



Exploring Mesolithic Cultural Remains: Evidence from Palasponga Region, Keonjhar, Odisha

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Abstract: The emergence of small and highly distinctive stone tools found throughout the Mesolithic is a defining feature of the period. A small-sized stone tool of different shapes, which could be a haft on a wood can be used as a spear, arrow, sickle, or saw, indicates a foraging economy focused on small game hunting or fishing. The cultural period is quite long, with a chronological range of approximately 10,000 B.C.E. to 8,000 B.C.E. This survey was conducted in the vicinity of the Palasponga region (21°46'55" N latitude and 85°33'59" E longitude) in the Keonjhar district of Odisha. The location is situated on the right bank of the Ardei River, which is a tributary of the Baitarani River. This densely forested region is an extension of the Chhotanagpur plateau. Through a lot of effort, the investigation produced nine prehistoric sites and six hundred and one lithic items from several cultural periods, including the Lower, Middle and Upper Palaeolithic, Microlithic and Neolithic. The survey in the area was conducted during the late winter season of February 2020. The available prehistoric evidence is limited only to the stone artifacts, and these collected materials indicates the human habitation in this area from the Lower Palaeolithic culture of the Middle Pleistocene epoch to the Neolithic period of the Holocene epoch.

Keywords: Chronological, Habitation, Mesolithic, Typology, Technology.

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Introduction

The Mesolithic period is the most widespread prehistoric culture on the Indian subcontinent. Its stone tools reflect adaptations to the early postglacial Holocene environment, occurring between the Upper Palaeolithic and the start of agriculture. This period is marked by small, distinct stone implements, suggesting a foraging economy centered on hunting small game and fishing (Mohanty, 1993). In

India there is clear evidence of cultural contacts between hunter-gatherer groups with Mesolithic tools and pre-historic food-producing cultures including Harappan civilization (Possehl and Kennedy, 1979). Odisha was subjected to intensive research during 1980's. Explorations by Nanda (1982-83, 1984) reported 85 microlithic sites in the Indrāvati Basin. Backed blade, fluted core and scrapers are predominant varieties, with the chert as the principle raw material. In Keonjhar intensive exploration was undertaken by Pradeep Mohanty for six seasons in the Champua, Ghasipura, Ghatgaon, Palaspal, Harichandanpur, and Patana taluks resulting in the discovery of 58 Mesolithic sites (Mohanty, 1991).

In this report honest attempt to present some complex Mesolithic sites identified during Fieldwork conducted in the district of Keonjhar, Odisha, which reveals the occupancy of Prehistoric people during the Mesolithic period.



Figure 1: Satellite imagery of the study area (Google Earth, 2023).

Study Area

The study area is, located between 21°46'58" N latitude and 85°33'59" E longitude, lies 20 km from district headquarters Keonjhar and about 260 km from the state capital, Bhubaneswar. The closed factory of Orissa Sponge Iron and Steel Limited is considered a landmark. The satellite imagery and the toposheet map of the study area are provided in Figure 1 and Figure 2, respectively. River Ardei and Jokdara Nadi drain at the western part. Surrounded by Tangrani RF and Nayagarh RF, with the Kanpur Canal and Jankapani Parbat as significant markers. Palaeo channels like Kashi Nalla, Balipada Nalla, and Jagdhala Nalla dissect the area. The study site is surrounded by dense sal forest and shrubs, with undulating land formations due to natural erosion and earthworks. The site is rich in Stone Age cultural remains from the Palaeolithic to Neolithic period.

Description of Sites

Jharaposi-1(JRP-1): 21° 48' 38" N latitude and 85° 33' 23" E longitude. Jharaposi-1 site is surrounded by dense sal forest of the Tangarani reserve forest to the south, open lands and agricultural fields to the north, and the Kanpur canal and agricultural fields to the east. This site yielded five flakes of Upper Palaeolithic culture from the site, which is a dug-out pond roughly 20 meters in length, 15 meters in

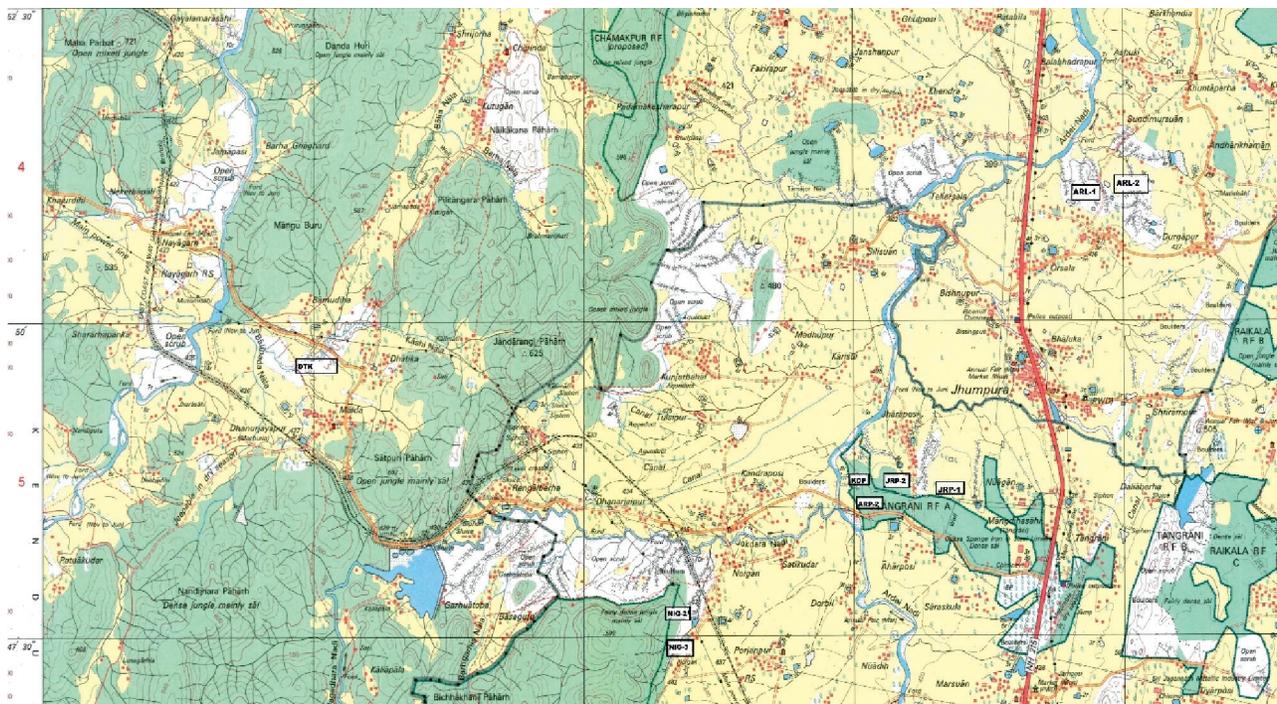


Figure 2: Toposheet map of the study area (Source : Surveyofindia.gov.in, 2024, Toposheet no. F45N5 and F45N9)

breadth, and 1.5 meters in depth. Two microliths were found from the site, which is 0.48% of the total finding.

Jharaposi-2(JRP-2): 21° 48' 39" N latitude and 85° 32' 48" E longitude. The Jharaposi-2 site is 500 meters south of Jharaposi village, inside the Tangarani Reserve Forest. The state highway is about 400 meters south of the site. The artifacts at this site are mainly Upper Palaeoliths and Microliths. This site yielded 63 Microlithic remains.

Kandaraposi (KDP): 21° 48' 37" N latitude and 85° 32' 35" E longitude. Kandaraposi site is 700 meters west of Jharaposi-2, located inside the Tangarani reserve forest. Tools and artifacts collected from rain gullies and their vicinity are mostly Upper Palaeoliths and Microliths. This site yielded 74 Mesolithic remains.

Aharposi-2 (ARP-2): 21° 48' 28" N latitude and 85° 32' 36" E longitude. The site is located on the right side of the state highway leading to Kalimati from Palasponga sponge chaak, opposite to site Aharposi-1. Artifacts found at the site included laterite palates and pieces of quartz. A total of 24 numbers of Mesolithic remains were reported from this site.

Dhatika (DTK): 21° 49' 39" N latitude and 85° 27' 32" E longitude. The site is located 50 meters from the road leading to Kalimati from Palasponga and is about 1.0 km southwest of the village Dhatika. The site has yielded a good number of Palaeolithic tools and a few Microliths, including a half broken ringstone of Neolithic culture. Only 1 Microlith tool is found from this site.

Arsala-1 (ARL-1): 21° 47' 58" N latitude and 85° 30' 56" E longitude. The site is located on the left bank of the Kanpur canal, 1.5 km north of the village Arsala. It is characterized by bad land formation with quartz crystals, surrounded by agricultural fields except on the eastern side, which borders the canal. Two Mesolithic remains were reported from this site.

Arsala-2 (ARL-2): 21° 47' 51" N latitude and 85° 30' 59" E longitude. This site is located on the right bank of the Kanpur canal, 1.8 km north of the village Arsala. It is 200 meters east of site Arsala-1,

on the opposite side of the canal. Similar to Arsala-1, it features open land with quartz crystals spread throughout; surrounded by agricultural fields with a newly dug pond to the south. The site yielded 3 Mesolithic remains.

Naigaon-2 (NIG-2): 21° 49' 28" N latitude and 85° 34' 50" E longitude. The site is situated on the left side of the railway track connecting Barbil to Keonjhar. Artifacts from the Palaeolithic and Mesolithic periods were discovered at the site. This site yielded 190 Mesolithic remains.

Naigaon-3 (NIG-3): 21° 48' 22" N latitude and 85° 35' 00" E longitude. The site is located on the left side of the railway track connecting Barbil to Keonjhar. Palaeolithic, Mesolithic, and Neolithic tools have been discovered on the site. This site consists of 55 Mesolithic remains.

Objectives of the Study

The primary aim of the study was to perform thorough surface exploration around the Palasponga area in order to locate palaeosites, discover and record the artefactual and non-artefactual material remains left by the palaeo-population around the palaeosites. Thereafter, the remains were to be classified with reference to their typologies and raw materials used to have a better understanding of the behaviour of the palaeo-human.

Methodology

Prior to surface investigation, the topo-sheet map was thoroughly examined, and study areas were chosen. Intensive surface research on foot was carried out in the chosen area to ensure close observation and collection of artifacts. The sites were photographed and positioned on a topographical map for locational analysis. The site-specific traits were noted in relation to other nearby artifacts and locations. Artefactual and non-artefactual material remains were obtained using the random sample approach. The acquired items were then sorted, catalogued, and photographed to commence the metric analysis.

Results

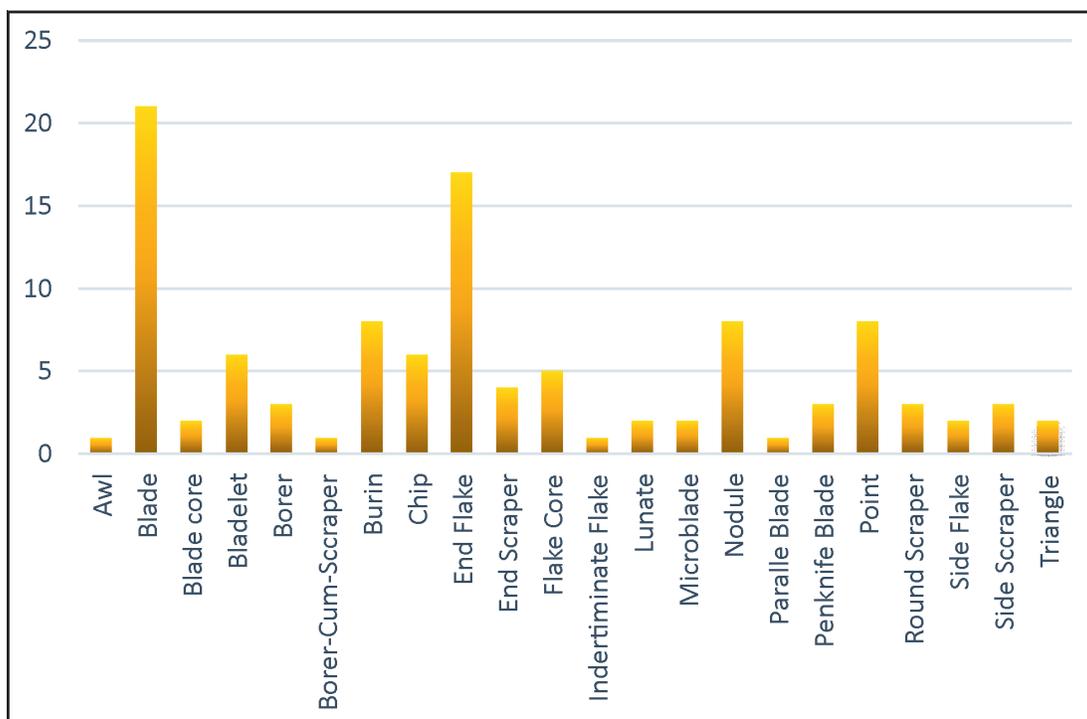


Figure 3: The Relative abundance of stone tools found at the sites

The surface exploration resulted in the finding of several stone artifacts from all eight sites which have been depicted in Figure 3. Typological classification suggests that the most abundant stone tool used by the early man was blade. It is reasonable to suppose that the high number of blades may be the result of both the widespread use of blades at the period and the ease with which raw materials were available in the area. Awl, Borer-cum-Scraper, intermediate flake, and parallel blade were also detected, but in small amounts.

Table 1: Site wise distribution of cultural remains found from surface survey around the Palaspanga Area

Sl. No.	Name of the Site	Abbreviation	Global Position		Mesolithic Remains	Percentage %
			Eastern Longitude	Northern Latitude		
1	Jharaposi-1	JRP-1	85° 33' 23"	21° 48' 38"	02	00.48 %
2	Jharaposi-2	JRP-2	85° 32' 48"	21° 48' 39"	63	15.21 %
3	Kandaraposi	KDP	85° 32' 35"	21° 48' 37"	74	17.87 %
4	Aharposi-2	ARP-2	85° 32' 36"	21° 48' 28"	24	05.79 %
5	Dhatika	DTK	85° 27' 32"	21° 49' 39"	01	00.24 %
6	Arsala-1	ARL-1	85° 30' 56"	21° 47' 58"	02	00.48 %
7	Arsala-2	ARL-2	85° 30' 59"	21° 47' 51"	03	00.72 %
8	Naigaon-2	NIG-2	85° 34' 50"	21° 49' 28"	190	45.89 %
9	Naigaon-3	NIG-3	85° 35' 00"	21° 48' 22"	55	13.28 %
	Total				414	99.96 %

A total of 414 objects were found at all eight locations, and these are listed in Table 1. Niagaon-2 (190) yielded the maximum artifacts, followed by Kandaraposi and Jharposi-2 study sites. The relative abundance of artifacts at these sites may be the result of adjacent habitation, which may have occurred during the Mesolithic era. Additionally, the presence of rainwater gullies could possibly have brought the small and light microliths from other places. Dhatika, Arsala-1 and Arsala-2 yielded the least number of artifacts. This might be the result of human interference, such as ploughing the field, which would undoubtedly bury the surface particles. Construction of water canals and roads in the vicinity might also have buried or displaced the artifacts from their original location.

Table 2: Metric analysis of the tools found at the study sites

Type	Count	Length		Breadth		Thickness	
		Range	Mean	Range	Mean	Range	Mean
Awl	1	-	1.9	1.2-2.3	1.5	1-1.9	0.4
Blade	21	1.6-5.1	2.6	0.7-3.2	1.2	0.2-0.9	0.4
Blade Core	2	2.5-2.6	2.6	2.4-2.6	1.9	1.4-2.4	1.9
Bladelet	6	1.3-1.9	1.6	0.7-1.2	1.0	0.2-0.3	0.3
Borer	3	2.3-3.9	2.9	1.2-2.3	1.9	0.9-1.5	1.2
Borer-cum-Scraper	1	-	2.5	-	2.0	-	1.2
Burin	8	1.9-2.9	2.5	1-1.4	1.2	0.3-0.6	0.4
Chip	6	1.4-2	1.7	0.7-1.3	1.1	0.2-1.7	0.5
End Flake	17	2.1-5.1	3.0	1.2-3.2	1.9	0.4-1.5	0.8
End Scraper	4	2.6-3.1	3.0	1.7-2.6	2.2	1.1-1.3	1.2
Flake Core	5	2.5-4.2	3.2	2-4	3.0	1.2-2.4	1.7
Indeterminate Flake	1	-	1.7	-	1.3	-	0.3
Lunate	2	2.5-4.2	1.9	2-4	0.4	1.2-2.4	0.2
Micro Blade	2	1.1-1.2	1.2	2-4	0.5	1.2-2.4	0.2
Nodule	8	2.3-4.6	3.8	1.2-2.3	1.8	1-1.9	1.4
Parallel Blade	1	-	1.8	-	0.5	-	0.3

Type	Count	Length		Breadth		Thickness	
Penknife Blade	3	2.1-5.1	3.4	0.8-0.9	0.8	0.4-0.5	0.5
Point	8	1.6-2.6	2.2	0.6-1.7	1.3	0.2-0.7	0.3
Round Scraper	3	2.7-4.5	3.6	2.9-5	3.7	1-3	1.7
Side Flake	2	1.8-2.3	2.1	2.4-2.8	2.6	0.5-0.9	0.7
Side Scraper	3	2.2-3.2	2.8	1.6-1.5	2.3	0.6-1.5	1.1
Triangle	2	2.3-4.6	0.4	1.2-2.3	0.7	1-1.9	0.3

Concluding Remarks

The evidence found around the study area shows that the prehistoric peoples of the Mesolithic culture had occupied the region. Most of the techno-morphological features of the Mesolithic tool types from the study area suggest that most of the tools were prepared using secondary retouching, punching, and pressure flaking techniques. The Mesolithic artifacts made on the raw materials indicate that the prehistoric people of that area preferred to use the locally available stones like quartz, milky quartz, quartzite and sandstones, cherts of different shades, agate, chalcedony and many more were also used. Thus, the presence of these miniature tools states that the evolution and distribution of the Mesolithic population in the study area was very much prevalent and dominant during the Holocene period.

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Illustrations

Figure 4:A utilized blade found during the survey



Figure 5:An In-situ core found during the survey



Figure 6:A quartz scraper found during the survey



Figure 7:Mesolithic Borer



Figure 8: Fluted Core



Figure 9: A Mesolithic Core



Figure 10:Flakes made of quartz found from the site of Kandaraposi



Figure 11: Blades recovered during the survey



Figure 12: Penknife blade recovered during the survey

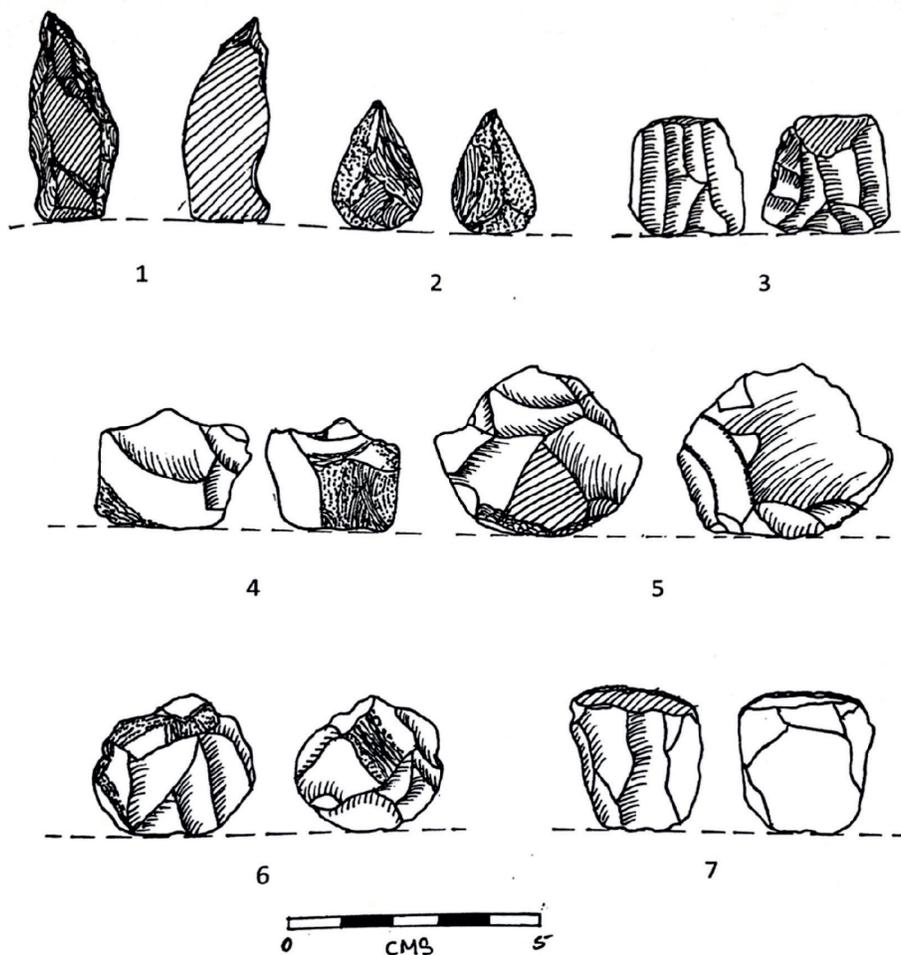


Figure 13: 1-2 Nodule, 2. 3: Blade core, 3. 4-5: Flake core, 4. 6-7: Blade core (citation/image courtesy if any)