Recently Discovered Middle Palaeolithic Locality at Nagardhan, Eastern Maharashtra, India: Placing It in Context

Jayendra Joglekar¹ and Akiyala Imchen¹

¹. Department of A.I.H.C. and Archaeology, Deccan College Postgraduate and Research Institute, Pune – 411 006, Maharashtra, India (Email: jayendra2008@yahoo.co.in, akiyalaimchen@gmail.com)

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Abstract: Excavations at historically significant site of Nagardhan in eastern Maharashtra have been carried out for consecutive three seasons i.e. 2015-16, 2016-17 and 2017-18 by Maharashtra State Department of Archaeology and Museums, Nagpur Division in collaboration with Deccan College Post-Graduate and Research Institute, Pune. Previously, two Acheulian artefact-bearing localities were discovered slightly away from the excavation site. During the latest season’s survey, a few Middle Palaeolithic artefacts were recovered from the Locality 9 of the Nagardhan excavations. Surprisingly all these artefacts were lying on the present-day soil sediment surface which is tilled for wheat, and pigeon pea cultivation. This artefact-bearing surface yellowish brown soil is capping the structures of Historical period, which was very enigmatic and demanded an answer for the original context of these artefacts. The clue was found from the iron pellets, which were stuck to a few of the artefacts, suggesting their relation with the ferruginized pediment surface beneath the structures of Historical period. This paper is a report about the discovery and importance of the Middle Palaeolithic locality at Nagardhan in eastern Maharashtra.

Keywords: Nagardhan, Vidarbha, Middle Palaeolithic, Geomorphic Context, Lithic Assemblage, Levallois Technology, Points

Introduction
The out of Africa model about modern human dispersals has been recently challenged by (Kumar, Akhilesh et al. 2018) at the multi-cultural site of Attirampakkam, Peninsular India. The site has been dated to 385-172 ka by Luminescence dating which has considerably pushed back the chronology of the Middle Palaeolithic phase in the Indian subcontinent. The Acheulian phase at Attirampakkam has been dated to approximately 1.7-1.07 mya which is oldest in the Indian Peninsula (Pappu et al. 2011). The site is a part of the Kortallaiyar River basin, which was well known for its Lower Palaeolithic and other pre-historic sites (Pappu 2001, 2001 and references therein). Prior to this path-breaking work, it was argued that the Middle Palaeolithic culture in Indian peninsula
was a result of modern human dispersals in the early Late Pleistocene period (Haslam et al. 2011; Blinkhorn and Petraglia 2014).

**Figure 1: Location of Nagardhan in Nagpur District, and two Acheulian Localities Discovered in 2017**

Previously, occurrence of Middle Palaeolithic sites has been well established in various parts of peninsular India which include Deccan region and central India (Banerjee 1957; Joshi and Sali 1969; Mishra and Ghate 1990; Sankalia 1956, 1964; Sankalia and Banerjee 1958; Sankalia et al. 1960), Jwalapuram area in the Jurerru valley (Haslam et al. 2010a, b; Haslam et al. 2011), Ghataprabra and Malaprabha River valley (Pappu 1974; Pappu and Deo 1994; Petraglia et al. 2002; Petraglia et al. 2003; M. Yogesh et al. 2012), Shorapur Doab (Paddayya 1974), Konkan region (Guzder 1983), Bhimbetka (Misra 1985), Gujarat and Rajasthan region in recent times have been surveyed for Middle Palaeolithic phase (Ajithprasad 2005; Blinkhorn 2012, 2014; Blinkhorn and Petraglia 2014; Blinkhorn et al.
2017; Blinkhorn et al. 2013; Blinkhorn et al. 2015 and references therein). Middle Palaeolithic culture of South Asia was reviewed by Pal (2002), (James and Petraglia 2005) which included modern human origin, evolution and behaviour in Later Pleistocene in South Asia. Petraglia et al. (2007) considered Middle Palaeolithic assemblages in the Indian subcontinent before and after Toba volcanic eruption dated to 74 ka BP.

Vidarbha region possesses plethora of raw materials and has fairly rich prehistoric past. Middle Palaeolithic culture of eastern Vidarbha region was well established by works of Joshi and other scholars including Archaeological Survey of India (Borkar 2009; IAR: 1969-70, 1989-90, 1994-95, 1995-96, 1997-98; Joshi 1962, 1964; Paddayya 1984). Mansar and its environs located around 10 km northeast of Nagardhan has been surveyed for prehistoric remains previously (Joshi and Sharma 2000; Sharma and Joshi 2015). In those investigations stone tools ranging from Lower Palaeolithic to Mesolithic were found.

On this background, it was decided to conduct a survey around the site of Nagardhan for revealing the antiquity of the region. For this purpose, the authors visited the excavation at this Early Historic settlement. The excavations were conducted by Dr. Virag Sontakke of the State Department of Archaeology and Museums, Nagpur Division, Maharashtra, and Dr. Shrikant Ganvir and Dr. Shantanu Vaidya of the Deccan College, Pune. The site of Nagardhan is situated around 40 km north-east of district headquarters at Nagpur. Vital Historical sites of Mansar and Ramtek are hardly few kilometres towards the north of Nagardhan. It was the capital of Nandivardhan-Pravarapura branch of Vakataka dynasty (Sontakke et al. 2016). During the last year’s explorations around Nagardhan two Acheulian artefact-bearing localities namely Dudhala tekad and Bhagi nala were discovered (Figure 1) (Joglekar 2017). Dudhala tekad has ferruginized regolith context while Bhagi nala is a channel gravel context. Comprehending prehistoric past is equally important to know the cultural beginnings and its perpetuation in the region hence these investigations were carried out.

**Physiographical Background**

Current paper is about Nagardhan and surroundings which form a part of Nagpur district of Maharashtra. Climatically it falls in sub-humid zone dominated by well distributed south-west monsoon rainfall. The average annual rainfall in the district is 1,161.54 mm. Unlike the Western Ghats, there are no major hilly areas in this region. Wainganga is the largest river in the region with Kanhan being a major tributary. The vegetation is of the dry deciduous type (Nagpur District Gazetteer 1966). Geologically the district is covered by Archaeans, Barakar formation of Gondwana group of rocks, and Deccan Trap (Nagpur District Gazetteer 1966). This region is located in the northern part of Deccan Plateau. The bedrock in immediate surrounding areas of Nagardhan is yellowish white hard sandstone of Barakar formation of Gondwana group and also quartzite of Archean formations is present in the vicinity. Whitish quartz occurs as eroded blocks derived from intrusive veins in the Archean rocks present in the area. The bedrock is strongly weathered into saprolite. Older geological hard rock formations are capped by ‘ferricrete’ at places. Ollier (1995) defines ‘ferricrete’ to include hardened
iron-oxide rich material in the form of pellets, nodules and lithic hard pans with or without development of saprolite in the lower part of the profile. At few places especially on the banks of streams yellowish silt with calcrete was also noticed. This is a characteristic feature of the Late Pleistocene period in this part.

The area around Nagardhan is marked by low lying hillocks with tors (250-350 m ASL), valley pediments with thin cover of ferruginous soil sediments and black soils. The colluvial fan like deposits commonly occur in the foothill zones of low hills with nonintegrated ephemeral lower order streams and small ponds. General direction of these streams is northwest-southeast according to the surface contour. These drainages are mainly active during the monsoon which transport the runoff and sediment load of the region. Natural ponds in structural depressions are common on pediment surface.

**Method and Geomorphic Context**

Locality 9 (21°20’N, 79°18’E; 298m ASL) of the Nagardhan excavations is located to the southwest of the Medieval fort of Nagardhan (Figure 2). Initially, a few artefacts were discovered accidentally in the soil debris covering the structures of historical period. It was enigmatic as to how the Middle Palaeolithic artefacts are on the surface while historical period structures are buried under the soil sediment. After careful survey around this locality, it was observed that the artefacts are embedded in soil sediment
covering the ferruginized rocky pediment. All the artefacts collected during this survey were collected using random sampling method as these artefacts were away from their original context. These artefacts were found scattered in an area of 80-90 m (east-west) and 60-70 m (north-south). It was observed that the ploughing activity in the fields had churned the soil as a result the artefacts were found on the surface. Due to this ploughing, the historical period structures buried beneath are also getting destroyed but in this process the artefacts get exposed (Figure 3). Similar phenomenon was noticed in the adjoining farms as well. One agricultural farm in the north of locality 9 was completely dug and the soil from that farm was spread over the neighbouring lands making it clear that the artefacts were on surface as part of modern anthropogenic process.

![Figure 3: General View of Locality 9 at Nagardhan, Inset: Miniature Handaxe](image)

Scores of artefacts collected from this locality have reddish ferruginous stains on their surfaces and a few iron oxide pellets stuck on their surface (see Figure 6 and 7). Similar observation was made regarding Acheulian artefacts in the last season’s explorations (Joglekar 2017). Few artefacts having Middle Palaeolithic affinities were recovered from the excavated trenches during the last season. At some spots, the rocky ferruginized pediment surface was occupied directly by Historical period habitants or was covered by black clay and then settled upon by constructing the structures over it (personal communication with the excavation directors). So, the original geomorphic context of the artefacts is the soil sediment covering the ferruginized rocky pediment (Figure 4). These kinds of ferruginized pediments are very common in this region. During the reconnaissance of the Bhagi nala i.e. Locality II (shown in figure 1) a few such Middle Palaeolithic tools including scrapers and miniature handaxes were also recovered. These
artefacts also have ferruginous stains suggesting their original context similar to Nagardhan locality 9 artefacts. None of these artefacts have any calcrete encrustations.

Figure 4: Ferruginized Rocky Pediment near Locality 9 at Nagardhan

Figure 5: Sources of Raw Materials in the Site Environments: a) Whitish Quartz, b) Yellowish Sandstone

Lithic Assemblage
A total of 79 artefacts were collected from this locality. Majority of the artefacts (89 %) are made from whitish quartz and while remaining on yellowish sandstone. Both these rocks are locally available in various forms i.e. boulder, cobble, blocks (Figure 5). The assemblage consists of diminutive handaxes and cleavers, varieties of points and scrapers, flakes, blades, cores and a worked cobble (Figure 6). Points are the most dominating finished tool in the assemblage (Figure 7). Almost all the artefacts are fresh as they have not undergone fluvial process.
Figure 6: a, b Miniature Handaxes, c Miniature Cleaver, d, e Flakes, f, g Retouched Levallois Flakes, h-j Scrapers, k Scraper on Levallois Flake (?), l, m Blades, n, o Levallois Cores
Miniature Handaxes and Cleavers

Miniature handaxes (6) and cleavers (2) are part of the assemblage. Mean dimensions of the flakes are as follows: Length-7.7 cm, Breadth-6.1 cm, Thickness-3.6 cm and Weight-169 gms. Four of these handaxes are made on end flake while the remaining two are made on obliquely struck flakes. On one of the handaxes a maximum of 6 flake scars were observed on the dorsal side and 3 scars on the ventral side.
Mean dimensions of the cleavers are as follows: Length- 6.6 cm, Breadth- 4.6 cm, Thickness- 2.7 cm and Weight- 92 gms. One cleaver made on side flake has pointed butt end and parallel bit end, while the other cleaver which is made on the obliquely struck flake has a roundish butt end and parallel bit end. These bifaces suggests the continuity from the Acheulian technology.

**Points**

The assemblage consists of 21 points. Mean dimensions of the scrapers are as follows: Length- 4 cm, Breadth- 2.7 cm, Thickness- 1.6 cm and Weight- 19 gms. All the points are made on quartz. 3 of them are Levallois points, 4 notched points (borer like), 6 tanged points and remaining are retouched points. Tanged points suggest use of hafting technique employed for functional purpose. Notched points must have served the purpose of a borer. Points are the most dominating tool in the assemblage.

**Scrapers**

Scrapers (13) are available in the assemblage. Mean dimensions of the scrapers are as follows: Length- 5.9cm, Breadth- 4.3 cm, Thickness- 2.13cm and Weight- 68 gms. Only one scraper is made on sandstone all other scrapers are made on quartz. Only one of the scrapers seems to be made on Levallois flake while remaining scrapers are made on flakes (6 end flakes, 5 side flakes and 1 flake indeterminate). Majority of the scrapers are single sided with exception of 2 which are double sided.

**Flakes**

Flakes (28) are part of the assemblage out of which only 4 are made on sandstone while others are made on quartz. Mean dimensions of the flakes are as follows: Length- 4.5 cm, Breadth- 3.2 cm, Thickness- 1.5 cm and Weight- 38 gms. 17 are end struck flakes, 8 are side struck flakes while 3 flakes are indeterminate. 10 flakes are retouched or have secondary flake scars, 3 flakes are pointed. 5 flakes have irregular surfaces as a result of raw-material faults. Majority of the flakes have a diffused bulb of percussion. Cortical and retouched Levallois flakes are also present in the assemblage.

**Blades**

The assemblage consists of 3 blades which probably are of incipient stage of blade production. The mean dimensions of the blades are as follows: Length- 4.2 cm, Breadth- 1.8 cm, Thickness- 1.1 cm and Weight- 12 gms. Two blades have backing on one lateral side and small retouches on the other lateral side. The third blade which is largest in size has an irregular surface.

**Cores**

Only 5 cores are part of the assemblage. Mean dimensions of the cores are as follows: Length- 4.6 cm, Breadth- 3.9 cm, Thickness- 2.6 cm, Weight- 52 gms. Maximum 5 number of flake scars on one of the cores is present. The largest flake scar on one this core is of 4 cm x 3.6 cm. All the cores in the assemblage can be termed as exhausted cores as no
further flakes could be detached from such core. Blade cores are absent in the assemblage. One unifacially worked cobble of sandstone also is part of the assemblage.

It can be easily said that the quartz was a preferred raw material over sandstone at Nagardhan during the Middle Palaeolithic phase. In the Acheulian strategy at Nagardhan, sandstone was favoured over quartz (Joglekar 2017). As properties of the different raw materials vary, it is unfair to expect sharpness of same quality in all materials. Also the shapes of the artefacts differ slightly according to the raw material. Raw material has an important role for the artefact morphology. The whitish quartz which has been exploited for tool manufacturing is coarse grained and is very hard for knapping. The quartz does not have conchoidal breakage pattern and hence many of the artefacts have very irregular surfaces. It is certain that while knapping many mishaps might have occurred, some of them include steps, irregular or rounding of the surface, E’ clat siret, hinge fractures, etc. These features occur during the process of hard rock knapping. It is very difficult to identify the negative scars on the quartz surface due to whitish colour, coarse grained structure, and shallow scars. The assemblage is small flake based and Levallois technology is an integral part of the tool production at Nagardhan. Blade element probably in its incipient stage is also present in the assemblage which is also one of the important components of the Middle Palaeolithic assemblages.

Importance and Discussion
Middle Palaeolithic culture of the eastern Vidarbha region has been misrepresented/ not identified especially in recent years. Lately, Joshi (2017) carried out limited survey in the Wainganga basin for the study of prehistoric remains but was unable to identify any Middle Palaeolithic site. Only Acheulian and late palaeolithic sites were identified and documented in that work. Distinguishing the middle palaeolithic industry from Acheulian and Late Palaeolithic is a challenge especially at the multi-cultural sites. Globally few characteristic features of the Middle Palaeolithic assemblages have been identified, some of them are as follows: 1) prepared core technique like Levallois and discoidal techniques, 2) points and scrapers in higher percentages, 3) smaller cores preferred for production of small flakes, 4) diminutive handaxes and cleavers (occasionally), 5) negligent percentage of large flakes or LCT’s, 6) presence of blades, 7) presence of retouched flakes, etc. The middle palaeolithic assemblages are drastically smaller than the large flake Acheulian assemblages and differ from the Acheulian technologies like Kombewa, Victoria west, sliced cobble, etc (Sharon 2007). The Levallois technique might have evolved from the pre-existing Acheulian bifacial knapping as has been observed elsewhere, and hence many of the Middle Palaeolithic assemblages have bifaces or bits and pieces of Acheulian technologies (Adler et al. 2014; Clark et al. 2003; DeBono and Goren-Inbar 2001; James and Petraglia 2005; Mcbrearty and Tryon 2006; Tryon et al. 2005; White et al. 2006). All these above-mentioned features have been observed in the present assemblage from Nagardhan. It is to be noted that the number of pointed (projectile) tools in the assemblage is fairly high. This certainly suggests some pattern which was adopted for food exploitation. Some of these pointed tools were part
of hafted tools as can be observed from the tang at their proximal end. Although the sample size is very small and also is not in the stratigraphic context but it gives ample indication, that this assemblage most probably belongs to the transition phase from late Acheulian to Middle Palaeolithic on the basis of technological observations and the types of tools it consists. This assemblage from Nagardhan locality 9 probably belongs to the Late Middle Pleistocene to Early Late Pleistocene period and might have continued later as well. These observations are well supported by the ferruginous stains and absence of calcrete encrustations. It is well known that during the Late Pleistocene period yellowish silt with calcrete was formed. This deposit does not yield the Middle Palaeolithic artefacts at Nagardhan.

The discovery of this locality near Nagpur in the middle Wainganga basin has its importance in regional context. This area with complex geological formations has been constantly occupied by the hominins during different time periods as mentioned previously. This area might have been selected for occupation by hominins/humans for variety of reasons which include availability of raw material, presence of game and edible vegetation, perennial sources of water, etc. This region is fairly humid and possesses water in form of wetlands, small streams, springs and high ground water level. Ferricrete formation is a diagnostic marker of humid environment in the past. It is clear from evidences that the region was constantly exploited for its rich natural resources. The antiquity of Nagardhan area had already been pushed back at least to the Middle Pleistocene period (Joglekar 2017), but post-Acheulian prehistoric past was unknown. Apart from the middle palaeolithic artefacts few microliths made on chert and chalcedony (non-local material) were also recovered from the excavated trenches (personal communication with the excavation directors). These microliths though are in the secondary context as they have reached the site as part of filling material (black clay used as bharaav). All these findings are helpful in filling the time and cultural gap at Nagardhan.

Preliminary exploratory investigations have now well established the Middle Palaeolithic phase around Nagardhan. Future investigations involving excavations of potential Middle Palaeolithic sites and detailed typological study of excavated material will provide sound basis of prehistoric past in the sub-humid part of central India. Also, quartz is one of the most difficult raw materials to work on as compared to quartzite, sandstone, chert, chalcedony, etc. It is therefore, a rare site in peninsular India, due to exploitation of difficult rock for making Middle Palaeolithic artefacts.

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