



Email: editorijless@gmail.com

Volume: 4, Issue 3, 2017 (July-Sept)

INTERNATIONAL JOURNAL OF LAW, EDUCATION, SOCIAL AND SPORTS STUDIES (IJLESS)

<http://www.ijless.kypublications.com/>

ISSN:2455-0418 (Print), 2394-9724 (online)

2013©KY PUBLICATIONS, INDIA

www.kypublications.com

Editor-in-Chief

Dr M BOSU BABU

(Education-Sports-Social Studies)

Editor-in-Chief

DONIPATI BABJI

(Law)

©KY PUBLICATIONS



SHAPE ANALYSIS OF THE LOWER PALAEOLITHIC TOOL TYPES OF THE NAGULERU VALLEY

Dr. K. Ajaya Kumar

Reader in History, Andhra Muslim College, Guntur.

E Mail : ajaykonakala@gmail.com



ABSTRACT

In the present article 28 Lower Palaeolithic sites of the Naguleru Valley have been taken for the shape analysis of the handaxes. As a part of the form analysis classification is done on the basis of the shape of the but end Symmetrically, Asymmetrically extra have also been taken into consideration for the form analysis. Our results indicated that the Lower Palaeolithic industries of the Naguleru Valley finite similarities with those artefacts reported from Vaal river of the South Africa. This is called Stellen Bosch impact. This is mainly because of the similarity between the Stellen Bosch and Naguleru Valley industries while choosing the raw material further details about the form classification have also been discussed.

GENERAL

As a part of the field work related to the survey of the pre-historic sites in the Naguleru Valley a number of Lower Palaeolithic habitations were discovered. The number sites of the Lower palaeolithic Culture is 28. They are located in various Geo-Eco settings we have reversion sites, open hair sites, slope sites and redeposited sites. The list of sites considered in present article included 1.Vellaturu 2.Sarikondapalem 3.Mugachitalapalem 4.Bandalamotu 5.Bollapalli 6.Ammarajukunya 7.Kunchenapalli 8. Remidicherla 9. Gummanapadu 10. Garikapadu 11. Garibodu 12. Chenchukuntatanda 13. Pamidipadu 14. Mellawagu 15.Hanumapuram 16. Marripalem 17. Reddypalem 18. Sunnigandlatanda 19. Krampuditanda 20. Oppicherla 21.Karempudi 22. Pedakodamagundla 23.Bhatruwaripalle 24. Sankarapuram 25. Kesanapalli 26. Koyayyanagaram 27. Bhatrupalem 28. Ramapuram. In the following paragraphs certain typo-technological details of the Lower Palaeolithic tool kit have been described against the find spots, raw material etc.,

PERCENTAGE REPRESENTATION OF ARTEFACT TYPES IN THE LOWER PALAEOLITHIC SITES

	CKT	MRP	ARK	GNP	GRB	HND	GRP	SGT	PDP	MLV	RDP	KPT	PKG	KRP
Choppers	4.2	4	4.13	4.85	2.17	4.68	4.58	6.4	2.6	2.48	3.33	5.39	1.63	18.75
Chopping Tool	2.8	2.58	5.51	3.71	4.34	2.47	2	3.2	2.13	8.69	2.5	8.33	4.91	0
Hand Axes	7	19.52	9.31	24.28	6.88	17.9	26.64	8.8	27.72	13.04	20.83	10.29	8.19	40.62
Cleavers	5.14	4	7.93	6	4.71	3.85	8.88	2.4	5.45	3.86	2.5	3.92	3.27	3.12
Discoids	1.4	2.58	4.48	3.14	3.26	1.92	1.71	1.6	2.13	1.44	1.66	1.47	1.09	0
Knives	6.07	10.11	5.86	5.42	4.71	3.03	9.16	0	9.24	5.79	0	0.98	4.91	0
Sorapers	4.2	3.76	10	3.71	5.79	2.47	4.87	8.8	3.55	3.86	6.66	8.33	4.91	18.75
Points	1.86	3.29	4.48	2	3.26	1.37	0.85	0	2.13	1.44	0	2.94	1.09	0
Retouched Flakes	20.09	7.52	15.86	14.28	17.02	12.398	4.29	13.6	4.02	8.21	10	10.29	9.28	0
Blade Flakes	3.73	6.82	5.51	3.71	6.88	3.85	3.15	0	4.5	3.38	7.5	2.45	4.91	0

Flake Blanks	10.74	10.11	12.41	8.85	9.78	7.98	7.73	18.4	7.81	13.04	19.16	11.27	12.56	14.05
Broken Hand	0.93	2.11	2.41	0.85	1.44	1.92	1.43	1.6	2.6	0.96	0	0	1.09	0
Axes	20.56	19.52	7.93	13.71	12.68	15.7	19.77	8.8	19.66	20.77	14.16	18.13	18.03	4.68
Fragments	11.21	4	4.13	5.42	17.08	20.38	4.87	26.4	6.39	13.04	11.66	16.17	24.04	0
	99.93	99.92	99.95	99.93	100	99.91	99.93	100	99.93	100	99.96	99.96	99.91	99.97

CKT = Chenchu kunta Tanda

MRP = Marri Palem

ARK = Ammaraju Kunta

GNP = Gummanampadu

GRB = Garibodu

HNP + Hanumapuram

GRP = Farikapadu

SGT = Sannigundla Thanda

PDP = Pamidipadu

MLV = Mellavagu

RDP = Reddy Palem

KPT = Karampudi Thanda

PKG = Peda Kodama Gundla

KRP = Karampudi

OPC = Oppicherla

DWP = Battu Wari Palle

SRP = Sankara Puram

KNP = Kesanu palle

PERCENTAGE REPRESENTATION OF ARTEFACT TYPES IN THE LOWER PALAEOLITHIC SITES

OPC	BWP	SRP	KNP	BTP	RMP	KTN	RMC	BLM	BLP	MCP	KCP	VL	SKP
8.57	11.39	2.4	4.87	2.5	10	5.08	1.62	2.94	4.62	3.48	3.68	10.71	3.09
0	0	5.6	5.91	5	7.5	0	3.24	5.29	5.88	4.47	1.57	0	4.81
16.19	21.51	14.4	96.13	7.5	11.66	18.64	15.67	14.11	12.18	11.44	10	15.47	14.77
4.76	3.79	6.4	4.87	5.83	2.5	5.08	4.86	3.52	4.62	6.96	5.78	2.368	6.52
0	0	1.6	3.22	3.33	0	3.38	3.24	1.17	3.78	4.47	8.42	0	3.09
0	0	2.4	7.52	5	0	0	7.02	10	5.46	13.93	1.57	0	4.46
16.19	11.39	14.4	5.91	6.66	14.16	15.25	8.64	7.64	69.66	6.96	7.36	15.47	5.84
0	0	0	1.61	0	0	0	1.08	2.94	3.78	2.98	3.15	0	1.37
13.33	3.79	8.8	9.13	14.16	9.16	5.08	9.18	7.64	8.4	6.96	11.57	10.71	14.43
0	0	12	5.91	7.5	0	0	7.56	4.11	7.56	4.47	11.05	0	6.87
21.9	16.45	8.8	12.9	19.16	20	18.64	12.97	13.52	13.44	14.92	18.94	27.38	11.68
0	0	0	2.15	0	0	0	0.54	1.17	1.68	1.49	1.57	0	1.71
8.57	13.92	14.4	17.74	9.16	10.83	10.16	15.13	15.88	11.34	11.94	10.52	7.14	14.77
10.47	17.72	8.8	9.13	14.16	14.16	18.64	9.18	10	7.56	5.47	4.73	10.71	6.52
99.98	99.96	100	100	99.96	99.97	99.95	99.93	99.93	99.96	99.94	99.91	99.97	99.93

BTP = BATTURU PALEM

RMP = RAMAPURAM

KTN = KOTALAH NAGARAM

RMC = REMIDI CHERLA

BLM = BANDLA MOTTU

MCP = MUGA CHINTALA PALEM

KCP = KUNCHANA PALLE

VL = VELLATURU

SKP = SARIKONDA PALEM

BLP = BOLLA PALLI

1. CHOPPERS:

Choppers are crude tools which find a universal representation in the Lower Palaeolithic industries of the Naguleru Valley. The raw material chosen are very commonly of quartzite in nature and the grain size of the medium is from medium grained to coarse grained. These are fabricated by chipping on one of the surfaces only. The resultant cutting edge is wavy but sharp. Retouching has not been done on the edge of the specimens at any of the site so far identified. Most of the choppers in the valley look fresh with occasional signs of use damage

2. CHOPPING TOOLS:

Chopping tools are also common occurrence across the Lower Palaeolithic sites of the Naguleru Valley. However they are found to be absent at Vellaturu, Kotayyanagaram, Karampudi, Oppicherla and Battuvaripalli. Chopping tools are usually considered to be specimens having bimarginal working or bifacial working. In the industries under investigation we do not have typical Rostrocarinates. The flake scars on the specimen in the most of the cases are deep and large and their number is as high as 10. But the specimen fall short of many other characteristics to qualify themselves as proud handaxes or proto-handaxes.

A few specimens from Gummanapadu, Garikapadu, Ammarajukuntas, Pamidipadu, Mellavagu and Karampudi tanda shows sign of secondary working with a view to the partial straighten the edge. The few specimens from pamidipadu and gummaanpadu show heavy damage on the edges. for the fabrication of the chopping tools craftman has choosen similar raw material as employed for the choppers. The only variation being that the size of chopping tools is much larger than that of the choppers. The presence of the choppers and

chopping tools need not necessary indicate the archaic nature of the industry. For the fabrication of both chopping and chopping tools stone hammer technique appears to have been employed.

3.HAND AXES: derived from top deposits concealed under mantles of Aeolian soils. the specimens made on thick plates, chunks and very rarely on flate nodules, the cross sections approximate to a long triangular are a parallel grammatical shape recalling examples from the Stellen Bosch industry of south Africa. Quartzites bearing a range of grains size were chosen as the raw material. there are also handaxes made on gneissic rocks. Where the local geology demanded, the crops man have chosen rocks like trap, sand tone, Quartz, shale and lydianite. Handaxes are known to occur in a variety of forms. The most of the common from the point variety. Occasionally we come across spatulates, Triangulates, cordates, Ovates, and ficron types.

Depending upon the nature of blank medium chosen as the skill exhibit by crafts men it is possible to make form classification. This include identification of symmetric and asymmetric forms. This includes identification of symmetric about 'B' axis, symmetric about 'T' axis and coaxially symmetric forms. Functionally a hand axes is supposed to be a multy purpose tool having two cutting edges along the side margin and a pointed end at the convergence of the margins and the surfaces.

A.NATURE OF THE HAND AXES FROM THE NAGULERU VALLEY

Across the nagulery valley altogether 28 sites have been recognized as belonging to the lower palaeolithic faceies Mallipalem, Ammarajukunta(Table.1), Bummanuampadu, Hanumapuram, Garikipadu, Pamidipadu and Sarikondapalem (Table-2) have yielded long number of hand axes compared to the other sides. A few hand axes show red stain due to contract with the local lateritic red earths.

It is only in the recent past that the local area underwent deforestation and their by the exposure of the artefacts to the surface is relatively a recent phenomena. Among the hand axes the most common only forms included pointed variety, ficrons, ovates, limandes, prodniks and miniatures.

LOWER PALAEOLITHICI CULTURE

SUB- TYPES OF HADAXES

Name of the site	RMC		BLM		BLP		MCP		KCP		VLT		SKP	
Handaxes Sub-types	T	%	T	%	T	%	T	%	T	%	T	%	T	%
1. Pointed	17	48.27	09	37.50	07	24.13	05	21.73	06	31.57	03	23.07	12	27.90
2. Ficron/ Spatulates														
3.Ovates														
4. Limandes	07	24.13	04	16.16	02	06.89	02	08.69	01	05.26	4	30.76	10	23.25
5. Prodniks														
6. Triangulates														
7. Lanceolates	02	06.89	03	12.05	02	06.89	03	13.04	03	15.78	02	15.38		
8. Micoquian														
9. Victoria West Forms														
10. Stellen Bosch Forms														
11. Miniatures														
12. Irregulars	05	17.24	06	25.00	14	48.27	10	43.47	09	47.36	04	30.76	12	27.90
Total	29	99.97	24	99.99	29	99.97	23	99.97	19	99.97	13	99.97	43	99.98

RMC = Remidicherla BLM : Bandlamotu BLP : Bollapalle, KCP = Kunchenapalli
MCP = Mugachintalapalem VLT : Vellaturu SKP : Sarikondapalem

**LOWER PALAEOLITHICI CULTURE
SUB- TYPES OF HADAXES**

Name of the site	OPC		BWP		SKP		KNP		BTP		RMP		KTN	
Handaxes Sub-types	T	%	T	%	T	%	T	%	T	%	T	%	T	%
1. Pointed	09	52.94	07	41.17	06	33.33	04	23.52	03	33.33	05	35.71	03	27.27
2. Ficron/ Spatulates														
3.Ovates														
4. Limandes														
5. Prodniks														
6. Triangulates														
7. Lanceolates							05	29.41	04	44.44	03	21.42	02	18.18
8. Micoquian					03	16.66								
9. Victoria West Forms														
10.Stellen Bosch Forms														
11.Miniatures														
12. Irregulars	08	47.05	10	58.82	09	50.00	08	47.05	02	22.22	06	42.85	06	54.54
Total	17	9.99	17	99.99	18	99.99	17	99.98	09	99.98	14	99.98	11	99.99

OPC = Oppicherla

BWP : Bhatruwaripalem SKP = Sankarapuram

KNP = kesanupalli

BTP = Bhatrupalem

RMP = Rmapuram

KTN = Kotaiahanagaram

**LOWER PALAEOLITHICI CULTURE
SUB- TYPES OF HADAXES**

Name of the site	SGT		PDP		MLV		RDP		KMT		PKG		KMP	
Handaxes Sub-types	T	%	T	%	T	%	T	%	T	%	T	%	T	%
1. Pointed	03	27.27	32	27.35	09	1.33	07	28.00	05	23.80	07	4.66	09	34.61
2. Ficron/ Spatulates			02	01.70	0207.40									
3.Ovates			16	13.67			02	08.00						
4. Limandes			04	03.41										
5. Prodniks			02	01.70			06	24.00						
6. Triangulates			17	14.52	03	1.11								
7. Lanceolates	02	18.18	04	03.41										
8. Micoquian			06	05.12										
9. Victoria West Forms			02	01.70									07	26.92
10. Stellen Bosch Forms			02	01.70										
11.Miniatures			10	08.54	01	03.70	03	12.00	05	23.80				
12. Irregulars	06	54.54	20	17.09	12	44.44	07	28.00	07	33.33	08	53.33	10	38.46
Total	11	99.99	117	99.99	27	99.98	25	100.00	21	99.97	15	99.90	26	99.99

SGT = Sannigandlatanda

PDP = Pamidipadu

MLV = Mellavagu

RDP = Reddypalem

KMT = Karempuditanda

PKG= Pedakodamagundla

KMP : Karempudi

**LOWER PALAEOLITHICI CULTURE
SUB- TYPES OF HADAXES**

Name of the site	SGT		PDP		MLV		RDP		KMT		PKG		KMP	
Handaxes Sub-types	T	%	T	%	T	%	T	%	T	%	T	%	T	%
1. Pointed	05	33.33	32	38.55	11	40.74	29	34.11	07	36.84	18	27.69	15	16.12
2. Ficron/ Spatulates							05	05.88					10	10.75
3.Ovates	02	13.13			06	22.22	04	04.70			07	10.76	12	12.90
4. Limandes			04	04.81			0303.52							
5. Prodniks			02	02.40	02	07.40	02	02.35			04	06.15	04	04.30
6. Triangulates			10	12.04	02	07.40	10	11.86			03	04.61	03	03.22
7. Lanceolates							03	03.52						

8. Micoquian							08	09.41						
9. Victoria West Forms							03	03.52						
10. Stellen Bosch Forms			12	14.45			10	11.76			06	09.23	08	08.60
11. Miniatures			13	15.66	02	07.40	05	05.88	02	10.52	04	06.15	16	17.20
12. Irregulars	08	53.33	10	12.04	04	14.81	03	03.52	02	10.52	04	06.15		
Total	15	99.99	83	99.95	27	99.97	85	99.99	19	19.99	65	99.97	93	99.97

CKT = Chenuchukuntatanda

MRP : Marripalem

ARK : Ammarajukunta

GNP = Gummanpadu

GRB = Garibodu

HMP : Hanumanpuram

GRP = Garikapadu.

FICRONS: Ficrons are mostly encountered at Gummanampadu, Pamidipadu, Garikapadu and mellavagu. They are heavy duty tools, resulting from the re-working of pointed ends of handaxes. When the tool user realizes that the pointed working end is becoming blunt, he would re-work the side margins close to the working end. Sometimes the working end of a fibrin may look like a narrow speculate. The craftsman of Naguleru have produced typical speculates and by conversion fibrins as well. Functionally microns are effective as digging specimens for uprooting tubers.

Ovate : ovate occur in considerable numbers across the major sites like Pamidipadu, Gummanampadu, Ammarajukunta, Garikapadu... etc. they are so fabricated perhaps to employ them as cutting tools possibly some of them could as well be employed for peeling bark or skin.

Lemandes : Lemendes are specimens which possess one of the side margins convex about the long axes while the other margin is parallel or nearly about the vertical axes. Functionally the specimens are useful as cutting tools. In the present context lemandes are found at marripalem, Gummanampadu, Garikapadu, Pamidipadu and reddypalem in the Naguleru valley.

Prodnik : Prodniks are pointed specimens with thick butt ends narrow elongated working ends. These specimens are usually made by unifacial working and functionally they are efficient as digging tools. These are noticed at marripalem, ammarajukunta, Gummanampadu, hanumapuram, Garikapadu and Pamidipadu. But ends of the specimens were left unworked and occasionally they show a cover of cortex. Most of the prodniks of our collection maintain irregular cross sections, though some of them tend to be triangular.

Lanceolates : Is basically considered to be a specimen which can be hafted to a piece of bamboo or wood. The specimens usefully possess a pointed working end and a thin hittable base. The proximal end is made thin by careful chipping. These specimens are found at Pamidipadu, Gummanampadu, mellavagu and sannigandla tanda.

Victoria – west form : Victoria west form for all practical purposes serves like a hand axes. The only difference is that it maintains a slightly different body contour. We have only two examples of this kind recovered one each at Pamidipadu and Gummanampadu. They have a pointed end and one of the side margins is convex about the long axes while the other margin is slightly concave at the pointed end. Forms of this variety are rare and they have been reported from lower Paleolithic industries of Africa particularly from the western shores of lake Victoria.

Stellen Bosch form : Stellen bosch forms are recovered from a number of sites of the Naguleru valley as at Marripalem, Gummanampadu, Hanumapuram, Garibodu, Pamidipadu and Karempudi. The specimens are made on flat pebbles or nodules the working is limited only to one of the surfaces resulting in a long triangular cross-section. We know that at Stellen Bosch on the river Vaal of south Africa. Similar artifacts were reported and thereby they are known as the Vaal river variants.

Micoquian forms : These are usually rare in the industries of the Naguleru valley. Specimens of this variety are noticed at Gummanampadu and Pamidipadu in small

numbers. The specimens possess pointed working ends and nearly globular but ends. These are supposed to be accruing in the late levels of acheulean strata.

Miniatures :These are a group of specimens exhibiting a very small size capered to most of the hand axes tool kit. They are found many places in the Naguleru vally . they frequency of occurrence is high at Gummanampadu and Garikapadu .

Triangulates :Some of the hand axes collected from Mmarripalem, Ammarajukunta . Hanumapuram, Garikapadu, Pamidipadu and Sunnignadla tanda . show their body format in irregular triangles. Thick flakes and flat nodules were utilized in the fabrication of these specimens.

Irregular hand axes :Some of the hand axes from the sites of the Naguleru valley do not confine themselves to any known shapes. They are hand axes but with no specific shape. Such as them are classified as irregular hand axes these are common occurrence in sites of very early nature like those of lower acheulean context.

Lanceolates : Is basically considered to be a specimen which can be hafted to a piece of bamboo or wood. The specimens usefully possess a pointed working end and a thin hittable base. The proximal end is made thin by careful chipping. These specimens are found at Pamidipadu, Gummanampadu, Mellavagu and Sannigandla tanda.

CLEAVERS : Cleavers constitute a common component of the Lower Palaeolithic Industries. In the Naguleru valley they have been recovered from almost all the Acheulean sites.

Cleavers are functionally heavy duty tools intended for cutting purpose. They sometimes do complimentary role with hand axes and thick knives. It is stated that cleavers occur in large numbers across the Acheulen sites, where the surrounding ecological background is characterized by thick wooded forestes. On typo-technological basis it is apparent that cleavers served all functions connected with the possessing of wooden objects and sometimes the processing of food caches.

Cleavers are made on quartzite's of brown and grey colours with a range of the grain size in the Naguleru valley. We have examples of cleavers made on a variety of blanks. Cores, flat water worn pebbles, thick fragments, thick flakes, etc.have been utilized for the making of cleaver. Depending upon the nature of blank medium cleavers are fabricated either bifacial or unifacially. The usually possess deep flake scars extending over the dorsal and ventral surfaces. In the Naguleru valley the cleavers show a variety of cutting edges. The most common type is however a straight edged variety. There are also example of specimens which have oblique edges, concave edges etc. Cleavers of the Naguleru valley show a variety of shapes close to the butt end. We have straight, convex "V" shaped and irregular forms of the butt. Some of these forms are already known to us as cleaver with "U" shaped butt end "V" shaped butt end. It is special interest that a large number of cleavers from the Naguleru valley show triangular or parallelogrammatic cross section. This feature has been referred to as the characteristic of the Stellen Bosch industry of South – Africa.

DISCOIDS: Discoids are roughly circular specimens fabricated on stone. Technically we have a number of specimens exhibiting bi-facial working close to the margin. Quartzite is the choicest raw material employed at the various sites in the Naguleru valley.

In very rare cases as at Kunchanapalli and Ammarajukunta the lower portions of broken hand axes have been partially modified and converted into discoidal cores. In the present industries discoids are founded at almost all the sites in varying magnitudes excepting at Karempudi Oppicherla, Bhattuvaripalle, Ramapuram and Vallatur.

KNIVES:Knives are of common occurrence in the Lower Palaolithic industries of the Naguleru valley. They are in a majority of cases, made on thick flakes and fragments. The usual raw material is medium gained quartzite of grey and brown colours. It I to be noted here that knives of any kind are totally absent at Vellaturu, Ramapuram, Kotayyanagaram, Reddipalem, Karempudi, Oppicherla, Battuvaripalle and Sanigandla Tanda. At all other sites knives are represented in varying magnitudes. The highest density of occurrence of knives is recorded at Mugachinthalapalem.

SCPAPERS : Scrapers are equipment with steep employed units. Depending upon the shape of the edge they are classified, into a variety of forms like straight, convex, concave, sided scrapers end scrappers etc.

In the present assemblages scrapers are found in the association of the Lower palaeolithic tools at all the 22 locations. In the Naguleru valley the most common forms of scrapers are the concave variety and the straight sided variety. The employable unit is obtained by careful retouching. Quartzite of fine-grained variety is the only raw material that has been employed for the making of their specimens. However the craftsmen used both the grey and brown varieties of quartzite. In the present assemblages a high percentage of scrapers is recorded at Kotyyanagaram, Ramapuram, Sankarapuram, Karempudi and Oppicherla.

POINTS : Points are projectile bits of stone having pointed ends. There by its presence is seen only at a few of the Lower Palaeolithic sites. They are recovered in small numbers from Ammarajukunta, Gummanampad, Garikapadu, Hanumapuram, Chenchukuntatanda Pamidipadu, Mellavagu, Karempudi Tanda, Pedakodamagundla, Kesanupalli, Remdicherla, Bandlamotu, Pamidipadu, Mugachinthalapalem, Kunchanapalli and Sarikonda palem. The specimens were made on fine/grained variety of quartzite and occur in ashy grey and brown colours.

RE-TOUCHED FLAKES : In the present industries of Naguleru re-touched flakes constituted a regular component of the topology. Functionally these specimens might have served the purpose of cutting micro-chipping etc., across organic materials. They are made on grey and brown varieties of quartzite. Re-touched flakes are available in varying magnitudes among the lower palaeolithic industries of the Naguleru excepting at Karempudi.

BLADE FLAKES : Blade flakes constitute a significant component of the Lower Palaeolithic industries of the Naguleru valley. There are occasional patches of cortex on the dorsal side close to the distal end.

It may be surmised that these blade flakes must have served the purpose of simple cutting. They are made on grey and brown varieties of quartzite. Blade flakes are collected at almost all places excepting at sunnigandla tanda, Karempudi, Oppicherla, Bhatruwaripalle, Rampuram, Kotayya Nagaram and Vellaturu.

FLAKE BLANKS : Flake blanks constitute almost common component of all the stone age industries. Among the industries of our investigation we have not come across any typical levallois type of flake, on the other hand all of them look like specimens resulting from either core trimming heavy duty tool making. They occur in various formats including oblong, leaf shaped, rectangular and irregular varieties.

Some of them are primary in nature and possess a cover of cortex on the dorsal side. Most of the flake blanks are on grey and brown varieties of quartzite maintaining medium to coarse grain structures.

BROKEN HAND AXES: At most of the major sites of the Naguleru as at Ammarajukunta, Gummanampadu, Garikapadu, Hanumapuram, Pamidipadu etc, we come across hand axes as broken specimens in small numbers. They may be considered to be specimens which are broken during the preparation or just after that.

Broken specimens of hand axes have been reported from a few lower palaeolithic assemblages across Andhra and outside also. Specimens with broken parts are known from a large number of sites across number of sites across Europe and Africa.

CORES : Cores are an integral part of stone age industries. They occur in various stages. Functionally some of the cores could have served the purposes of hammer stones. Cores could have been utilized for breaking open the bone for extracting marrow by the hunter gatherers communities. Also cores could serve to crush the tips of vegetal material to produce useful brushes and wipers. It is known that a set of three cores were assembled in a socket and they were swung against a moving game. In Africa such an equipment is

known as the assembly of Bolas stones (Brodes F 1968; 64) Though not in clusters of there, in India also cores of appropriate size have been utilized by the tribal and rural folk to ward off birds spoiling their crops. Palaeolithic assemblages of the Nagulru valley in varying proportions.

FRAGMENTS : Fragments constitute waste products, unused fragments of rock and other debitage. Small fragments of stone are utilized as planes and wedges while working on wood. Probably during the pre-historic times some of the fragments served a few functions as known from the ethnographic data. Fragments of a variety and size have been collected at almost all the locations in the area under study, with the exception of karempudi.

Discussion

The foregoing typo technological analysis indicates that the naguleru valley though it a tributary of the river Krishna on its right bank preserved the artifacts in the original settings. Form analysis indicated various sub-types of hand axes which are very common in the acheulean culture of Europe, Africa and India. Particularly interesting are the Victoria – westform. They are also known as stellen bosch type. It is also interesting that the various in sites in the naguleru valley give a picture of acheulean succession. This succession is also to be noticed in the nagarjunakonda valley. As all the tool types and sub types are included in the collection. The lower Paleolithic phase of the naguleru valley represents a graphic picture of the lower Paleolithic in the region. Impact this becomes an index which can be compared with any other lower Paleolithic industry as at attimpakkam of coretalair valley of tamilnadu.

BIOBOGRAPHY

- [1]. Allchin B .1959 : The Indian Middle Stone Age : Some new sites in the Central and south ern India. And their Implications. Bull. Inst Arch : 11: 1-36.
- [2]. Binford L.R. 1962 : Archaeology as Anthropology American Antiquity 285(2) Salt hake city
- [3]. Binford L.R. 1980 : Willow smoke and dogs Tails Huntergeathes settlement systems and archaeological site formation. American Antiquity 45 : 4- 20
- [4]. Burkitt M.C. and Cammiact L.A. 1930 : Fresh light on the stone age of eastern India Antiquity : 4:15
- [5]. Cammiade L.A. 1924 : Pygmy implements of the lower Godavari man in Inda. Vol 4 Ranchi
- [6]. Colin Renfrew and Gene strevd 1969 : Close proximity Analysis : A rapid method for the ordering of at chaeological materials. American Antiquity vol 34 No. 3. Salt LKE city.
- [7]. Issac N. 1960 : The stone Age culture Kurnoal. Ph.D. Thesis unpublished Deccan college ponna.
- [8]. Murti D.B. 1977 : Middle stone Age site at Modduru District Guntur, it ninas (Journal of A.P. Archiever) Vol. V. No. 1
- [9]. Murti D.B. and Srinivasaulu K. 196 :Middle Palaeoliths from nagarjuna nagar and Tummala palem, Distric Guntur, A.P. & S.M.S.Lxx1 No.1 and 2.
- [10]. Murti D.B. 1992 : Prehistric Investigation in the Naguleru vally A Metrical Approach. Proceedings of Indian History congress 52 session. New Delhi.
- [11]. Murthy M.L.K. 1970 :Blade and Burin and hate stone age Industries around Renigunta, Chittor District. Indian Antiquity, Vol. N, No.1-4.
- [12]. Robinson W.S. 1951 : A Method sfor Chronologically ordering Archaeological Deposits. American Antiquity vol XVII No. 4, salt lake city.
- [13]. Sankalia H.D. 1974 : The prehistory and proto history of India and Pakistan Deccan College, Poona.
- [14]. Sarma I.K. 1974 : Indian Archaeology – A Review 1973 – 74 :89
- [15]. Soundara Rajan K.V. 1952 : Stone Age Industries near Giddalur, Kurnool, District, Ancient India No 8 : 64- 92.

- [16]. Soundara Rajan K.V. 1985 : “Studies in the stone age of Narjuna konda and its Neighbourhood Ancient India No. 14: 49-103.
 - [17]. Soundara Rajan K.V. and R.V. Joshi. 1958 : Indian Archeology Review 1957 – 58: 8
 - [18]. Thimma Reddy K : Prehistoric Culture of the Cuddanpan District. Andhra Pradesh. Ph.D Thesis Unpublished sagar University.
 - [19]. Vijaya Prakash P. 1981 : Lithic Cultures and Palaeo – Environment of Gambheeram vally Visakhapatnam coast. Ph.D Thesis unpublished Andhra University Waltair.
-