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Bifaces and Cleavers on Flakes and Core at Ramba, a well-developed Lower Palaeolithic site in theSuvarnarekha- Burahabanga complex.

Arabinda Singha Roy

Department of Archaeology, University of Calcutta.

Abstract

Ramba**,** a site located in a plain land but in the middle of hilly area beside the river Suvarnarekha in Suvarnarekha-Burahabanga complex. The entire drainage system runs over a peneplain surface that was developed due to the lava flow. The complex is name for the occurrences of tools and materials of pre and proto historic culture have been collected in a greater number beside both the rivers. Different types of bifaces and cleavers were found from this site. Detail of the tools and their making technologies are analysis. Though, any postulation would be vague based on the surface collections, but location of the site among the other prehistoric sites and absent of early historic even late medieval materials somehow let us postulate that collected materials must be placed with the bracket of prehistoric period.

Keywords: Ramba, Suvarnarekha, Burahabanga, Bifaces. Cleavers, Flake tools.

1. Introduction:

The area adjacent to the river Suvarnarekha is quite rich and prosperous. Several archaeological sites have been discovered in the upper reach of the rivers. Their concentrations are mainly around the districts of Ranchi, Khunti, East and West Singbhum and, in a small number, in Saraikela. Culturally, their lineages have been traced from the prehistoric time period to the early and even the late medieval period (Sen and Ghosh 1960; Sen and Chaturvedi 1957; and Sen 1969). Efforts of researchers prior to our work have brought to light the knowledge of many such places that are associated with the evidence of Palaeolithic tools and based on their properties, they can be designated to the Lower, Middle, and Upper Palaeolithic time periods. Lower Palaeolithic tools have been found from Roro Valley (Sen 1970), Rajdoha, Tilimdah, Ghatsila, Chandil, Sini, Chaibasa, Nimdih, Chakuria, Serenga, Tegra, Musabani, Beniasole, Uldah, Bichhati- Gungri, Kitadi- Dungri, Ful- Dungri, Charakmara, Patbera, Maheshpur, Kalikapur, Kamalpur, Hat Gamaria, Sasaghati, Tatibe, Guntia, Karalajuri, Chakradharpur, Tebo,Hesadih, Lapso- Kyanite, Jojodih, Barudih, Kandra, Purnapani, Bamni, and Dungi (Sinha and Singha Roy 2018, 25) in Singbhum district; and

TatiSilwai, Sabai, Namkum, Chainpur, Banari, Mahabodhi, and Ramgarh in Ranchi district (Sinha and Singha Roy 2018, 27). Tools of the middle Palaeolithic period have been found from Chandil, Sini, Chaibasa, Jamda, Ghatshila, Betwa, and Lotapahada in Singbhum district (Roy 1985) and Chainpur, Bishunpur, Banari, and Mahabodhi in the Ranchi district (Sinha and Singha Roy 2018, 31-32). Tools belonging to the upper Palaeolithic period have also been found from Sini, Chandil, Ghatshila, and Jamda in the Singbhum district and Parasdhika, Jilin Buru Pahar, Amjora, Jojadih, Hardag, Bajra, Charma, Roshanpur, Kamre, Murgu, Tape, Ghagra, and Pithartoli in the Ranchi district (Chakrabarti, 1993). Alongside, a good number of implements belonging to the Mesolithic age have also been noted along the area of the river Suvarnarekha, i.e., Bongara, Barda Bridge (Sen and Chaturvedi 1957), Lotapahada (S.R. Roy 1985) in Singhbum; Namkum (Ghosh 1970), Potpoto, Jumar, Borea, Patratu, BharmdihPahar, Bargain, and Borea in the Ranchi district. By the effort of Bodding, Anderson, and Walsh in the pre-independence era and Chakrabarti, Narayanan, and Singh in the post- independence period, this upper part of the river valley became famous for the existence of ground and polished stone tools. Such tools have been noted from Chenegutu, Salgi, Burju, Janumpiri, Binda, Chendagutu, Iti, Panguru, Sembua, Torangkel, Gora, Pandu, Senegutu, Murud, Indpiri, Buruhatu, Bichna, and Buruhatu in the Khunti district; Omto, Chacho, Nawatoli, Sodag, Arra, Kakra, Soparom, Jurdag, Kakra, Soparom in the Ranchi district; and Chandil, Sini, Chakradharpur, Barda Bridge, Barudih, Haribera, and Dugni in the Singbhum district.

This region along the line of the upper Suvarnarekha valley is also studied by many scholars and their contributions are noteworthy. Among the works, mention may be made of the work of Gopal Chandra Mohapatra (Mohapatra 1962). He studied the entire area of eastern Odisha and discovered many prehistoric sites. Four sites, i.e., Kandalia, Mahulia, Pratappur, Ghantasali, among many other ones in the eastern part of Odisha, especially within the Mayurbhanj district, as discovered by him, are situated within the boundary of the present study area. His study in not limited only to discovering lithic tools. He also gave a vivid description of the context of occurrence and defined their stratigraphical position. Before the work of Mohapatra, several excavations and extensive exploration had been done by N. K. Bose and D. Sen (Bose and Sen 1948) throughout the eastern part of Odisha which falls within the periphery of the present study area based on the work of E. C. Worman and P. Acharya. A number of sites have come to light with the occurrences of the lithic tools (Ball

1876), through the efforts of P. Acharya, later accompanied by E. C. Worman (Worman 1939).

A few decades later, around 1960s, the area east of the district of Mayurbhanj and morphologically south-eastern extension of the Chotanagpur plateau as well as eastern postponement of the Simlipal Massifi drained by the mighty Suvarnarekha and administratively situated under the boundary of Medinipur district of West Bengal was worked upon for an archaeological expedition (Ghosh 1970: Ghosh and Basu 1969). The State Archaeology Department of West Bengal had undertaken an endeavour to survey this western part of Bengal to understand the nature of the prehistoric settlements. The surveys had revealed more than 2000 lithic tools of Palaeolithic, Mesolithic, and Neolithic periods which are now stored at the State Archaeological Museum in Kolkata. These tools were collected from several places on the western bank of the Suvarnarekha, especially from the villages under the administration of Gopiballavpur and Nayagram C. D. Block. Name of the places are obliterating and illegible due to lack of care and observation by the museum authorities. Except a few boxes where the names of the places have been found, many of the tools are placed haphazardly and mixed with one another, and therefore, their actual provenances are not clearly understood, except through the records of the expeditor. P. C. Dasgupta, stated his discovery through his two publications. One of these is *Pragaitihasik Bangla* published in 1981, where he cited only the existences of the Palaeolithic to Neolithic implements revealed during 1960s beside the Suvarnarekha (Dasgupta 1981, 54). His other publication, published in 2007, is *SubarnarekharPranganeAranyakanyaKangsabati*, and is a branch of the articles collected by his son, DevapriyaDasgupta, where he narrates the assemblages, its nature and places of occurrence. He also classified them according to their properties. Though, not a single article has been written, so far, on a particular site emphasizing rich occurrences.

In the purpose of Ph.D. dissertation present author has surveyed the entire region and collected thousands of tools from different places. Among the place in this article Chuagara of Chau Gora has been taken for occurrences tools from palaeolithic to neolithic period without any break. Though most of the tools were collected from upper surface and without any stratification by the prior researchers (stored in the State Archaeology Museums, Govt. of West Bengal) and present authors.

2. Geographical and Geological settings:

Geomorphologically, the Suvarnarekha experiences a wide range of variation from the Ranchi plateau to the Balasore coast due to its flow through different geological structures that comprises various compositions of rock and topography. The eastern axis of the Ranchi plateau acts as a watershed between the two river basins, i.e., Suvarnarekha and Damodar, while the Purulia Upland forms a divide between Suvarnarekha and Kasai. Sediments carried by the river have a high amount of heavy metals. Its entire course is divided into three major portions. The initial course occupies the Ranchi Plateau, and the second phase begins from the Jundru fall (75m) in the Dalma range of northern Jamshedpur. It covers a wide area of erosional surface that is made of granite-gneisses and phyllitequartzose-mica-schist across the PanchPargana plain and the Dalma range. The lower course, which marks the beginning of Jamshedpur and ends at the Bay of Bengal, consists of a rocky surface of granite, gneiss as well as thick deposits by the river which it carries during its journey through the long upper course. The lower course is further divided into three sub-phases, i.e., (i) Jamshedpur to Ghatsila, (ii) Ghatsila to Jamsola and (iii) Jamsolaupto its base level—the coastal bay. The entire area is affected by the Tertiary upliftment and wrapping. The eastern portion of the river is characterized by different types of drainage pattern, river piracy and scarp recession. Along the river, many terraces have formed recently due to the deposition of thick alluvium, which is primarily a result of the recent uplift. It also represents a homoclinal shifting at Jamsola. Four major types of landforms are visible throughout its course by the different actions of the river, i.e., (i) fluvial landform which comprises laterite tableland, river terraces (alluvial uplands) and valley fills which are seen near the Suvarnarekha delta region, (ii) deltaic landforms which comprises extensive alluvial and tidal flats and depressions, meander scrolls and ox-bow lake, abandoned channels and aggraded river segments, levees, back swamps, floodplains and braids, (iii) coastal landforms that include estuaries, spits and bars, tidal and estuarine marshes and swamps, foreshore beach, beach ridges, onshore bars and troughs, backshore mudflats, sand ridges and ancient beach ridges, chenniercomplex, and (iv) Aeolian landforms which include transverse and obstacle ancient dunes formed through reworking of marine and fluvial sands by wind action (Figure 2).

The geology of the adjacent area of the Suvarnarekha is associated with the geology of the Ranchi and Singhbhum sections of the Chotanagpur plateau. The entire drainage system runs over a peneplain surface that was developed due to the lava flow. In the course of its development, the erosional surface was subjected to upheaval up to 300 m which may have increased the capacity of degradation. New surfaces have developed as a result of the rejuvenation. In the late Tertiary period, after the formation of Chotanagpur, the prevalent

surface further rose up to 300 m that led to a new phase of rejuvenation. Some of the well-known ‘piracy' along the river are the Jhalida, Baghmundi and Ajodhya gaps.

The Archean rocks are the dominant rock type in this region found in the Suvarnarekha River basin. Dharwar is a metamorphic series that is found in the southern portion of Singbhum, which is the middle portion of the Suvarnarekha basin. Lower beds of Iron ore series rest upon the upturned beds of the Old Metamorphic series in south Singbhum. The Iron series in this region is a highly metamorphosed character. Pronounced volcanic deposit is observed in the northern and middle portion of the valley.

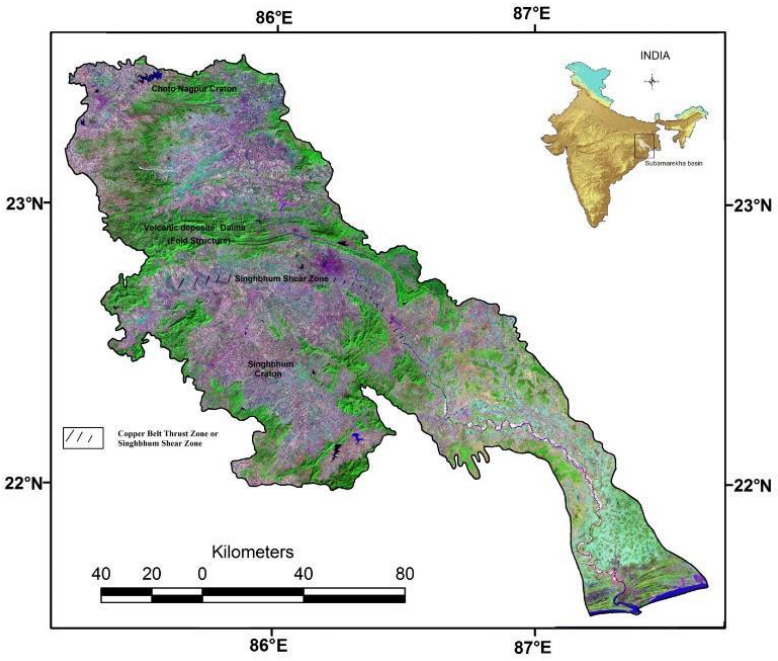


Figure 2: Different geological structure and its topographic expression has been identified within the Suvarnarekha Basin.

3. Concept of Suvarnarekha-Budhabalang Complex:

Suvarnarekha, one of the largest rivers in eastern India, covers a total course of 500 km from its source at Piska near Ranchi to Bay of Bengal in Balasore district in Odisha with a drainage area of 1.93 million hectares. In course of Ph.D dissertation by the present author, Palaeolithic implements have been found from 78 places within the present study area and their concentration is limited within three regions, i.e., (a) on the basin of the Suvarnarekha, (b) along the side of the Burahabanga river, and (c) a few are beside the Jamira river. Microlithic materials are concentrated only in the basin of Suvarnarekha at 20 find-spots. Only 34 places have been documented, so far, with the polished stone tools and they are concentrated along the river Suvarnarekha, except a few that are located along the river

Burahabanga. Palaeolithic people inhabited sites along the river Suvarnarekha and Burahabanga sometime in the Pleistocene period and traces of continuity are marked at many of these sites. The polished stone tool using communities were also acquainted with the technology of making pottery (as found at Kuchai). The beginning of the material cultural milieu of the prehistoric cultural phase in the study area can be tentatively dated to the mid-Pleistocene period. Implements related to the Palaeolithic culture, so far recorded, are substantial in number. It is observed that Palaeolithic, Mesolithic, and Neolithic material are specifically concentrated along the two rivers specified above. In the protohistoric period, within this present study area, people possibly remained scattered and also selected places away from the river, for habitation. Therefore, implements belonging to the protohistoric cultures have been noted in such contexts to the left bank of the river Suvarnarekha where prehistoric material are inconspicuous. Apropos the area of concentration of both pre- and proto-historic cultural materials and their morphological similarities, the entire cultural unit can be named the 'Suvarnarekha–Burahabanga Cultural Complex'. It could be expected that various studies will be conducted, in future, concerning this geo-cultural unit with the contemporary cultures on the highland of Jharkhand, North-Western part of Odisha, and southern and northern extension of the Chotanagpur plateau.

4. The Site Ramba:

The name of this village is found from the accession register of the State Archaeology Museum of West Bengal. Though, presently, the name of the village is not found in any of the Govt. record and the villagers of the Gopiballavpur area are also not familiar with the name. But the accession register mentions that the village is situated somewhere beside the river Suvarnarekha. A temple is found which name as RambhaHariMandap situated in between the villages Ram Bhavan and Bara Menia. It would be possible that name of the village has changed in the course of time or it could be possible that people deserted the village for some certain reason.However, from this village some of the finest tools have been collected, which are yet to be found from the other places in the Suvarnarekha valley. These tools are;

a. Cleaver (Figure 4.1 A):

Roughly rectangular in shape. Both the surfaces are fully flaked. Seven flakes are knapped from both the surfaces. Working edge is sharp and formed due to joining two bevelled surfaces. Posterior is semi rounded and both the margins are parallelogram.

b. Biface (Figure 4.1 B):

Made of a pebble. A big flake is removed from the ventral while dorsal is remain untouched. Anterior is pointed. Posterior is semi rounded. Cortex is seen around the butt of the ventral surface.

c. Biface (Figure 4.1C):

Pebble tool. Both the surfaces are trimmed such a way that cortex is not left on the surface. Many medium size flakes are removed from the surfaces of both the sides. Retouches are seen along the margins. Anterior is pointed but the posterior is rounded.

d. Biface (Figure 4.1 D):

Medium size biface with a well-trimmed surfaces. Many primary flakes are removed from the surface. Secondary retouches are seen on the primary flaked surfaces. Both of the ends are pointed.

e. Biface (Figure 4.2 A):

Made of Pebble. Well-trimmed surface. Triangular in shape. Eight big flakes are trimmed from the dorsal surface. Eight flakes are also removed from the ventral face. Retouches can be seen along the margin of the dorsal face especially around the distal end. Anterior is pointed, while posterior is semi rounded. Small patches of cortex is left on the dorsal face.

f. Biface (Figure 4.2 B):

Both the faces are trimmed well to form a cordate shape biface. Median is broader than the both pointed ends. Small and shallow primary flakes are removed from the surface. From the primary flaked surface, a small number of secondary flakes are also detached along the margins.

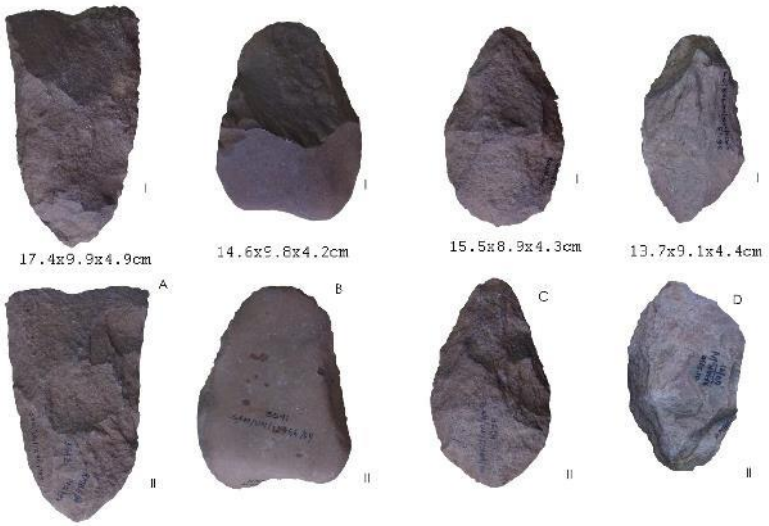


Figure 4.1: Tools from the site Ramba.

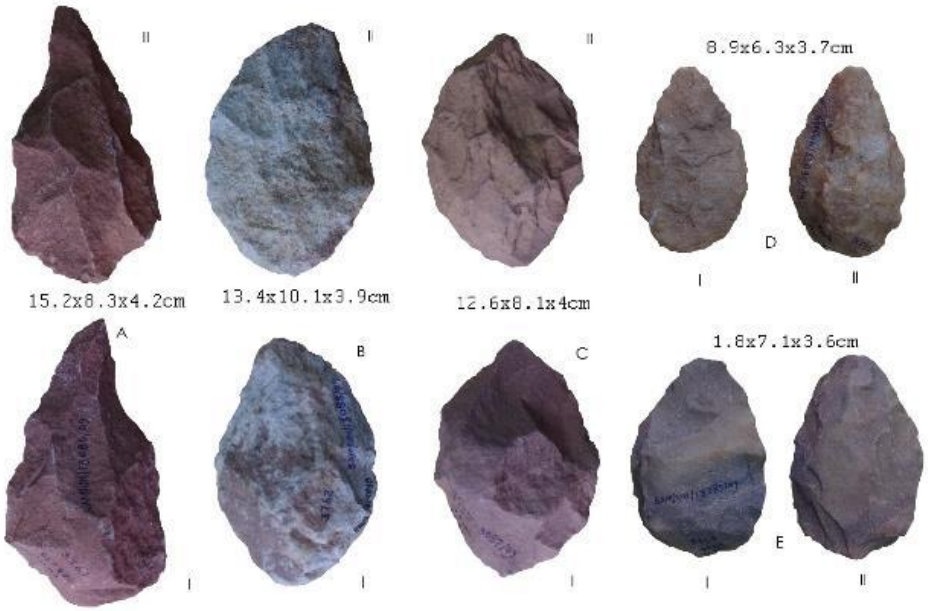


Figure 4.2: Tools from the site Ramba.

g.Biface (Figure 4.2C):

Roughly oval shape biface made of a pebble by trimmed both the surfaces extensively. Patches of cortex can be seen on the dorsal face. Median is broader than both the pointed ends. Working edges are very sharp. Secondary flake scares are found on the shallow primary flaked surface.

h. Biface (Figure 4.2D):

Made of pebble. Surfaces are knapped extensively left no cortex on the surface of both the sides. Anterior is pointed and posterior is rounded. Retouches can be seen along the margins.

i. Biface **(Figure 4.2E):**

Made of a small pebble. Both the faces are trimmed carefully to form a cordiform shape. Anterior is pointed and posterior is rounded. Secondary flake scares are seen on the primary flaked surface.

j. Biface (Figure 4.3 A):

It is trimmed to curved oblique with rounded butt. Dorsal shown numerous small and shallow flake scares same in the case of ventral. Both the margins are alternatively trimmed step scars. The surface is covered with brown patina. Anterior is broken.

k. Biface (Figure 4.3 B):

Dorsal and ventral are extensively worked leaving an undulating surface with a ridge in the middle. Both the butt are rounded and made trimmed by secondary flaking. Steeply trimmed along the margins.

l. Biface (Figure 4.3 C):

Bifacially worked. Dorsal has flaked through the middle to the left margin retaining cortex along the right distal margin. Scars on the left anterior is deep. In determine median half part of the rounded anterior is broken.

m. Biface (Figure 4.3 D):

Bifacially worked. Dorsal has flaked along the two sides retaining cortex centrally. Scars on both the margins are deep. Working end sharp and straight heavy butt. Ventral is fully flaked. Both the ends are pointed.

n. Biface (Figure 4.4 A):

Trimmed to nearly cordate form. Lateral margins are parallel. Anterior is pointed and the posterior is rounded. Scars are comparatively large and deep in the ventral face than the dorsal one. The butt is formed by removing secondary flakes.

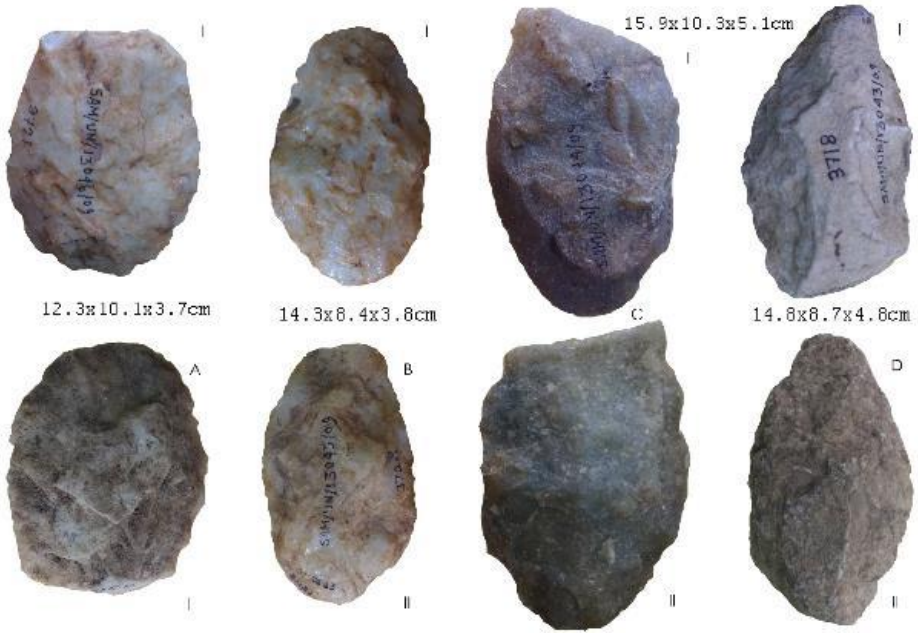


Figure 4.3: Tools from the site Ramba.

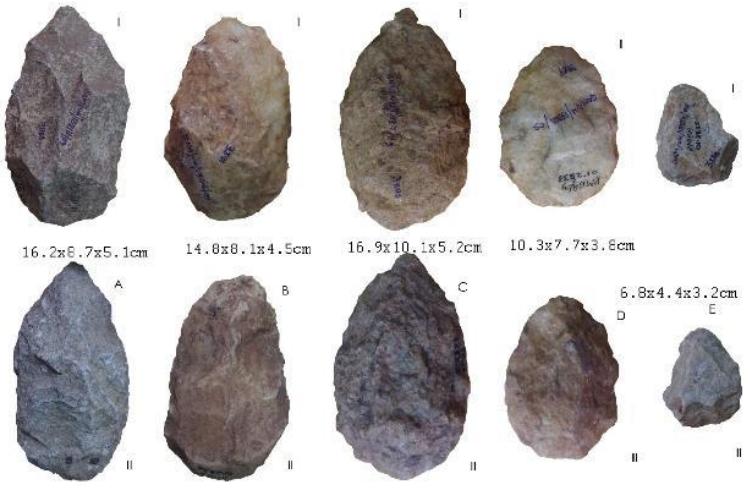


Figure 4.4: Tools from the site Ramba.

o. Biface (Figure 4.4 B):

Trimmed to long pentagonal form. Thicker at butt, thin anterior. Dorsal is formed by removing a large flake. Flake scars are shallow and light. The ventral face is dressed by removing several fakes. Cortex can be seen along the rounded posterior.

q. Biface (Figure 4.4 C):

Fully flaked retaining big and irregular scars. Small steps at both the sides at the posterior and the central elevation. A mid ridge in the in the middle of the tool. Primary flakes from both faces intersects to form the marginal working edge. Anterior is pointed and posterior is semi rounded.

r. Biface (Figure 4.4 D):

Trimmed to form an oval shape biface. Dorsal and ventral are extensively trimmed and retaining no cortex on the surface. Secondary flake scars seen along the margins. A ridge is formed in the middle by joining different deep flake scars. Both the ends are semi rounded.

s. Flake tool (Figure 4.4 E):

Small tool made of a flake. Ventral is formed by removing a large flakes. Dorsal is trimmed by removing secondary flaking along the margins.

t. Biface (Figure 4.5A):

Fully flaked retaining medium and irregular flake scars. Dorsal is exclusively trimmed retaining a ridge in the middle. Ventral is also dressed by removing small and shallow flakes around the margins and retaining a ridge in the middle. Median is broad than the pointed anterior and semi rounded posterior.

u. Biface (Figure 4.5 B):

Dorsal extensively worked leaving an uneven surface by removing seven medium size flakes. A ridge is left in the middle and cortex around the butt. The ventral face is dressed by trimming six deep flake retaining a ridge in the middle. Secondary flaking seen around the margins.

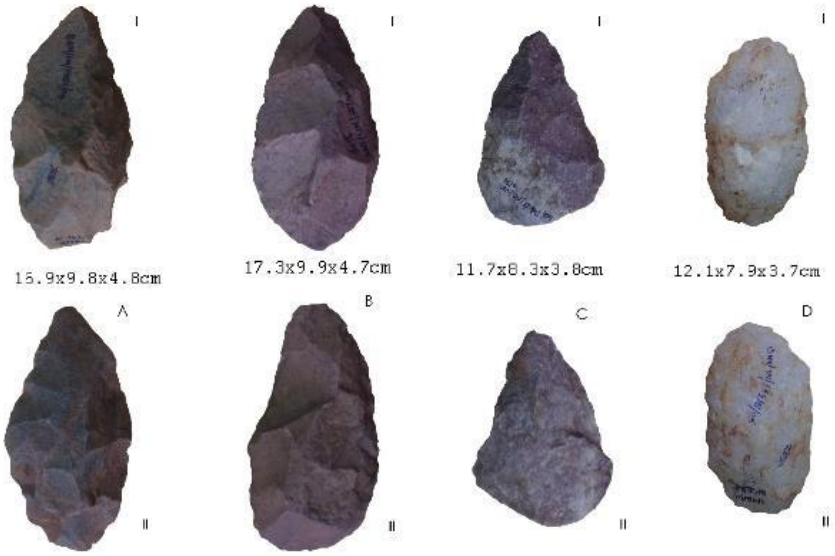


Figure 4.5: Tools from the site Ramba.

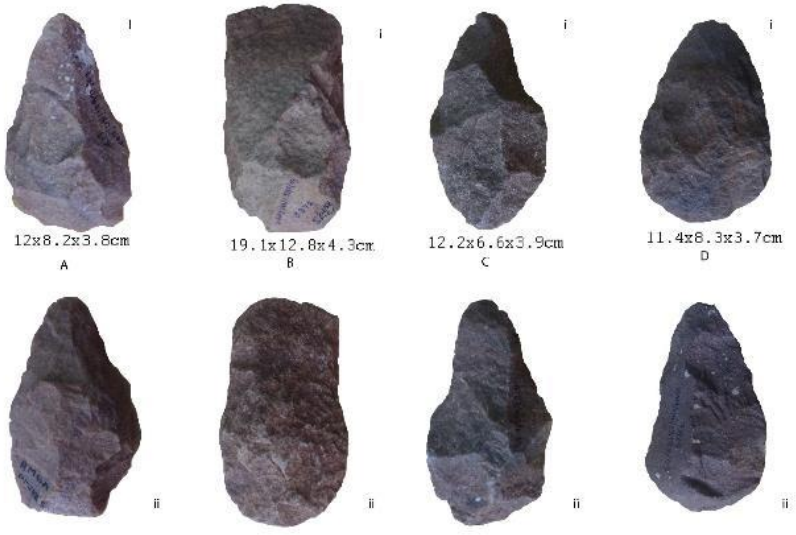


Figure 4.6: Tools from the site Ramba.

v. Biface (Figure 4.5C):

Both the surfaces are trimmed extensively to form a triangular shape. The dorsal face of this flake tool is worked partially specially along the left anterior margin. Ventral is fully worked. Median is broad than the pointed anterior and semi rounded posterior. The butt end of dorsal face is made of cortex.

w. Biface (Figure 4.5D):

Both the surfaces are exclusively flaked retaining a flat surface. Small primary shallow flakes are removed from the both the surfaces. Parallel side margins are formed due to extensive secondary flaking. Anterior and posterior and rounded.

x. Biface (Figure 4.6A):

Both the faces are extensively trimmed to form this roughly triangular shape. Primary flakes are removed from the dorsal and ventral surface. Along the margins secondary flakes are also removed. Working end is sharp. Anterior is pointed and posterior is straight.

y. Cleaver (Figure 4.6B):

Dorsal is formed by a removing a large flake along the anterior and several small secondary flakes from the posterior retaining a cortex surface. Ventral is formed with the inner surface of the flake. Working edge is sharp and formed by joining two large flake surfaces. Margins are parallelogram and butt end is rounded.

z. Biface (Figure 4.6 C):

Dorsal face is trimmed by removing seven deep flakes retaining a ridge at the centre. Secondary flaking can be seen along the left lateral margin. Ventral is trimmed by removing five deep and large flakes retaining a ridge at the middle. Secondary retouches can be seen along the margins. Anterior is pointed and posterior is semi-rounded.

aa. Biface (Figure 4.6 D):

Both the surfaces are trimmed. Dorsal is trimmed along the right lateral margin by removing a large flake. Cortex is left along the left lateral margin. Ventral is dressed by removing small flakes. Anterior is pointed and posterior is rounded.

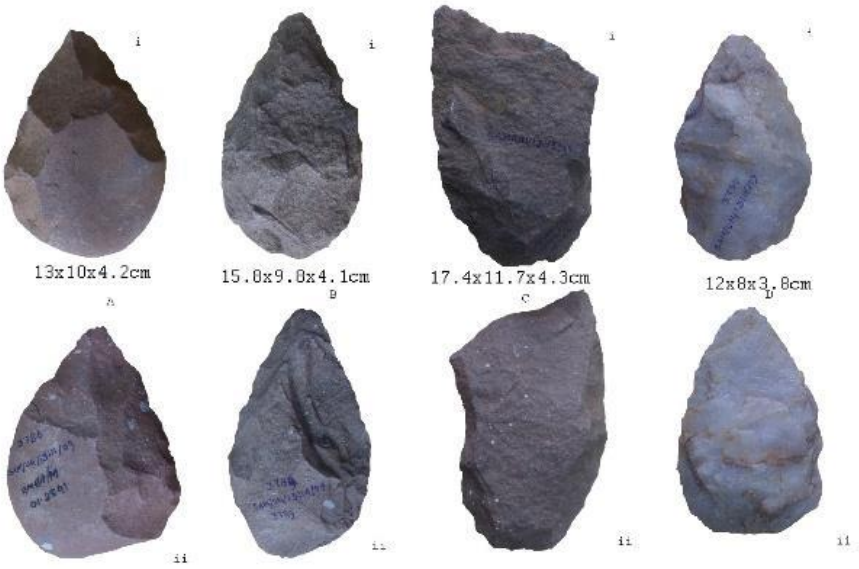


Figure4.7: Tools from the site Ramba.

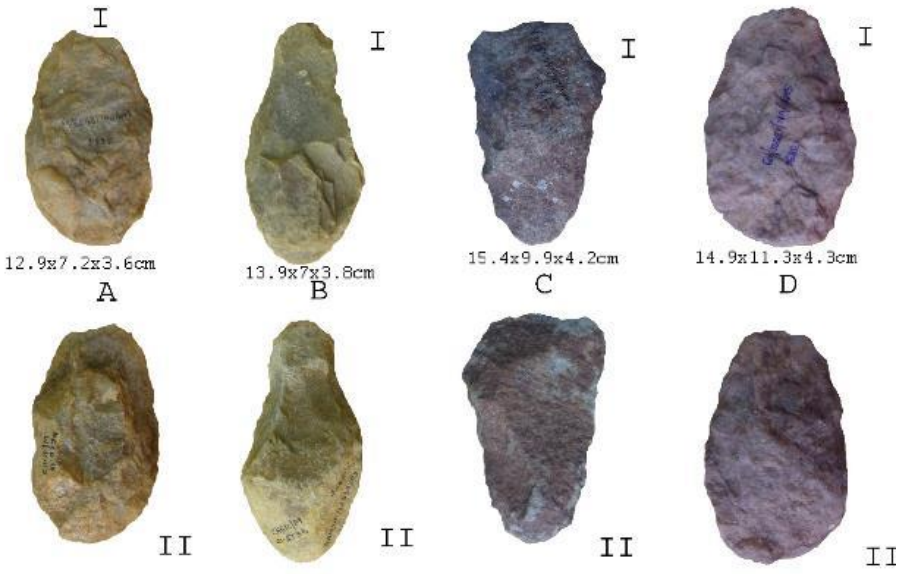


Figure 4.8: Tools from the site Ramba.

bb. Biface (Figure 4.7A):

Pebble tool. Dorsal face is trimmed along the anterior by removing seven small and deep flakes retaining cortex surface along the posterior. Ventral is dressed by removing irregular

flakes retaining cortex along the right margins and posterior. Anterior is pointed. Butt end is rounded and made of original surface.

cc. Biface (Figure 4.7B):

Made of a pebble. Dorsal is trimmed by removing small and shallow flakes retaining a cortex surface along the right margin of the posterior. Secondary flaking is done along the lateral margins. Anterior is pointed ad posterior is rounded.

dd. Cleaver (Figure 4.7C):

It is trimmed to parallel oblique with rounded butt and oblique cutting edge. Dorsal shown several irregular flake scares. Ventral is dressed by removing one large primary flake from the central and several small flakes along the right and left lateral margins.

ee. Biface (Figure 4.7 D):

Exclusively trimmed both the faces. Dorsal shown some irregular flake scars and a ridge in the central. Anterior is pointed and posterior is rounded. Several secondary flake scars are removed along the margins.

ff. Biface (Figure 4.8A):

Both the surface are trimmed retaining a depression on the dorsal face. Small primary flakes are removed from the dorsal face. The ventral is also trimmed removing several primary flakes. Along the margins secondary flake scars can be seen.

gg. **Biface (Figure 4.8B):**

Dorsal is trimmed by removing deep and large two flakes retaining cortex surface along the posterior. Ventral is also dressed by trimming big and deep flakes. Secondary flake scars can be seen on the primary flake surface. Distal part is thick and made of original cortex surface. Anterior is pointed and made by joining two flaked surface on both the sides.

hh. **Cleaver (Figure 4.8C):**

Trimmed both the surface to form a triangular shape. Dorsal trimmed by removing five large flakes retaining cortex at the edge which is thick in nature. Ventral is dressed by removing several small flakes. Cutting edge is sharp and made by joining both the flaked surface. Secondary flaking seen along the margins.

ii. Biface (Figure 4.8D):

Extensively trimmed both the surfaces by removing large primary flakes retaining ridge at the central. Small secondary flake scars are seen along the margins. Anterior and posterior are rounded.

5. Technologies behind produce these tools:

Most of the tools are made on flakes though a few tools are found made of core. Techniques used to produce these tools can be explain therefore;

A type of flake Bifaces are found which are exactly same as the flake bifaces found at the site LevalloisPerret in France (Okley 1975). This method is assumed to have also been used here. The flakes on which the biface is made was produced at firs preparing the core carefully by initially roughly trimming the sides and from the upper surfaces. The cortex was removed in such a way that flake scars usually meet in the centre. Then, in the next stage, a flattish place called "Striking Platform" on the core especially along the margins where two surfaces of the core intersect. Finally, a blow was delivered either directly or by punching on the prepared surface by holding or supporting the core with a suitable medium. The bifaces which are found produced using this method are roughly triangular or oval outline resulted to detached thin and narrow flakes.

A good number of bifaces are found which are made on core. These are different in size and shape. The nature of flake surfaces also vary from one another. Which made on pebble removing large and deep flakes from both the surfaces. Flakes are rounded to cone-shaped. No secondary retouches are seen over the surface. These tools are dressed, probably, by at first removing a flake from a side of the pebble and then this flaked surface is used as a striking platform and further retouches are done (McCully 1948).

6. Classification of the Assemblages:

In total from this place 43 (37 bifaces and 6 cleavers) have been found. Based on their morphological similarities they can be classified in the following groups (Figure 6):

Assemblages from Ramba		
Sl no	**Nature of Tools**	**Number of tools**
1	Biface	37
2	cleaver	6
Total		43

Figure 6: Assemblages from the site Ramba.

6.A. Bifaces (Figure 6.A):

The variety, in the present context, is found made both on pebbles and flakes. In the case of the pebble, both faces are dressed by removing small and shallow flakes from the entire surface. In the case of bifaces made on flakes, at first a large flake is removed from a big core, then the flake is dressed by removing small and shallow secondary flakes on both surfaces. However, bifaces found from these sites can be classified into the followings classes;

Different types of Bifaces found from Ramba		
Sl no	**Types of Bifaces**	**No. of Tools**
1	Triangular	2
2	Sub-Triangular	1
3	Cordiform	16
4	Discoid	1
5	Ovate	2
6	Micoquian	4
7	Amygdaloid	2
8	Lanceolate	8
9	Other (irregular form and Half-Axe)	1
	Total	37

Figure 6 A: Different types of Bifaces from the site Ramba.

6. A. I. Triangular:

Two such specimens were found from this site. Both faces are extensively trimmed. The distal part is pointed and proximal is slightly rounded or has a straight edge. The median has a bevelled surface and the tip is pointed. Retouching is seen along the margins of both faces. The surface is generally flat and no such ridge exists on the median part.

6. A. II. Sub-Triangular:

This is quite similar to the form of the triangular, except for a few things. Only one piece was collected from this site. Sometimes the proximal edge is formed rounded or convex or concave or the tip of the distal part becomes convex rather than pointed. It has a lanceolate cross-section. Both faces are trimmed extensively and the margins are also bifaces. Surfaces of the tools are flat in nature and bevelled towards the pointed tip.

6. A. III Cordiform bifaces:

This type of bifaces has a flat surface and rounded base with the edge that is either sharp or not, and markedly convex edge and distal extremities that are pointed or slightly rounded. From this present site 16 of this variety of bifaces were collected.

6. A. IV. Discoid:

These bifaces have more of less circular contour and thick elongation is, therefore, very low. Surfaces on both sides of these specimens are trimmed extensively. Median is wider than the proximal and distal ends. The distal is convex or rounded edge but sometime a pointed tip is projected from these edges. The proximal end generally has a rounded edge. Only a single piece was collected from this site.

6. A. V. Ovate:

Two of this variety were collected from this site. This is a roughly oval form in which both proximal and distal parts are pointed but the median is wide. A sharp cutting edge covers all margins, except in few cases where it covers only the distal end. Flakes are removed from whole surfaces on both sides.

6. A. VI. Lanceolate:

This form has an elongated but pointed distal part that is bevelled from the rounded or convex but wide proximal part. Small and shallow flakes are removed from the surface on both sides. Retouches are done along the margins. 8 such pieces were found from this site.

6. A. VII. Micoquian:

The form is similar to Lanceolate. From this present site 4 pieces of such tools were collected. It can be distinguished from the Lanceolate type based firstly on the edge at the proximal end which is in the former case slightly concave; secondly on both side of the

margins from the median towards the distal end suddenly tapering and also forming a concave shaped margin; and, lastly, the distal part that is sharper and more pointed than that of the Lanceolate.

6. A.VIII. Amygdaloid:

This aspect is similar to the form of Cordiform Bifaces and is generally difficult to distinguish it from the previous one. The only differentiation is that these types are thicker than the earlier form and its sharp edge is also limited. Only 2 pieces of this variety were found from this site.

6. A. IX. Other (Irregular form and Half-Axe):

Besides the diagnostic forms mentioned above, only a single tool has been found. The distal is shown and the lower half of the median is left. Their edge at the distal end is convex, but the edge at the lower part is straight. Other features are the same as other bifaces.

6. B. Cleavers:

These are generally made of flakes with an unworked cutting edge that is the original distal edge of a flake. While some cleaver presents bifacial retouches on other edge, retouches should not occur on the distal cutting edge. The cleavers made on flakes are thin and bi-facially work on both faces. The posteriors of the tools have a pebble butt with a thick surface.

6. B. I. "V" Shaped Cleaver:

These are a type of cleaver designated entirely depending upon their shape. These types are found both on pebble and flakes. From this present site 3 such pieces have been collected. They have slightly pointed and blunt or sometimes unworked proximal end and broad and sharp cutting edges which give them the shape of the letter V.

6. B. II. "U" Shaped Cleaver:

This type is common and found more than the other types of cleavers. They have a rounded or convex posterior and a straight or convex and broad cutting edge at the distal end. In the case of flakes, the cutting edge is formed by joining two large flake scars, and the same happens in the case of pebbles, but with an unworked surface or cortex left at the proximal edge.In this present site 3 such pieces were found during the time of exploration.

7. Observations:

1. This site like the most of these sites located beside the Suvarnarekha and the Burahabanga in between the attitude of 1156 and 241 feet are undulating plains covered by thick jungles

and drained by major perennial rivers like the Burahabanga and the Suvarnarekha. Raw material are available on the surface and the rivers beds in these areas. But no site has been discovered in the valley north of the study area and between the two major rivers.

2. Most of the tools collected form the upper surface without any stratigraphic context beside small streamsas well as river Suvarnarekha, But the area from where these tools have been collected is situated along the undulating plains covered with thick jungles — no early or late historical sites have been found in this region. And its stratigraphical position above the polished stone tools are already established by the excavation of Kuchai.

3. The techniques used to produce tools were famous and established in the European and African countries. Though present author think that tools in the prehistoric period were not made by borrowing technologies from other, rather than originated locally according to the needs of the habitats. In one hand technological similarities with the European even African counties indicates that these were made in the lower Palaeolithic period, and on the other hand it is shows that the people who lived here reached in a position were able to produce such a sophisticated tools on flakes by retouching again and again.

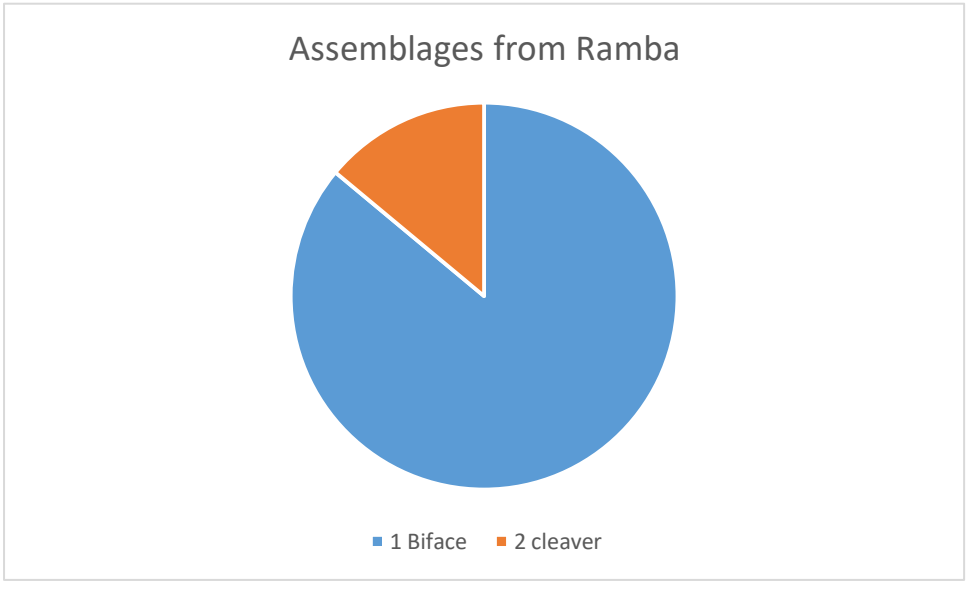


Figure 7: Ratio of Bifaces and Cleaver found from the site Ramba.

4. Among these 43 tools were found from this site, 37 are bifaces and 6 are cleavers (Figure 7). Bifaces are predominant tools consisting more than 86% of the total collection. Among the bifaces most are made on flakes rather than cores indicate a developed technology.

Among different type of bifaces cordiform and lanceolate are found more than the rest of the types (Figure 7. 1). These two type of bifaces are mound from such a sites where technology reached in a peak. Among the 6 cleavers were collected from this site 5 are made on flakes and one on core. Typologically their ratio is same.

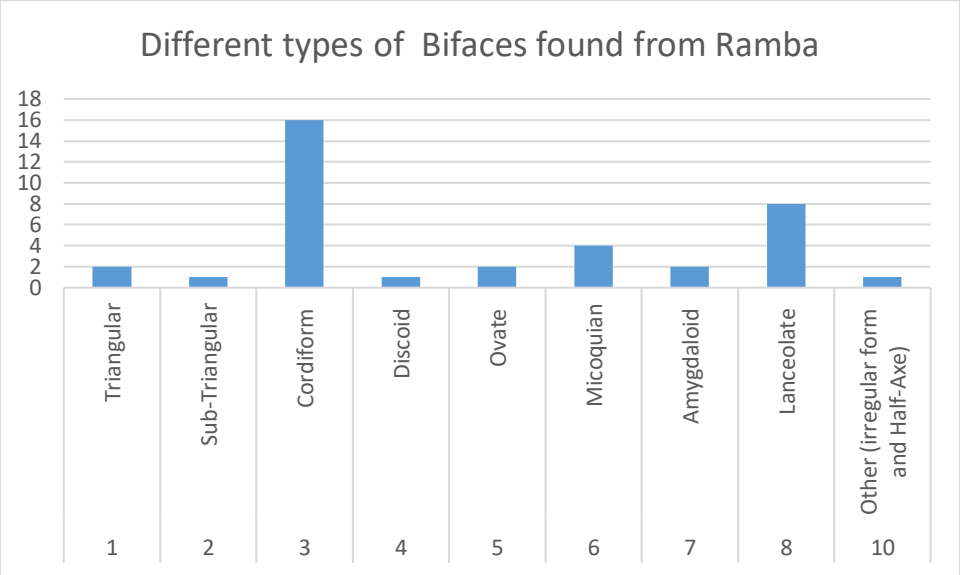


Figure 7.1: Different types of Bifaces and their ratio.

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