CHAPTER - III

MATERIAL AND METHODS
Now-a-days most of the prehistorians have been concentrating on specific area or microgeographical levels of studies like in any other academic disciplines. Perhaps it is because of some inbuilt advantages of such type of studies. They provide an opportunity to understand much better and they also provide solutions to the problems specific to that local situation and area. In addition, they provide an opportunity to probe into factors like the relationship between man and environment and other biomass. The process of human activities, effects of cultural contacts, details of spatial relations of physical traces of socio-economic activity etc., also become part of studies. That's why prehistorians shifted their studies which were conducted a few years ago to understand the general picture of prehistory relatively to large areas like revenue divisions to that of specific areas.

Even among these specific area studies also, it is very difficult to understand the complex nature of human evolution, environmental changes and its impact on human dignity, cultural process, residues of prehistoric human behaviour and the relationship of human behaviour to the physical world, variation in artefact form, details of spatial relations of physical traces of socio-economic activity, location of craft and subsistence activities in relation to the settlement organisation etc. In addition, unfortunately, the archaeological deposits have been found to be rather poor in organic
remains. To cross such barriers and to explain the archaeological data, ethnoarchaeological studies began with the ethnographic present and worked back to the prehistoric past.

The present study is one of such ethnoarchaeological studies conducted in a specific area. I have selected the coastal and SHAR Islands environment covering about 1250 sq.kms. for investigations of Palaeolithic and Mesolithic cultures along with ethnographic account (Map 4) with the following aims:

**Aims:**

(i) to locate prehistoric occupational sites;
(ii) to build up a chronological sequence of prehistoric cultures;
(iii) to reconstruct the prehistoric economy by taking analogies from the subsistence strategies and cultural parallels in a tribe, who are still practicing primitive economic activities;
(iv) to link prehistoric cultures from the vicinities/confines of the prehistoric sites and in the vicinities of Pulicat lake islands and Coastal areas; and
(v) to draw a continuum from Palaeolithic, Mesolithic cultures to present Hunter-Gatherer through their material culture and parallels in economy.

**Methodology:**

The major methods applied for the collection of archaeological data involves:
Earlier reports available from Andhra Pradesh in general adjoinings of the study area in particular, I have resorted for the collection of already available aerial photographs and satellite imagery (Plate 1). Topo sheets are first studied to locate probable prehistoric occupational sites. Historical and legendary importance of the area also have been collected through several informants. Ethnoarchaeological studies of the coastal regions were attempted as a maiden study.

Explorations for locating prehistoric sites were carried out along the (i) plains, (ii) lakes, (iii) streams, (iv) river banks, (v) foot hills, (vi) hill tops, and (vii) the valleys. The sites have been shown in map according to their topographical location and distribution (Map 4). This information are of great helpful in discovering the sites. Sources of raw material, especially quartzite of different varieties, flora, fauna, river systems etc. were studied and superimposed on the same scale of Stone Age sites plotted on geological maps.

To start with, finished artefacts are collected followed by cores, raw materials, chips and others. Infact, no artefact or raw material involved with the industry are left out. Then the data is analysed in the field itself after Murty (1966) and Jacob Jaya Raj (1983). Statistical tables are formulated and for selected artefacts diagrams have been drawn. Then the selected data is transported to the lab, washed clearly depending upon the need and then registered serially for each locality with separate alphabets named after river or tank or other significant land marks of the site.
By using the latest methods, the archaeological data have been analysed on the basis of their typotechnology. The data collected have been analysed in terms of both qualitative and quantitative reasons and have been presented for descriptive statistics and also for graphic presentation.

Based on the ecotomes, relative distance and altitudes, the sites have been classified into (i) Coastal; (ii) Midland; and (iii) Interior zone types. Each zone measures 26 kms. width from East to West (from coastal line to Veligonda hill ranges) and from North and South tentatively between selected latitudes of 13°45' to 14°20' N. Based on the ecotome and on the occurrence of Stone Age artefacts, each zone is divided into (i) Plain land sites, (ii) Lakeside sites, (iii) Streamside sites, (iv) River sites, (v) Foot hill sites, (vi) Hill top sites, and (vii) Valley sites and each into several loci. In case of surficial occurrences, extent of artefactual occurrence, density and distance between the sites were also taken into consideration each locus is divided into several scatters. In case of trial pit excavation, they are called as trenches. Each locus, scatter or trench was divided into several square metres and from selected square metres of average density, randomly the artefacts were collected.

The Stone Age material are classified in the same lines as classified by Murty (1966) and Jacob Jaya Raj (1983). Functions are attributed and assigned to some specific tool types on documentary ethnographic evidence (Mulvaney, 1976: 76-84) and experimental results used in microwear analysis of stone tools in other parts of the world (Keeley, 1980: 102-109). It is presumed that the variability in the
distribution of stone tools shows the variability in human activities (Jacob Jaya Raj, 1983: 46-47) and in the lines of Binford and Bindord (1969: 94-95) related the stone tools to human activities and then to determine how these tools were distributed at different sites in order to assess the relevance for Palaeolithic hunter-gatherers.

**Ethnographic data:**

Ethnographic data, particularly on the material culture, the equipment of Yanadi tribe inhabiting in and in the vicinities of archaeological sites and the islands of Pulicat lake area is also collected and analogies have been made (Daniel Styles, 1977). The data had been collected from different habitations which are more or less within the confines of archaeological sites and adjoinings of Pulicat lake area. Information regarding hunting activity, floral food items, medicinal plants and other ethnobotanical information that are gathered and information on fishing, fowling etc. has been collected by the following methods:

1. Interviewing Yanadi of all age groups of both the sexes.
2. Information by participant and non-participant observation in hunting, fishing, fowling and gathering expeditions.
3. Documentary evidence like hand books, census reports, district gazetteers, statistical abstracts, district manuals and information has also been drawn from published and unpublished regional ethnographic monographs and field reports concerned with Yanadi.
Sites and Stratigraphy:

Explorations conducted in Coastal, Island environments and in the Veligonda ranges have brought several archaeological sites ranging from Palaeolithic to Mesolithic periods to light. These are found both on surface and in a stratified contexts. The sites can be distinguished as (i) Plainland sites, (ii) Lakeside sites, (iii) Stream side sites, (iv) River sites, (v) Foot hill sites, (vi) Hill top sites, and (vii) Valley sites, each of these are described as follows:

(i) Plainland sites (Map 5)

The plainland sites are characterised by Lower and Middle Palaeolithic occurrences in the scrub jungles and on patches of uncultivated land in the terrain. A total of seven loci and 17 scatters in the order of three sites and six scatters in the Coastal zone and four sites and 11 scatters in the Interior zone thus belong to the plainland sites. The sites are divided into the following loci.

I. 1. Locus 1

The site is situated to the southwest of the village Chittedu in Kota mandal on either side of the road from Gudur to Vidyanagar. From this locus three scatters of Middle Palaeolithic occurrences are presently considered.

The entire surface of the land is characterised by lateritic gravel, however at a few places some thin layer of red silt is also observed. The site is almost thickly covered in scrub jungle bushes
and thorny vegetation. The artefacts are collected from lateritic gravel. We can observe a sequence of two layers:

(i) lateritic gravel of unknown depth, and (ii) a layer of red silt of 20 cms. thickness from a dugout pit (Fig. 1).

Fig. 1

Scatter 1: Scatter one is situated on the right side to the Gudur to Vidyanagar road. It measures about 5 sq. mts. and has yielded Middle Palaeolithic artefacts made on coarse grained to medium grained quartzite. The tool kit comprise side scrapers, borers, notch, cores and flakes.

Scatter 2: The second scatter is situated on the left side about 2 kms. away from the road said above and measures about 4 x 4 mts. The artefacts comprise side scrapers, side and end scrapers, points, cores, flakes and chips made on coarse to medium grained quartzite.

Scatter 3: The third scatter is situated just 25 mts. east of the preceding occurence. It measures about 5 sq. mts. The artefacts are made on the same raw material and typological varients are similar to that of the preceding scatter.

I. 2. Locus 2

Molakalapudy is a small village and the Palaeolithic site is located about seven kilometres away. The site is divided into two scatters and both these are found in jungle and show Lower and Middle Palaeolithic tool kit respectively. These scatters are described below.
Scatter 1: It is situated about 10 mts. east of the road leading to Molakalapudy in the scrub jungle. It measures about 10 sq. mts. Lower Palaeolithic artefacts include handaxes, choppers, cleaver and flakes made on coarse grained, dark brown coloured quartzite and also on quartz.

Scatter 2: This scatter is located further east to the first scatter at a distance of about 25 mts. in the midst of bushes. It measures 12 sq. mts. and yielded Middle Palaeolithic artefacts like side scrapers, borer cum end scrapers, cores, flakes and chips made on medium to coarse grained, brown coloured quartzite.

I. 3. Locus 3

The site is situated on the Nayudupet-Ekasiri bus route within 2 kms. from Mittakandriga village. Only one scatter measuring about 8 sq. mts. is found. The hillock-Ekasiri Thippa is situated within one kilometre to this locus. This locus is in the midst of the scrub jungle. The artefacts include side scrapers, blades and flakes made on medium grained quartzite. The artefacts are fresh and are in mint condition.

I. 4. Locus 4

The site is located 2 kms. south to Venkatagiri town near the river Kaivalya. A total of 3 scatters are observed to yield Lower and Middle Palaeolithic artefacts. Plenty of handaxes and choppers lying over the surface. The artefacts on the surface are unrolled and they are slightly patinated.
Scatter 1: Infact, the scatter is situated about half a kilometre south of Thribhuvani theatre near Raja's holiday house. The area is covered with herbs and thorny bushes and yielded both Lower and Middle Palaeolithic artefacts. The variants include choppers, handaxes, miniature handaxe, cleaver, side scrapers, cores and flakes. Lower Palaeolithic artefacts are made on coarse grained quartzite while Middle Palaeolithic are made on medium grained quartzite of brown colour. The artefacts are slightly patinated. The area on which these are found measures about 15 sq. mts.

Scatter 2: This scatter is situated 2 kms. south to Venkatagiri town near Kasithota and Boggulamitta, northeast to Kaivalya river. It measures about 10 sq. mts. on the lateritic pebbly gravel surface. The assemblage include the variants as in the preceding scatter. The artefacts are slightly patinated.

Scatter 3: The isolated occupational scatters occur in varying density. These clusters range from about 3 sq. mts. to 10 sq. mts. From these scatters, clusters of average artefactual density are taken into account. The artefacts include choppers, handaxes, miniature handaxe, cleavers, side scrapers, end scrapers, cores and flakes made on coarse and medium grained quartzite in the case of Lower and Middle Palaeolithic respectively. Artefacts are slightly patinated. This scatter is situated further west to the preceding scatter.

The artefacts lie directly over the weathered bed-rock. There are some pits and a small gully has exposed a section which shows three layers. The first is weathered bed-rock of unknown depth; the second is
a gravel of about 100-120 cms., while third is a thin layer of silt of about 15-20 cms. The gravel found in the section mostly contains angular vein quartz, besides occasional quartzite and appears as colluvial in nature (Fig. 2).

**Fig. 2**

**I. 5. Locus 5**

This locus is situated at about two kilometres away from Venkatagiri town in southward direction at Manulalpet village. The locus is found on the left side to Tirupati-Nellore bus road.

**Scatter 1:** This is situated in the southwest direction to the village and is found to expose both Lower and Middle Palaeolithic artefacts. The variants include choppers, handaxes, miniature handaxes, side scrapers, cores and flakes. The area measures about 8 x 8 sq. mts. and the stratigraphy is observed in the pit dug out (Fig. 3).

![Diagram](image)

The stratigraphic section consists of five layers. The bottom most layer is formed by pebbly gravel layer. This layer contain artefacts belonging to Lower and Middle Palaeolithic phases.

**Fig. 3**

On the pebbly gravel layer, there is a dark brown coloured silt deposit measuring about 80 cms. The silt particles are small and are compactly arranged. No artefacts are collected from this layer.
The third layer is a deposit of loose gravel of 20 cms. thickness. The size of small pebbles is uniform. These quartzite pebbles are loosely packed with silt.

On the small pebbly layer a deposit of brown silt layer is found. It measures about 40 cms. in thickness. On the sandy layer, the uppermost layer of humus of recently formed red sand is found and it is swampy.

Scatter 2: It is situated 25 mts. north to the preceding scatter and measures about 3 x 3 sq. mts. Middle Palaeolithic flake tools, miniature handaxes, cores, flakes and chips have been collected. The artefacts are fresh in condition. They are made on medium grained quartzite.

I. 6. Locus 6

This locus is situated about 4 kms. west to Rapur town on right of the Rapur-Rajampet bus road. The area is right on the Veligonda hill ranges and covered with bushes and thorny scrubs. The locus covers approximately 30 sq. mts. and this is divided into five scatters. The tool types belong to Lower Palaeolithic period and they lie on brown silt and over the weathered bed-rock which are exposed due to the erosional activity. This is divided into different scatters.

Scatter 1: This scatter measures about 4 x 4 mts. From this scatters choppers, handaxes, cores and flakes were collected. Some artefacts show slight patination.
Scatter 2: The scatter is situated about 15 mts. west of the preceding scatter. From this scatter measuring about 5 sq. mts. choppers, handaxes, cleavers, end scrapers, cores and flakes were collected. They are also slightly patinated.

Scatter 3: This covers about 4 sq. mts. area and situated on the northern side to the preceding scatter. Among the finished artefacts handaxes stand next to choppers, chips also recorded inaddition to cores and flakes.

Scatter 4: This scatter is located about 25 mts. west to the preceding scatter. The features of this scatter are the same as those of scatter 3 described above.

I. 7. Locus 7

This site is located on the left side to Rapur-Gundavolu bus road and about 100 mts. to the northwest of Saidalapalli village. Veligondas form the adjacent hill ranges to the site. The land is thickly strewn with jungle shrubs. We can observe the following stratigraphy from the sections exposed by small rain gullies. (i) the lower most layer is weathered bed-rock of unknown depth; (ii) gravel with angular pebbles of about 40 cms.; (iii) dark-brown sandy silt of calcareous nature of about 65 cms.;
(iv) thin layer of loose gravel of about 25-30 cms.; and (v) brown silty sand of 45-50 cms. (Fig. 4). Both the gravels are implementiferous yielding Lower and Middle Palaeolithic artefacts respectively.

Scatter 1: This scatter measures about 7 sq. mts. and is located about 100 mts. northwest of the village Saidalapalle. The artefacts are collected both from surface and exposed sections of rain gullies. A number of handaxes, choppers, miniature handaxes, side scrapers, cores, flakes and chips are collected.

Scatter 2: This occurs on the extreme western side of the preceding scatter at about in 20 mts. distance. It measures about 5 sq. mts. and comprise all the artefact types as in the preceding scatter and in addition points, borers and denticulates also are found.

II. Lakeside site (Map 6)

The lakeside site is characterised by Lower, Middle and Upper Palaeolithic and Mesolithic occurrences. It is found in the Midland zone and shows only one locus which is divisible into four scatters. In this area there is a huge reservoir bunded for irrigation purpose probably recently. Very near to this there is another natural pond and both are fed by northeast monsoons. These lakes are found in the midst of almost in the scrub jungle of Pudur Reserve Forest. Whole of the area is treated as only one locus.
II. 1. Locus 1

This locus is situated on the left side of the Nayudupet-Mallam bus road about 6 kms. southeast to Nayudupet village. The site is associated with Palaeolithic and Mesolithic specimens found in scrub jungle and it is divided into four scatters.

Scatter 1: The first scatter is situated on the western bank of the Mittakandriga reservoir and possess Lower, Middle and Upper Palaeolithic cultural data. It measures about 4 sq. mts. and the artefact types include choppers, handaxe, side scrapers, burins, cores, flakes, broken blades and chips. The raw material for Lower Palaeolithic is coarse grained quartzite, for Middle Palaeolithic is medium grained quartzite and for Upper Palaeolithic it is fine grained quartzite as well quartz.

Scatter 2: Close to the eastern bank of the Mittakandriga reservoir, a number of isolated clusters spread in a wider area possessing Lower, Middle and Upper Palaeolithic and Mesolithic artefacts are found. The Lower and Middle Palaeolithic artefact variants are same as in the case of the preceding scatter. But, in Upper Palaeolithic cultural data we can find complete blades also besides the preceding scatter types. Mesolithic artefacts include blunted back blades, retouched blades, points, side scrapers, denticulates, notches, flake cores, flakes, blades and chips. The Mesolithic tools are predominantly made on milky quartz of fine grained quartzite.

Scatter 3: A scatter measuring about 6 sq. mts. on the eastern border of a small pond in the scrub jungle towards southeastern side of the
preceding scatter is found. The artefacts are fresh and have suffered no disturbance. The artefacts include choppers, handaxes, borers, points, notches, side scrapers, cores and flakes belonging to Lower and Middle Palaeolithic data. The raw material is same as in the case of the preceding scatters.

**Scatter 4:** This scatter is situated on the eastern border of the pond and measures about 5 sq. mts. The characteristic feature of the artefact varients and the raw material is same as in the case of scatter shown above.

In all the above scatters the artefacts are almost in fresh and are in mint condition except at scatter One where handaxes with tips broken and broken blades were collected.

**III. Streamside sites (Map 7)**

The streams in the study area take their origin in the Veligonda hill ranges. Thus Menakur stream takes its birth from Yarlapudi kaluva basin. The streams are found to flow during rainy season and in summer remain dry except at Malliswarikona and Marrimanupenta. Menakur, Dakkili, Lalapet streams are located at about 270 mts. AMSL. Palemkota at 500 mts. AMSL and Marrimanupenta and Malliswarikona streams are located at 500 mts. AMSL and 749 mts. AMSL respectively. Relatively Malliswarikona and Marrimanupenta sites are undisturbed and all the sites are rich sources for cobbles and pebbles in the stream courses. These sites have shown Lower and Middle
Palaeolithic cultures, while three are associated only with Lower Palaeolithic culture and one site Middle Palaeolithic data.

A total of six loci and 14 scatters comprise the streamside site type. Among them one locus and three scatters are in Midland and five loci and 11 scatters are found in Interior zones. Artefactual scatters occurring right on the granitic surface without any displacement, as well as on the ancient alluvial deposits of Godderu, Lalapet, Malliswarikona and Dakkili in a primary context, as well as in the river channels (though in a rolled condition) attesting as these econitches formed favoured habitats from Acheulian to Mesolithic times. In the study area the following streamside sites are found.

III. 1. Locus 1

The site is situated on the western bank of stream near Menakur village, which crosses the Nayudupet-Venkatagiri road. The stream bed is full of pebbles. A number of artefacts of Lower and Middle Palaeolithic types are collected. Three scatters represent Lower and Middle Palaeolithic specimens.

Scatter 1: This scatter is situated on the northwestern side to Menakur village. The surface on the western side of the stream has yielded rolled and patinated choppers, handaxes, cleavers and cores. The material employed is coarse grained quartzite.

Scatter 2: This scatter is situated about 20 mts. west to the preceding scatter. It measures about 3 sq. mts. and has yielded Lower and Middle
Palaeolithic. Slightly patinated choppers, handaxes, miniature handaxes, side scrapers, end scrapers, cores and flakes are common. These artefacts are made on coarse to medium grained quartzite in the case of Lower and Middle Palaeolithic artefacts.

**Scatter 3:** This scatter is situated on the leftside to the Nayudupet-Venkatagiri bus road situated about 250 mts. south to the preceding scatter. The western side of the stream has yielded rolled and patinated Lower Palaeolithic handaxes, choppers, cores and flakes and slightly patinated Middle Palaeolithic miniature handaxes, side scrapers, cores and flakes. The raw material is same as in the case of scatter 2.

**III. 2. Locus 2**

This site is situated about 6 kms. northeast to Malliswarikona stream on right side of the stream. The artefacts are spread in a scatter which measures about 6 sq. mts. The artefacts are slightly patinated but not rolled. They are all made on quartzite and belong to Lower Palaeolithic. The area is in the midst of vegetational cover and the artefact variants include choppers, handaxes, cores and flakes.

**III. 3. Locus 3**

This site is located about 9-10 kms. southwest of Venkatagiri town, on the way to the waterfalls of Malliswarikona. About 250 mts. northwest of Marrimanupenta stream, two scatters representing Middle Palaeolithic and Mesolithic are studied. A number of river gullies traverse the area and join the main stream, which take its birth from Malliswarikona waterfalls. The eroded rain gullies show the following
stratigraphy: (i) the first layer is weathered bed-rock of unknown depth; (ii) overlying this is brown silt of about 60-80 cms. thickness. We find wide spread occurrence of pebbles of quartzite lying directly over the weathered bed-rock or outcrops of the bed-rock and the brown silt is seen as patches sustaining the erosional activity of the rain wash from the hills (Fig. 5).

**Scatter 1:** This scatter is located 250 mts. northwest of Marrimanupenta, a village. It measures about 12 sq. mts. The artefacts belonging to Middle Palaeolithic including miniature handaxes, side scrapers, end cum side scraper, denticulate, notches, point, borer, cores and flakes are collected from light brown soil surface. The raw material employed is of medium grained quartzite. The artefacts are heavily patinated.

**Scatter 2:** A scatter of about 8 sq. mts. is situated about 200 mts. further west to the preceding scatter. A good number of Mesolithic artefacts made on quartz of milky, smoky and dull white colour, black lydianite and brown coloured fine grained quartzite are collected from the surface. The artefact variants comprise retouched blades, blunted back blades, truncated blade, points, crescents, side scrapers, burins, denticulate, cores, flakes, blades and chips.
This site is situated near Palemkota village, which is located about 10-12 kms. northwest of Vankatagiri town. The scatters of Lower Palaeolithic occurrences were recorded near the Palemkota stream, which originates in the Veligonda hill ranges. The following stratigraphy can be observed from the Stream: (i) weathered bed-rock of unknown depth; (ii) cemented pebbly gravel of about 100 cms.; (iii) dark brown silty sand of calcareous nature of about 60 cms.; (iv) a patch of loose gravel of 30 cms.; and (v) brown silty sand of about 20 cms. thickness (Fig. 6).

**Scatter 1:** This is situated about 100 mts. west of the stream near Palemkota village. Some artefacts belonging to Lower Palaeolithic were collected from the pebbly gravel and also soil surface. The artefacts from the pebbly gravel have calcareous incrustations. The artefacts comprise choppers, handaxes, scrapers, cores and flakes made on coarse grained quartzite.

**Scatter 2:** This scatter is located further 50 mts. west of the preceding scatter in the scrub jungle. The artefact variants and the raw material are the same as in the preceding scatter. But in this scatter the artefacts come from the surfacial scatters and the artefacts are slightly patinated.
This site is located at the outskirts of Lalapet village. The stream take its birth in the Veligonda ranges and join the Kaivalya river in the eastern outskirts of Venkatagiri town. On the right bank of the stream about 50 mts. west of the village Lalapet, two scatters belonging to the Lower Palaeolithic period were noticed. The stratigraphy is almost same as in the case of the river Kaivalya at Venkatagiri.

**Scatter 1**: This is located about 50 mts. west of Lalapet village on the right bank of the stream. The artefacts were collected from the patches of gravels spread on the bed-rock. The artefacts include choppers, handaxes, scrapers, cores and flakes made on coarse grained quartzite and occur in primary context.

**Scatter 2**: Further on the west of about 25 mts. to the preceding scatter, rolled and patinated handaxes and choppers are collected from pebbly gravel. The raw material is same as in the case of the preceding scatter.

**III. 6. Locus 6**

This site is located at about one kilometre south of Dakkili village in Dakkili mandal. On the Venkatagiri - Rapur bus road a stream crosses the road, it is at this causeway the stream has exposed two sections as described here: (i) dark brown silty sand of
about 125 cms. thickness with high percentage of calcareous nodules; (ii) brown silty sand of about 55 cms. thickness (Fig. 7 A).

The second one is found at about 100 mts. upstream from the causeway, a small nullah joins the same stream and exposes a section. It shows: (i) dark brown silty sand with calcareous nodules of about 130-150 cms. thickness; (ii) a thin loose gravel of about 15-20 cms. thickness, which yielded Middle Palaeolithic (Fig. 7 B). Four scatters representing Lower and Middle Palaeolithic are studied with the aid of this section and the locus.

Fig. 7 B

Scatter 1: This is located about 100 mts. from the causeway at the nullah. The Middle Palaeolithic artefacts such as miniature handaxes, side scrapers, end scrapers, end cum side scrapers, points, cores, flakes and chips were collected from the loose gravel of the nullah and the surface. The medium grained quartzite of dark to medium brown colour was used in making these tools, all are in mint condition.

Scatter 2: About 100 mts. west to the preceding scatter a few Lower Palaeolithic artefacts were collected from an area of 3 sq. mts. The artefacts comprise choppers, handaxes, cores and flakes made on coarse grained quartzite.

Scatter 3: This scatter is located further 3 kms. upstream. A section observed in the stream bank shows the following stratigraphy:
(i) partly exposed weathered bed-rock; (ii) cemented pebbly gravel of about 80 cms.; (iii) dark brown silty sand of 60 cms. thickness with calcareous nature; (iv) a small patch of loose gravel of 15-20 cms. thickness; and (v) brown silty sand of 25 cms. thickness (Fig. 7 C).

The Lower Palaeolithic artefacts with calcareous incrustations were collected from the basal gravels.

**Scatter 4:** Very near to the preceding scatter, further south at about 200 mts. a few Middle Palaeolithic artefacts were collected in slightly patinated conditions of patches of about 8 sq. mts. scatter. The tool types include miniature handaxes, side scrapers, points, cores, flakes and chips.

**IV. River sites (Map 8)**

In the district Penner, Kandleru, Swarnamukhi, Kaivalya, Paleru, Manneru etc. are the principal rivers. Among them Penner and Swarnamukhi are the important rivers concerned with the study. Penner rises in the Nandidurg hills in former Mysore state (present Karnataka) and after a course of 456 kms. in Anantapur and Cuddapah districts, enters Nellore district through a fine gorge in the Velikondas at Somasila and joins the Bay of Bengal. River swarnamukhi and kaivalya rises in Chandragiri hills in Chittoor district. The rest of the rivers rise in the Velikondas as streams and form their shape when they enter
into the plains towards east. In the present study, the river sites are recorded on the banks of Swarnamukhi and Kaivalya associated four and two sites respectively. A total of six loci and 13 scatters are included in the river sites of which two loci and three scatters fall in the Coastal, two loci and four scatters fall in the Midland, and the rest two loci and six scatters fall in the Interior zones. The flood-plain of these two rivers is under intensive cultivation and so it became difficult to locate the archaeological sites. Artefactual occurrences were noticed both from the stratigraphy as well as surfacial scatter and the following sites are found.

IV. 1. Locus 1

The site is located to the south of Gudali village in Kota mandal on the left bank of Swarnamukhi river. In the present study two scatters represent Lower and Middle Palaeolithic cultural remains. They are:

**Scatter 1:** This scatter is measuring about 10 sq. mts. and bears exclusively Lower Palaeolithic artefacts. The artefact types are choppers, handaxes, scrapers, cores and flakes. They are rolled and patinated.

**Scatter 2:** A scatter measuring about 8 sq. mts. lies about 100 mts. west of Gudali village. The artefacts exclusively belong to Middle Palaeolithic and the variants include side scrapers, end scrapers, end cum side scraper, points, notches, cores, flakes and chips made on medium grained quartzite. The artefacts are slightly patinated.
IV. 2. Locus 2

One scatter measuring about 10 sq. mts. form this locus near Mettu, a village is situated on the southern side of Swarnamukhi. The microlithic clusters are found to occur on brown silty sand. The artefacts are fresh and the types include truncated blades, blunted back blades, points, crescents, side scrapers, denticulate, knife, cores, flakes, blades and chips. The raw material is milky and glassy quartz and fine grained quartzite of dark brown shade.

IV. 3. Locus 3

The Swarnamukhi is a part of riverine zone to the west of Nayudupet town and shows occurrence of vast Palaeolithic clusters. This locus is situated on the eastern bank of the river. Three scatters found are included in the study.

Scatter 1: It is situated near the burial ground on the eastern bank of the Swarnamukhi river. It measures about 5 sq. mts. The Lower and Middle Palaeolithic artefacts are densely concentrated. Coarse grained in the case of Lower Palaeolithic and medium grained quartzite in the case of Middle Palaeolithic period were employed. The typological variants are choppers, handaxes, miniature handaxe, side scrapers, cores, flakes and chips. The artefacts are slightly patinated.

Scatter 2: This scatter is located 300 mts. south to the preceding scatter found near Pichhireddythropu. The artefacts are exclusively Middle Palaeolithic. The variants are miniature handaxes, side scrapers, points, cores, flakes and chips. They are found on lateritic gravel and
are in fresh condition.

**Scatter 3:** The scatter is found further 200 mts. south to the preceding scatter. The artefacts belong exclusively to Upper Palaeolithic. The variants include side scrapers, notches, knives, burins, denticulate, crescent, pointed blade, cores, blades, flakes and chips made on fine grained quartzite. The artefacts are fresh and are in mint condition.

**IV. 4. Locus 4**

This locus is situated on the western bank of the Swarnamukhi river, opposite to the preceding locus. There is only one scatter measuring about 12 sq. mts. The artefacts comprise choppers, handaxes, miniture handaxes, points, notches, side scrapers, cores, flakes and chips belonging to Lower and Middle Palaeolithic phases. The tool kit is made on coarse and medium grained quartzite respectively. They are slightly patinated while some of them particularly Lower Palaeolithic types are in rolled condition.

**IV. 5. Locus 5**

The site is located at Venkatagiri town on both left and right banks of the river Kaivalya. A total of three scatters belonging to Lower and Middle Palaeolithic phases were taken into consideration.

**Scatter 1:** This scatter is located at about 2 kms. south to Venkatagiri town on the left bank of the Kaivalya river. A good number of artefacts belonging to Lower Palaeolithic made on coarse grained quartzite were
collected. They are slightly patinated and heavily rolled. The tool types are choppers, handaxes, cleavers, cores and flakes.

**Scatter 2:** This scatter is located on the right bank of the river Kaivalya. Here trial pit trench was made besides the stratigraphy observation. The stratigraphy consists of: (i) the bottom most layer pebbly gravel with tools of 105 cms. thickness; (ii) greenish ash coloured clay deposition of 40 cms. thickness; (iii) a thin pebbly gravel of 10-40 cms. thickness; and (iv) the reddish brown humus of 10 cms.thickness (Fig. 8 A). The artefacts belong to Lower Palaeolithic and the raw material are the same as in the case of the preceding scatter.

**Scatter 3:** This scatter is located about 2 kms. northeast to Venkatagiri town on the right bank of the river Kaivalya. About 150 mts. southeast of the site, a small gully has exposed the following stratigraphy: (i) a weathered bed-rock of unknown depth; (ii) a pebbly gravel layer of about 100-125 cms.; (iii) a thin layer of dark brown silt of about 15-20 cms. (Fig. 8 B). The artefacts on the terrace directly lie over the weathered bed rock and they are unrolled but slightly patinated. The gravel in the section is mostly angular veins and quartzite appear as colluvial occurrence. This gravel forms gravel II in relation to the basal gravel found in the river bed. The artefacts were collected from the basal
The terrace section, collected from one unit of palaeoarthritic artefacts are scattered (Fig. 9). The lower and preservation an occurrence river preserves an occurrence of the Yarum. The left side of the river and the terrace is located between scatter 1: the first terrace, described below.

The three terraces located on the banks of Kalvalaya, each scatter is belonging to lower and middle palaeoarthritic is found. It is divided into Venkeraghat-Churur bus road, a widely distributed artefactual occurrences. This site is located about 9 kms from Venkeraghat on the right.

IV. 6. Focus 6

Miniature handaxes, side scrapers, round scrapers, flakes and chips, case of scatter 1 and 2. Middle palaeoarthritic artefacts include artefacts respectively. The lower palaeoarthritic tools are same as in the medium to fine grained quartzite in the case of middle palaeoarthritic in the case of lower palaeoarthritic and coarse to medium grained and gravel and gravel II of the section. The raw material is coarse grai
**Terrace I:** The terrace shows (i) Weathered bed rock; (ii) a thin mantle of pebbly layer; and (iii) dark brown silt which appears in patches due to erosion. This terrace is about 5 mts. high from the river bed and finally slopes and merges into terrace II. Lower Palaeolithic artefacts were collected from the pebbly gravel patches. They are in slightly patinated and rolled condition.

**Terrace II:** The second terrace stands over a height of 3-4 mts. from the river bed. It shows of: (i) pebbly layer measuring about 1-2 mts.; and (ii) the former is sealed by brown silt. The pebbly gravel layer is divisible into: (1) highly cemented bottom layer; and (2) very loose pebbly layer. Middle Palaeolithic artefacts were collected from this gravel. They are slightly rolled and patinated.

**Scatter 2:** This scatter is located away from the village Vengamambapuram in the scrub jungle. The scatter measures about 15 sq. mts. Lower Palaeolithic artefacts like choppers, handaxes, cleaver, cores and
flakes made on coarse grained quartzite are collected. The artefacts are in fresh condition. But a few of them show white patination.

Scatter 3: This scatter is located in the scrub jungle located by the side of river Kaivalya at the village Yachavaram. Partly eroded surface of light brown soil which exposed Middle Palaeolithic artefact variants comprising miniature handaxes, side scrapers, points, borer, cores, flakes and chips made on medium grained quartzite.

V. Foot hill sites (Map 9)

The foot hill sites represent all the three phases of Palaeolithic cultures, among them Middle Palaeolithic tool kit is a dominant variety. These occurrences are found on the surface. The coastal belt is represented by small elevation or hillocks and in the present study the foot hill sites of Ekasiri and Perimidi represent the Middle Palaeolithic assemblages of hillock type sites. These sites fall under Coastal and the Midland zones. The other two sites namely Mupillamandagutta and Mallemadugu represent Lower and Upper Palaeolithic cultures respectively and form a part of Veligonda hill ranges. A total of four loci and seven scatters represent the foot hill sites. Among them one locus and one scatter fall within the Coastal, one locus and two scatters in the Midland and two loci and four scatters in the Interior zones. Since, these foot hills have a lateritic and red sandy loam cover besides large quantities of boulders and cobbles, these areas are not suitable for agriculture. Hence, these are relatively undisturbed. The vegetation along these foot hills vary from scrub jungle to dry deciduous nature. It can be inferred that the land scape
during the prehistoric period was not much different from that which is seen today.

V. 1. Locus 1

The locus is represented by only one scatter measuring about 6 sq. mts. and it located on the left side to Ekasiri-Nayudupet bus road, in the scrub jungle (Plate 2). The artefacts are scattered on the lateritic gravel surface along with the quartz nodules and pebbles. The Middle Palaeolithic artefacts made on medium grained quartzite include side scrapers, notches, borers, biconcave ending in a borer, cores and flakes are collected. The artefacts are in fresh and mint condition.

V. 2. Locus 2

This locus is situated at the foot of the hillock namely Perimidi Thippa in Balayapalli mandal. The artefactual occurrences are spread in two scatters described as follows.

**Scatter 1:** The first scatter is located to north of the hillock and measures about 4 sq. mts. The erosional gullies are found to expose this scatter. The Middle Palaeolithic tools like side scrapers, end scraper, borers, denticulates, notches, cores, flakes and chips made on medium grained, dark brown to brown and smoky coloured quartzite are collected.

**Scatter 2:** The second scatter is situated about 150 mts. west of the preceding scatter. It measures about 5 sq. mts. The artefacts comprise miniature handaxes, side scrapers, end scrapers, points, end cum side
scraper, cores and flakes. The raw material is same as in the case of the preceding scatter.

V. 3. Locus 3

This is situated on the eastern side to the Mupillamandagutta hillock, which lies close to Veligonda hill ranges in Venkatagiri mandal. It covers approximately 100 mts. area comprising two scatters, these artefacts show late Acheulian character of the industry.

**Scatter 1:** The scatter lies about 150 mts. east to the hillock Mupillamandagutta and measures about 4 sq. mts. The tool types are choppers, handaxes, cores and flakes. The artefacts are fresh and are in mint condition.

**Scatter 2:** The second scatter measures about 5 sq. mts. and is located about 100 mts. north to the preceding one. The artefacts are exposed on the surface and show a high frequency of flakes. The tool types and the state of preservation is same as in the preceding scatter. The raw material employed are coarse grained quartzite and quartz.

V. 4. Locus 4

The site is located in the Veligonda ranges near Mallemadugu village, it is still in buried state and fresh artefacts are found to expose through quarrying activities. The vegetation cover belong to degraded savanna and discontinuous thorny thicket type. The artefacts are fresh and are in mint condition. The assemblage belonging to Upper Palaeolithic occuring in two scatters. They are described as follows:
Scatter 1: This is located at about 250 mts. east to Mallemadugu village and measures about 14 sq. mts. Infact it was a buried scatter which got exposed later due to quarrying activities. The Upper Palaeolithic artefacts are found to occur, they are made on fine grained quartzite of olive green colour and lydianite. The primary components of the tool kit include side scrapers, burins, notches, knives, denticulates, points, bill hook, cores, blades, flakes and chips.

Scatter 2: The second scatter is located a few mts. away to the east to the preceding scatter and confined to an area of 5 sq. mts. The raw material and the artefact types are similar as in the preceding scatter, however in this scatter two bored stones were also collected.

VI. Hill top site (Map 10)

Hill top site is represented by only one locus and one scatter in the Coastal zone. It measures about 3 sq. mts. and the artefacts are found to spread on the laterite surface on the lateritic hillock known as 'Ekasiri Thippa' found in Chittamur mandal. The hillock is devoid of vegetation, there is an artificial cave measuring about 15 feet in diameter with semi spherical shape on hill top and its interior is a rectangular shaped room like structure measuring about 8 x 5 x 5 feet, in which the demon "Bakasura" was said to have lived during the historic past. The site is associated with Mesolithic artefacts comprising of retouched blades, blunted back blades, crescents, side scrapers, notches, cores, flakes and blades made on milky quartz, fine grained quartzite and lydianite. The artefacts are in fresh state and are in mint condition.
VII. Valley sites (Map 11)

Valley sites are represented in tropical deciduous, woodland, savanna woodland type of vegetation. These sites are located about 232 mts. AMSL in the valleys of Veligonda ranges, which fall within Interior zone. Two loci and four scatters representing Lower, Middle and Upper Palaeolithic periods comprise the data. The geological formations include the Archaean, Purana and Cuddapah groups. The main rock formations are of quartzite, shale and mantle is predominantly red loam and red sandy soil. There are many natural springs, an abode for a variety of wild animals habitation, birds, wild vegetable foods, honey, and turtles are plenty. A variety of fish are found in the pools and perennial sources. These factors might have provided ideal niches for prehistoric men to live from Acheulian to Upper Palaeolithic times and even beyond.

VII. 1. Locus 1

The locus is found in about 15-18 kms. southwest to Venkatagiri town in the Veligonda ranges near the Malliswarikona water falls. Two scatters of Lower and Middle Palaeolithic assemblages form studied and are described below.

Scatter 1: The first scatter is located about 200 mts. north to Malliswarikona water falls. Acheulian artefacts are found protruded on the surface of the loose feruginous gravel on red sandy loam. They include choppers, handaxes, cores, flakes and a cleaver made on coarse grained quartzite. The artefacts are fresh and are in mint condition.
Scatter 2: The second scatter measures about 6 sq. mts. situated about 25 mts. northeast to the preceding scatter. The Middle Palaeolithic artefacts such as miniature handaxes, side scrapers, end scrapers, notches, denticulates, points, borers, cores, flakes and chips are collected. The raw material used is medium grained quartzite. The state of preservation is same as in the case of the earlier scatter.

VII. 2. Locus 2

The site is located in Rapur Reserve Forest about 8 kms. away from the bus stop on the Nellore-Cuddapah district border, near Kutalamarri village. The area is covered with dense vegetation where thousands of fresh artefacts belonging to Upper Palaeolithic are exposed due to denudation. A small 50 sq. cms. trial excavation at an undisturbed area revealed seemingly in situ. This area is studied in two cases described as follows.

Scatter 1: A scattering measuring about 15 sq. mts. is found in the midst of bamboo bushes about 150 mts. southern side to Kutalamarri village. It displays tool types such as side scrapers, denticulates, knives, notches, burins, borers, bill hooks, cores, blades, flakes, chips, bored stones and a stone hammer belonging to Upper Palaeolithic period. These are made on fine grained quartzite raw material.

Scatter 2: The scatter is located at about 30 mts. south of the preceding scatter. The artefact types, the raw material and the state of preservation are the same in this scatter also except absence of bored
stones and stone hammer. The artefacts are found in buried condition however some of them are exposed partially here and there.

The material collected is subjected for various desired methods of analysis presented in the chapter to follow.