

Typo-Technological study of Blades and Bladelets clusters around Excavated site of Naun Kalan

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Abstract: Man is a tool maker, a number of scholars have been made this statement with a valid logical reasons earlier. When man left arboreal life and became terrestrial animal, later social/political animal and started off rooting from their close cousins, he had to face a lots of difficulties to survive without having special or gains like his close cousins (Sinha, 1999). As we all known that, necessity is the mother of inventions, therefore to resolve challenges, to defend himself, to satisfy hunger and to be fittest among creatures, he had to make object. Then he/she started learning from environment and the edge or tip of some naturally broken stone pieces (eoliths) seemed useful to him/her and hence, he started to replicate those tools that could protect him from the surrounding adverse environment. After that, through a long trial and error stage man became a true tool maker. The pebble tool stage might have been his first experimental level in obtaining a pointed shape that can Pierced into the body of a predator (Sinha, 1999).

This research paper broadly focuses on typo-technological study of prehistoric lithic artifacts which is a crucial methodology of experimental archaeology domain, and more objectively deals with the study of prehistoric hominine behavior and the concept of functional landscape through traces of activities embedded in prehistoric stone tools obtained in non in situ locus, generally on surface during exploration. Spatially, the research is restricted to the explored artifacts of Gorma Valley.

Keyword: Typo-technology, Metric Analysis, Blade and Bladelets, Human Behavior.

I. INTRODUCTION

History is what we construct. From the beginning of human life to the present era, history has been reconstructed by a number of scholars following different perspectives. Evidence is always playing a vital role to understand the evolution of human history but the issue is how valid and authenticated facts may be collected or retrieved. From beginning, a long period of human activities could not be traced without understanding lithic artifacts. Lithic artifacts itself bear signatures of hominine s and the medium of retrieving cultural activities and behavior (Sinha, 1996-97). A number of scholars have had been working on micro-wear attributes on lithic artifacts at least since 1960.

The site, Naun Kalan (NNK) is situated in this region, has been taken under study. Therefore, the whole analysis of the present research work is based on the evidence found from the site and around. This is a primary site and was first identified by B.B. Mishra of the Dept. of Ancient History, Culture and Archaeology, University of Allahabad. Subsequently, the site was excavated by Prakash Sinha of the same department, in May 2012. The site is located in the Gorma valley in the Rewa District of Madhya Pradesh and the geo-coordinates of the site is 24° 45' 39.7" N; 82° 07' 58.7" E. The archaeological deposit of the site constitutes range of late Upper Palaeolithic tool repertoire.

A Typo-Technological study of lithic artifacts has been attempted here in present research paper to have an understanding of the cognitive landscape of the prehistoric hominine behaviour. Hence, surface explored materials in proximity to the excavated site of Naun Kalan have been considered. Sixteen surface clusters around the site are identified having considerably high intensity of lithic artifacts. The clusters one named NNK-Micro-1(24°44'41.50"N, 82°7'51.76"E) and NNK-Micro-2 (24° 44'42.14"N, 82°8'12.10"E) second named NNK-Bhati-1(24°45'10.18"N, 82°7'55.26"E) and NNK-Bhati-2 (24°45'15.12"N, 82°7'55.20"E) along with 12 clusters named NNK-1 to NNK-12. It seems that either those proximal areas were utilized by the prehistoric population of Naun Kalan for specific activities or there might be the possibility of displacement of locus of the artifacts due to factors such as natural and anthropogenic.



Figure1: Satellite Image of Naun Kalan and adjoining area Kalan, (Courtesy: Google Earth Inc.)



Figure2: Topographical map of Naun NNK-Micro and NNK-Bhati (Courtesy: Survey of India)

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Archaeological Data collection

In the year 2012, the site Naun Kalan (NNK) was excavated. Around this site, there are a number of lithic artifact clusters and are numbered one to twelve is NNK-1 to NNK-12. Besides, these clusters, there are two other sites, their lithic industry is primarily based on chalcedony as the percentage of chert is very low in comparison of NNK site. These two sites are Naun Kalan-Bhati ($24^{\circ}45'10.18''N$, $82^{\circ}7'55.26''E$) and Naun Kalan-Micro ($24^{\circ}44'41.50''N$, $82^{\circ}7'51.76''E$) and are at distance of 700 meter and 400 meter from the NNK, respectively. All the 12 clusters have been considered as one site. These three sites around Naun Kalan (NNK) and adjoining area have been selected for the present research work. Whole area spread in 3-4 square km, a seasonal drain divided this area into two parts. First site, NNK situated towards north direction from plateau. Artifacts have been picked up from 12 clusters for the microscopic study. These artifacts were spread around the site on the surface. These clusters belong to approximately 5-10 meter at a distance to each other on rock bed. The size of the second site, Naun Kalan-Bhati (NNK-B) in about 500 Square meters towards the south-west from the drainage on the open scrub. The percentage of crypto type (chert, chalcedony, carnelian etc.) raw material is very high. On account of huge amount of spread lithic artifacts, it is to be perceived as manufacturing site. Surface material has been collected from 2 clusters of 1m x1m grid applying judgment sampling procedure for the micro wear study. The third site, NaunKalan-Micro (NNK-M) is situated on the open scrub area towards north-east from the drainage. Mostly, artifacts are found on the site are made of chalcedony, chert, agate etc. At this site too, artifacts have also been collected from 2 grids of 1m x 1m as was done at NNK-B. On the basis of typo-technological study of artifacts and raw material it is to be observed that chert is a dominant raw material for the manufacturing of artifacts at NNK, while artifacts made on chalcedony and carnelian are found at NNK-B and NNK-M. Selection of raw material probably reflects on change in technology, availability and requirement of hominines.

A review of archaeological literature broadly suggests that as we move uplands from late Pleistocene period to Holocene it has been observed that the percentage of chert gradually decline and replaced by the rise in the percentage of chalcedony and agate. Geological study, though limited, in the area also suggest that chalcedony and agate dominating artifacts are present in post Pleistocene deposits. Hence, on the basis of above two factors and technological analysis of artifacts, it can be said that all the 12 clusters, NNK-1 to NNK-12 like NNK belong to late Pleistocene and the two sites NNK-B and NNK-M are of early Holocene period.

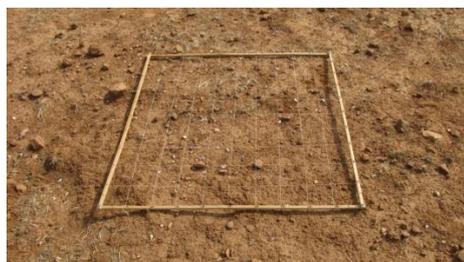


Figure3 and Figure4: Collection Procedure of Explored Artifacts (1x1 mt. grid)

II. NNK – 12 Clusters

CLUSTER-1

443 artifacts were collected from the Cluster-1 at NNK. All artifacts are made on chert and consist of blade, flake, blade fragment, flake fragment, core rejuvenating flake/blade, borer, ret/mod blade, burin, truncated backed blade etc.

CLUSTER-2

A total of 161 stone artifacts were collected from this cluster. Out of which 112 were made on chert, 46 on chalcedony and 3 on agate. It is consist of flake fragment, core rejuvenating blade, blade, scraper, blade fragment, ret/mod blade, flake, core, chunk, etc.

CLUSTER-3

In the cluster-3, a total number of 210 artifacts have been collected, out of these 62 are made on chert, 132 on chalcedony, 14 on agate and 2 on others. This sample consist of flake fragments, blade fragments, ret/modified blade fragment, backed blade fragment, backed and truncated blade, percoir and denticulated scraper, cores and chunks.

CLUSTER-4

68 artifacts were collected from cluster-4 out of which 52 were made on chert, 13 on chalcedony and 1 on agate. This cluster comprises flake fragment, blade fragment, flake, core, chunk, chips etc.

CLUSTER 5

15 artifacts were collected form Cluster 5 of NNK, out of which 13 are made on chert and 2 on chalcedony. The artifacts obtained from this cluster consist of blade fragment, ret/modified, flake and flake fragment.

CLUSTER 6

35 artifacts were collected from the cluster 6, out of which 32 are made on chert, 5 on chalcedony and 1 on agate. The artifacts in this cluster are namely blade fragment, flake, core rejuvenation blade, end-scraper, chunk, core etc.

CLUSTER 7

104 artifacts were collected form cluster 7 of NNK, out of which 94 are made on chert, 8 on chalcedony and 2 on agate. The main artifacts in this collection comprise flake fragment, blade, core rejuvenation blade, blade fragment, flake, core and chunk.

CLUSTER 8

14 artifacts were collected from cluster 8, out of which 11 are made on chert, 2 on chalcedony and 1 on agate. Flake fragment, blade fragment, core rejuvenation blade, Percoir, core, chunk have been found in this cluster.

CLUSTER 9

44 artifacts were collected from the cluster 9, out of which 40 are made on chert, 1 on chalcedony and 3 on others.

CLUSTER 10

31 artifacts were collected from the cluster 10 of NNK, out of which 29 are made on chert and 2 on others. Typologically these artifacts are blade fragment, backed blade fragment, flake, core, end scraper, chunk etc.

CLUSTER 11

28 artifacts were collected from the cluster 11, out of which 25 are made on chert, 1 on chalcedony and two on others. Artifacts includes in this cluster are blade, flake fragment, core fragment, flake, core, core rejuvenating blade, ret/modified flake etc.

CLUSTER 12

23 stone artifacts were collected from this cluster 12, all are made on chert. Artifacts consist of blade, flake fragment, core fragment, flake, chunk, core rejuvenating blade etc.



Figure 5 and 6: Archaeological tools of NNK

NNK-Bhati (NNK-B)

As has been mentioned earlier, at this site stone artifacts were collected from two 1x1 m grids at different location.

From the first cluster, a total of 820 stone artifacts were collected, out of which 115 are made on chert, 610 on chalcedony, 20 on agate and 72 on carnelian. The sample includes blade, flake fragment, ret/mod blade, blade fragment, flake, core, chunk, partially denticulated convex scraper, core rejuvenating blade, etc.

From cluster-2 of NNK-B, a total of 302 stone artifacts have been collected. Out of which 71 are made on chert, 200 on chalcedony, 4 on agate and 27 on carnelian. The main type present in this cluster are blade, flake fragment, ret /mod blade, blade fragment, core fragment, truncated blade, core, chunk and core rejuvenating blade.



Figure7: Archaeological artifacts of NNK-B

Naun Kalan- Micro (NNK-M)

At the third site, NNK-M, stone artifacts were collected at 2 places from 1x1 m grids. 131 stone artifacts were collected from NNK-M cluster-1 and out of which 23 are made on chert, 107 on chalcedony and 91 on agate. The main artifact types are flake fragment, blade fragment, flake, core, chunk, etc.

A total of 109 stone artifacts were collected from NNK -M cluster-2, out of which 10 are made on chert, 98 on chalcedony and 1 on carnelian/agate. The main tool types in this cluster are flake fragment, ret/mod blade, flake, core, chunk, etc.



Figure8: Archaeological artifacts of NNK-M

III. CONCLUSION

On the basis of metrical and typo-technological analysis of artifacts analyzed at the three sites around the excavated NNK site, a chronological sequence may be proposed, if we follow methodology proposed by Verma (1997) the site of 12 clusters i.e. NNK is the oldest one, while the site of NNK-M is the youngest. However, this method based on metrical attributes alone hardly hold any ground in the light of stratigraphic position of metrical data recovered at excavated sites like Baghor-I & III in the middle Son valley. The site Baghor-III which is stratigraphically in geological context, is below the Baghor-I, while artifacts of Baghor-III are smaller than Baghor-I. Similarly, the presence or absence of geometrical tools hardly establishes chronological order (Sinha, 1996-97). The explored and the excavated sites of the Stone Age in different parts of India in particular and the world in general clearly reveal that there had been behavioral changes in the selection of raw material (Sinha, 1999). In the earlier two periods that is the Lower and the Middle Palaeolithic period hominines had been exploiting raw material mainly available in their habitat. However, thereafter when they learn to manufacture 'blade' through fluted core or exploiting long straight ridge (s), they had become very selective so far as raw material is concerned, and now they had been exploiting raw material like chert/flint only; whether available in their vicinity or not. If not, they had been bringing such type of raw material to manufacture blades from nearby places (Sinha, 1999). This fact becomes more clear when we see the position of raw material in the Belan and the middle Son valleys. In the case of former, no such material is available and the nearest source is the beds of Son valley (Sihawal district, M. P.). Even today we bring raw material for experiments from the Sihawal district, Madhya Pradesh in the middle Son Valley. This fact has been established by exploring the region right from close to Amarkantak to the Belan valley thorough the areas of Jabalpur, Satna and Rewa districts of Madhya Pradesh (P. Sinha, personal communication). Further, in geological and archaeological context it has been found that the hominines gradually exploited more and more crypto-crystalline material mainly chalcedony, agate, carnelian, jasper and lesser and lesser chert. It is very well documented in the excavations at Lekhiya, Morana Pahar, Baghaikhor, Chopani Mando, Banki, Baghor-I, II & III, Naun Kalan, Dhanuhi Rock-shelter, etc. Hence, predominance of chalcedony, agate and carnelian over chert do suggests chronologically later period. It is, therefore, most likely that NNK (12 clusters) along with excavated site of Naun Kalan, which is in geological context and of late/terminal Pleistocene, is older and falls under

late/terminal Pleistocene (Sinha, 2014); while Naun Kalan-Bhati and Naun Kalan-Micro are of the Holocene period.

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