greatly in the limits of their adaptive range and milieu. As cultural systems become more complex, they generally span greater ecological ranges and enter into more complex, widespread, and extra-societal interactions. The isolation and definition of the content, the structure, and the range of a cultural system, together with its ecological relationship, may be viewed, as a research objective. The research design should be aimed at accomplishing this isolation, which is believed to be most profitably prosecuted within a regional' unit of investigation (Binford,'72).

Archaeology is the special concern to some certain type of anthropologists, who treat the tools as their 'subject' in data collection. Consequently, to some archaeology stands defined within the ambit of anthropology. There are others who consider it a branch of history. Archaeological anthropology concerns itself with life ways of man in the past; therefore it can also be described as the 'anthropology of extinct people'. These anthropologists usually excavate the material remains of past culture, and through the study of such evidences, attempt to re-create the history of man from his earliest date of emergence, and also attempt to study the nature of cultural systems at different times and places around the world (Deetz,'67).

A large number of discoveries have been made during the last five decades (1950-2000) in Indian Palaeolithic culture. But the context of the discovered

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sites was mainly of secondary nature. In such cases the archaeological materials are generally transported by the rivers over considerable distances from their original places of manufacture and or use before being deposited as a component element of the river sediments. In view of their secondary context the artifact collections from river deposit do not give a complete picture of the nature and composition of lithic industries. Any elaborate statistical studies of such incomplete data can lead to dubious cultural inferences. We cannot be certain that a gravel or silt deposit is the result of one cycle of sedimentation. It may have undergone several stages of reworking. In such cases there is immense scope for the admixture of materials belonging to different cultures. Hence it is not always possible to equate stratigraphically successions with cultural sequences.

These shortcomings have given rise to a somewhat pessimistic attitude that nothing can be known about the Indian Palaeolithic culture beyond stratigraphy and tool typology. It is precisely this attitude which has led the otherwise distinguished archaeologist like Wheeler ('60:34, 63) to adopt such derisive titles as 'stones' and 'more stones' for chapters dealing with stone age culture viewed in larger perspective. It is because of the pre-occupation with secondary sites that Indian prehistory has not been able to win anything beyond passing references in works and talks dealing with world prehistory. Yet, the discovery of relatively undisturbed surface sites and their importance as evidence for early habitation pattern have also been emphasized by some specialists (Jacobson,'70a, '75, '85).

A stage has therefore been reached, when it is imperative to be clear about the ultimate goals of our research work stated in simple terms. Prehistoric research is aimed at the reconstruction of life ways of prehistoric societies in the context of the then prevailing environmental conditions. If that is our aim, a re-orientation of our research appears to be necessary, which in turn entails a different set of techniques and methods. In this connection it is impossible to exaggerate the importance of the study of primary sites and all kinds of phenomena associated with them. Primary sites are those sites in which the evidence pertaining to early man's activities is preserved in its original or undisturbed context. These may be open air sites or located in caves and rock shelters. Depending upon the nature of human activity, these may be classified into different groups, such as, living or occupation sites, kill sites, butchering sites, workshop for making tools and weapons, etc (Speth and Johnson,'76:50-53).

From the seventies of the last century, one can see that field research was beginning to address issues of culture and life ways of even the remotest cultural period. The excavation of Palaeolithic sites in caves of Adamgarh (Joshi,'78) and Bhimbetka (Misra,'75-76) in Madhya Pradesh, Gudium in Tamilnadu (Allchin and Allchin,'68) and Kurnool district in Andhra Pradesh (Murthy,'74); could not only reveal the pattern of vertical successions, but also such other significant information as the area of stone quarrying and working floors. Pattern of dispersal of cultural features started attracting more attention in these latest series of Palaeolithic researches, like at Chirki-Nevasa in Maharastra (Corvinus,'68, '68-69, '70a, '70b, '73), Hunsgi (Paddayya,'76, '77a, '77b, '85) and Isampur (Paddayya and Patragila,'97, '98) in Karnataka.

The paper discusses the new discovery of the Acheulian site Jogiya in Kharagpur Hills, situated in south Bihar (see Figure 1 & 2).

KHARAGPUR HILLS REGION

The hills of Munger and Jamui districts of south Bihar comprise a number of low ranges and isolated peaks, outliers of the Vindhyan series which entered the districts from south and gradually converge towards Munger town, near Jamalpur, known as Kharagpur hills. This is named after the town, which bears the same name and is situated to the east of the hills. The Kharagpur hills form an irregularly triangular block extending from near Jamalpur to the Jamui railway station. It measures about 40 km north-south in length and 55 km east-west in breadth, and contains within it large number of tribal village settlements of mainly Kora and Santhal tribes (Sherwill, 1852). The area consists of a number of steep ridges rising from the low ground on all the sides with scarped faces on massive quartzite in places, they are of irregular formation and do not run in any uniform direction. Generally speaking the range is a bold and striking mass of rocks covered for the most part with jungle; but it contains valleys with patches

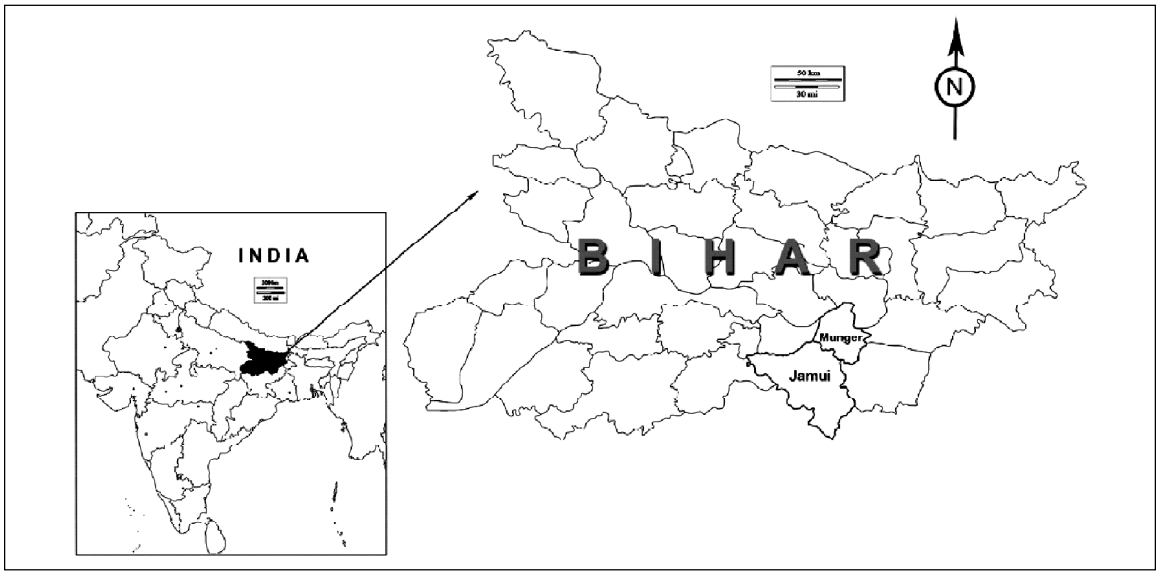

Figure 1: Map of India showing the region of Bihar

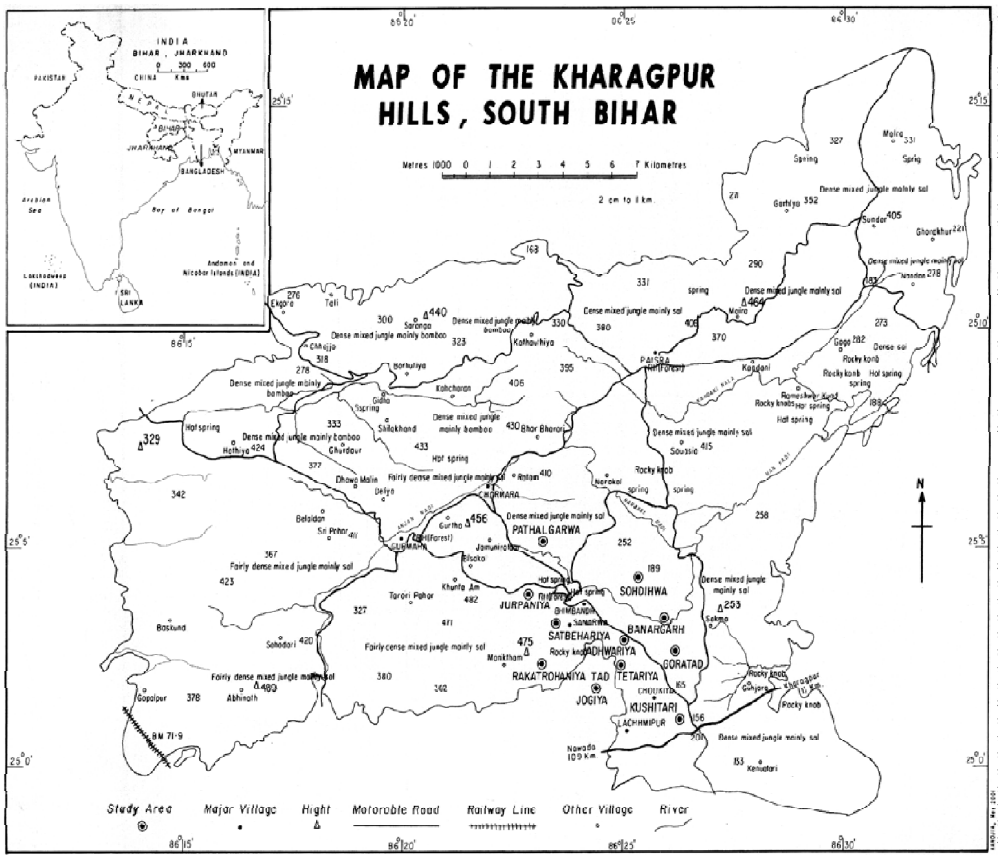

Figure 2: Map of Kharagpur Hills, South Bihar

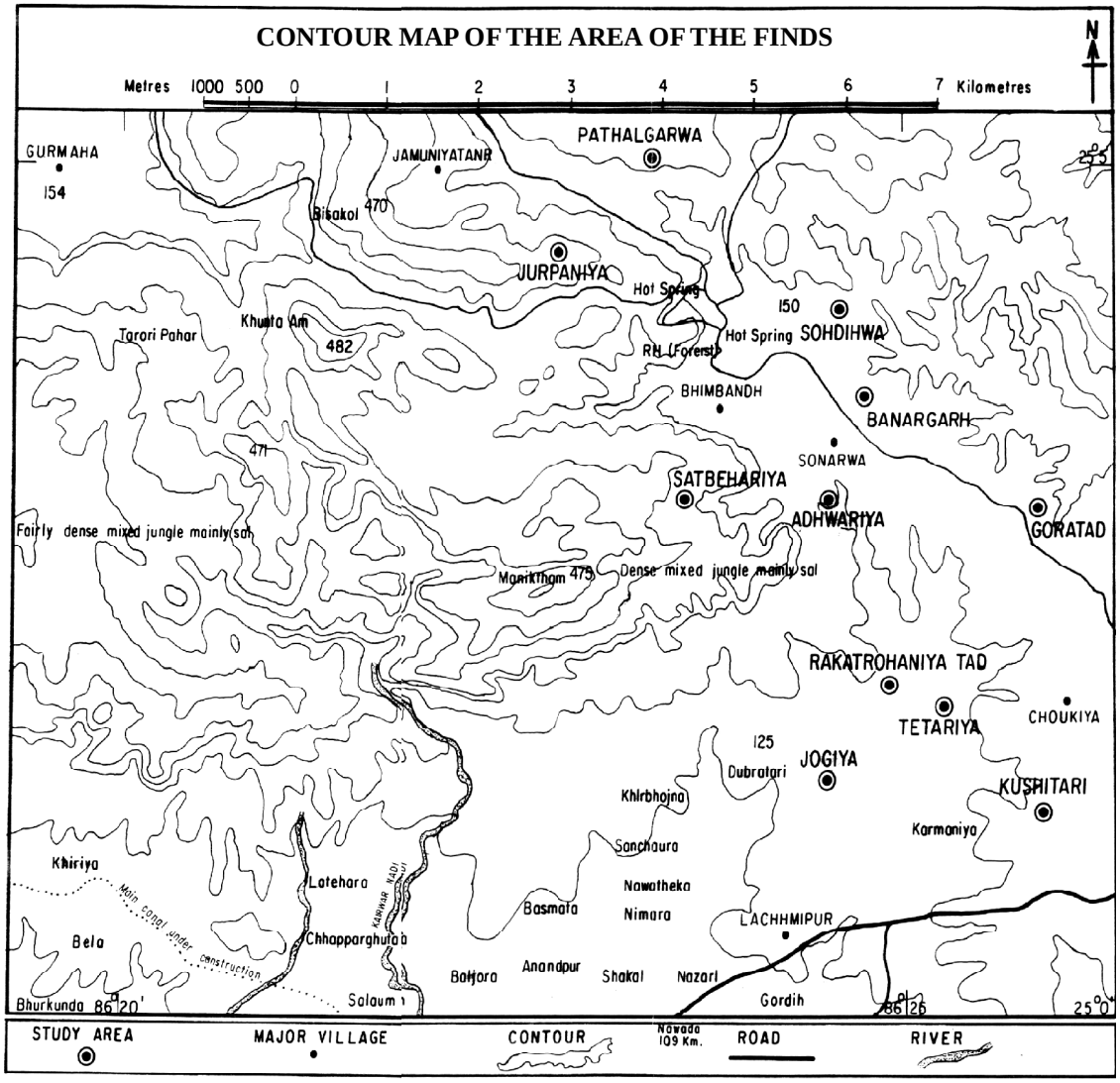

Figure 3: PI-Hysiographic region and contour of the Kharagpur Hills

of cultivation and several hot springs, of which the finest and better known ones are Bhimbandh, Sitakund and Rishikund (Waddell, 1890). There are several peaks rising to a height of about 1,500 feet and the highest point is called maruk (1,628 feet above sea level). The central region is a table land encircled by the hills maintaining a thick forest and covered with a deep layer of laterite. The Kharagpur hills form a distinct watershed. The Kiul river draining the western part and the Maan and other streams drain the eastern part of the hills. To the north, the hills are having low jungle-cover and this extends within a short distance of Munger urban area. To the south-west is another block of hills, which are known locally as the Gidheswar hills, named after a peak of that name. In geological reports, however, these are referred to as the Gidhour hills. These hills are a continuation of the hills in the Nawada district and cover an area of about 80 square kilometers, forming a compact cluster between Khaira and the western boundary of the Munger town. They rise sharply from the plain, but in most places there is a belt of jungle along their

Figure 4: A view of the site Jogiya

northern face before the actual ascent begins. To the east there is a fine cliff overlooking Khaira and the Kiul river, and the range falls away to the south into the rocky valley of the Kiul. On the south in the village of Sakdari, there is a spring called Panchbhur, which is surrounded by precipitous walls of rock. The highest point of the range is at Ekgora (1,813 feet).

To the south a broken semi-circular range extends from near Bishnupur, on the west to Simultala on the east, separating the Chakai plateau from the rest of the Jamui district. On the extreme west of this range is a high hill, named Satpahari, scarped on its northern face, beyond which the Kiul river breaks through the range by a narrow gorge. The hill is 1,806 feet above sea level. There is also a small range of hills in the level of alluvial plain near Sheikhpura, and these are practically bare of vegetation. There are also small, isolated, stony hills south of Sheikhpura and some hills of fair size on both sides of the Lakhisarai-Jamui road south of Titar Hat in the plain to the west of the Kiul river (Roy Choudhury,'60).

The rivers originating from the Kharagpur hills, which include major streams like Maan, Anjan, Morwe and other minor streams like the Jalkundnala, the Dakranala and the Gangtanala. Of these the major streams are permanent streams with meagre surface flow during summer. Except the Maan, which debouches in the Ganga river near Ghorghat, other streams meet the Kiul river.

In the Kharagpur hill tract, structure and neo-tectonic movement have more control over the drainage than lithology. There are two groups of streams of different maturity draining this hill tract. The first group includes mature streams like Maan and Anjan and their sub-tributaries with a drainage density of above 2.0 km/sq km. They drain the major part of this hill tract. These streams initially flow away from Ganga, towards south, southwest and southeast and then swing towards north to follow the regional slope of the valley to join the Ganga. The other group includes immature streams like the Dokranala, the Bangalwanala etc., draining the northern and other valley ward slopes of the peripheral hill ranges.The co-existence of the mature and immature drainage systems in the Kharagpur hill tract signifies that the hill and adjoining valley areas have undergone neo-

tectonic movement in early quaternary period. This also explains the presence of only quaternary sediments (Middle Pleistocene and younger) in the valley areas adjoining the Kharagpur hill tract (O'Malley,'26).

QUATERNARY SEDIMENT

The quaternary sediments covering the Kharagpur hills is known as Jamui formation. The multiple alluvial fill of Jamui terrace, which is described as the 'Jamui formation' constitutes the oldest continental quaternary deposits in this region, which is known as 'older Alluvium' in Indian geology (Passoe,'64). This formation is restricted to the Ganga and constitutes the high level alluvial plains (40m-50m above MSL) to the south of Sarmera - Sheikhpura - Luckhe Sarai - Singichauk -Darhara on the west of Kharagpur hills and the similar high grounds to the south of Lohechi - Udadi - Dathara on the east of the Kharagpur hills. The district town Munger and other important towns like Jamui, Jamalpur, Sikandra and Jajha are located on this formation. The laterite occurrences on the top of the Kharagpur hills and the ferruginous residual soil over the bedrock below the alluvial fill of Jamui terrace is indicative of a tropical climate at the beginning of the quaternary period. This was gradually replaced by a relatively cold and dry climate during the aggradation of the basal boulder sand member of Jamui formation.

The thickness of colluvium and residual deposit in the Kharagpur hills increases up to 4m in the narrow pediment zone, bordering the Kharagpur and Gidheshwar hills and the scattered inliers within the Jamui terrace has a 0.5m to 2m thick cover of colluvium and residual deposits. In the Pedi plain area bordering the Kharagpur hills, the thickness of the residual soil is much less than the colluvium deposit and the material is mainly reddish brown silt and clay.

The lithological and sequential equivalent of upper Jamui formation has been considered to be of Upper Pleistocene to early Holocene in age, on the basis of the palaeontological finds (Dassarma *et al*.,'76, '77). Since no fossil has been found in the quaternary sediments from this region till now, therefore, estimation of the age can be inferred only on the basis of sequential lithological, Pedological and Climatological analysis. In, the Narmada Valley, the oldest continental quaternary sediments, which is lithological similar to lower Jamui formation, has been dated at Middle Pleistocene, on the basis of vertebrate fauna (Dassarma *et al.*,'77). Hence the Jamui formation of the Kharagpur hill region is provisionally considered to be of Middle to Upper Pleistocene, extending up to Early Holocene in age (Roy *et al.*,'87).

STRATIGRAPHY OF THE SITE

The stone tools of early man have seldom been found exactly where he left them. A number of relatively less disturbed or almost undisturbed sites are situated in the Kharagpur hills. As stated earlier the region chosen for the study presents a series of rocky ranges surrounded by high hills on almost 3 sides. Wherever two ranges meet in a crevice a water course or a gully is created. When these gullies are present in the floor of the valley they become wide and can carry forceful flow during high rain fall seasons. When these gullies are at a higher altitude these form convenient water shed channels which eventually disgorge themselves in the valley gullies. The load of boulders brought by these narrow channels are so enormous that one is left with no other alternative but to surmise a very strong colluvial activity to explain them. The water courses crisscross all through the valley area and these are further supplemented by large number of underground hot and cold water springs providing constant water supply to them.

For exploring to discover possible prehistoric sites these water courses were followed and these provided a very useful indicator in understanding the quaternary depositional history in this chosen area. It will be better to describe these features on the basis of evidences recorded from each of the sites discovered.

SITE DESCRIPTION

JOGIYA (JPY)

Jogiya (86°24' E and 25°2' N) is located in the Kharagpur hills, near the north of the village with the same name in Laxmipur block of Jamui district of south Bihar. It is situated about 4 km north from Laxmipur block and 20 km from Jamui railway station. Towards the east of the site occurs the village settlement and towards south-west two hills called

Anjan and Manithan are located. These are nearly 5 km and 6 km respectively from the site. Agricultural fields are spread all over the regions extending from south of the site.

The site is situated on the flat plain of the Kharagpur hills, which covers an area of about 2 square kilometre. There is no rain gullies or nala present near the site. The only source of water is available at least 5 km away from here in the Anjan hill, from where Amjari cold spring flows throughout the year. There is no vegetation visible around the site. The area seems to be literally covered with cobbles of quartzite. There is also evidence of large flake beds present on all those portions of the bed rock which are jutting out. Consequently Jogiya, would seem to be a workshop site in open air, where prehistoric man had come to quarry the abundant raw material present and also manufacture the tools from them before returning to the base camp, which could have been near the Anjan hills.

There is a deposition of a yellow coloured soil measuring 3 meter in thickness which can be seen spread on the bed rock at some suitable areas. No single artifacts have been found on this soil deposit.

It would appear from the above description that unlike the other sites described so far the surface of the site is not constituted by lateritic deposits. Here the succession would seem to be only bed rock covered by yellow coloured clay which is evidently stained by lateritic wash. Apparently this surface where the bed rock is exposed is only a large patch that has escaped the depositions because of lack of any vegetation that helps leaching of the surface material. Further down on the lower flanks one can see the same lateritic phenomenon which appears to be common almost all over these hills.

The yellow soil at this site is thick and compact at parts where vegetation has grown but more often than not this appears to be loose and mobile and hence

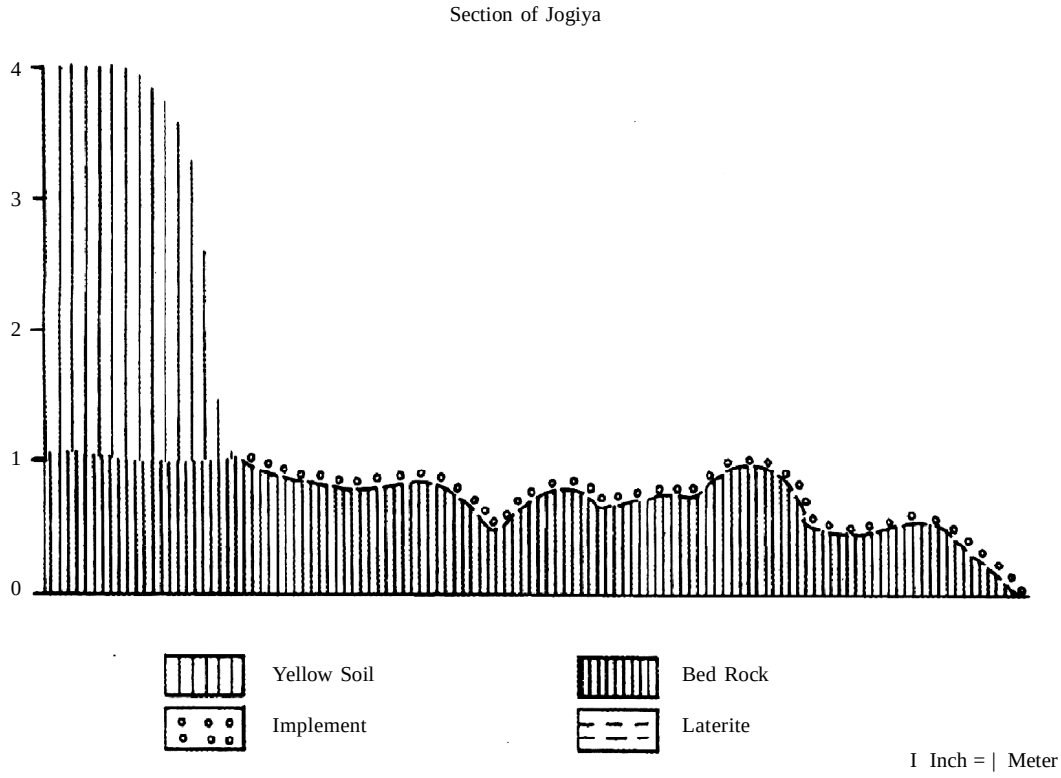

Figure 5: Stratigraphy of Jogiya

have not been able to support any significant vegetation growth. Jogiya, as such would appear as a completely bare rock face for several square kilometers over which one finds evidence of intensive quarrying and tool making activities. The concentration of the tools and their factory fresh state of preservation further lends proof of prehistoric man having used this as a factory for manufacturing activities.

TECHNO-MORPHOLOGICAL ANALYSIS OF THE INDUSTRY

In the foregoing pages we have briefly examined the existing trend in Stone Age researches usually carried out in India. The *'micro'* region studies in the past have, more often than not, have been relevant mainly in the construction of a *'macro'* statement. That is, micro or a regional study in itself had seldom been considered to have any interpretative value. We had proposed to change this earlier perspective in our present study. Consequently each of the discovered industries is being analyzed in detail in this chapter.

TABLE 1

Palaeolithic industry of Jogiya, Jamui

Total industry: 909

Cores	Absolute number Cores	Out of total	Percentage out of total industry
Flake Core	188	45.1	20.6
Retouched Core	12	2,8	1.3
Nucleate	42	10.0	4.6
Levalloisian Core	10	2.4	1.1
Discoid Core	20	4.8	2.2
Blade Core	43	10.3	4.7
Finished Types	101	24.2	11.1
Total	416	99.6	45.6

Flakes	Absolute number	Out of total flakes	Percentage out of total industry
Simple Flake	149	30.2	16.3
Retouched Flake	64	13.0	7.0
Blade	78	15.8	8.5
Levalloisian Flake	42	8.5	4.6
Simple Side Flake	12	2.4	1.3
Core Trimming Blade	16	3.2	1.7
Core Trimming Flake	20	4.0	2.2
Finished Types	112	22.7	12.3
Total	493	99.8	53.9

TABLE 2

Tool types of Jogiya, Jamui

Total Industry: 909

Types	Absolute number	Out of total types	Percentage out of total industry
Handaxe	31	14.5	3.4
Unfinished Handaxe	11	5.1	1.2
Diminutive Handaxe	06	2.8	0.6
Handaxe Fragment	09	4.2	1.0
VaalHandaxe	01	0.4	0.1
Flake Handaxe	06	2.8	0.6
Diminutive Flake Handaxe	02	0.9	0.2
Cleaver	06	2.8	0.6
Flake Cleaver	04	1.8	0.4
Unfinished Cleaver	02	0.9	0.2
Cleaver Fragment	06	2.8	0.6
Chopping	02	0.9	0.2
Pebble Butted Knife	01	04	0.1
Core Scraper	07	3.2	0.7
Elongated Pebble with Chisel Edge	07	3.2	0.7
Backed Knife	08	3.7	0.8
End Scraper	17	8.0	1.8
Single Side Scraper	46	21.3	5.1
Double Side Scraper	04	1.8	0.4
Convergent Side Scraper	09	4.2	1.0
Transverse Side Scraper	01	0.4	0.1
Retouched Blade	03	1.4	0.3
Retouched Levalloisian Flake with Tanged Butt.	01	0.4	0.1
Point	04	1.8	0.4
Atypical Point	01	0.4	0.1
Burin	01	0.4	0.1
Atypical Borer	02	0.9	0.2
Borer	06	2.8	0.6
Notch	07	3.2	0.7
Denticulate	02	0.9	0.2
Total	213	98.3	22.5

This will include a general appreciation of the debitage as well from each of the sites besides also understanding the chief techno-morphological characteristics of the finished tool types (Bhattacharya,'78). Photographs and line drawings are also added to help illustrate these characters.

This represents one of the average concentration sites of Kharagpur hills. A total of 909 specimens could be collected from the site. 45.6 per cent of the total collection constitutes cores while 53.9 per cent constitute flakes. Table 10, shows the various categories of cores and flakes identified with their relative frequencies. It will be clear from this that only

11.1 per cent of the total industry has been finished as core tool types while only 12.3 per cent of the total industry has been finished as of flake tool types.

The flake cores (Figure 6) constitute the largest number / frequency of the unfinished cores (45.1 per cent of the total cores). These are not as massive as has been noted earlier in some of the pebble based industries. On an average they measure between 12cm to 6 cm in length and only in rare instances one can see small patches of pebble cortex left unretouched at places. Our newly defined type which we named as elongated pebble with chisel edge again occurs in this site in a small number (Table 2). These specimens off course show liberal amount of pebble cortex present on them (Figure 7). While we are still talking about pebble cortex it would be important to mention that the discoid cores, nucleates and even the tortoise cores in many instances show original pebble cortex to be present on them. A smaller tortoise core is illustrated in Figure 8. It measures 11.5 cm it's the maximum diameter. This specimen hardly seem to have been properly finished because other than the large flake scar which occupies the entire central area of the core face there are hardly any other evidences of prepared core flakes having been taken from it (Debenath and Dibble,'94). However, the planning of the flakes would seem to indicate that this was desired to be finished as a proper tortoise core. Of the various kind of flakes recorded simple and retouched blades taken together form the largest proportion (43.2 per cent). Levalloisian flakes are also recorded in moderately large number in this site (total no. 42), i.e. 8.5 per cent of the total flakes. Figure 9 show one of the usual variety of Levalloisian flake recorded at this site. This has been irregularly retouched at some parts of the edges but otherwise is almost circular and thin in shape. The striking platform in most of the flakes is not elaborately facetted. The specimen illustrated does not even possess the characteristic facetted platform.

All the tool types recorded from the site are listed in table 2 or with their relative frequencies. Handaxes form the highest frequency of a single type recorded in this industry if all the forms found are counted together (30.7 per cent). These are moderately elongated specimens measuring 15.5cm to 6.0 cm in length. Even here some of the specimens show patches of original pebble cortex on them. One of the typical bifaces of this site is illustrated in Figure 10. It measures 16.0cm in length and 10.5cm in breadth and is reasonably thick for its length and breadth. The maximum thickness measured near the butt-end is 3cm. Besides flat and shallow flakes removed by cylinder hammer technique, one can notice numerous step flaking spread all along the periphery of the dorsal surface. It appears this has been done specifically to obtain a sharp and thin working border without sacrificing much of the thickness which provides sturdiness to the implement. In Figure 11, another variety of a handaxe is illustrated. This is prepared in a triangular flake with minimum working in the ventral surface. This is a flake handaxe and measures 11.5cm in length and 6.5cm in breadth. The dorsal surface is extensively worked to form a sharp continuous border culminating into a point. A small patch of original pebble cortex is left unretouched in a central elevated region of the specimen. The maximum thickness is recorded at this elevated region which is 3.5 cm. The diminutive handaxes form another interesting feature of this industry and these occur in a total frequency of 3.7 per cent. In Figure 12, one of these diminutive handaxes is illustrated. This measures 6.5 cm in length and 5.4 cm in breadth. The maximum thickness, however, is really appreciably high measuring almost 3.0 cm. The planned manner in which the two surfaces of the handaxe are flaked is typical of these diminutive specimens. But what is interesting is that here also a patch of sloping original pebble cortex is left untouched towards one of the borders. Figure 13 shows a classic variety of a flake cleaver known from this industry. It is a big specimen prepared on a side flake and measures 16.5cm in length and 9.0cm in breadth. The maximum thickness measures 4.0cm. The dorsal surface shows a sloping flat scar that runs medially meeting the working border. Both the lateral borders including the butt end are carefully worked (Inizan *et al.*,'99). In the ventral surface the scar of detachment occupies 90 per cent of the area. The lateral border maintaining the positive bulb has been extensively flaked up to the butt-end in an oblique manner. This has resulted into a typical parallelogram cross-section for the tool. Figure 14 shows a second variety of flake cleaver which shows a remarkably thin cross-section. It measures 11.0cm in length, 7.5cm in breadth as little as 1.5cm in thickness. The

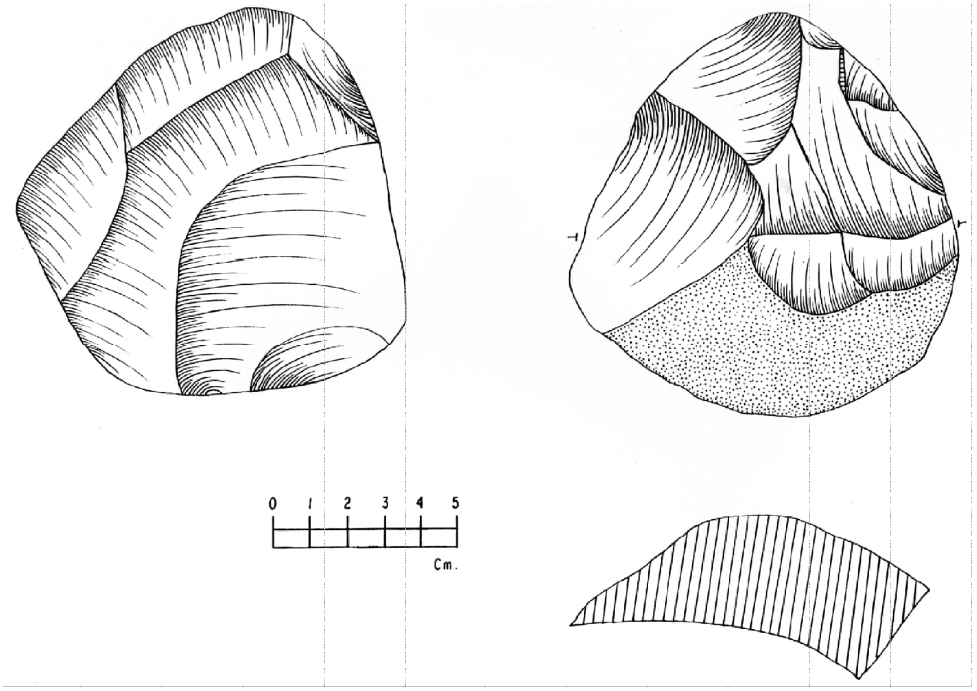

Figure 6: Flake Core from Jya

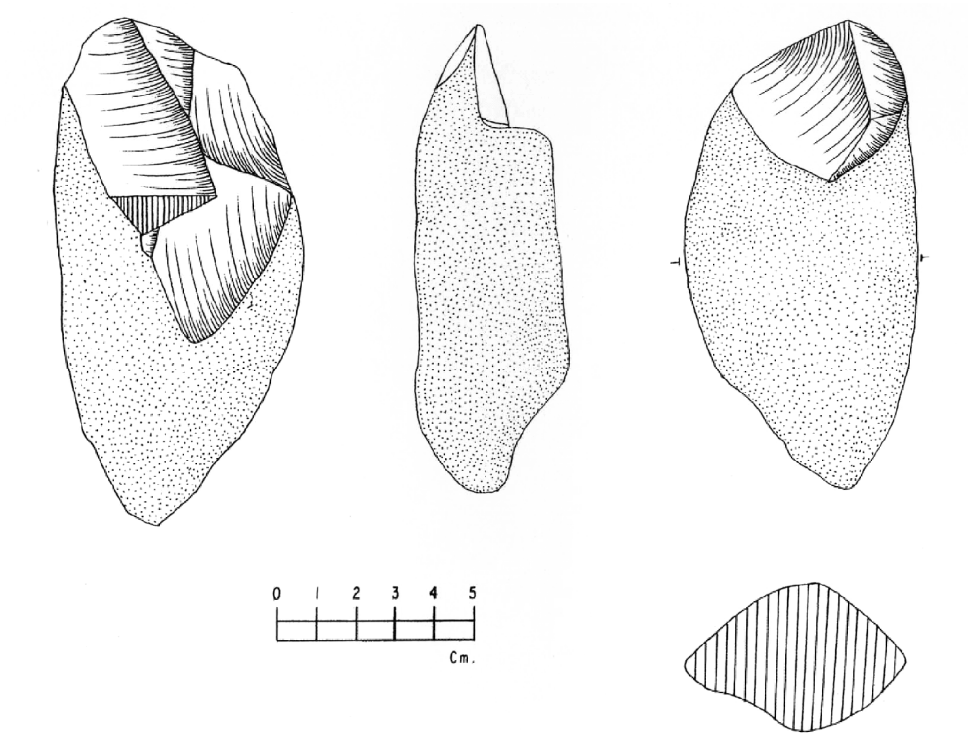

Figure 7: Elongated Pebble with Chisel Edge from Jya

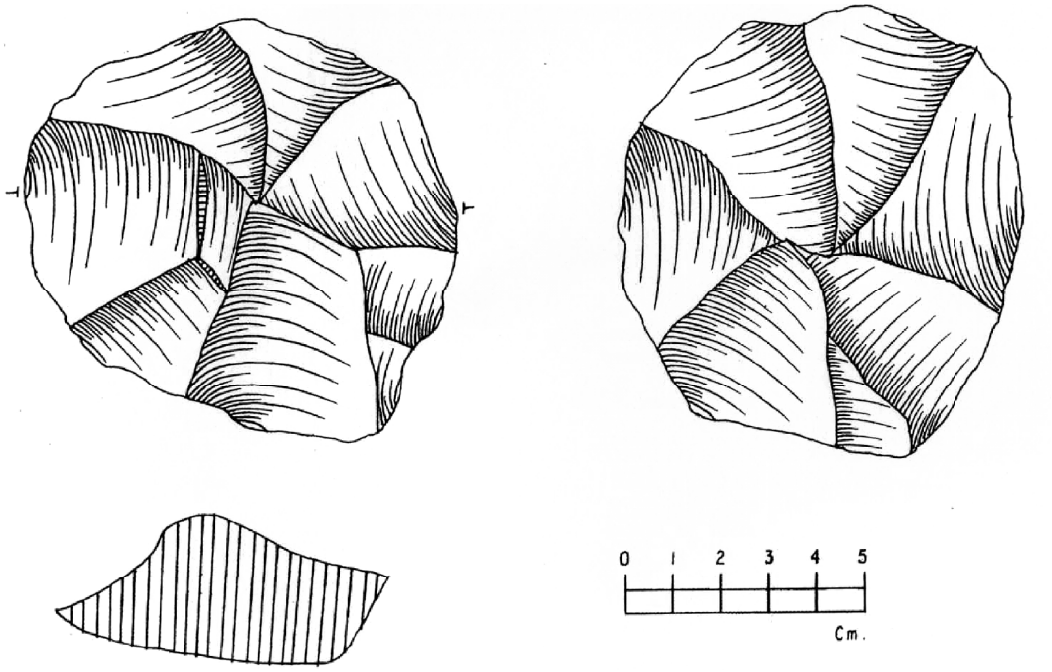

Figure 8: A Levalloision Core from Jya

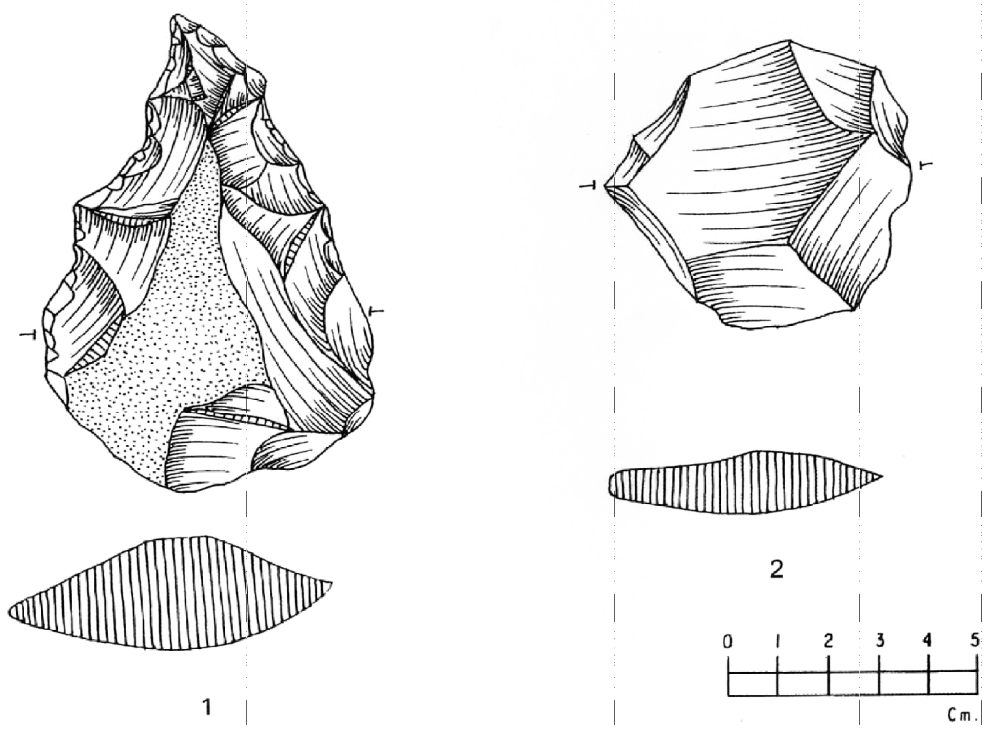

Figure 9: Flake Tool Types from Jya 1–A Large Size Point, 2–Levalloision Flake

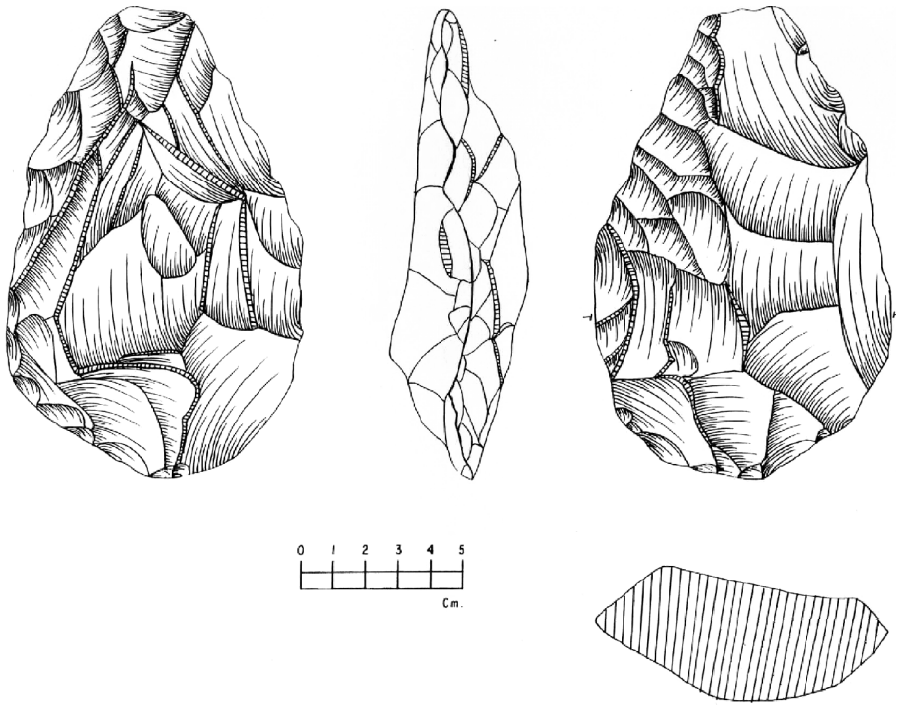

Figure 10: A Moderate Size Thick Handaxe from Jya

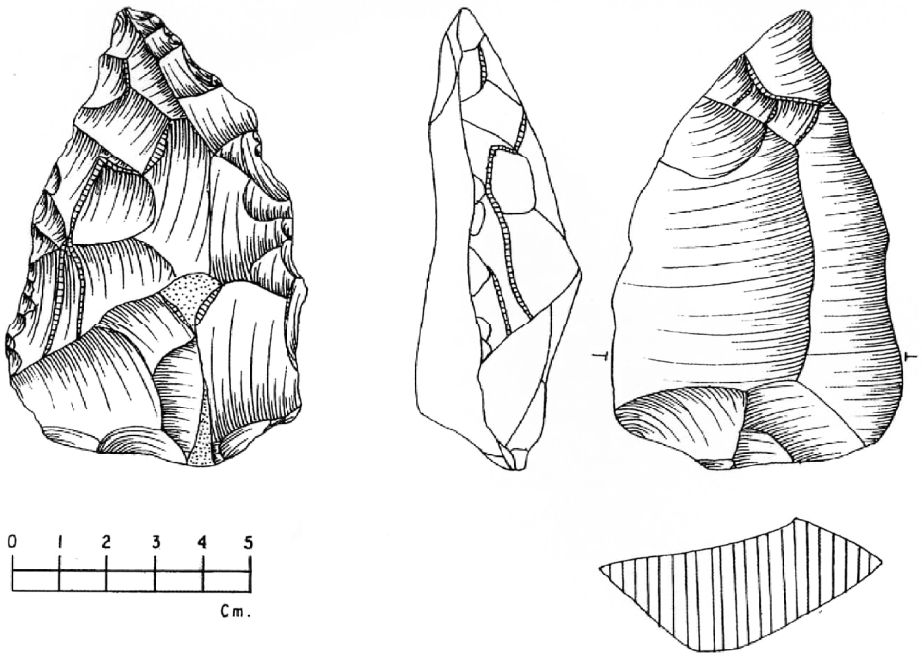

Figure 11: A Thin Flake Handaxe from Jya

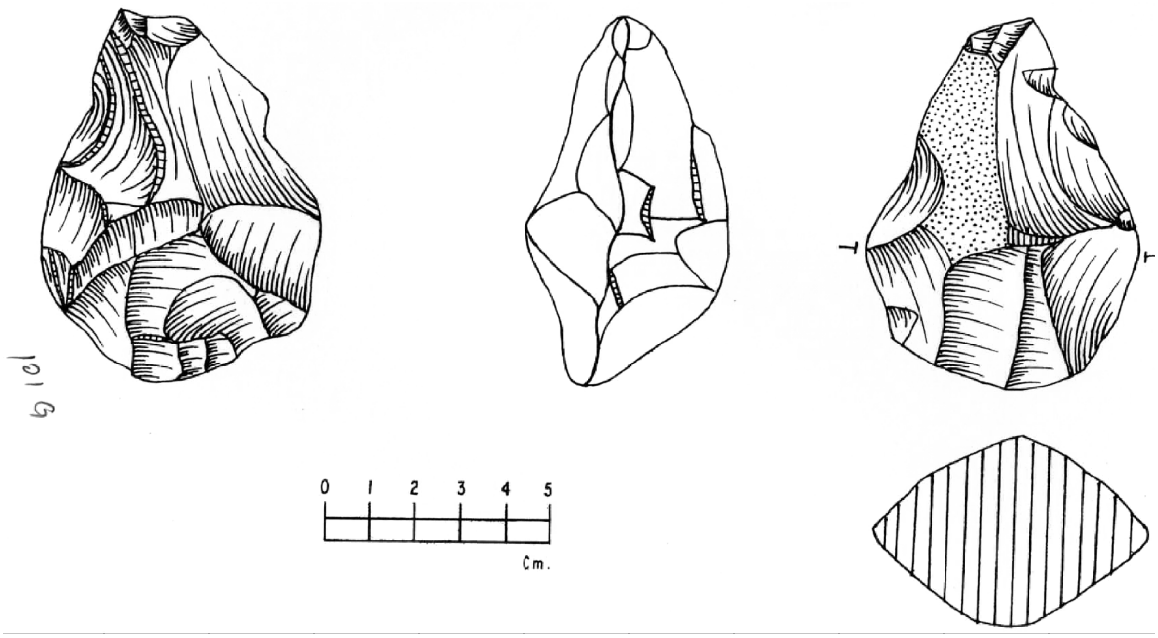

Figure 12: Diminutive Handaxe from Jya

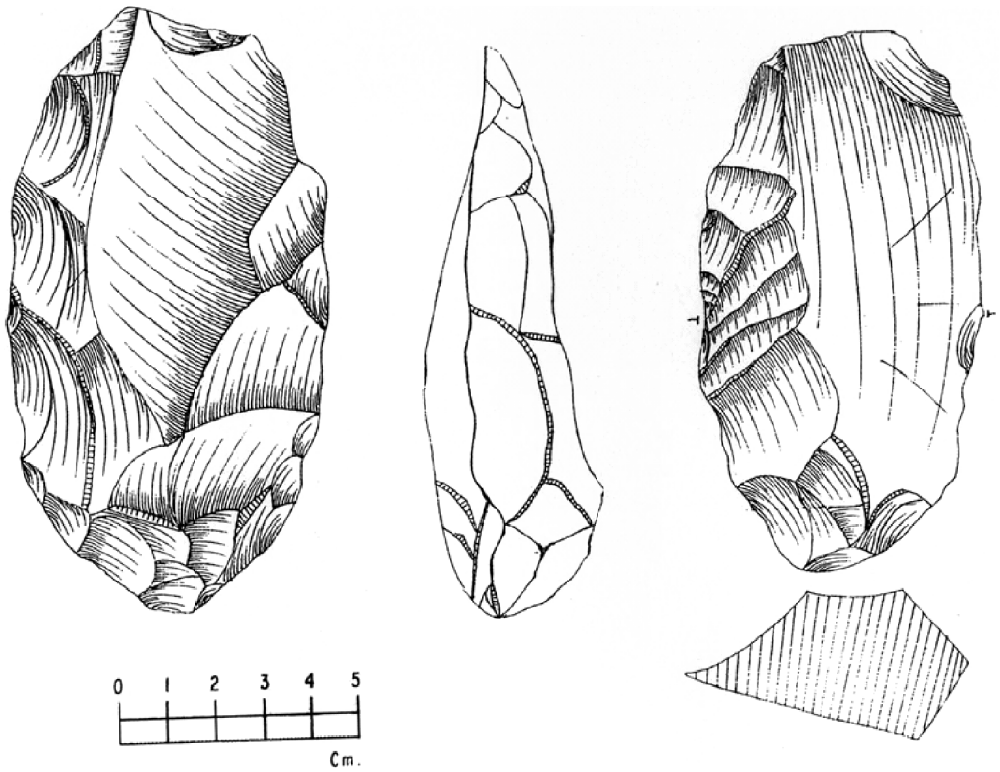

Figure 13: Flake Cleaver from Jya

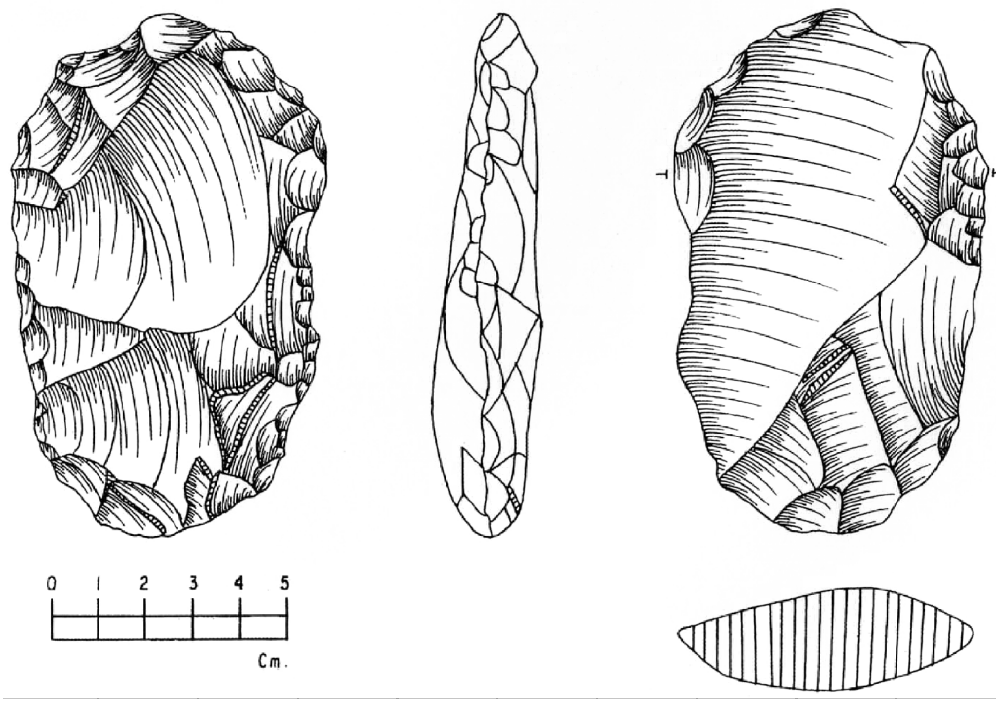

Figure 14: Flake Cleaver of Moderate Size and Rounded Edge from Jya

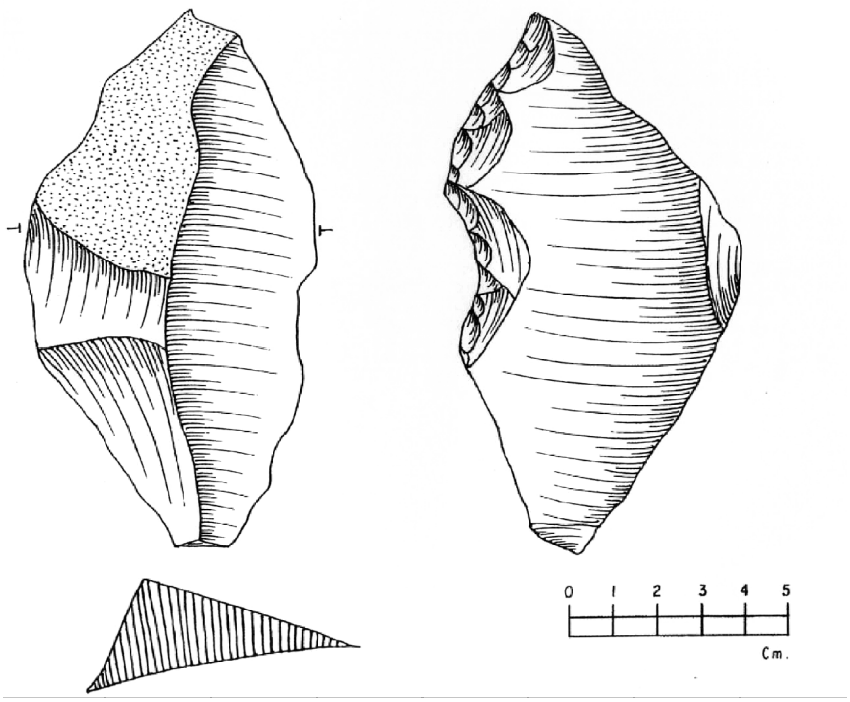

Figure 15: A Backed Knife from Jya

working border of the specimen unlike usual flake cleavers is retouched from both the surfaces. Consequently the anterior end appears totally rounded. It appears that the transverse working border must have been damaged while working and subsequently the area was retouched specifically to rejuvenate it. The slender and thin section of the butt-end can also be taken to speculate the possibility of this having meant to be hafted.

Among the flake tools a variety of side scrapers forms the largest proportion of finished types. Figure 15 shows a side scraper which has been prepared on a backed knife. It measures 12.5cm in length and 5.6cm in breadth. It shows a moderate sized point prepared on an ordinary triangular flake. It measures 10cm in length and 6.5cm in breadth. A major part of the dorsal surface maintains unretouched pebble cortex but the two converging borders culminating interiorly into a point are extensively retouched. In Figure 16, a borer from the industry is illustrated. It measures 6.0cm in length and 3.0cm in breadth and is apparently prepared on a blade. The dorsal surface of the blade has absolutely no retouching except a small scar near the base. In the ventral surface, however, one can see distinct and bold retouching along one of the borders to form the notch and along and projecting. In Figure 16, a notch and also a denticulate from the industry is illustrated. In the case of the notch a blade is taken and the lateral in curve etched out along one of the borders from the ventral surface. This measures 6.0cm in length and is 3.4cm in breadth. In contrast to this the denticulate is prepared on a thick flake measuring 7.5cm. x 5.0cm. One of the borders of the flake is thick and steeply flaked like in a backed knife while the opposite border which is thinner has the two contiguously worked notches to form the denticulate. This is a generally sturdy specimen.

Figure 17 shows one of the varieties of retouched blade recorded from this site. This measures 14.0cm in length and 5.0cm in breadth. Generally speaking both the blade and also the retouching executed on it are not very classical in appearance. As compared to this, the end scraper illustrated in Figure 17, shows classic features. It has been prepared on a broad blade measuring 6.4cm in length and 4.8cm in breadth. The working border at the terminal end is retouched in a classically Upper Palaeolithic manner (Bordes,'61).

SUMMARY AND CONCLUSION

Kharagpur Hills constitute almost the northern most extension of the Chotanagpur region. The latter

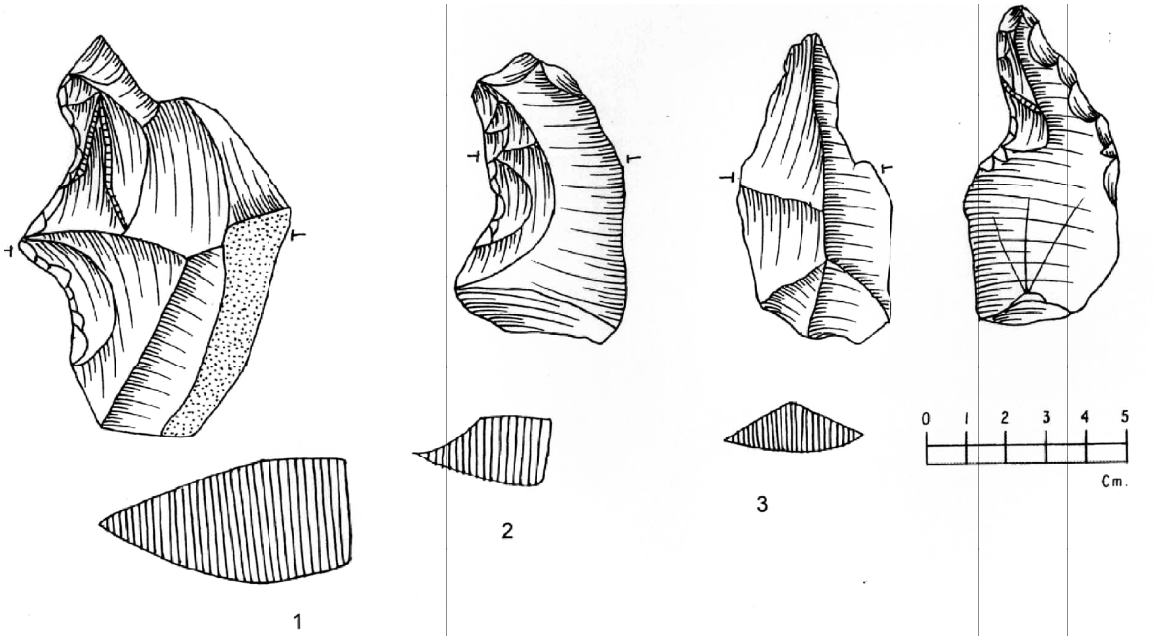

Figure 16: Flake Tool Types from Jya, 1–Denticulate, 2–NOTCH, and 3–BORER

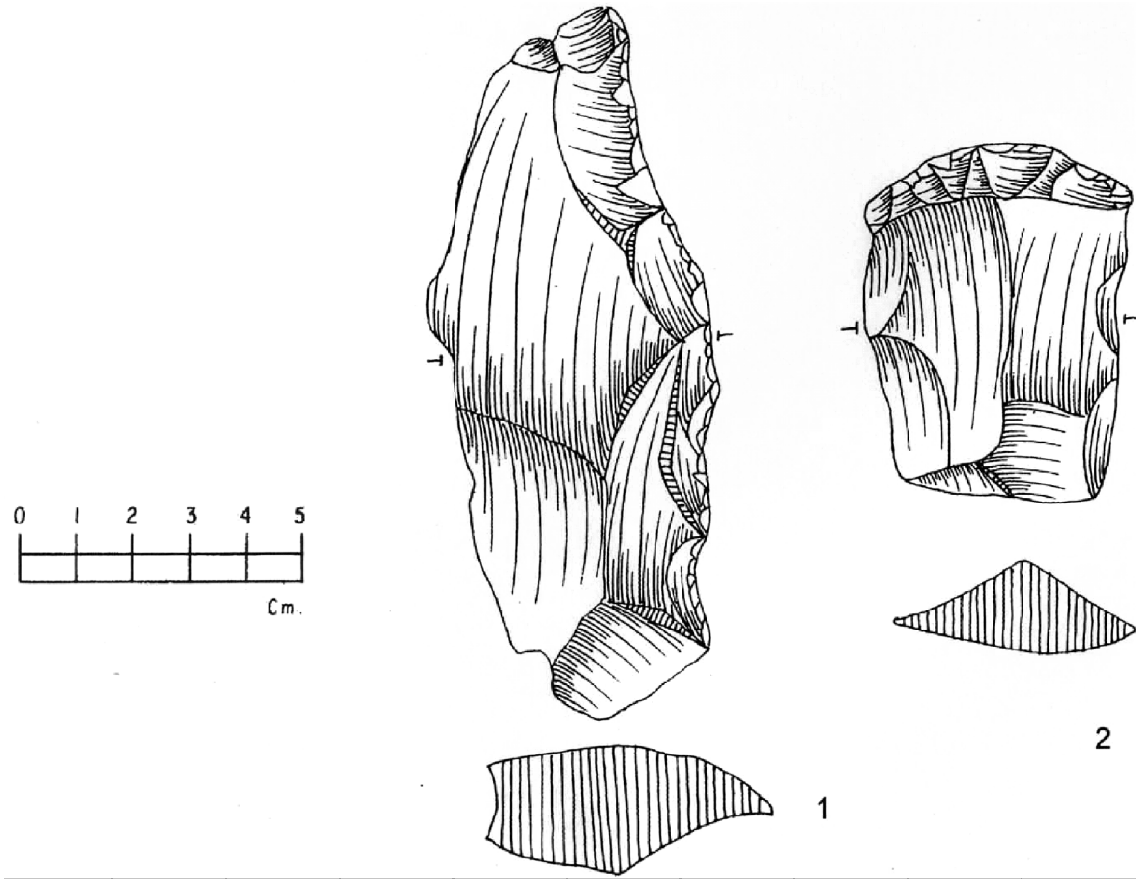

Figure 17: Blade Tool Types from Jya, 1–Retouched Blade, 2–End Scraper

includes large expanses of a plateau type physiography with occasional intrusion of small hillocks. The Kharagpur Hills, in contrast, forms an extension of the Mahadeo hills and is densely forested. Sankalia ('74) summarizes this difference very succinctly. "There are two different environments of habitation of early man in south Bihar. The one is the rolling, undulating, lateritic plains of Chotanagpur plateau with occasional grooves of bamboo and Sal forests, while the other is the hill-girt valleys in the southern plain which are heavily forested at places like Rajgir, Jethian, Bhimbandh, Chormara and Paisra" (page 43). It has been argued earlier that this hill-girt region drained by small water sources form a distinct eco-zone which is worth considering for understanding differential adaptational imperative as an explanation of culture (Jacobson,'75). This becomes a strong possibility mainly because the kind of geographic specialization of prehistoric colonization evidenced in Bihar is possibly nowhere else so strongly marked. To quote Basudev Narayan ('96), "The north Bihar plain represents a complete blank as far as Palaeolithic and Mesolithic tool types are concerned...." (page 548). Yet as one enters the region south of the course of Ganga (approximately south of 25°10' N latitude) evidences of stone age prehistory starts emerging. If one can take a survey of all prehistoric evidences known from entire Chotanagpur as also from the hilly regions lying further east in West Bengal, it will be seen that the Kharagpur Hills yield the richest and also the most prolific evidences of stone age colonization.

Jogiya (JYA) is another site with moderate concentration of tools from the southern group.

Handaxe and cleavers, as usual forms the highest frequency of finished types recorded at this site. Liberal amount of pebble cortex is left unretouched in a large number of finished core as well as flake tool types. Some of the blades have been finished into good end-scrapers but otherwise elongated blades are neither many nor ever retouched. The elongated pebble with chisel edge found in many of the southern sites are also found at this site.

The Palaeolithic evidences from the Kharagpur Hill do show a reasonably rich concentration of occupation towards its southern limits. Further, it would seem that this area has also maintained a longer duration of occupation, may be with periodic abandoning of the sites. The latter interpretation is solely based on the fact that many of the sites in this zone show a mixture of weathered & fresh tools occurring together. The typo-technological characters recorded from the finds of all these sites show a special feature which might be considered more as a regional adaptation rather than general feature for the whole region. This is revealed in the fact that besides handaxes and cleavers emphasis laid in these sites is more on sturdy blades & flakes being worked into sharp tools. Thick and long blades with triangular cross-section have been given bold semi-abrupt retouch along one or both the borders to create formidable tools. These blades in no case can be compared with Upper Palaeolithic blades. Consequently, one has to admit that Middle to Upper Acheulian character of this region include a specific blade component as well. The elongated pebbles with chisel edge are another specific feature of this region. Similar specimens have been illustrated by (Murthy,'85) for his collection. In other words such specimens would seem to be more of an adaptive feature of forested hills like this region rather than flat land of hill slopes.

The evidences from Jogiya can be taken to surmise that the average duration of various stone ages in diverse eco zones must have been vastly different. Consequently in west Europe or even nearer home at Narmada one can have a spread out duration of Lower Palaeolithic smoothly giving rise to Middle and Upper Palaeolithic like what has been observed at Bhimbetka (Misra,'75-76). It is felt that as one proceeds to the east towards higher rainfall zones the duration of these cultural stages are so much squeezed together that it may not be difficult to find blade technology occurring almost side by side with Lower Palaeolithic attributes. This assumption would gather more strength of credibility when one looks at the typological spectrum of the far eastern Indian prehistory.

Finally, it will be important to mention here that Paisra (Pant and Jayaswal,'91) is being more or less occurring in the same region in the northern extension of Kharagpur hills show the same character. It is an excavated site. Here a handaxe / cleaver bearing layer is followed by a Mesolithic layer having a radio carbon date of 7420+110 B.P. (5470+110 B.C.). In other words, the handaxe / cleaver evidences occur immediately preceding the microliths. Neither was any Middle Palaeolithic / Upper Palaeolithic layer reported before the microliths nor are there reports of any significant amount of sterile deposits separating the two groups of tool types. Under the circumstances one is left with no other alternatives but to accept that Jogiya/ Paisra like occurrences might be a very late variety of Palaeolithic which is specific of this region. In other words, designating them with conventional western terms like Lower Palaeolithic etc., might altogether distort both the cultural and chronological character of these finds. We have argued elsewhere in this study that *'handaxe users', 'blade* and *burin users'* or *'microlith users'* are better terms to designate these finds until a time we can have some more excavated sites to confirm the views expressed here.

Since there is no such cultural evidence known from the area lying immediately north of region one would have no other alternative but to surmise that these represent colonies of migrations which must have originated in the south. Rich Palaeolithic evidences are known from Singhbhum district (Ghosh,'70) and from further south in Mayurbhanj district (Bose and Sen,'48) of Orissa. One can naturally assume that Kharagpur Hill population must be derived from these southern sources. But a close examination of the tools would indicate that Palaeolithic evidences from most of the Kharagpur Hill region is much more advanced in technology.

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