EXCAVATION OF ARCHAEOLOGICAL SITES IN TAMILNADU

PARIKULAM

(2005 - 2006)



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EDITOR'S INTRODUCTION

Archaeology is the science which deals with past. The archaeological excavation reveals the material evidence of our ancestors. The State Department of Archaeology carried out excavations in the various parts of the state.

In the year 2005-2006 the department carried out excavation at Parikulam and Marakanam at a cost of Rs. 5.00 lakhs. Parikulam is an important pre-historical site, which yielded a number of Paleolithic implements from the excavations.

I express my happiness in bringing out this archaeological excavation report of this site in book form. It will definitely benefit the scholars and public. I appreciate the sincere work of the technical staff of this department to bring out this report.

- SITHARAM GURUMURTHI

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Back cover : Middle and Late Palaeslithic tools from Parikulam excavation

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PREFACE

The "Madras hand axe industry" occupies a very important place in the history of Indian Palaeolithic archaeology. There are more than 110 palaeolithic sites in and around Kortallayar (old palar) basin. There sites comprise in both rock shelters and open air sites. These include the well known sites of Gudiyam caves, Attiarampakkam, Poondi, Vadamadurai, Parikulam and others. They have yielded several palaeolithic artefacts which are of immense importance in Indian Palaeolithic research. Systematic palaeolithic studies in this region indicate that these sites point the extensive movement of the early hominids across the landscape or lakhs of years or more.

There is an another important industry called "Soan industry" located in the soan valley, a tributary of the river Indus in North western fron thier of India. Several palaeolithic sites are noticed in this valley. Soan Industry tools belong to unifacial culture while the Madras industry belongs to bifacial culture. Scholars both from abroad and India had made elaborate studies about these two industries.

To obtain more evidences about the life style of early hominids of Kortallayar basin, the Tamil Nadu state department of Archaeology has undertaken excavations in the year 2006 at Parikulam which is located near poondi in Tiruvallur District. In point of fact, the excavations have yielded several important evidence regarding the study of different aspects about the stone age man of the region. This is the first palaeolithic site to be excavated by Tamil Nadu State Department of Archaeology. The Department has so far conducted excavations in 29 sites and unearthed several rare artefacts. Based on the cultural sequence of the

unearthed objects, the political and social history of Tamil Nadu has been reconstructed. Excavations at Poompuhar, Korkai, Kodumanal, Gangai Konda Cholapuram, Mangudi, Modur and Alagankulam have yielded remarkable artefacts. These are displayed in the 14 site museums located all over the State.

I am thankful to the Director General Archaeological survey of India, New Delhi for granting permission to conduct excavation. I am also thankful to Government of Tamil Nadu and Secretary to Government, Tamil Development, Cultural and Religious Endowments Department for Sanctioning amount for the excavation.

The Preliminary contour survey has been conducted by the conservation section consisting of Thiruvalargal R. Narayanan, T. Thangavelu and M. Arun. The excavation was sincerely conducted by Thiruvalargal K. Sridaran, D. Thulasiraman, S. Selvaraj, V. Ramamurthy and Srikumar. The soil analysis and Petrological study was made by Anna University, Chennai. The Photography work for this excavation is neatly done by Thriu. M.T. Sridharan, Photographer of this department.

An exhibition of the excavated artefcts was held in Chennai on 10th May. It was inaugurated by Dr. S. Gurumoorty, Retired Professor of Archaeology, University of Madras. The Publication of this volume within a year of excavation is a matter of pride for me and with I am sure Reaearch scholars, archaeologists and the several public will find it useful reading material. I wish to place on record my appreciation for the good work done by Thiruvalargal D. Thulsairaman, Curator, Poondi and S. Selvaraj Archaeological officer, Dharmapuri under the supervision of Thiruvalargal V. Ramamurthy, Prehistoric Archaeologist and K. Sridaran, Registering Officer, Chennai.

T.S. SRIDHAR
Special Commissioner
Department of Archaeology

7.8.2006

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1. INTRODUCTION

The history of chennai as most of us know started from the time the British established their trading company here, but astonishimgly chennai (Madras) has been a place of habitation for prehistoric hominids who had lived here millions of years ago. The chain of discoveries had stcarted off when Sir Robert Bruce Foote accidentally discovered a stone tool at Pallavaram on 30th may 1863 CE, followed by the discovery of many number of artefacts in and around Poondi, near Chennai. This tremendous discovery in the field of prehistoric archaeology pushed back the antiquity of man in Tamil Nadu to more than half a million years ago and placed this region on the world map of prehistoric culture.

Interestingly the sites around Poondi reservoir, from where our city derives its water, turns out to be significantly important for archologists and geologists around the world Gudium cave, the first of its Rind in India, discovered by geologist Sir Robert Bruce Foote exists near Poondi in Tiruvallur Taluk of Tiruvallur District, and reaching there takes some adventurous paths into the silent forests, which can actually turnout to be a nice expedition for trekkers and even nature lovers.

Millions of year ago, man did not live as we live to day. He lived in jungles like most of the animals. It was very difficult to dig out roots or to kill animals with bare hands. So, he needed to use tools. He found that stones and rocks could be shaped to do his job easily. He picked up heavy stones and rocks, sharpened them and tied them to sticks with nerves and used them as spears. These were his first tools. Thus he could dig out roots with sharp edged stones or kill an animal without going very near it. The first tool that man made were not very good but served his purpose. Some of these tools have been discovered from ancient caves and are kept in museums.

To understand the perhistory of Tamil Nadu as a whole and palaeolithic age of the kortallayar region in particular, the Tamil Nadu state Department of Archaeology had established a small site museum at Poondi in 1985 for the benefit of the public, students and scholars. Palaeolithic, Mesolithic and Neolithic stone tools, Megalithic potteries, iron implements, Photographs and charts are displayed in this museum in an attractive manner. Four life - sized models of early hominids and a rock portion with prehistoric paintings were also erected in the open space in front of the museum in the year 1993. The prehistory museum at Poondi is an unique one as it features the prehistoric heritage of the region. It is the only site museum is India, which portrays regional prehistory.

The Kortallayar river basin holds a pre - eminent position in the history of Indian palaeolithic archaeology. There are several palaeolithic sites in this valley in and around Tiruvallur, Distirct Emiment scholars like T.T. Paterson, V.D. Krishnasamy, K.V. Soundararajan, K.D. Banerjee, Shati pappu and others had done valuable field work in this region and published a number of useful research articles on this subjeet. Sofar five places namely Gudium, Attirampakkam, Poondi, Neyveli and Vadamadurai were excavated in this area by Archaeological survey of India.

Parikulam, a hamlet of Tiruper revenue village, is located at an elevation of 87m AMSL and situated on the western side of Kortallayar river near Poondi in Tiruvallur Taluk of Tiruvallur District. The surface exploration on the mound found at the south eastern side of Parikulam, had revealed all types of palaeolithic weapons. So, to assess the archaeological potentialities of the area and to provide further absolute evidences for the study of palaeolithic archaeology of the region, the Tamil Nadu state department of Archaeology under took systematic archaeological excavation in the year 2006 at Parikulam. The main aim of the excavation is to determine the cultural sequence of the site and to study the palaeo environmental changes during middle Pleistocene at this area. It is also proposed to collect the stone artefacts and bring out catalogue indicating the type and variety of tools that are found in excavation.

2. PARIKULAM EXCAVATIONS

Pioneering Survey :

The out standing discovery of the first Palaeolithic stone tool in India, was made in the lateritic deposit at Pallavaram near Chennai by the British Geologist Robert Bruce Foote in the month of May 1863. Subsequently he and his assistnt William King undertook furious survey in the Kortallayar basin and discovered the Gudium caves and the river terrace with abundant palaeolithic tools at Attirampakkam (Foote : 1916). Foote also picked up a fossilised human tibia with both ends broken (now in Oxford) amidst the numerous palaeoliths in Attirampakkam (Srinivasan : 1987) Their intensive survey revealed the location of several palaeolithic sites in this region.

In the year 1930, Cammiade and Burkitt (Cammiade : 1930) had made elaborate studies on the palaeolithic tools, collected from the river terrace at Manjankarani. Subsequently V.D.Krishnasamy (1938-1947), T.T.Patterson (1939) and K.V.Soundarrajan (1966) undertook notable research in this field. Their location of fourfold terrace system in the Kortallayar basin, identification of boulder conglomerate horizon at Vadamadurai and classification of laterites into primary pre-pleistocene compact laterites and secondary Pleistocene laterites were the remarkable developments in the palaeolithic studies of the region. V.D.Krishnasamy had classified the Palaeoliths of Kortallayar basin into three series based on degrees of patinations rolling and refinement in technology and correlated them with African traditions (Krishnasamy : 1938). A notable contribution by these scholars, was the recognition of a different industry, popularly known as "Madras hand axe Industry" from that of the Soan industry of north western India.

A.Swamy (1976) of Madras University had discovered several new sites in this region and classified the tools collected by him into three

ages viz. Early, Middle and Late stone age. The technological aspects of the tools, collected from Gudium and Vadamadurai were analysed by Vidula Jayaswal (1978) in detail.

Under the leadership of Thiru.T.S.Sridhar, IAS, Special Commissioner of Tamilnadu State Department of Archaeology, an intensive field survey was conducted in the year 2005 by a team, consisting of two archaeologists and a Geologist in the palaeolithic sites of Kortallayar region to record their original archaeological importance and to make a comparative study for correlating their Geomorphic setting and the tool types with each other. This survey had yielded two fossils along with palaeoliths in a bed of a stream (Otteri Odai) of the village of Mettupalayam near Parikulam. An outstanding Micoquin hand axe was also collected from Parikulam.

Previous Excavations :

Dr.K.D.Banerjee, a veteran prehistorian of the Archaeological survey of India had conducted excavations from the year 1957 to 1979 at Gudium, Attirampakkam, Vadamadurai, Poondi and Neyveli. Unfortunately detailed reports were not yet published on these excavations. These excavations led to a contradiction of the work of previous scholars. Banerjee denied the existence of fluvial terraces and put forward a hypothesis of marine terraces. He also questioned the existence of a pre lateritic industry and hypothsised that tools on the surface of the shale could have been derived from the overlying horizons at Attirampakkam (IAR 1964-65 PP 20-22) and believed that the laterites at this site were the horizon for a post Acheulian flake industry. He further thought that the early Acheulian at Vadamadurai, in the Boulder conglomerate was possibly reworked from some where else (IAR 1966-67 pp 20-21)

Excavations at Attirampakkam :

Shanti Pappu from Sharma Centre for heritage education, Chennai had conducted field survey (1991-1995) in the Kortallayar region to make a regional approach with multistage survey and sampling methodology. She also undertook excavations (1999-2004) at Attirampakkam to establish the nature of hominid activities at the site. These excavations

had revealed the lower, middle and upper palaeolithic cultures spanning more than 500000 years of occupation. It had also yielded three fossil teeth. This discovery is significant as fossils are rare at Indian Lower, Middle palaeolithic sites. These include an upper molar of a water buffalo, a lower molar of a horse and a left molar of a nilgai. (S.Pappu : 2003-2004)

Present Excavations at Parikulam

Parikulam is located (Latitude 13°13'N and longitude 79° 51'E) at an elevation of 87 m. AMSL and situated on the werstern side of Kortallayar river near Poondi in Tiruvallur District. There is a mound which was formed by the outliers of the Allikuli hills. The surface exploration on this mound reveal all types of Palaeolithic weapons. So, the Tamilnadu state department of Archacology undertook excavations at Parikulam in the year 2006 with the following objectives.

a. to determine the stratigraphy and cultural sequence of the site.

b. To examine the tool technology found in Acheulion period at the site and to investigate caveman's use of the landscape here.

c. To study the Palaeo-environmental changes during the middle Pleistocene at the site.

d. To catalogue the finds in a systematic manner.

3. TRENCHES AND STRATIGRAPHY

Systematic archaeological excavations were undertaken at Parikulam to reveal the geological context of this area. It was necessary to find out the earlier culture and periodical stratigraphic evidence of this region. For that, an intensive contour survey was made at the north eastern side of Parikulam Village. Totally 1200 sq.m. was surveyed in two sectors and two highest points were selected for excavation, totally 33 sq.m. in two trenches was excavated was excavated.

P.K.M. – 1

It was laid in the eastern end of the first sector measuring 6 x 4 m. This trench had revealed four distinct layers. The first layer is with 65 cm thickness and contained ferricrete gravels mixed with less quantity of quartzite pebbles and cobbles. The ferricrete pisoliths were predominant in this layer. This laterite formation was due to the continuous action of running water during Pleistocene period. In association with this laterite pellets, late palaeolithic tools and debitage which include flakes and chips were observed. Stratigraphically the first layer was in alluvium formation. The upper portion (upto the depth of 50 cm from the surface level) of the first layer had yielded late Palaeolithic tools like small hand axes, ovates, blades, scrapers and borers, etc. This layer was capped by the humus which was of 5 cm thickness.

The second layer predominantly contained pebbles and cobbles. The gravels in the upper portion of this layer was hard and red in colour. These leterite detrital gravel formation was followed by the pebble bed. This pebble bed was mixed with red soil. The laterite pellets were completely absent in this pebble bed. This layer had exposed more than

25000 pebbles and cobbles which were of varrying sizes from 2 x .75 x .5 cm to 31 x 20 x 5 cm. These quartzite pebbles were the core material for early hominids to make their tools. The bottom portion of the first layer and the top level of the second layer (from the depth of 50 cm to 1 m) had revealed middle palaeoliths such as hand axes, ovates, cleavers, scrapers, borers, lunates and stone hammers. The lowest part of this layer from the depth ro 120 c.m.s. to 175 c.m.s. had yielded early Palaeoliths like hand axes and cleavers. The average thickness of this layer was 135 cm.

A restricted digging was made in PKM-1 in between the pegs 0-II & 0'-II' to know the geological formation of the site. The digging had exposed two more layers below the second layer which were archaeologically sterile. The third layer was composed of small pebbles and a few boulders mixed with light greenish hard clay. The average thickness of the layer is 136 cm. The fourth layer was formed with whitish hard shale mixed with particles of various minerals like quartz, feldspar, calcic pellets, etc. V.D.Krishnasamy identified this as Sriperumbudur shale. Formation of this clay deposit might be slow and gradual precipitation in a basin whereas the pebbles in clay matrix must be formed in flash flood. The exfoliation of pebble blocks seen in this region indicates that rock surfaces were affected by alternate heat and chillness due to heavy rain. On observation, it was ascertained that this region had witnessed heavy rain (Pluvial) and dry weather due to scorching heat. Also, it is understood that the presence of Gondwana formation is indicative of existed glacial condition. The average thickness of the layer was 126 CM.

PKM – 2

It was marked 50 m away from the trench PKM-1 near the 'Vazhikatti' Amman temple. It was oriented north – south direction and measured 3 x 3m. This trench had yielded two layers and dug upto 2 m depth.

Layer No.1 : The depositional plain which has been studied is on the laterite stone and laterite rock formation. This layer is strewn with lateritised boulders and patches or pellety laterite over lie a bed of

boulder conglomerate. Late palaeolithic tools were completely absent in this layer. Only a few chips and flakes were noticed. Middle Palaeolithic tools occurred from the depth of 52 cm in this stratum. This layer was sealed by the humus which was of 13 cm thickness. The average thickness of this layer was 95 cm.

Layer No.2 : The formation of slightly hard soil mixed with large number of pebbles was the distinguishing feature of this layer. The bottom portion of the preceeding layer had yielded middle palaeolithic tools from the depth of 52 cm to 1.65 m. Nearly six lower palaeolithic tools were exposed in this layer at the bottom most level in the depth of 1.65 m to 1.80 m. The boulder bed at the bottom of the Parikulam mound is lateritic which might indicate that this was formed by the distruction of laterite ridge. The upper portion of this layer had revealed middle palaeoliths while the bottom part yielded lower palaeolithic tools.

The critical study on the stratigraphy from this excavation reveals two important points. The occurrence of large number of pebbles with angular dimensions from layer No.2 of the trench PKM-1 had clearly indicated the existence of a palaeochannel in this area. The slight sloping formation of the pebble bed from south-west to north-east direction noticed in the trench PKM-1 had strengthened this view. The present channel named 'Pazha Odai' which flows one k.m. away east from Parikulam, would be the palaeochannel of the Parikulam Section I area. The middle palaeolithic level of Parikulam excavation had yielded large number of chips and flakes along with core pebbles and finished tools. This shows that a tool making industry existed here in Acheulian period.

PKM-1 yielded detrital laterite pellets (Secondary Pleistocene laterites) while PKM-2 had laterite boulders (Primary pre Pleistocene compact laterites) and rocks presence. The availability of less number of tools from PKM-2 indicate that the place was away from hominid utility area in Acheulian period.

4. TOOLS TYPES – A STUDY

The excavation at Parikulam had yielded the stone tools of Lower, Middle and Late Palaeolithic periods. This implies that the early hominids had used this place continuously from Early Palaeolithic through Middle Palaeolithic to Late Palaeolithic period.

Lower Palaeolithic Phase :

Lower Palaeolithic tools were encountered from the depth of 1.20 m to 1.55m in the trench PKM-1 and 1.60 m to 1.80 m in PKM-2. Generally three techno-typological stages were seen in this phase. First stage is of crude implements that was straight broken from the boulders into two pieces. These are called as rough tools. Secondly, it comprises massive choppers or broken tools which were separated from the cobbles or boulders. The choppers were removed by unprepared method from the core. In Parikulam the unprepared flakes or blanks are also noticed. Generally one or two unprepared flake scars are made on these tools. These scars are very deep and irregular in shape. The third stage is represented by the fine tools by removing a few number of prepared flakes on the core pebbles. In the early palaeolithic period, the hand axes and cleavers are the most dominant tool types of the Indian Peninsular region. These type of tools are occuring throughout this region. Parikulam excavation has also yielded 13 hand axes, two cleavers and three stone hammers in the stratigraphical context of early palaeolithic phase. There are the slow development in tool making technology in the Early palaeolithic period. These people had put less labour for making the tools from the core. The typology applied on the core is proved as the earliest one. Though the several tools from Parikulam were made by Anvil or Clactonian technique, it seems that a few of them were produced by cylinder hammer technique.

Hand axes :

All the tools are red patinated and heaving fine coarseness. Deep flake scars are noticed in these tools. Most of the tools are with less than 50% of cortex and having irregular side profile. However some tools are with sinuous profile. The butt end is covered with cortex. The usual shape of the butt is round and in some cases with flat shaped. The butt is left unworked in all the specimens. Most of the hand axes are unabraded and with sharp working edges. From the point of view of the fineness of flaking on the surfaces a hand axe with 24.5 cm length and 12 cm breadth (No.197) is the well finished example among all hand axes. The working edge shows prominent used marks in these tools. They were used for a variety of indoor and outdoor operations such as cutting of meat and vegetables and wood cutting etc.

Cleavers :

Two cleavers were collected from Parikulam. They are made on an angular block and all are fashioned on flakes. The working edge is formed by the intersection of the main flake surface. The flake suface does not show any secondary work. Dorsal surface is covered by a single large flake scar. These are with red patination and fine coarseness (No.199 and 242). It was used for cleaning shrubs and small trees from spot selected for habitation, for shaping stemps and for removing bark strips from the tree trunks.

Stone hammers :

Three stone hammers were recovered from Parikulam. These are cylindrical in shape and having smooth cortex. They were used for manufacture of stone tools, grinding and crushing the seeds and grains.

Middle Palaeolithic Phase :

Large number of stone tools were recoverd from the middle palaeolithic levels at Parikulam. Quartzite pebbles (a metamorphic rock) were always preferred for fashioning these tools. In raw material, a total transformation took place in the realm of technology in as much as flakes replaced the cobbles and pebbles as the chief category of blanks for the

manufacture of tools. In Parikulam excavation, we have collected finished tools by means of various forms of secondary working. In the case of scraper and borer they are either retouched or chiped. The bifacial blades, occurring in Parikulam excavation are fashioned by means of surface working involving the removal of small and shallow flakes from both the surfaces. The fine finished or well finished tool types, occurring in the middle paleolithic phase are hand axes, ovates, cleavers, scrapers, borers, lunates, blades and stone hammers. The main yielding of the middle palaeolithic tools in Parikulam shows the gradual developments from the earlier tradition of the early palaeolithic culture.

Hand axes :

Totally 43 hand axes were collected from Parikulam excavation. They are all smaller in size and more perfect in shape than the early palaeolithic hand axes. Large number of flakes were removed from the both surface. These tools are red patinated and having less than 50% of cortex with shallow flake scars. Usually these hand axes are having round butt, pointed working bottom and with sharp straight profile. Most of the tools are unabraded and with sharpened working edges. These hand axes are having different shapes like pear shaped, cordate, leaf shaped and triangular.

Ovates :

Twenty ovates in different sizes were collected from Parikulam in middle palaeolithic levels. It looks like round and bifacially worked implement with biconvex cross–section. This type has sometime been considered as a hand axe. A perfect round shaped ovate (No. 166) with elegant workmanship was recovered at the depth of 80 cm in PKM-1. The extensive secondary working on this tool is in a very advance manner.

Cleavers :

This is a unique type of bifacial tool with sharped bottom edge. This type is generally made on flakes but cleavers on cores are also collected from Parikulam. A cleaver is essentially a tool made on broad rectangular, triangular side. Totally 21 cleavers were recovered from Parikulam. Among these a few of the most important and recurring types are here mentioned.

(a) Cleaver with square or rounded "V" shaped butt and straight broad edge.

(b) Cleavers with pointed butt and straight broad edge and triangular shape.

(c) Cleaver with broad or narrow butt and flaring sides. The edges are straight.

The cleavers were meant for cutting or splitting the objects like trees and dead animals.

Scrapers :

Parikulam excavation had revealed 30 scrapers of different types and sizes. The classification of the scraper is made according to the nature of the edge. They are side scraper, end scraper, convex scraper and round scraper. Most of these scrapers are with the secondary work and retouch. These are used for scraping such things like barks of tree, dressing thin wood or bamboo shafts and skins of animal as well as various other scraping purpose. The working edge of the scraper is mostly semicircular in shape and the opposite sides provide hand hold.

Borers :

This is another characteristic tool type of this period. In the excavation at Parikulam 7 borers were collected. Mostly, it was made on a triangular flakes. The bulbar end of the flake was removed by secondary work. Few of them were made on a leaf shaped flakes. The thick and sharp but long borer point is formed by triming either side. Comparatively, these were big in size than late palaeolithic borers. Generally the borers were made by larger or smaller flakes which were removed from the pebbles. Two of the specimens are having triangular cross section at the top and with pointed end. Other two of them are finer borers made on a triangular end flake with a prominent point at the lower end. The working point of the borers are obtained by retouching on its either side of the upper surface and it gives a suitable hand hold to the user. The points and borers come under the same group in their utility. Mainly, these tools were used for perforating the wood and skin of animal, etc.

Lunates:

Only two lunates were obtained from Parikulam in the middle palaeolithic context. The working edge of these lunates is on the lower portion in the shape of semi–circular or cresent moon. The upper blunted end of the tools is to facilitate for hafting in a handle.

Stone hammers:

Six stone hammers were recovered in this phase from Parikulam. These are all round cylindrical in shape with parallel sides. A stone hammer with blunted top with projecting flaking edge and with a flat hand hold, is an unique stone hammer from this site. (No. 133) The side projected point was used to strike the cores for manufacture of stone tools. These were also used for grinding, crushing of seeds, grains, roots and bones.

Early and middle palaeolithic tools were occured from the following areas in peninsular India.

1. Subernmukhi basin (Andhra)
2. Pennar basin (Andhra)
3. Krishna basin (Andhra)
   (Tungabhadra Valley
4. Malaprabha basin (Karnataka – Maharashtra)
5. Upper Krishna basin (Andhra – Maharashtra)
6. Bhima basin (Maharashtra)
7. Nagarjuna Konda vallay (Andhra)
8. Nalagonda District (Andhra)
9. Godavari Basin (Andhra - Maharashtra)
10. Hunsgi (Karnataka)

Late Palaeolithic Phase :

The late palaeolithic industries found statigraphically succeed the middle palaeolithic phase. This later portion of the glacial period was

marked by a rapid development and technological advancement as well as the expression of hominids imaginative power and artistic talent. The late palaeolithic technology was the major production of blades on prismatic cores. The blades are thin paralal sided and with small bulbs of percussion. This would suggest that they were produced by indirect percussion and punch technique. Most of the blades are having very simple striking flatforms. This cultural phase had revealed several types of tools such as small hand axes, ovates, cleavers, scrapers, borers, lunates and blades from Parikulam. This period is distinguished by two important features from the previous lithic periods. The maximum reduction in the size of the tools is the first important feature in this phase. The use of large number of blades in different types is the another important feature. These features are account for the size and large in number of the tools must have been come under close related to the requirement of man. The dominant tool types of Parikulam are blades and borers. The technology of producing a large number of this strictly parallel side of blade from a single core by pressure flaking was the special characteristic feature of this area.

The vast majority of palaeolithic tools were made on flakes and cores were also used in small quantity. Rarely, we found heavier tools like hand axes and ovates from Parikulam. So, at Parikulam the above mentioned stone industry consist entirely of late palaeolithic phase.

Hand axes:

Four fine and well finished hand axes were collected from Parikulam. Comparatively, these hand axes are smaller in size and with sharped edges to those hand axes of earlier phase. Mostly, they were made on flakes and in some cases on small pebbles. The working edge shows prominent use marks in these specimens. All these hand axes are with straight profile and having secondary work and retouch. They are all red patinated and with medium abrasion.

Ovates :

Six ovates were collected from Parikulam in late palaeolithic phase. They are all small in size with 5 cm of average diameter. These are with

medium coarseness and red patination. The working edges are in straight profile and unabraded. It is oval in out line and made usually on flake and the surface of the tool is comparatively smooth.

Cleavers :

Only two cleavers were recovered from Parikulam in this phase. The flake surface of these small tools does not show any secondary work. The shape of the artefact flaking in order to chiping is rather steep and proceeds in a step like fashion. It is executed on both the specimens of Parikulam. These specimens are with truncated convergent top and the bottom working edge is straight.

Scrapers :

Totally 14 scrapers were collected from this excavation in late palaeolithic levels. All are flake tools. According to the shape of the particular piece and the position and the nature of the edge for scraping, the tool is classified as side scraper and end scraper. These are two types noticed in scrapers of Parikulam.

a. Side Scraper :

Longer sides is obliquely retouched from the upper sides and the main scraping edge and the opposite side provide the hand hold.

b. End scraper :

In this type of tools, the edge made obliquely from the upper surface on a thick flake or a flat under surface is on the shorter side. Three specimens show the underside with bulb percussion and the bulber scare is boldly retouched along the lower end.

Borers :

Thirty borers were exposed from Parikulam. In late palaeolithic flake tool industry, this is an another important characteristic tool. Correctly, we say the tool has called it as borer-cum-scraper. Here also the tool itself give a suitable hand hold to the user. The exact use of these tools are to driling the wood etc.

Lunates :

Seven lunates were collected from here. They are concave or convex shaped. These tools are with steep working edge and are minutely retouched. They may be called as cresentic blades.

Blades :

Totally 23 blades were obtained from Parikulam in late palaeolithic context. They are all made on flakes with average length of 5 cm and breadth of 2 cm. A vast number of blades are without retouch or secondary work. But quite a good proportion is with a retouch. In the retouch the oblique retouch and the steep retouch are seen in the above obtained blades. These blades are either on one longer side or both the longer sides. According to the working edge, the blades are classified into three types.

a. Single straight sided blades :

   Usually thick in one side and a steep cutting edge is seen at other side. These are called as single faceted blades.

b. Double straight sided blades :

   Both the edges are straight and retouched for cutting or working purpose.

c. Straight with one end pointed :

   These blades are with asymmetrical points.

The Late palaeolithic industry can be divided into three major groups such as flake blade, blade tool and blade-cum-scraper on typological grounds. The blade production technique is much developed in this period. The availability of the artefacts obtained from Parikulam excavation had strengthen this point.

The following regions have yielded the Late Plaeolithic tools.

1. Subernmukhi Basin (Andhra)
2. Shorapur Doab (Maharashtra)
3. Patne (Maharashtra)
4. Karnool District (Andhra)
5. Nevesa – Chirki group (Maharashtra)

5. CULTURAL SEQUENCE

In the stone age cultures, large number of artefacts obtained from Parikulam excavated trenches is described in this chapter. The cultural materials recovered from the excavated trenches consist of only the stone artefacts. The artefacts were found in the level of the deposits in two layers in both the trenches (PKM-1 and PKM-2). The artefacts were concentrated in particular level of the deposits at the depth from 50 cm to 80 cm. This was noticed in the lower most level of the layer (1) and the upper most level of the layer No (2). The bottom most level of the layer No.(2) from the depth of 1.20m to 1.55m had yielded less number of lower palaeolithic tools. The richest tools bearing area is measured 85 cm thickness in PKM-1 and 90 cm thickness in PKM-2 except waste pieces and the core materials or raw materials. More than 25000 pebbles, cobbles and boulders were exposed from both the trenches. These were used as core material for lithic people to make their weapons. From the humus to 45 cm large number of late palaeolithic tools such as small hand axes, ovates, cleavers, scrapers, blades and borers were recovered.

The study of stone objects from Parikulam excavation brings out three important cultural divisions. Firstly at the depth of 1.20m rough or rude implements were recovered. The soil of the level is reddish in colour mixed with large number of pebbles and cobbles along with the artefacts. Totally 11 artefacts were collected from PKM-1 and 4 from PKM-2. These are all irregular in shape and less number of flakes were removed which resulted in deep scars on the cores. These tools were made by applying less labour. All these tools are big in size. Among these specimen No.197 measured 24.5 x 12 x 7 cm, recovered at the depth of 1.20 m is the best piece. These type of artefacts are obtained upto the depth of 1.55 cm at

the lower most level of layer No (2). The occurrence of stone artefacts is completely absent in the following layers of (3) and (4). These early palaeolithic tools were made by Clactonian or Anvil technique. So, it is concluded that the early hominids had started their occupation in this level at this area.

Because of the unpreservative nature of the ferricrete soil., the Parikulam excavation has not yielded any organic materials or fossils to make scientific analysis to get absolute date for demarking the exact cultural periods. So, we have to depend upon only on the relative chromology to date for these cultural divisions. The recent excavations at Attirampakkam had provided evidence to fix the date for early palaeolithic period to 500000 – 250000 years before present. The same date may be considered for Parikulam also.

Secondly, the stone artefacts like hand axes, cleavers, ovates, scrapers, borers, blades and stone hammers were obtained from the depth of 50 cm to 1.20 cm in PKM-1. The soil of this level is hard and red in colour mixed with large number of pebbles and cobbles. In the upper portion of layer No.(2) a pebble bed is noticed. An overlapping which provides a considerable number of middle palaeolithic tools, is seen in between the layer No.(1) and (2). Due to the thick pebble formation the zig-zag overlopping is not able to demarcate exactly. This level had revealed well finished artefacts. These artifacts are smaller than the tools of previous early palaeolithic phase. They were made by using prepared technique to remove the flakes from the core and were also retouched by making secondary work on the working edges. Cylinder stone hammers were used to produce these type of tools. Large number of blanks and flakes were recovered in this level along with finished tools. Out of 139 tools, the domininent tool type is hand axes. They are 59 in number in different types and sizes. Ovates and cleavers are the next dominent artefacts in this level. Two specimens of ovate are notable as they had perfect workmanship and smooth surface on both sides with sharp working edges. Usually, they had made in oval shape. Totally 21 cleavers were collected

from this level. These cleavers are carefully made in order to regularize the shape of the artefact and the working edge in an excellent manner. The refined typo-technological aspects of the above tools clearly indicate the cultured skills gained through experience in the life ways of the early hominids. These come under the Middle palaeolithic phase (period-II) which is datable to 250000 to 30000 years before present.

Thirdly, the last phase of the late palaeolithic tools differ from the other variety of tool forms. A gradual decrease in the average length and breadth in tool making is an important feature of this phase. Most of the tools are made by flakes. So, archaeologists called it a period of flake tool industry. The tools are chiefly made on flakes and rarely on nodules. These are the flakes from unprepared and also from prepared cores with faceted as well as unfaceted flatform. The scrapers were also mainly made on flakes with thin flat chips in associate with the large number of blades, borers, etc.

The blades are quite long and broad and the edges are minutely retouched. Different type of blades are the most interesting and important feature of this phase. The most important evidence at Parikulam is that of the Late palaeolithic culture forming period III. Stratigraphically, it succeeded the Middle Palaeolithic which falls on the upper level of the layer No.(1) in the trench PKM-1. The cultural deposit of this phase is of 45 cm thickness. On the basis of the stratigraphy and difference in tool variety this phase comes under Late palaeolithic culture (period III) which is datable to 30000 – 10000 years before present.

6. LIFE STYLE OF STONE AGE MAN IN KORTALLAYAR BASIN

Parikulam is a classic site which had yielded plenty of materials for the study of palaeolithic archaeology of Kortallayar river basin. The artefacts and other aspects mainly from Parikulam excavations and several sites in the same area reveal the following facts regarding the life style of stone age man of this region. The Kortallayar river basin is presently situated in Tiruvallur District and comprises the parts of Tiruttani, Uttukkotai, Tiruvallur and Ponneri Taluks. It is represented by the Satyavedu plantation surface consisting of the north – north east, south – south east trending Allikulli hill ranges (200 - 380 m AMSL) and surrounded by undulating low lands. It is believed that the Kortallayar flows at present on the ancient bed of the river Palar, which changed its course sometime in Early Holocene period. (Ramasamy : 1992) 'In Tamil Nadu, climatic changes, led to the burial of clays and laterites under deposits of red gravels laid down by small braided streams. A new landscape slowly evolved with shifts in the course of the river Kortallayar' (S.Pappu : 2003).

Kortallayar river basin was a semi–arid region with suitable physiographic setting in the form of gentle plateau and sparsely forested type of vegetation in Middle Pleistocene period. The availability of quartzite pebbles, cobbles, and boulders in plenty in this region, was the main attraction of early man for using them as the raw material to make their tools. Kortallayar and other several palaeochannels had served them as reliable water sources. The above factors had compelled the early man to prefer this area as his habitation.

The present Parikulam excavation has revealed sufficient evidences for the study of early hominid behavior during the middle and late Pleistocene period. The excavation clearly shows that this place was continuously occupied by hominids from Early palaeolithic through Middle palaeolithic to Late palaeolithic period.

Early man had used natural pebbles as their tools at the beginning. To avoid the hardship in using these pebbles or natural clasts, they had begun to utilize the rude implements, which were made by unprepared technique without any secondary work. In Middle Palaeolithic phase, the man had realised that if cores were carefully prepared, he could knock off flakes, having the size and shape he wanted. This is called the 'Levallois' technique. By this method, the tools were produced in perfect style and in elegant manner. The shapes were modeled to handle them for different purposes without hurting the hand. The abundance and scattered occurrence of hand axes and ovates all over the area indicates that they were used only once, probably for hunting. Because of their wide usage, these tools were produced in large number.

The occurrence of large number of flakes and chips that were removed from the pebbles for making the tools along with several finished weapons from the Middle Palaeolithic levels of the present Parikulam excavation, clearly confirm the existence of an Acheulian tool making industry here. It can be inferred from the fine technological aspects of the tool types that a particular group of people would have involved themselves for making these tools here as their profession. Others might have borrowed these tools for their daily use by exchanging a part of hunted animal or collected wild plant foods like fruits, roots and tubers, etc. "These tools were used to hunt animals gathering around waterholes or stock in swamps to scavenge off carcasses, to dig roots and tubers or to exploit mollusk and other aquatic resources' (S.Pappu : 2003)

In early phase, hominids had lived near the channels and lagoons, Gradually, they had extended their living area to the sites of interior forest region in Middle Palaeolithic phase. They had also occupied the natural rock shelters near Gudium for dewelling purpose.

In the last phase of palaceolithic age, blades were made in large number. 'A single core could now be used to peel or strike off a number of blades, a strategy both efficient and which could conserve raw material' (S.Pappu : 2003). These blades were used for hunting the animals and exploiting the fish and other aquatic creatures. By mounting in the wooden shafts, the blades were also used as sickles for harvesting wild grains.

Fossils of the organic materials such as human or animal bones and wood and root casts are only the ravages for understanding the past faunal and floral pattern of the area where the early hominids had their extensive movement. Unfortunately, the previous excavations at Gudium, Vadamadurai, Poondi, Neyveli and Attirampakkam including the present excavations at Parikulam had not yielded any fossil remains. However, the recent explorations at Mettupalayam near Parikulam and the excavations at Attirampakkam had revealed a few fossil remains. A wood fossil and other specimens of bird bones embedded in the Cuddalore sand stone from Mettupalayam (2005) are under study. The occurrence of fossilised teeth remains of water buffalo, horse and nilgai from Attirampakkam (2004) revealed the existence of an open and wet landscape here in Middle Pleistocene period. These animals would have also served as food to Palaeolithic people.

7. PALAEO - CHANNEL OF KORTALAYAR VALLEY

Rivers played an important role in the civilizations of mankind. Water is the main source for livelihood. So man had selected river bank to live from early times.

The rivers like Allikuli river, Nagari river, Araniriver and Kortalaiyar river are flowing in this region and discharged water in Poondi reservoir. In Parikulam area fossils are located in Otteriodai a small canal near Mettupalayam. Dense forest areas are also found in Allikulli and Nayapakkam areas suitable for early man's stay.

The river Kortalaiyar branch off from river Palar and passed through Arakonam, Tiruttani, Tiruvallur Ponneri and joined Bay of Bengal near Ennore. It is also called as old Palar. Rivers often changed their course due to flood and natural agencies. The satellite photographs depict existing evidence of the migration of river systems. Because of this study it is known that river Palar might have flowed in this region in between 1,00,000 years and 1000 years before.

Tamil literature provides a good deal of information about the migratory history of the rivers of Tamil Nadu. In *Kalingattuparani* it is referred that the warriors crossed the river Palar when they advanced or marched to the North from Kancipuram. Now the river Palar flows south of Kancipuram. It is inferred that the river Palar flowed north of Kancipuram about 900 years before. similar fact is also known from Kondapuram inscriptions near Kaveripakkam, about the change of course of river Palar.

similar evidences for the change course of rivers like Kaveri and Ponnaiyar are also found in the literature and inscriptions.

Palaeo Channel Network in Tamil Nadu

The study conducted around Chennai shows an array of palaeo channels in and around the present day river systems. A major palaeo channel net work is observed north of Chennai city. These palaeochannels branch off from the present day Palar river just east of Walajapet and are seen to turn and flow in a east - north easterly direction upto Poondi reservoir. Further to the east and north east of Poondi, the palaeo channels show a regional distributary net work suggesting a palaeo deltaic environment and showing a well developed bird - foot shaped deltaic lobes and complementary depressions. This clearly indicates that the sea shore might have been situated - 5 - 10 Kms west of the present day coast.

The Kortalayar basin is an important palaeolithic site yielded inplements at Attirampakkam, Vadamadurai, Neyveli, Gudium and Poondi. The tools are found in terraces of Kortalayar river formed of a lateritic gravelly horizon overlying boulder conglomerates which inturn over lie the upper Gondwana shales. This show the presence of pre - Historic cultures from the Acheulian period to 10,000 years ago and upper palaeolithic period or the pleistocene period. The terraces of Kortalayar valley suggest - that a major river might have flowed through this region during pleistocence times. (Ramaswamy S.M. : 1992)

From the satellite photographs and other evidences it can be concluded that Palar might have originally flowed along the present day Kortallayar valley from the middle pleistocene and latest upto 1800 years B.P.

8. GEOLOGY

Geology of the area located in and around Poondi reservoir is complex in nature. Exposures of rock formations of various geological periods are key to understanding the environmental and climatic fluctuations existed in this region. It is to be noted that the occurrences of small patches of Gondwana formation and overlain by Cuddalore formation are encountered in this region. Besides this, occurrences of Pleistocene boulder conglomerate & laterite beds are also encountered here.

The expoure of Upper Gondwana formation consistiing of mottled ferruginous sandstone and conglomerate are well noticed at Satyavedu, which is very close to Poondi reservoir and Parikulam & 55 km from N.W. of Chennai. This beds of Upper Gondwanas exposed here are called as Satyavedu bads, equivalent to Tirupati Stage. They have been laid in shallow basins and are lecustrine in character.

The deposits that were formed between Upper Carboniferous and Jurassic period commences with a glaciar boulder beds, as the era is concerned with glacial climate and are called as Gondwana formation. Equivalent to these deposits are also found in Australia, South Africa, South America, Antarctica and Madagascar. In Tamil Nadu Gondwana deposits are exposed in patches spread over 2,000 sq in Chingleput and. Cuddalore District. Of which the largest path occur near Sriperumbudur, 40km W.S.W. of Chennai. They belong to Lower Stage of Upper Gondwana contains marine animals and plant remains. However, deposits of Poondi and Satyavedu are Upper Stage of Upper Gondwana. The other Patches are recorded from Tiruchirappalli where it

rest on Archaean Gneisses and are ovderlain by marine Cretaceous formation near Sivaganga. The Gondwana deposits of Tiruchirappalli contain micaceous shales, grey sandstone and grits mixed with calcareous concretions.

The exposures of laterite, is porous, pitted, clay-like rock, might be derived from a variety of rocks. These include alkali rocks like nepheline syenite, trachyte, intermediate and basic ingeous rocks like diorite and basalts; gneissic rocks rich in feldspars; and sedimentary rocks including shale and impure limestone. Laterite is extensively distributed in peninsular India. It is generally agreed that the condition favouring the formation of laterite are warm, humid climate with plentiful and well distributed rainfall and good drainage. There are no definite criteria for determining the age of the laterite. The existing deposits in most parts of India may have been formed during the upper tertiary, probably mainly during Pleistocene. The laterite deposits of area in and around Allikuli Hills are undoubtedly formed during Pleistocene period.

Of the four-straigraphical layers that were exposed in the excavation, the top most layer is a laterite soil. This soil might be formed by the continuous action of running water on laterite beds. Laterite beds found in India are mostly formed during Pleistocene period. On account of this, it is understand that laterite soil noticed here might be formed later than Pleistocene or most probably during Holocene period (10,000 years.)

The second layer formed of quartzite pebbles are found embedded in red clay matrix (cementing material). The pebbles are transported by river water and angular dimensions of the pebbles indicate that are transported from shorter distance. Second layer is underlain by greenish clay with pebbles and few cobbles of quartzite.

The bottommost layer is clay mixed with particles of various minerals like quartz, feldspar, etc., Formation of this clay deposit might be slow and gradual precipitation in a basin whereas the pebbles in clay matrix must be formed in flash flood. The exfoliation of pebble blocks

seen in this regoin indicates that rock surfaces are affected by alternate heat and chillness due to heavy rain.

Fossils collected during exploration at Mettupalayam near Prikulam is undoubtedly a wood fossil found embedded in the Cuddalore Sandstone of Miocene period. On the reverse of the specimen a long bone belonging to a bird species is seen. Since it is fragmentary and not representing complete size of a part of skeletal, the nature of the species is not identified. The species of the fossil remain of the tree might be similar to that of fossil exposed at Tiruvakkarai, Villupuram District. The fossilization of wood is mostly takes place in fluvial and Lacustrine environment and petrification is due to replacement of organic matter by silicon - di - oxide suspended in the solution.

In the other fossil specimen bones are found embedded in the Sandstone. On megascopic observation, it is identified that the bones belong to bird which survived during Moicene or later geological periods. The identification the bird species and dating might be more valuable for understanding the Palaeo-climatic condition of the area in and around Poondi reservoir, more precisely Kotralaiyar river basin and Alikuli hills in Tiruvallur District. However, it is understood that the environment existed here in the geological time was more conducive for fossilization of organic remains.

On observation it is ascertained that this region had witnessed heavy rain (Pluvial) and dry weather due to scorching heat. Also, it is understood that the presence of Gondwana formation is indicative of existed glacial condition.

9. FLORA AND FAUNA

Geographical Setting :

The Asiatic Sub Continent is as big as Europe but smaller than the Soviet Union, can theoretically be divided into two halves by the tropic of cancer : the continental region lies north of the line, the peninsula to the south. The later is triangular in shape with its point getting into the Arabian sea, the Indian Ocean and Bay of Bengal. The middle of the peninsula is dominated by high land of the Deccan, furrowed by its numerous rivers and partially covered by vast forest. Its western side, dropping abruptly to the sea. Northern side extends upto Himalayas from Vindyan Mountains in the south and Bay of Bengal in the east.

Fruits and Vegetables in Ancient India :

Since the earliest times fruits are the common and important items of man's diet. In earliest times when man lived in forest he had to fill his belly with fruits and tubers whatever he could find in natural surroundings because till he knew the cultivation and cooking.

The Proto-Astroloids who displaced Negritos the earliest inhabitants of India, started crude form of cultivation. It is said that they used fruits like Kadali, Narikela, Sambu, Dadina, Bhayva in their diet.

The Indus valley Civilization shows that those people at Harappa and Mohanjodaro used fruits like Kharjhur, Narikela, Dadima, Kadila, Nimbuna when we come to the vedic period we see considarable in the number and variety of fruits.

Vegetables :

Vegetables have been in use since the earliest time, Parts of plants such as roots, stems, leaves, flowers and fruits obtained from natural environment were used uncooked and cooked. The area of vegetables has remained much wider than that of fruits, which also were sometimes subjected to the form of vegetables. The early inhabitants developed entirely on these because they knew no cultivation and such had to depend on the natural gifts only.

The Proto-Astroloids who started Crude cultivation seemed to use Alabu, Vartaka and Kahnga as vegetables. They also used spices like Harida, Srigavira and Nimbu along with mustard oil and guda.

The Dravidians vedic age, Rig veda mentions urvaruka which might have been used as vegetable. Apart from this flowers of Kimsuka and Salmali, sigra, young sprouts of Aswatha, pathe, bilwa, kamala were also in use. Similarly in Yajur vedic Samhitas Alabu, Khalva, gawedhuka are mentioned.

Plant Kingdom - General :

In the system of classification used by modern biologist living things are organized into kingdoms. The smallest kingdom, interms of species so far identified is the kingdom of Monera, which contains bacteria - single - celled organisms that are the simplest form of lite. The kingdom Protozoa also contains single - celled organisms together with some multi cellular alage, but their cells are large and more complex than those of monerans. Most members of the kingdom fungi are multi cellular and live by absorbing organic matter from their surrounding. All plants (kingdom plantae) are multi cellular and live on photosynthesis. This Large kingdom contains some 40000 known species.

Animal Kingdom - General :

With over 2 million known species the kingdom animals is the largest grouping in the classification of living things. It members are

divided into approximately 30 phyla over 95% of animal species are invertebrate, an informal term used for any animal that does not have a backbone. Invertebrate include a varied organisms in many different phyla, from sponges to insects. Many remain poorly known, and it is believed that as many as 10 million vertebrates or animals with backbones form part of the phylum Chordata. Although their total only about 45,000 species, they include the largest and most familiar members of the ancient kingdom, and also ourselves.

The following sequences are arranged according to geological time scale.

1. The formation of the earth.
2. Unicellular organisms appeared (blue green algae)
3. Marine plants flourished.
4. Coral reefs appeared.
5. Land plant appeared.
6. Shelled invertebrates appeared.
7. Multi cellular soft-bodies animals appeared (worms & Jelly fish)
8. Vertebates appeared (eg. Hemicylaspis)
9. More complex types of algae appeared.
10. Carboniferous trees.
11. Coniferous trees appeared.
12. Early desertification
13. Marine reptiles appeared.
14. Dinosaurs flourised.
15. Birds appeared (eg. Archaeopheryx)
16. Small mammals appeared
17. Dinosaurs became extinct.
18. Large mammals appeared (eg. Arsinoitherius)

Since earth formation are many tectonic movements many river changed their course. Reciprocally the life also changed due to their environment. Later the movement of birds and animals to greener Pasteur. The human bagan nomadic life. Later they settled in place civilization started. Domestication of animals and birds were done.

From recent exploration and excavation of Tiruvallur district and the peninsular in particular it is found that the regoin comprises the Albizzia amara and Acaciaseries of vegetation. This consists of scrub wood, thorny thickets, discontinuous thorny thickets, and scattered shrubs. The principle species are Albizzia amara, Boir and *Chloroxylon Swietenia* D.C. The transitional species of Gyrocarpus and Hardwicuia occur on the skeletal soils of the slopes. Fauna comprises bonnet, nilgai, Chital, barking deer, black buck, Chinuava wild pig, black napped harry, porcupine, redents, sloth bear, Sacual, wolf, Cheetal, wild dog and panther with only one sub-fossil bone of Boselephus tragocamelus (nilgai). This was found in the section revealed by the cutting of the Krishna canal. Another bird collection at Parikulam has been sent to G.S. I for further studies.

10. CONCLUSION

Kortallayar basin is an ideal area for palaeolithic studies. The earlier researches in this region had yielded several facts about the early hominid behaviour strategy of this landscape. However, the present Parikulam excavation provides the following influential evidences for the study of palaeolithic epoch of ancient Tamil Nadu.

1. This place was continuously occupied by hominids from early palaeolithic through middle palaeolithic to late palaeolithic
2. Parikulam is an unique site as it reveals all types of late palaeolithic tools from the exact stratigraphical context.
3. The occurrence of large number of chips and flakes removed from the quartzite cores confirms the existence of an Acheulian tool making industry in this place.
4. The geological studies of the exposed layers of Parikulam excavation indicate the complex evironmental changes during Middle Pleistocene period.
5. Two hundred and forty three palaeoliths, recovered from Parikulam excavation are classified and catalogued in systematic manner for the use of scholars for further research.

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I CHARTS 1 & 2

STATISTICAL CHART OF TOOL TYPES FROM PARIKULAM EXCAVATION

Sl. No	Tool types	PKM –1				PKM -2				
		LP	MP	EP	Total	LP	MP	EP	Total	Grand Total
1.	Hand axes	4	37	9	50	-	6	4	10	60
2.	Ovates	6	17	-	23	-	3	-	3	26
3.	Cleavers	2	16	2	20	-	5	-	5	25
4.	Scrapers	14	20	-	34	-	10	-	10	44
5.	Borers	30	5	-	35	-	2	-	2	37
6.	Lunates	7	1	-	8	-	1	-	1	9
7.	Blades	23	7	-	30	-	3	-	3	33
8.	Stone Hammers	-	5	3	8	-	1	-	1	9
	Total	**86**	**108**	**14**	**208**	**-**	**31**	**4**	**35**	**243**

TOOL TYPES – INTER PERIOD VARIABILITY

(PERCENTAGE OF ALL FINISHED TOOLS AT PERIODWISE)

Sl. No	Tool types	Late Palaeolithic	Middle Palaeolithic	Early Palaeolithic	Total
1.	Hand axes	1.65	17.69	5.35	24.69
2.	Ovates	2.47	8.23	-	10.70
3.	Cleavers	0.82	8.64	0.82	10.28
4.	Scrapers	5.76	12.35	-	18.11
5.	Borers	12.35	2.88	-	15.23
6.	Lunates	2.88	0.82	-	3.70
7.	Blades	9.47	4.12	-	13.59
8.	Stone Hammers	-	2.47	1.23	3.70
		35.40	**57.20**	**7.40**	**100.00**

II. APPENDIX

1. LIST OF PALAEOLITHIC SITES IN KORTALLAYAR AND PALAR BASIN

District	Taluk	Place
Kancheepuram	Chengalpattu	1. Amanampakkam
		2. Angnar
		3. Aapurmalai
		4. Kalvoy
	Kancheepuram	5. Parandur
		6. Puttur
		7. Tirukkatchur
		8. Vathiyur
		9. Veliyur
		10. Visakandikuppam
	Sriperumbudur	11. Chettupattu
		12. Makaliyam
		13. Mannur
		14. Nattarasampattu
		15. Nemili
		16. Oragadam
		17. Panrutti
		18. Salamangalam
		19. Sirumathur
		20. Siruvanjur
		21. Somangalam

District	Taluk	Place
		22. Sriperumbudur
		23. Sriramapuram
		24. Thollazhi
		25. Thondakkulam
		26. Umaiyal
		27. Valayakaranai
		28. Vallakkottai
	Tambaram	
		29. Nanmangalam
		30. Orattur
		31. Pallavaram
		32. Puttur
	Uttiramerur	33. Edamatchi
Tiruvallur	Ambattur	34. Sengundram
		35. Tirumullaivoyal
	Gummidipoondi	36. Amarambedu
		37. Amirthamangalam
		38. Karadiputtur
		39. Madarapakkam
		40. Padirivedu
		41. Rosanagaram
	Ponneri	42. Erikuppam
		43. Erumaivettipalayam

District	Taluk	Place
	Tiruttani	44. Dharanivarahapuram
		45. Kanchipadi
		46. Manavur
		47. Mavandur
		48. Nayakkanpalayam
	Tiruvallur	49. Arumpakkam
		50. Aryathur
		51. Bangarampettai
		52. Hudsanpuram
		53. Kattupudi
		54. Mettupalayam
		55. Mettur
		56. Narayanapuram
		57. Neyveli
		58. Parikulam
		59. Placepalayam
		60. Poondi
		61. Pudur
		62. Pullaramppakkam
		63. Rangapuram
		64. Senrayanpalayam
		65. Tirupper
		66. Thomur
		67. Vidaiyur

District	Taluk	Place
	Utthukottai	68. Vengal 69. Allikulli 70. Attirampakkam 71. Devendrapakkam 72. Girinayattam 73. Gollapalayam 74. Gudium 75. Gunipalayam 76. Gunjarapalayam 77. Kalavai 78. Kalmedu 79. Kammavaripalayam 80. Karukkampakkam 81. Katchur 82. Krishnapuram 83. Mailapur 84. Malandur 85. Manjankarani 86. Nakkalakona 87. Nampakkam 88. Nayappakkam 89. Nelvoy 90. Odappai

District	Taluk	Place
		91. Pennalurpettai
		92. Pondavakkam
		93. Rajapalayam
		94. Seethanjeri
		95. Timmaboopalapuram
		96. Uthukottai
		97. Vadamadurai
		98. Velakapuram
		99. Vellathukkottai
Vellore	Arakkonam	100. Amrishapuram
		101. Arakkonam
		102. Kalattur
		103. Kilvenpakkam
		104. Nagavedu
		105. Puliamangalam
		106. Takkolam
		107. Tirumalpuram
	Arcot	108. Kaniyanur
		109. Vaniyanchatram
	Walajapettai	110. Musiri
		111. Pagaveli
	Vellore	112. Chennasamudram

II. APPENDIX : 2

Trench No. : 1.

PARIKULAM EXCAVATION 2005 - 2006

CATALOGUE OF PALAEOLITHS

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U'	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	5cm	(H)	Ovate	7x8x2	Quartz	Y	Red	M	-	-	11	S	-	-	I	-	-	L	-	U	F	LP	
2	"	(H)	scraper	7x5x2	Q	Y	Red	M	-	-	2	S	-	-	S	-	-	L	-	U	F	LP	
3	"	(H)	scraper	5x3x2	Q	N	-	M	50>	Dor-sal	3	S	-	-	I	-	-	L	P	U	F	LP	
4	"	(H)	Borer	6x2.5x1.5	Q	N	-	M	50>	Dor-sal	3	M	-	-	S	-	-	L	-	U	F	LP	
5	"	(H)	Lunate	6x2x1.5	Q	Y	Red	M	50>	Dor-sal	3	S	-	-	S	-	-	L	F	U	F	LP	
6	"	(H)	scraper	3x4x1	Q	N	-	M	-	-	4	M	-	-	I	-	-	L	P	U	F	LP	
7	"	(H)	scraper	4x3.5x1	Q	Y	Red	M	-	-	3	S	-	-	S	P	-	L	P	U	F	LP	
8	12cm	(1)	Ovate	4.5x4x2	Q	Y	Red	M	50>	Dor-sal	5	S	-	-	S	P	-	L	-	U	F	LP	
9	"	(1)	scraper	4x4.5x1	Q	Y	Red	M	-	-	5	S	-	-	I	D	-	U	P	U	F	LP	
10	"	(1)	Borer	7x6x2	Q	Y	Red	M	-	-	6	S	-	-	S	-	-	U	-	U	F	LP	

Trench No. : 1.

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
11	12cm	(1)	Blade	4x2.5x2	Q	Y	Red	F	-	-	4	S	-	-	S	-	-	U	F	U	F	LP	
12	"	(1)	Borer	6x5x2	Q	Y	Red	F	-	-	6	S	-	-	I	-	-	U	F	U	F	LP	
13	"	(1)	Borer	3x4x1	Q	Y	Red	F	-	-	7	S	-	-	S	P	-	U	F	U	F	LP	
14	"	(1)	Scraper	8x4x2.5	Q	Y	Red	M	-	-	5	S	-	-	S	-	-	U	F	U	F	LP	
15	"	(1)	Blade	5x3.5x2	Q	Y	Red	M	-	-	6	S	-	-	S	-	-	U	F	U	F	LP	
16	"	(1)	Lunate	6.5x3x2	Q	Y	Red	M	-	-	5	S	-	-	S	-	-	U	-	U	F	LP	
17	"	(1)	Borer	6.5x3.5x1.5	Q	Y	Red	C	-	-	7	S	-	-	I	-	-	M	-	M	F	LP	
18	"	(1)	Scraper	5x3.5x1	Q	Y	Red	C	50>	Dor-sal	6	S	-	-	S	-	-	M	-	M	F	LP	
19	"	(1)	Borer	5x3.5x1.5	Q	Y	Red	M	50>	Dor-sal	3	M	-	-	I	-	-	U	-	U	F	LP	
20	"	(1)	Borer	7x4.5x3	Chart	N	-	F	50>	Butt	4	S	-	-	I	-	Black	U	-	U	F	LP	
21	15cm	(1)	hand axe	9x5.5x3	Q	Y	Red	C	-	-	7	S	R	R	S	-	-	M	P	M	P	LP.	

Trench No. : 1.

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
22	15cm	①	Borer	4x3.5x1	Q	N	-	F	-	-	3	S	-	-	S	P	-	U	F	U	F	LP	
23	"	①	Blade	3.5x3x.5	Q	Y	Red	M	-	-	5	S	-	-	S	P	-	U	P	U	F	LP	
24	"	①	Blade	7.5x5.5x3	Q	Y	Red	M	-	-	3	S	R	R	S	P	-	U	F	U	F	LP	
25	"	①	Borer	9x6x3	Q	Y	Red	M	-	-	10	S	R	P	I	-	-	U	P	U	F	LP	
26	"	①	Hand axe	9x6x3	Q	Y	Red	C	-	-	5	S	R	R	S	-	-	M	-	M	P	LP	
27	20cm	①	Borer	8.5x6.5x2	Q	N	-	M	50>	Dor-sal	4	S	F	P	S	P	-	U	P	U	F	LP	
28	"	①	Ovate	9x9x3	Q	Y	Red	C	-	-	7	M	-	-	I	D	-	M	F	U	F	LP	
29	"	①	Borer	5x4x2	Q	N	-	F	-	-	6	S	-	-	S	P	-	U	F	U	F	LP	
30	"	①	Borer	11.5x6.5x4	Q	N	-	F	-	-	8	M	-	-	I	-	Red	U	F	U	F	LP	
31	25cm	①	Cleaver	10.5x7x3.5	Q	Y	Red	F	-	-	8	S	F	N	S	P	-	U	F	U	F	LP	

Trench No. : 1.

Serial Number	1	32	33	34	35	36	37	38	39	40	41	42
Depth	2	25cm	"	"	"	"	"	"	"	"	"	"
Stratum	3	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Tool type	4	Borer	Scraper	Cleaver	Borer	Borer	Ovate	Scraper	Borer	Blade	Borer	Scraper
Measurement (LxBxT) cms.	5	5.5x4.5x1.5	6.5x6x1.5	7.5x5x3	5.5x5x1.5	7x4.5x3	9x10x4	6x6.5x2.5	10.5x4.5x3	6.5x5x3	5.5x5.5x1	9.5x6x3
Raw material	6	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Patinated Yes / No (Y) (N)	7	N	N	N	N	Y	Y	N	Y	Y	Y	Y
Colour of Patination	8	-	-	-	-	Red	Red	-	Red	Red	Red	Red
Coarseness Fine - F Medium - M Coarse - C	9	M	M	M	M	M	M	M	M	M	M	M
Percentage of Cortex	10	-	-	-	-	-	-	-	-	-	-	-
Position of Cortex	11	-	-	-	-	-	-	-	-	-	-	-
No. of flake scars (Retouch)	12	7	6	6	3	3	9	5	6	8	4	10
Flake Scar Shallow-S Medium-M Deep-D	13	M	S	S	S	S	M	S	M	S	S	S
Shape of Butt Rounded - R Flat - F	14	F	R	R	F	F	R	R	F	F	F	R
Shape of apex Pointed-P Round-R Notched-N	15	P	N	N	P	P	R	R	P	N	N	P
Line of Profile Staight - S Irregular - I	16	I	I	S	S	S	I	SI	S	SI	I	S
Bulb Prominent - P Diffused - D	17	-	P	P	-	P	-	P	D	D	P	-
Stain	18	Red	Red	Red	Red	-	-	Red	-	-	-	-
Abrasion Medium - M Deep-D Less-L Unabraded-U'	19	U	U	U	U	U	M	M	M	M	U	U
Striking plat form Plain-P Flat-F	20	-	-	F	P	F	-	P	P	P	F	P
Edges Abraded - A Unabraded - U Medium abraded-M	21	M	M	U	U	U	M	M	M	M	M	U
Made of Flake - F Pebble-P Cobble-C	22	F	F	F	F	F	F	F	F	F	F	P
Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	23	LP	LP	LP	LP	LP	LP	LP	LP	LP	LP	LP
Remarks	24											

Trench No. : 1.

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
43	25cm	(1)	scraper	65x45x25	Q	Y	Red	M	-	-	9	M	R	R	I	P	-	M	F	U	F	LP	
44	"	(1)	scraper	3.5x4.5x1	Q	N	-	F	-	-	5	S	R	P	S	P	-	U	P	U	F	LP	
45	"	(1)	Blade	4.5x2x1.5	Q	Y	Red	F	-	-	5	S	F	N	S	P	-	U	F	U	F	LP	
46	"	(1)	Blade	5x2.5x1	Q	Y	Red	M	-	-	5	S	F	N	S	-	-	U	F	U	F	LP	
47	30cm	(1)	Borer	7.5x5x2	Q	Y	Red	C	50%	Dor-sal	5	S	R	P	S	-	-	U	-	U	F	LP	
48	"	(1)	Ovate	5x5x2.5	Q	Y	Red	M	-	-	4	S	F	R	I	P	-	U	F	U	F	LP	
49	'	(1)	Blade	3.5x3x1	Q	N	-	M	-	-	3	S	-	-	S	-	-	U	F	U	F	LP	
50	"	(1)	Lunate	5x2.5x1.5	Q	Y	Red	M	-	-	3	S	F	N	S	P	-	U	F	U	F	LP	
51	"	(1)	Blade	4x3x1	Q	N	-	F	-	-	4	S	F	N	S	D	Red	U	F	U	F	LP	
52	"	(1)	Borer	4x3.5x1	Q	N	-	F	-	-	3	S	R	P	S	P	Red	U	F	U	F	LP	

Trench No. : 1.

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
53	35cm	(1)	Hand axe	12.5x8x4	Q	Y	Red	M	-	-	13	M	F	P	I	-	-	U	F	U	P	LP	
54	35cm	(1)	Borer	12x6x3	Q	Y	Red	C	-	-	9	M	R	P	S	-	-	M	-	M	F	LP	
55	35cm	(1)	Cleaver	9.5x6x3.5	Q	Y	Red	M	50>	Dor-sal	8	M	F	N	S	-	-	U	-	M	F	LP	
56	35cm	(1)	Borer	8.5x4.5x2.5	Q	N	-	-	-	-	7	M	F	P	I	-	-	U	-	U	F	LP	
57	35cm	(1)	Borer	7x6x1	Q	Y	Red	M	-	-	6	M	F	N	S	P	-	U	F	M	F	LP	
58	35cm	(1)	Borer	5x4x2	Q	N	-	F	-	-	4	M	F	P	S	-	-	U	-	U	F	LP	
59	35cm	(1)	Borer	10x9x2.5	Q	Y	Red	C	-	-	7	D	F	P	I	P	-	M	P	M	F	LP	
60	40cm	(1)	Borer	7x6x1.5	Q	Y	Red	F	-	-	5	M	F	N	S	P	-	U	P	U	F	LP	
61	40cm	(1)	Borer	6.5x5x2	Q	Y	Red	F	-	-	7	M	F	P	S	-	-	U	F	U	F	LP	
62	40cm	(1)	Borer	5.5x3.5x2	Q	Y	Red	M	-	-	5	M	R	P	S	-	-	U	F	M	F	LP	

Trench No. : 1.

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks (T.D.M.) cms.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
63	40cm	(1)	Lunate	5.5x5x2	Q	N	-	F	-	-	3	S	F	R	S	D	-	U	P	U	F	LP	
64	40cm	(1)	Borer	6x6x1	Q	N	-	F	-	-	5	S	F	P	I	-	Red	U	F	U	F	LP	
65	40cm	(1)	Lunate	5.5x4x2	Q	Y	Red	M	-	-	3	S	F	R	S	-	-	M	P	M	F	LP	I:20x 35-40
66	40cm	(1)	Blade	7x4x2	Q	Y	Red	F	-	-	4	S	F	N	S	-	Black Bottom	U	F	U	F	LP	
67	40cm	(1)	Borer	6.5x6x2	Q	Y	-	F	-	-	4	S	R	P	S	P	-	M	P	M	F	LP	
68	40cm	(1)	Blade	5.5x4.5x1.5	Q	Y	Red	M	-	-	5	S	F	P	S	-	-	M	P	M	F	LP	
69	40cm	(1)	Blade	4x4x1	Q	Y	Red	M	-	-	4	S	F	N	S	D	-	M	F	U	F	LP	
70	40cm	(1)	Blade	4x2.5x1	Q	Y	Red	M	-	-	4	S	R	N	S	-	-	M	P	M	F	LP	
71	40cm	(1)	Borer	6x4x2	Q	N	-	F	-	-	5	S	F	P	S	P	-	U	F	U	F	LP	
72	40cm	(1)	Blade	4.5x5x1	Q	Y	Red	M	-	-	5	S	F	N	S	D	-	M	P	U	F	LP	

Trench No. : 1.

Serial Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
		Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat fotm Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks
73	40cm	(1)	Blade	5.5x3x1	Q	Y	Red	F	-	-	6	S	F	R	S	D	-	U	P	U	F	LP	
74	40cm	(1)	Borer	6x4x3	Q	Y	Red	F	-	-	4	S	F	P	S	D	-	U	F	U	F	LP	
75	45cm	(1)	Hand axe	10x6x3	Q	Y	Red	M	-	-	8	S	F	R	S	-	-	M	P	U	F	LP	
76	45cm	(1)	Borer	10x8.5x3	Q	Y	Red	M	-	-	6	M	F	P	I	-	-	D	P	A	F	LP	
77	45cm	(1)	Lunate	5x6x2.5	Q	Y	Red	M	-	-	7	S	F	R	I	-	-	M	P	A	F	LP	
78	45cm	(1)	Lunate	6.5x4x1.5	Q	Y	Red	M	-	-	3	S	F	R	S	D	-	M	P	M	F	LP	
79	45cm	(1)	Lunate	3.5x4.5.5	Q	Y	Red	F	-	-	7	S	F	R	S	-	-	U	P	M	F	LP	
80	45cm	(1)	Lunate	4.5x4.5x2	Q	Y	Red	M	-	-	5	S	F	R	S	D	-	M	P	M	F	LP	
81	45cm	(1)	Blade	4x3x1.5	Q	N	-	M	-	-	6	S	F	R	S	D	-	M	P	M	F	LP	
82	45cm	(1)	Blade	4x3.5x1.5	Q	N	-	M	-	-	4	S	F	S	S	-	-	M	F	M	F	LP	

Trench No. : 1.

Serial Number	1	83	84	85	86	87	88	89	90	91	92
Depth	2	45cm	45cm	45cm	45cm	50cm	50cm	50cm	50cm	50cm	50cm
Stratum	3	①	①	①	①	①	①	①	①	①	①
Tool type	4	Blade	Blade	Blade	Blade	Hand axe	Hand axe	Ovate	Scraper	Ovate	Blade
Measurment (LxBxT) cms.	5	3x3x1	2x2.5x.5	2.5x2x5.5	3.5x2.5x1	10x1x4	8x6x3	10x10x3.5	6.5x8x3	10x9.5x3.5	3.5x3.5x1
Raw material	6	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Patinated Yes / No (Y) (N)	7	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Colour of Patination	8	-	-	Red	Red	Red	Red	Red	Red	Red	Red
Coarseness Fine - F Medium - M Coarse - C	9	F	M	M	M	M	F	F	M	M	F
Percentage of Cortex	10	-	-	-	-	50>	50>	-	50>	-	-
Position of Cortex	11	-	-	-	-	Dor-sal	Butt	-	Dor-sal	-	-
No. of flake scars (Retouch)	12	4	3	3	5	6	9	11	2	7	3
Flake Scar Shallow-S Medium-M Deep-D	13	S	S	S	S	M	S	M	S	S	S
Shape of Butt Rounded - R Flat - F	14	F	F	F	F	F	R	R	F	R	F
Shape of apex Pointed-P Round-R Notched-N	15	N	N	N	N	P	P	R	R	R	N
Line of Profile Staight - S Irregular - I	16	S	S	S	S	S	S	S	S	S	S
Bulb Prominent - P Diffused - D	17	P	-	-	-	-	-	-	-	-	-
Stain	18	Red	Red	-	-	-	-	-	-	-	-
Abrasion Medium - M Deep-D Less-L Unabraded-U'	19	U	U	U	U	M	M	U	M	M	M
Striking plat form Plain-P Flat-F	20	F	P	P	P	F	P	P	P	P	P
Edges Abraded - A Unabraded - U Medium abraded-M	21	U	U	U	U	M	M	U	M	M	M
Made of Flake - F Pebble-P Cobble-C	22	F	F	F	F	F	F	F	F	F	F
Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	23	LP	LP	LP	LP	LP	LP	LP	LP	LP	LP
Remarks (T.D.M.) cms.	24					III:35x20 x-50	IV:25x 50-50			III:15x40 -50	

Trench No. : 1.

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
93	50cm	1	Hand axe	13x11x6	Q	-	-	M	50>	Butt	7	M	R	P	S	-	Red	M	P	M	P	MP	
94	50cm	1	scraper	13.5x6x3	Q	Y	Red	M	50>	Dor-sal	9	S	R	R	S	-	Red dots	M	P	M	F	MP	
95	50cm	1	Ovate	10x9x3.5	Q	Y	Red	F	50>	Butt	15	M	R	R	S	-	-	U	P	U	P	MP	
96	50cm	1	Blade	6.5x4.5x3	Q	Y	Red	F	-	-	5	S	F	N	S	D	-	U	F	U	F	MP	
97	50cm	1	Ovate	6x6.5x2	Q	Y	Red	F	-	-	7	S	R	R	S	P	-	U	F	U	F	MP	
98	50cm	1	Ovate	9x8x4	Q	Y	Red	F	-	-	12	M	F	R	S	-	-	U	F	U	F	MP	
99	50cm	1	Cleaver	12x9x3.5	Q	Y	Red	F	50>	-	7	S	F	N	S	P	-	U	F	U	F	MP	
100	50cm	1	scraper	13.5x9x2.5	Q	Y	Red	F	50>	Butt	11	S	F	P	S	D	-	U	P	U	F	MP	
101	50cm	1	scraper	9.5x9x2	Q	Y	Red	F	-	-	5	S	F	N	S	P	-	U	F	U	F	MP	
102	50cm	1	Hand axe	14x9.5x6	Q	Y	Red	F	50>	Butt	8	-	R	P	S	-	-	U	P	U	P	MP	

Trench No. : 1.

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U'	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
103	50cm	(1)	Ovate	9.5x9x2.5	Q	Y	Red	M	-	-	10	S	R	R	S	-	-	M	P	M	F	MP	
104	50cm	(1)	Ovate	11.5x9x3	Q	Y	Red	F	-	-	10	S	R	R	S	-	-	M	P	M	F	MP	
105	50cm	(1)	Hand axe	15x9x3.5	Q	Y	Red	F	-	-	13	S	R	P	S	-	-	U	P	M	P	MP	
106	50cm	(1)	Ovate	12x8x3	Q	Y	Red	M	-	-	4	S	R	R	S	-	-	U	P	U	F	MP	
107	50cm	(1)	Borer	11x8x3	Q	Y	Red	F	-	-	9	S	R	P	S	-	-	U	P	U	F	MP	
108	50cm	(1)	Hand axe	18x11.5x6	Q	Y	Red	M	50>	Butt	9	M	R	P	S	-	-	U	P	U	P	MP	
109	50cm	(1)	Hand axe	18x11x5	Q	Y	Red	F	50>	Butt	5	S	R	P	S	-	-	U	P	U	F	MP	
110	50cm	(1)	Cleaver	16.5x11.5x3	Q	Y	Red	M	-	-	11	M	R	N	S	-	-	M	P	M	P	MP	
111	50cm	(1)	Cleaver	17x12x6	Q	Y	Red	F	-	-	9	S	F	N	S	-	-	M	P	M	P	MP	
112	50cm	(1)	Ovate	18.5x12x6	Q	Y	Red	F	-	-	6	S	R	R	S	-	-	P	P	U	P	MP	

Trench No. : 1.

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
113	55cm	(1)	Blade	4x5x1	Q	N	-	M	-	-	4	S	F	N	S	P	-	M	P	M	F	LP	
114	55cm	(1)	Blade	4x4x1	Q	N	-	M	-	-	5	S	F	N	S	D	-	M	P	M	F	LP	
115	65cm	(1)	scraper	4x3.5x1	Q	Y	Red	M	-	-	5	S	F	R	S	P	-	M	F	M	F	MP	
116	65cm	(1)	Borer	11x6x2	Q	Y	Red	M	-	-	5	S	F	P	S	-	-	U	P	U	F	MP	
117	65cm	(1)	Blade	4.5x3.5x1	Q	Y	Red	M	-	-	4	S	F	R	S	-	-	U	P	U	F	MP	
118	65cm	(1)	Borer	6x3.5x2	Q	Y	Red	M	-	-	5	S	F	P	S	P	-	U	P	U	F	MP	
119	65cm	(1)	Borer	14x4x3	Q	Y	Red	F	-	-	5	S	R	P	S	-	-	U	P	U	F	MP	
120	65cm	(1)	Scraper	8.5x6x3	Q	Y	Red	F	-	-	9	S	F	R	S	-	-	U	P	U	F	MP	
121	65cm	(1)	Hand axe	10x8x4	Q	Y	Red	M	50>	Butt	11	M	R	R	S	-	-	U	P	U	P	MP	
122	65cm	(1)	Hand axe	10x9x3	Q	Y	Red	M	-	-	8	S	F	P	S	-	-	M	F	U	F	MP	

Trench No. : 1.

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Strking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks (T.D.M.) cms.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
123	65cm	(1)	Hand axe	9x8.5x5	Q	Y	Red	F	50>	Butt	8	S	R	P	S	-	-	U	P	U	F	MP	
124	65cm	(1)	Hammer Stone	13.5x6x4	Q	Y	Red	F	<50	Total	2	S	R	R	-	-	-	U	P	U	P	MP	VI:28x 42-65
125	65cm	(1)	Scraper	9x6x1.5	Q	Y	Red	F	-	-	4	S	R	P	S	P	-	U	P	U	F	MP	
126	65cm	(1)	Blade	9x5x1.5	Q	Y	Red	F	-	-	5	S	F	N	S	P	-	U	F	U	F	MP	
127	65cm	(1)	Scraper	6x7x2	Q	Y	Red	F	-	-	4	S	R	R	S	-	-	U	F	U	F	MP	
128	65cm	(1)	Lunate	5x10.5x3	Q	Y	Red	M	-	-	3	S	F	R	S	-	-	M	P	U	F	MP	
129	65cm	(1)	Hand axe	18.5x10.5x6	Q	Y	Red	F	50>	Butt	10	S	R	P	S	-	-	U	P	U	P	MP	
130	65cm	(1)	Cleaver	14x7.5x4	Q	Y	Red	F	-	-	6	S	R	P	S	-	-	U	P	U	P	MP	
131	65cm	(1)	Ovate	9x10.5x4	Q	Y	Red	F	-	-	11	S	R	R	S	-	-	U	P	U	P	MP	
132	65cm	(1)	Cleaver	14.5x12x6	Q	Y	Red	M	50>	Butt	5	S	F	N	S	-	-	U	P	U	P	MP	
133	65cm	(1)	Hammer stone	23.5x8x7	Q	Y	Red	F	<50	Full	-	-	F	R	-	-	-	U	P	U	P	MP	V:57x 60-65

Trench No. : 1.

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks (T.D.M.) cms.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
134	65cm	①	Hand axe	16.5x10x5	Q	Y	Red	M	50>	Butt	8	S	R	R	S	-	-	M	P	M	P	MP		
135	65cm	①	Cleaver	14.5x8.5x3	Q	Y	Red	F	50>	Butt	10	S	R	N	S	-	-	U	P	U	P	MP		
136	65cm	①	Hand axe	12.5x7.5x4	Q	Y	Red	F	50>	Butt	10	S	R	P	S	-	-	U	P	U	P	MP		
137	65cm	①	Hand axe	15.5x8x5	Q	Y	Red	F	50>	Butt	9	S	R	N	S	-	-	U	P	U	P	MP		
138	65cm	①	Hand axe	15.5x12x5	Q	Y	Red	F	50>	Butt	7	S	R	N	S	-	-	U	P	U	P	MP		
139	65cm	①	Hand axe	14x8x4	Q	Y	Red	F	-	-	10	S	R	P	S	-	-	U	P	U	F	MP		
140	70cm	②	Hand axe	9x6x2.5	Q	Y	Red	M	-	-	12	S	N	P	I	-	-	U	P	U	F	MP		
141	70cm	②	Blade	10.5x4x1.5	Q	Y	-	F	-	-	5	S	F	P	S	-	-	U	F	U	F	MP		
142	70cm	②	Scraper	9x7.5x1	Q	Y	Red	F	-	-	8	S	F	P	S	P	-	U	F	U	F	MP		
143	70cm	②	Cleaver	9x7x4	Q	Y	Red	F	-	-	11	S	R	N	S	-	-	U	P	U	F	MP		
144	70cm	②	Hammer stone	11x7x6	Q	Y	Red	F	<50	Dor-sal	4	S	R	N	I	-	-	U	P	U	P	MP	III:72 58-70	

Trench No. : 1.

PARIKULAM EXCAVATION 2005 - 2006
CATALOGUE OF PALAEOLITHS

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
145	70cm	(2)	scraper	5.5x5x2	Q	Y	Red	M	-	-	5	S	F	R	S	P	-	U	F	U	F	MP	
146	70cm	(2)	scraper	6.5x4x2	Q	Y	Red	F	-	-	7	S	R	P	S	-	-	U	F	U	F	MP	
147	70cm	(2)	Cleaver	15x11x5	Q	Y	Red	M	-	-	5	S	F	R	S	-	-	M	P	M	P	MP	
148	70cm	(2)	Cleaver	18x10.5x6	Q	Y	Red	F	-	-	8	S	F	R	S	-	-	U	P	U	P	MP	
149	70cm	(2)	Cleaver	15x11.5x5	Q	Y	Red	F	-	-	7	S	F	R	S	-	-	U	P	U	P	MP	
150	70cm	(2)	Cleaver	13x9x4	Q	Y	Red	F	50>	Butt	6	S	F	R	S	-	-	U	P	U	P	MP	
151	70cm	(2)	Cleaver	13.5x9.5x3	Q	Y	Red	F	-	-	6	S	F	R	S	-	-	U	P	U	P	MP	
152	70cm	(2)	Ovate	11.5x9x3	Q	Y	Red	F	-	-	8	S	R	R	S	-	-	U	P	U	P	MP	
153	70cm	(2)	Ovate	11x9x3.5	Q	Y	Red	F	-	-	11	S	R	R	S	-	-	U	P	U	P	MP	
154	70cm	(2)	scraper	12.5x9x3	Q	Y	Red	F	-	-	11	S	F	R	S	-	-	U	P	U	P	MP	

Trench No. : 1.

PARIKULAM EXCAVATION 2005 - 2006

CATALOGUE OF PALAEOLITHS

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
145	70cm	(2)	scraper	5.5x5x2	Q	Y	Red	M	-	-	5	S	F	R	S	P	-	U	F	U	F	MP	
146	70cm	(2)	scraper	6.5x4x2	Q	Y	Red	F	-	-	7	S	R	P	S	-	-	U	F	U	F	MP	
147	70cm	(2)	Cleaver	15x11x5	Q	Y	Red	M	-	-	5	S	F	R	S	-	-	M	P	M	P	MP	
148	70cm	(2)	Cleaver	18x10.5x6	Q	Y	Red	F	-	-	8	S	F	R	S	-	-	U	P	U	P	MP	
149	70cm	(2)	Cleaver	15x11.5x5	Q	Y	Red	F	-	-	7	S	F	R	S	-	-	U	P	U	P	MP	
150	70cm	(2)	Cleaver	13x9x4	Q	Y	Red	F	50>	Butt	6	S	F	R	S	-	-	U	P	U	P	MP	
151	70cm	(2)	Cleaver	13.5x9.5x3	Q	Y	Red	F	-	-	6	S	F	R	S	-	-	U	P	U	P	MP	
152	70cm	(2)	Ovate	11.5x9x3	Q	Y	Red	F	-	-	8	S	R	R	S	-	-	U	P	U	P	MP	
153	70cm	(2)	Ovate	11x9x3.5	Q	Y	Red	F	-	-	11	S	R	R	S	-	-	U	P	U	P	MP	
154	70cm	(2)	scraper	12.5x9x3	Q	Y	Red	F	-	-	11	S	F	R	S	-	-	U	P	U	P	MP	

Trench No. : 1.

PARIKULAM EXCAVATION 2005 - 2006

CATALOGUE OF PALAEOLITHS

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
155	70cm	(2)	Ovate	14x12x4	Q	Y	Red	F	-	-	8	S	R	R	S	-	Block	U	P	U	P	MP	
156	70cm	(2)	Hand axe	13x8x5	Q	Y	Red	F	50>	Dor-sal	9	S	R	P	S	-	-	U	P	U	P	MP	
157	70cm	(2)	Hand axe	11.7x7.5x2.5	Q	Y	Red	F	-	-	8	S	R	P	S	-	-	U	P	U	P	MP	
158	70cm	(2)	Hand axe	16x9x6	Q	Y	Red	M	-	-	9	S	F	R	S	-	-	M	P	M	P	MP	
159	70cm	(2)	Scraper	10.5x7.5x4	Q	Y	Red	F	50>	Dor-sal	10	M	R	P	S	-	-	U	P	U	F	MP	
160	70cm	(2)	Hand axe	16x13x3.5	Q	Y	Red	M	50>	Butt	9	S	F	R	S	-	-	M	P	M	P	MP	
161	70cm	(2)	Hand axe	16x8x3.5	Q	Y	Red	F	50>	Butt	7	S	R	P	S	-	-	U	P	U	P	MP	
162	70cm	(2)	Ovate	10.5x10x4.5	Q	Y	Red	F	-	-	12	S	R	R	S	-	-	U	P	U	P	MP	
163	70cm	(2)	Ovate	10x2.5x3.5	Q	Y	Red	M	-	-	15	S	R	R	S	-	-	M	P	M	P	MP	
164	80cm	(2)	Ovate	11x10x4	Q	Y	Red	F	50>	Butt	7	S	R	R	S	-	-	U	P	U	F	MP	

Trench No. : 1.

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P. Late palaeolithic - L.P.	Remarks (T.D.M.) cms.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
165	80cm	(2)	Cleaver	14x9x5	Quartz	Y	Red	F	-	-	10	S	F	R	S	-	-	U	P	U	P	MP	
166	80cm	(2)	Ovate	18x17x6	Q	Y	Red	F	-	-	13	S	R	R	S	-	Black Dots	U	F	U	P	MP	v.58x 43-80
167	80cm	(2)	scraper	14.5x10x4	Q	Y	Red	F	-	-	11	S	F	R	S	-	-	U	P	U	P	MP	
168	80cm	(2)	Borer	9x6x4	Q	Y	Red	F	-	-	13	S	R	P	S	-	-	U	P	U	P	MP	
169	80cm	(2)	Hand axe	14x9x4	Q	Y	Red	F	-	-	11	S	R	N	S	-	-	U	P	U	P	MP	
170	80cm	(2)	Hand axe	18.5x10x7	Q	Y	Red	F	50>	Butt	12	S	R	N	S	-	-	U	P	U	P	MP	
171	80cm	(2)	Hand axe	15x12x5	Q	Y	Red	F	50>	Butt	9	M	R	N	S	-	-	U	P	U	P	MP	
172	80cm	(2)	Hand axe	12x10.5x4	Q	Y	Red	F	50>	Butt	11	S	F	R	S	-	-	U	P	U	P	MP	
173	80cm	(2)	Hand axe	12x8x2.5	Q	Y	Red	M	-	-	13	S	R	P	SI	-	-	M	P	M	P	MP	
174	80cm	(2)	Hand axe	16x10x7	Q	Y	Red	F	50>	Butt	10	S	R	N	S	-	-	U	P	U	P	MP	
175	80cm	(2)	Scraper	11x135x35	Q	Y	Red	F	-	-	6	S	F	R	S	P	-	U	P	U	F	MP	
176	80cm	(2)	Scraper	8x10x2	Q	N	-	F	-	-	5	S	F	R	S	-	-	U	P	U	F	MP	
177	80cm	(2)	Cleaver	11.5x8x2.5	Q	Y	Red	M	-	-	10	S	F	N	S	-	-	M	P	M	F	MP	

Trench No. : 1.

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
178	80cm	(2)	Hand axe	15.5x12x4	Quarty	Y	Red	M	-	-	11	S	R	P	S	-	-	M	P	M	P	MP	
179	80cm	(2)	Hand axe	19x10x3.5	Q	Y	Red	M	-	-	9	S	R	P	S	-	-	M	P	M	P	MP	
180	80cm	(2)	scraper	12x6.5x4	Q	Y	Red	F	-	-	8	S	R	N	S	-	-	U	P	U	P	MP	
181	90cm	(2)	scraper	10.5x8x3	Q	Y	Red	M	-	-	9	S	F	P	S	-	-	M	P	M	P	MP	
182	90cm	(2)	Cleaver	11x8.5x4	Q	Y	Red	F	50>	Butt	7	S	F	R	S	-	-	U	P	U	P	MP	
183	90cm	(2)	Hand axe	12x8x4	Q	Y	Red	C	50>	Butt	8	S	R	R	S	-	-	A	P	A	P	MP	
184	90cm	(2)	Hand axe	15x11.5x5	Q	Y	Red	M	-	-	6	S	R	P	S	-	-	M	P	M	P	MP	
185	90cm	(2)	Hand axe	11.5x8x4	Q	Y	Red	F	50>	Butt	11	S	F	R	S	-	-	U	P	U	P	MP	
186	90cm	(2)	Hand axe	16.5x12x5	Q	Y	Red	C	-	-	8	S	R	P	S	-	-	A	P	A	P	MP	
187	90cm	(2)	Hand axe	14x11x4.5	Q	Y	Red	M	50>	Butt	13	S	R	P	S	-	-	M	P	M	P	MP	
188	90cm	(2)	Hand axe	14x12x4	Q	Y	Red	F	50>	Butt	7	M	R	N	S	_	-	U	P	U	P	MP	
189	90cm	(2)	Ovate	8x8.5x4	Q	N	Red	F	-	-	15	M	R	R	I	-	-	U	P	U	F	MP	
190	90cm	(2)	Scrapar	9x7.5x2	Q	Y	Red	M	-	-	7	S	F	P	S	-	-	M	P	U	F	MP	

Trench No. : 1.

PARIKULAM EXCAVATION 2005 - 2006

CATALOGUE OF PALAEOLITHS

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks (T.D.M.) cms.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
191	90cm	(2)	Hand axe	17x10x4	Quartz	Y	Red	M	50>	Butt	9	M	R	R	S	-	-	M	P	M	P	MP	
192	90cm	(2)	Borer	16x6.5x4	Q	Y	Red	M	-	-	14	S	R	P	S	-	-	M	P	M	F	MP	iii:70x 58-90
193	1mtr	(2)	Hammer stone	18x7x6	Q	Y	Red	M	<50	Full	-	-	R	R	-	-	-	U	-	U	P	MP	i:55x 28-100
194	1mtr	(2)	Hammer stone	15x8x4	Q	Y	Red	M	<50	Full	-	-	R	R	-	-	-	U	-	U	P	MP	ii:35x 50-120
195	1.20m	(2)	Hammer stone	19x7x5.5	Q	Y	Red	M	<50	Full	-	-	R	R	-	-	-	U	-	U	P	EP	v:55x 35-120
196	1.20m	(2)	Hand axe	17x10x4.5	Q	Y	Red	M	50>	Dor-sal	3	D	R	P	S	-	-	M	P	M	C	EP	iii:15x 50-120
197	1.20m	(2)	Hand axe	24.5x12x7	Q	Y	Red	F	50>	Butt	9	D	R	N	I	-	-	U	P	U	C	EP	iii:58x 35-120
198	1.20m	(2)	Hand axe	27x13x7	Q	Y	Red	F	50>	Butt	7	D	R	R	I	-	-	U	P	U	C	EP	iv:70x 55-120
199	1.35m	(2)	Cleaver	17x12x6	Q	Y	Red	F	50>	Dor-sal	3	D	F	P	S	-	-	U	P	U	C	EP	ii:42x 25-120
200	1.35m	(2)	Hand axe	23x13x56	Q	Y	Red	F	50>	Dor-sal	8	D	R	P	I	-	-	U	P	U	C	EP	

PARIKULAM EXCAVATION 2005 - 2006

CATALOGUE OF PALAEOLITHS

Trench No. : 1.

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P. Late palaeolithic - L.P.	Remarks (T.D.M.) cms.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
201	1.35m	(2)	Hand axe	20x10.5x6	Quartz	Y	Red	F	-	-	5	S	F	N	S	-	-	U	P	U	C	EP	
202	1.35m	(2)	Hand axe	16.5x6x5	Q	Y	Red	F	-	-	6	D	F	P	S	-	-	U	P	U	C	EP	
203	1.35m	(2)	Hand axe	25.5x16x7	Q	N	-	F	50>	Butt	4	D	R	N	I	-	-	U	P	U	C	EP	
204	1.55m	(2)	Hammer Stone	25x8x4	Q	Y	-	M	<50	Full	-	-	R	R	-	-	-	M	P	M	C	EP	v:35x 28x-155
205	1.55m	(2)	Hammer Stone	14x11x3.5	Q	Y	Red	C	<50	Dor-sal	3	D	R	N	I	-	-	A	P	A	C	EP	v:35x 45-155
206	1.55m	(2)	Hand axe	14x5.5x4	Q	Y	Red	C	50>	Dor-sal	2	D	F	N	I	-	-	A	P	A	C	EP	v:55x 25-155
207	1.55m	(2)	Hand axe	21x10.5x5	Q	Y	Red	M	<50	Dor-sal	4	D	F	R	I	-	-	M	P	M	C	EP	v:55x 28-155

Trench No. : 2

PARIKULAM EXCAVATION 2005 - 2006

CATALOGUE OF PALAEOLITHS

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks (T.D.M.) cms.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
208	52cm	(1)	Ovate	11x10x3.5	Quartz	Y	Red	F	50>	Dor-sal	6	S	R	N	S	P	Red Dots	U	P	U	F	MP	
209	70cm	(1)	Borer	7x9x2	Q	Y	Red	M	50>	Dor-sal	5	S	R	P	S	P	-	M	P	M	F	MP	II:58x 32x-52
210	76cm	(1)	Hand axe	10x7x3	Q	N	-	M	50>	Butt	8	S	R	P	S	-	-	M	P	M	P	MP	O:30x 59x-70
211	78cm	(1)	Hand axe	18x10.5x6	Q	Y	Red	M	-	-	20	S	R	R	S	-	-	M	P	M	P	MP	I:28x 146x-76
212	82cm	(1)	Cleaver	13x6x4	Q	N	-	M	50>	Butt	4	S	F	N	S	-	-	M	P	M	C	MP	01:15x 150x-78
213	90cm	(1)	scraper	6.5x6x1.5	Q	Y	Red	F	-	-	4	S	F	N	S	P	-	M	F	M	F	MP	
214	90cm	(1)	scraper	5x7x2	Q	N	-	F	-	-	10	S	F	R	S	-	-	U	F	U	F	MP	
215	90cm	(1)	Blade	6x4x1.5	Q	Y	Red	M	-	-	5	S	F	N	S	P	-	M	P	M	F	MP	
216	90cm	(1)	Hand axe	14x9x3.5	Q	Y	Red	F	50>	Butt	12	S	R	P	S	-	-	U	P	U	P	MP	I:35x 40x-90
217	1 Mrt	(1)	Lunate	5x9.5x3	Q	Y	Red	M	-	-	6	S	R	R	S	-	-	M	P	M	F	MP	

Trench No. : 2

PARIKULAM EXCAVATION 2005 - 2006

CATALOGUE OF PALAEOLITHS

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks (T.D.M.) cms.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
218	1 Mtr	(1)	Blade	4x5.5x2	Q	Y	Red	F	-	-	5	S	F	N	S	D	-	U	P	U	F	MP	
219	1 Mtr	(1)	scraper	3x6.5x2	Q	Y	Red	M	-	-	5	S	F	R	S	-	-	M	P	M	F	MP	
220	1.09 Mtr	(1)	Hand axe	16x9x4	Q	Y	Red	F	-	-	14	S	R	P	S	-	-	U	P	U	P	MP	i:35x 38-109
221	1.15 Mtr	(1)	Ovate	6x6.5x3	Q	Y	Red	F	-	-	11	S	R	P	S	-	-	U	P	U	P	MP	
222	1.15 Mtr	(1)	scraper	7x5.5x2.5	Q	Y	Red	M	-	-	7	S	F	N	S	-	-	M	F	M	F	MP	
223	1.15 Mtr	(1)	Hand axe	10.5x7x3	Q	Y	Red	F	-	-	14	S	R	R	S	-	-	U	F	U	P	MP	
224	1.15 Mtr	(1)	Ovate	10x9.5x4	Q	N	-	C	50>	Butt	9	S	R	R	S	-	-	M	P	M	P	MP	ii:38x 20-115
225	1.15 Mtr	(1)	Blade	8.5x5x4	Q	Y	Red	F	50>	Butt	7	S	F	N	S	-	-	U	F	U	F	MP	
226	1.25 M	(1)	Borer	10x9x3	Q	Y	Red	C	-	-	10	S	F	P	S	-	-	M	F	M	P	MP	
227	1.25 M	(1)	scraper	8.5x6x2	Q	N	-	F	-	-	7	S	F	P	S	P	-	U	F	U	F	MP	

Trench No. : 2

PARIKULAM EXCAVATION 2005 - 2006

CATALOGUE OF PALAEOLITHS

Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT) cms.	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - R Flat - F	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Difffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks (T.D.M.) cms.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
228	1.25M	(2)	scraper	5x6x2.5	Q	N	-	M	50>	Apex	4	S	F	N	S	D	-	M	F	M	F	MP	
229	1.25M	(2)	Cleaver	9x6x2	Q	N	-	C	-	-	7	S	F	N	S	D	Red	M	F	M	F	MP	0:28x 68-125
230	1.25M	(2)	Cleaver	11x6.5x3	Q	Y	Red	M	-	-	10	S	R	N	S	-	Red Dots	M	F	M	F	MP	ii:58x 44-125
231	1.25M	(2)	scraper	3.5x5x1	Q	N	-	F	-	-	5	S	F	R	S	-	Red Dot	U	F	U	F	MP	
232	1.40M	(2)	Hand axe	13x5x2.5	Q	Y	Red	M	50>	Dor-sal	7	S	R	R	S	-	-	M	P	M	F	MP	
233	1.40M	(2)	Cleaver	12x8.5x4	Q	Y	Red	F	50>	Dor-sal	8	S	F	R	S	-	-	U	P	U	F	MP	
234	1.40M	(2)	Cleaver	14x10x2.5	Q	Y	Red	F	-	-	8	S	F	N	S	P	-	U	P	U	F	MP	
235	1.50M	(2)	scraper	5.5x6x2	Q	Y	Red	M	-	-	5	S	F	R	S	-	-	M	P	M	F	MP	
236	1.50M	(2)	scraper	15x10x3	Q	Y	Red	F	<50	Dor-sal	4	S	R	P	S	P	-	U	P	U	F	MP	
237	1.65M	(2)	Hammer Stone	18.5x8x6	Q	Y	Red	M	<50	Dor-sal	2	S	F	R	S	-	-	M	-	M	C	MP	

Trench No. : 1.

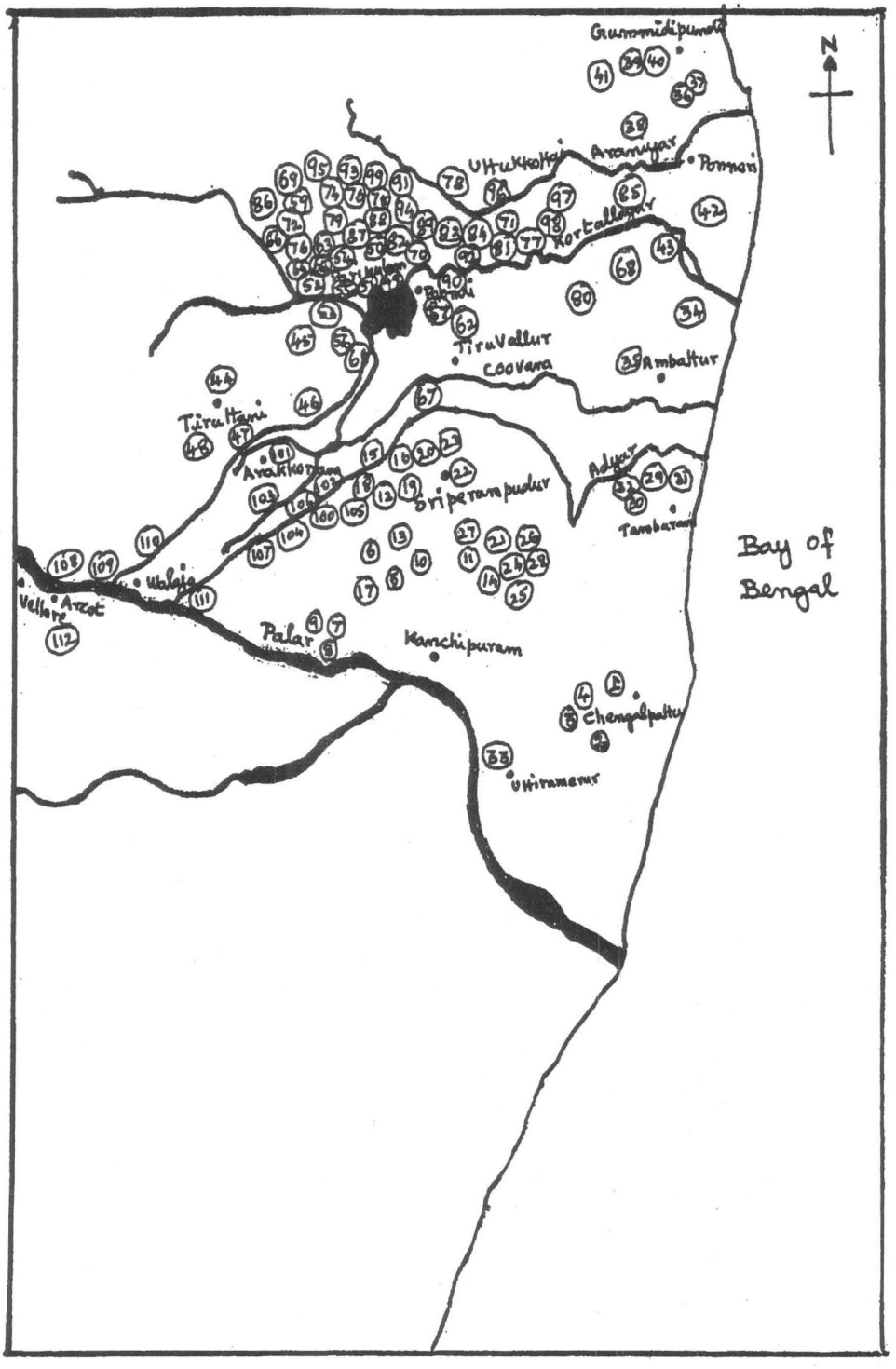
PARIKULAM EXCAVATION 2005 - 2006

CATALOGUE OF PALAEOLITHS

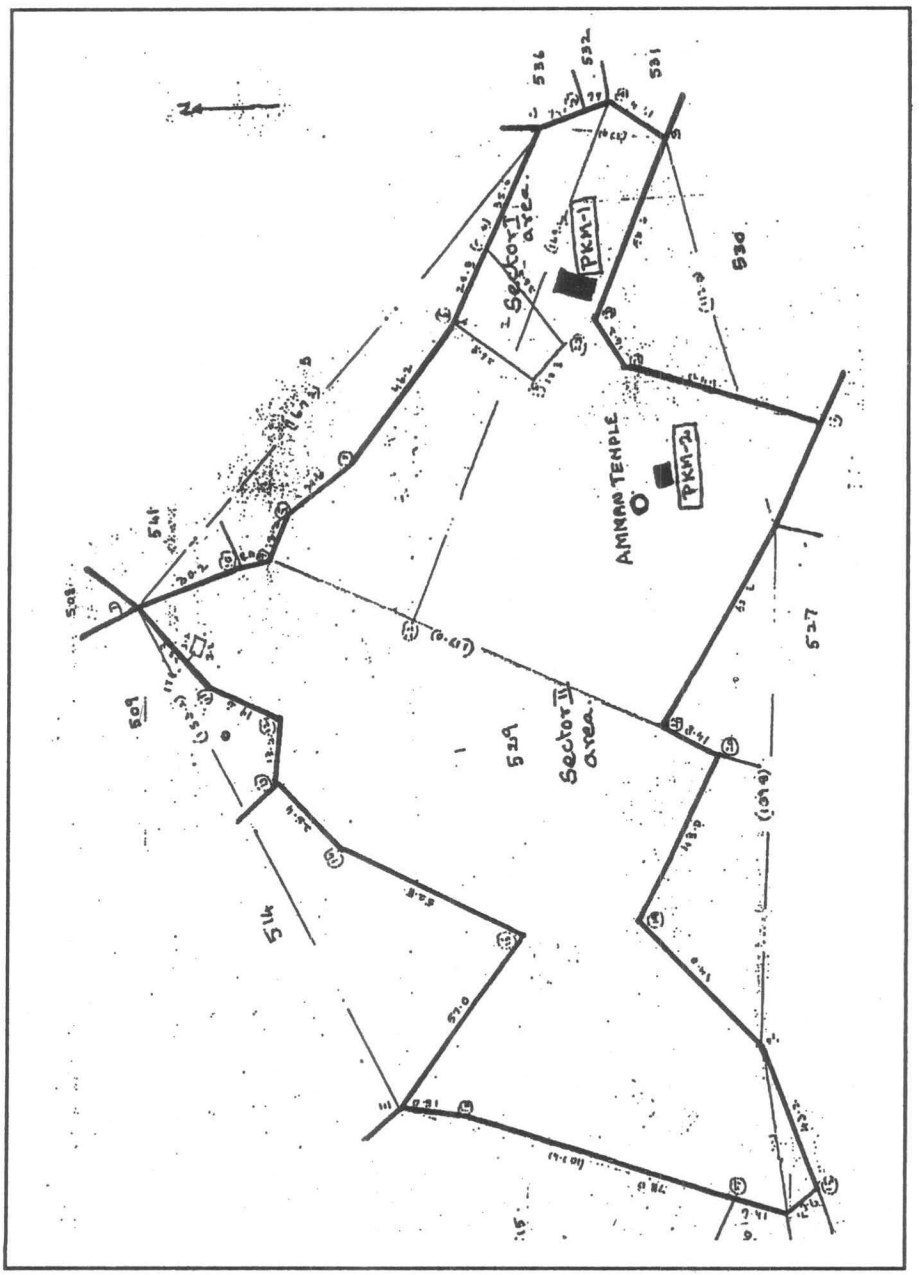
Serial Number	Depth	Stratum	Tool type	Measurment (LxBxT)	Raw material	Patinated Yes / No (Y) (N)	Colour of Patination	Coarseness Fine - F Medium - M Coarse - C	Percentage of Cortex	Position of Cortex	No. of flake scars (Retouch)	Flake Scar Shallow-S Medium-M Deep-D	Shape of Butt Rounded - M deep D	Shape of apex Pointed-P Round-R Notched-N	Line of Profile Staight - S Irregular - I	Bulb Prominent - P Diffused - D	Stain	Abrasion Medium - M Deep-D Less-L Unabraded-U	Striking plat form Plain-P Flat-F	Edges Abraded - A Unabraded - U Medium abraded-M	Made of Flake - F Pebble-P Cobble-C	Period Early palaeolithic-E.P. Middle palaeolithic - M.P Late palaeolithic - L.P.	Remarks (T.D.M.)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
238	1.65 Mtr	②	scraper	8.5x6x1.5	Q	Y	Red	C	50>	Dor-sal	5	S	F	P	S	-	-	D	P	A	F	MP	
239	1.75 Mtr	②	Hand axe	195x125x65	Q	Y	Red	F	50>	Butt	5	S	R	P	S	-	-	M	P	M	C	LP	ii:55x 40-175
240	1.75 Mtr	②	Hand axe	22x14.5x6	Q	Y	Red	F	50>	Butt Dorsal	3	S	R	R	S	P	-	M	P	M	C	LP	0:78x 60-175
241	1.75 Mtr	②	Hand axe	12x9x6	Q	Y	Red	F	50>	Dor-sal	3	S	F	P	S	-	-	U	P	U	C	LP	i:67x 105-175
242	1.75 Mtr	②	Cleaver	10.5x14.5x5	Q	Y	Red	F	50>	Dor-sal	4	S	R	N	S	P	-	U	P	U	C	LP	i:75x 125-175
243	1.75 Mtr	②	Hand axe	18x11.5x9	Q	Y	Red	F	50>	Butt Dorsal	2	S	F	P	S	-	-	U	P	U	C	LP	ii:25x 50
																							-175

III 1. DISTRICT MAP SHOWING THE LOCATION OF PARIKULAM

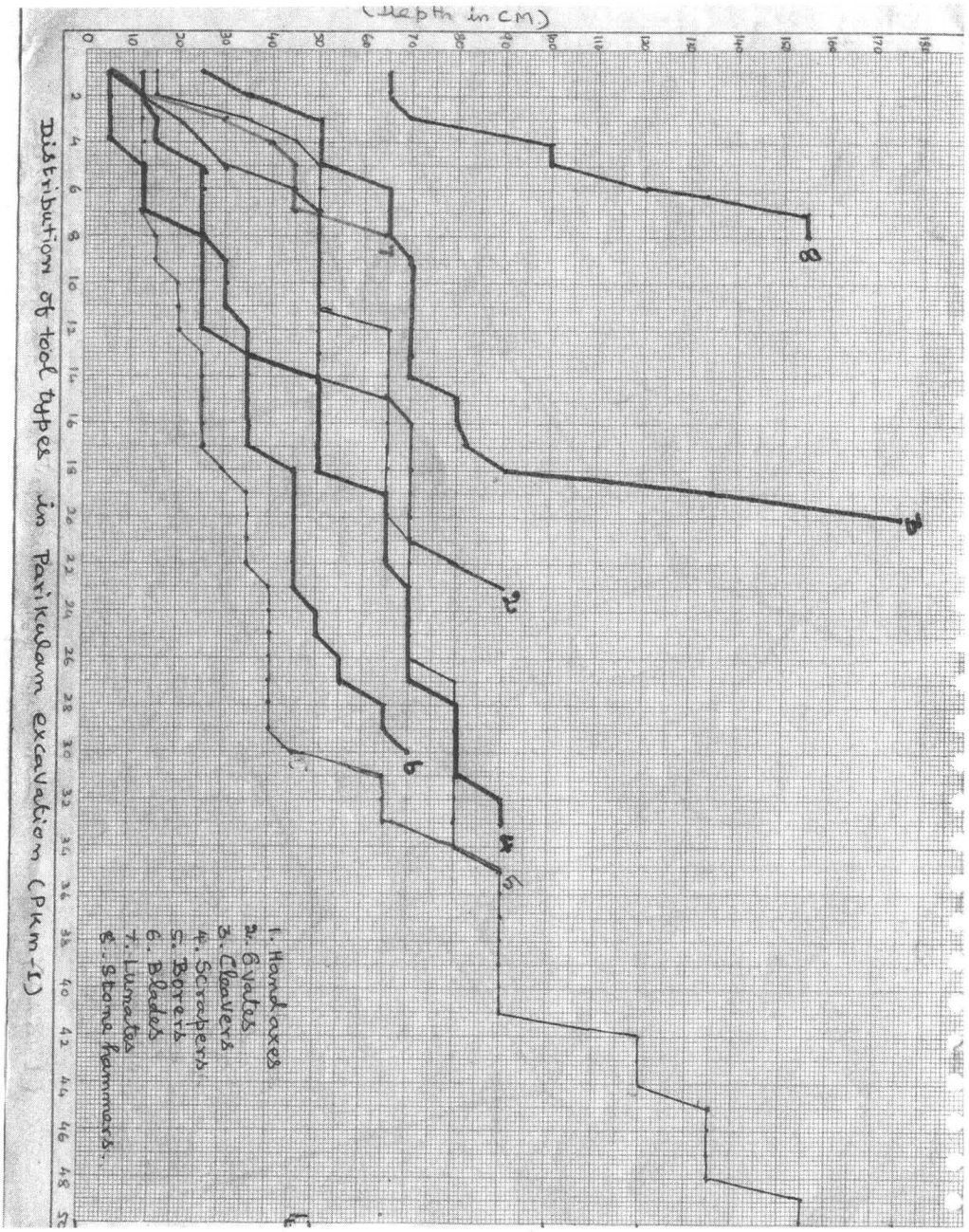

ANDHRA PRADESH
KARNATAKA
KERALA
TAMILNADU
SRI LANKA
BAY OF BENGAL
KEY MAP
KANCHIPURAM
TIRUVALLUR
CHENNAI
PARIKULAM
Satyamurti Sagar
Puzal Lake
Coovum
Adyar
Doranakambaki
Nadavaluru
KAMMAPALLE
Timmarajuappalle
Anupalle
Yerraguntakandriga
VADMALAPETA
Pattiguta
Nesanuru
Singiri Kona
K.V.B.Puram
PUTTUR
KARVERNAGAR
Rajulakandriga
Gollakandriga
Kilagaram
Middigunta
Kannikapuram
PICHATUR
Vepamunta
Kotterapalle
Mulakandriga
Idigapalle
Venkatapuram
SRIRANAGAR
PALLIPAT
Adavikottu
NAGARI
Tirumalakuppam
Sorkavalapalem
Sindurajapuram
Podatturpet
Padmapuram
Attmiri
Kottakuppam
Sarawemtvilasapuram
Kalatturu
Katrapalli
Potapalem
Agraharam
Bujjayyakandriga
Vagatturu
Brahmanapallu
Tipurantakapuram
Birakuppam
Ambikapuram
Obularajuandriga
Satyavedu
Konnayaram
Vemnakkam
NINDRA
Nindra
Govardhavagil
NAGALAPURAM
Nandanam
Ururukandriga
Siddiraukanargu
Chingapatti
Madhavaram
Atturu
Krishnopuram
Pannuru
Adavisenkarapuram
UTHUKOTTAI
Sroramapuram
Mangalamkondriga
N.Kandigai
Jilatturu
Nemili
Jambada
Maharajapuram
Krishnapuram
Kanamachathiram
Perungolathur
Karnikaputam
Ramanjeri
Poondi
Pattariperumbudur
Ikkadu
Tirupasur
Rajapalaiyam
Palayanur
Kavanur
Thiruvalangadu
Mosur
Sampathrayanpet
Arigilavadi
Kilkelathur
Nemili
Kuvam
Mappedu
Kilcheri
Kadambathur
Vellavedu
Thiruninravur
Thandarai
Paruthippattu
Thirumazhisai
Thiruverkadu
Avadi
Ambattur
Korattur
Villivakkam
Madhavaram
Thiruvothiyur
Puzal
Thirumullavoyal
Sevvappettai
Meyyur
Velliyur
Vengal
Timmabnupalapuram
Pennalurpet
Palavakkam
Gunnipalayam
Ellapuram
Periapalayam
Thirukandalam
Damarapakkam
Naravarikuppam
Padianallur
Sholavaram
Vellivovayalchavadi
Valur
Ennore
Athipedu
Athipattu
Minjur
Panjetti
Andarkuppam
Elavambedu
PONNERI
Vellore
Arani
Kaverapettai
Suravarikandigai
Karadiputhur
Sittarasur
Tiruvellavayal
Tirupalaivanam
Medur
GUMMIDIPUNDI
Pulicat Town
Pulicat Lake
Chengambakkam
Pandur
Padirikuppam
Kolladam
Irukulam
Arur
Arampakkam
Sunnambukulam
Elavur
Madarpakkam
Mangavaram
Rettambedum
Eguvarpalayam
Nagalapura
Vandaloor
Padappai
Mathur
Vallakottai
Tambaram
Medavakkam
VGP Golden Beach
Velacheri
Pallavaram
Somangalam
SRIPERUMBUDUR
Maduramangalam
Kunnipatti
Rajakulam
Kilvenpakkam
Kuram
Thirupukuzh
Thiruparuthikundram
Valyavoor
Thenneri
Ayyampettai
Walajabad
Nandivaram
Gudiyancheri
Navalur
Mambakkam
Sunguvarchathiram
Kunnathur
Kovur
St.Thomas Mount
Meenambakkam
Mandaveli
SAIDAPET
POONAMALLEE
Mevallurkuppan
Oragadam
Ayanambakkam
Kattupakkam
Kattupalli
Ennore
Manali
Minjur
Puzhal
Madhavaram
Thiruvottiyur
Villivakkam
Korattur
Ambattur
Avadi
Thirumullaivoyal
Padianallur
Naravarikuppam
Kathivakkam
Ennore
Athipattu
Athipedu
Minjur
Elavambedu
Andarkuppam
Panjetti



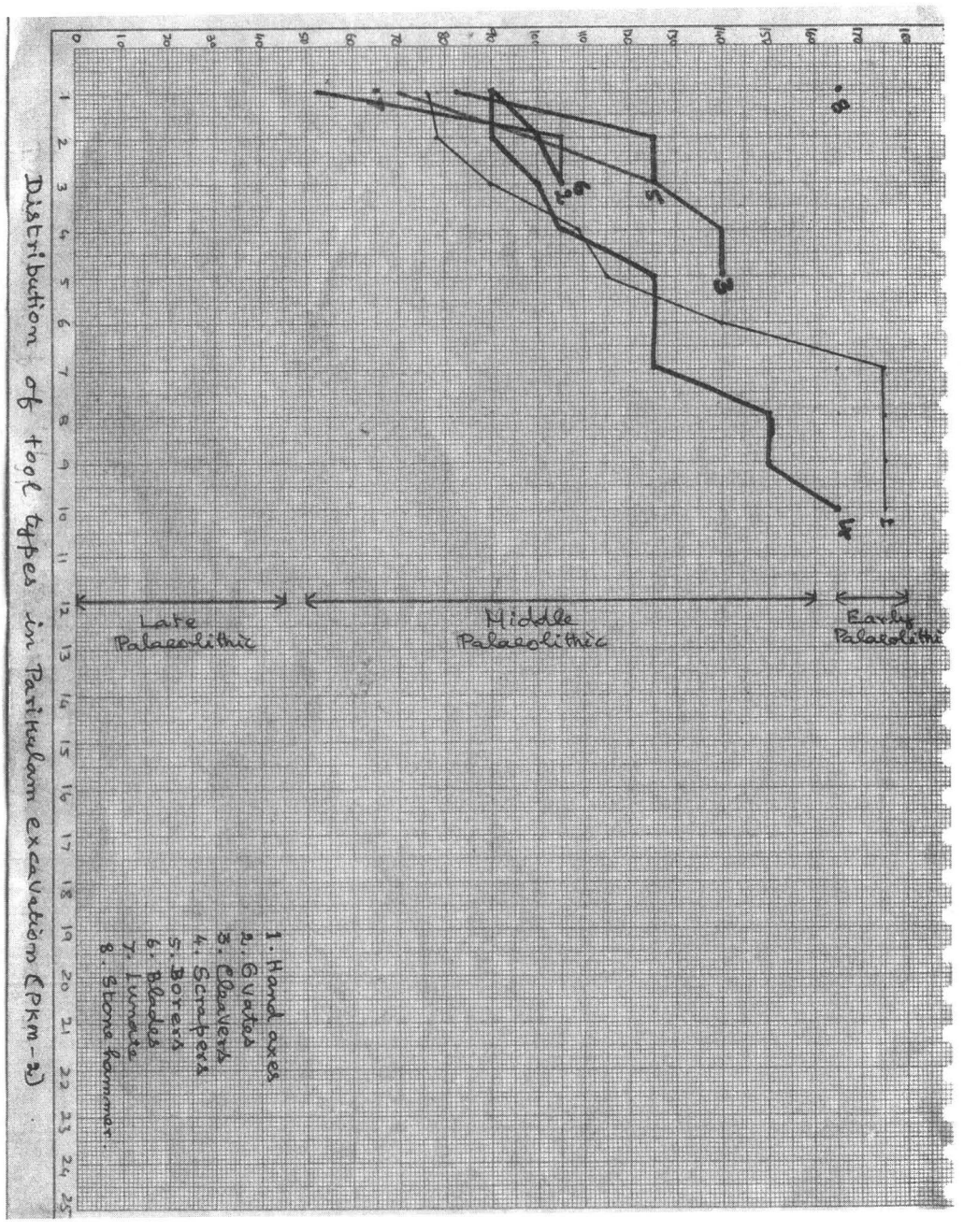
III 2. Map Showing the location of palaeolithic sites in Kortallayar and Palar Basin (Numbers denote the places in the list) see. appendix II. 1



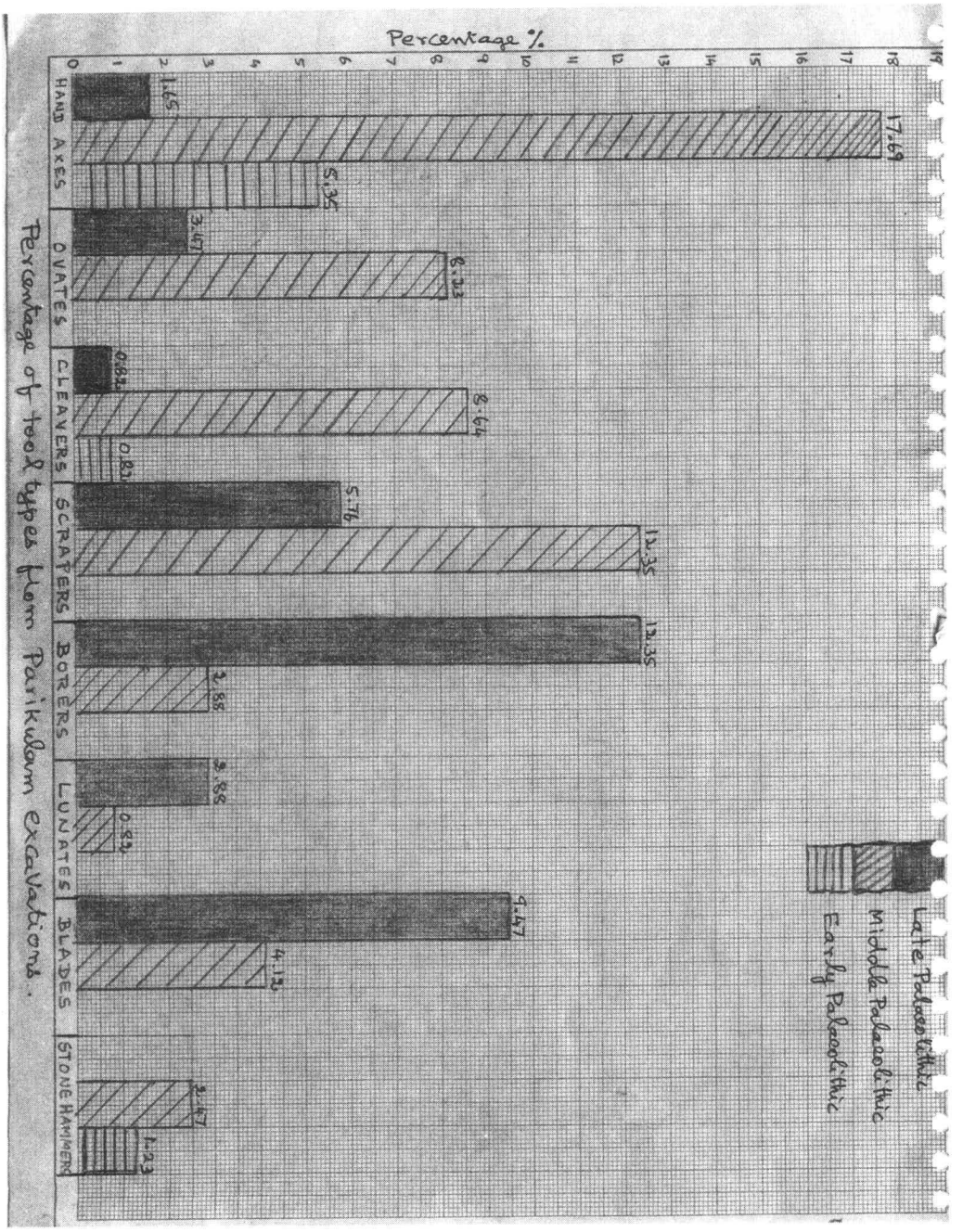
IV 1. site plan of excavated trenches - Parikulam PKM-1, PKM-2.



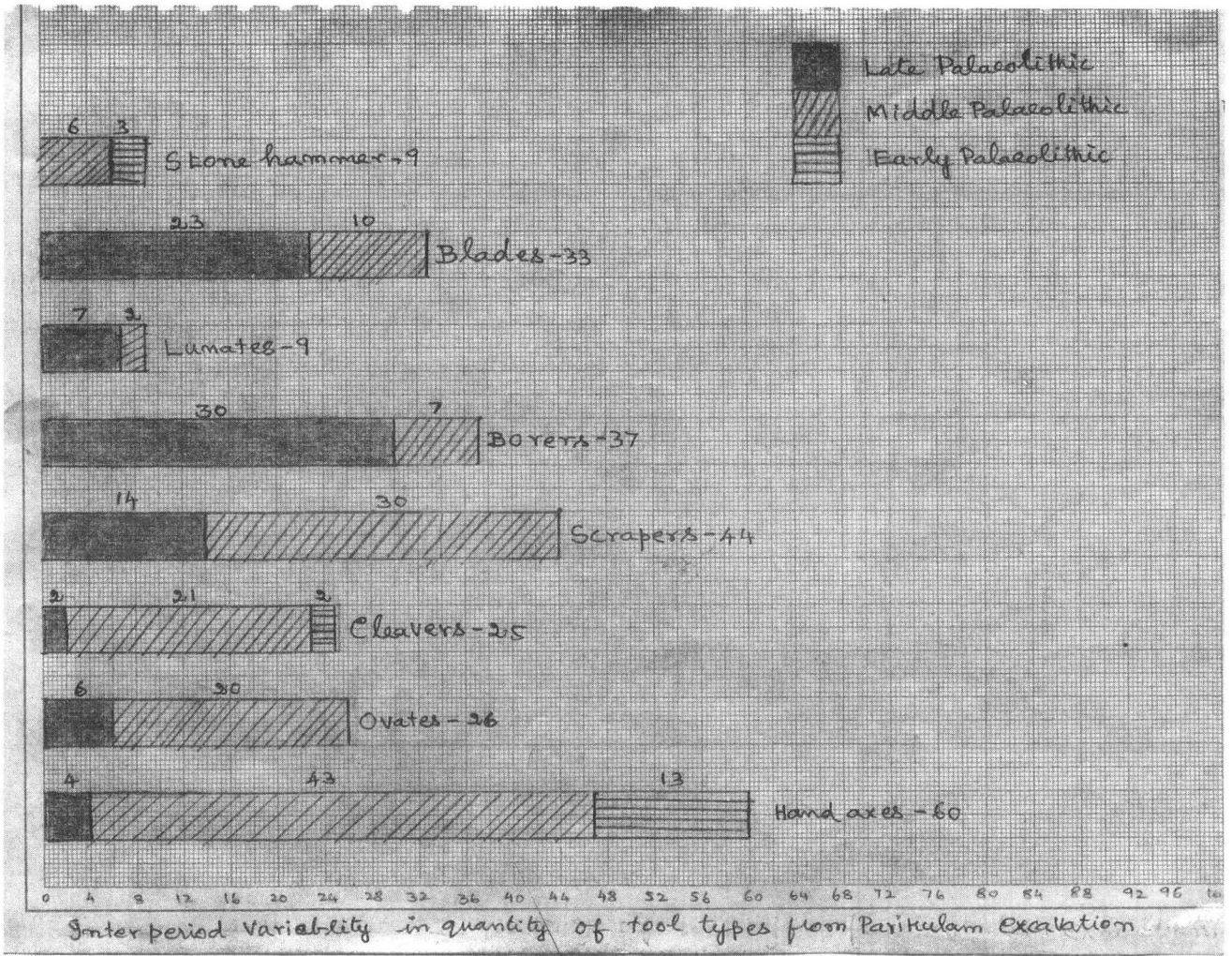
Distribution of tool types in Parikulam excavation (PKM-I)



Distribution of tool types in Pariwalam excavation (PKM-2)

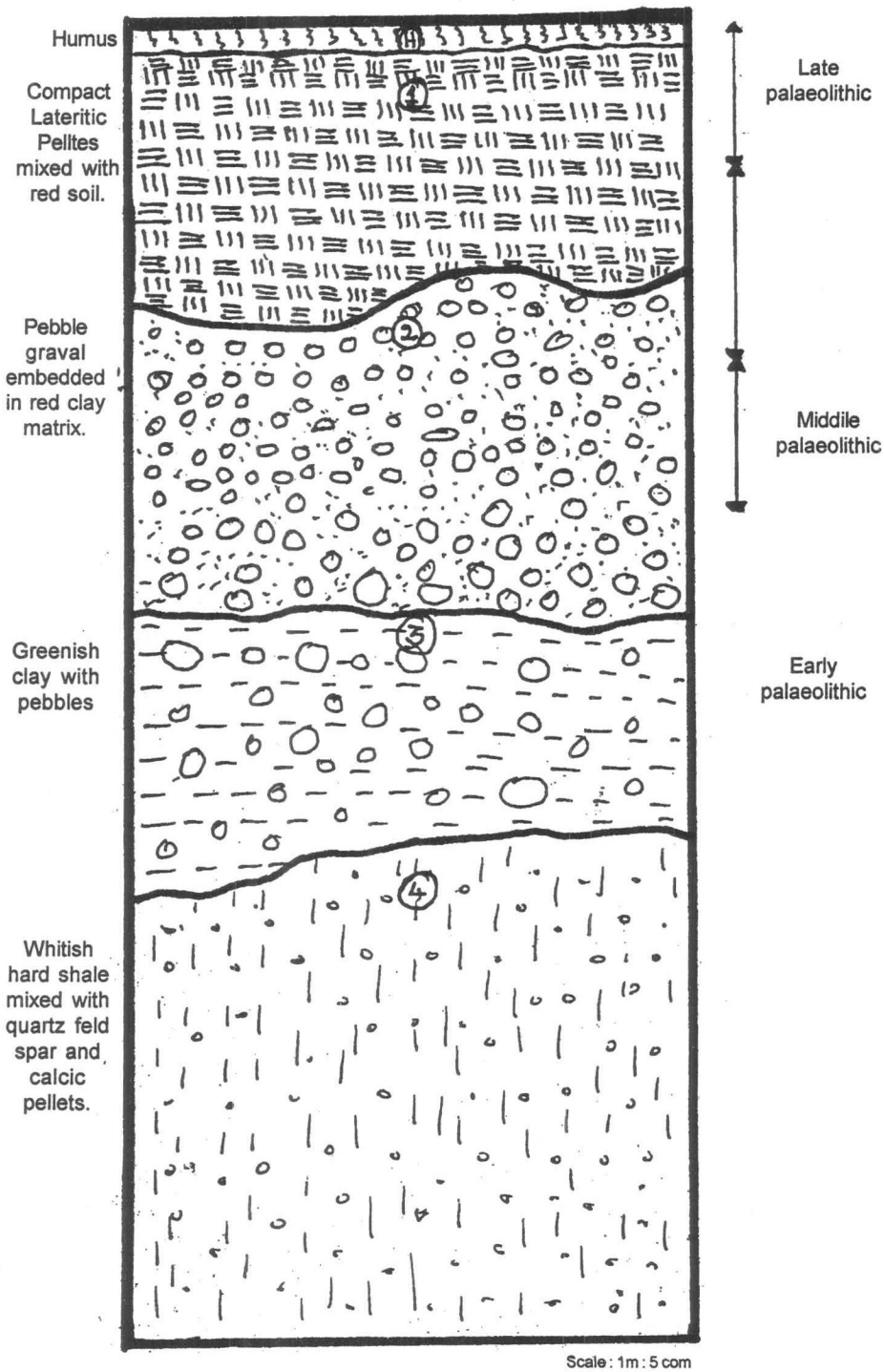


Percentage of tool types from Parikulam excavations.



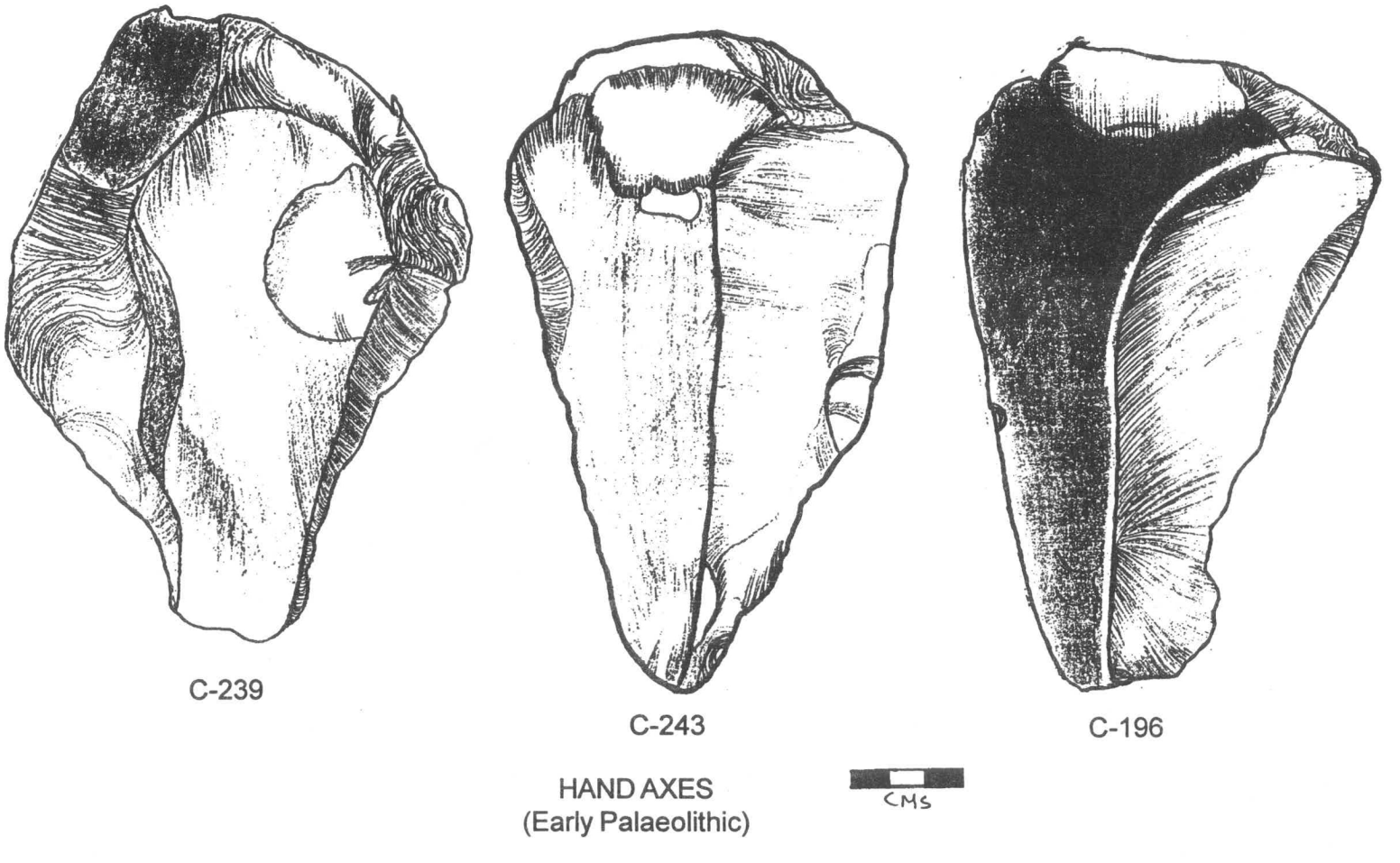
Inter period variability in quantity of tool types from Pariyalam Excavation

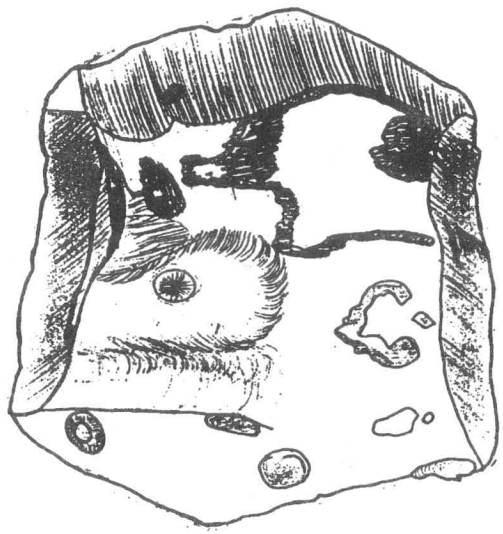
Cultural sequence and stratigraphy of Parikulam



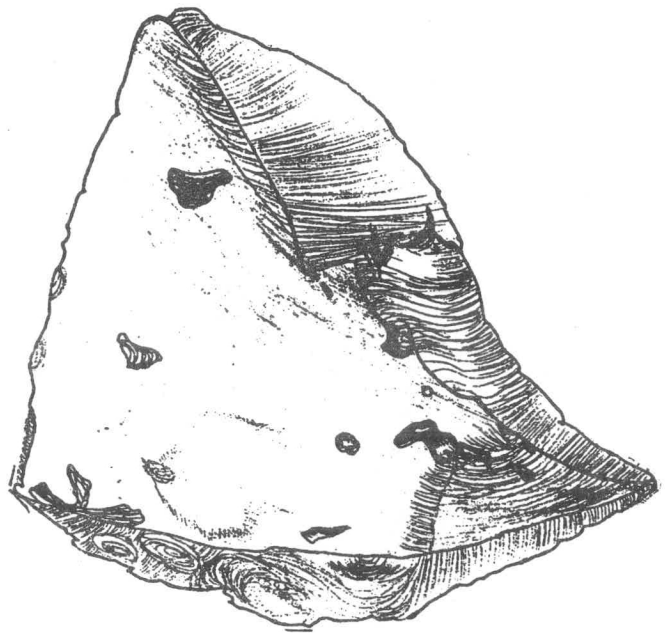
IV 6. Eastern section PKM - 1

IV 7. Drawings of Stone tools from Parikulam Excavation.





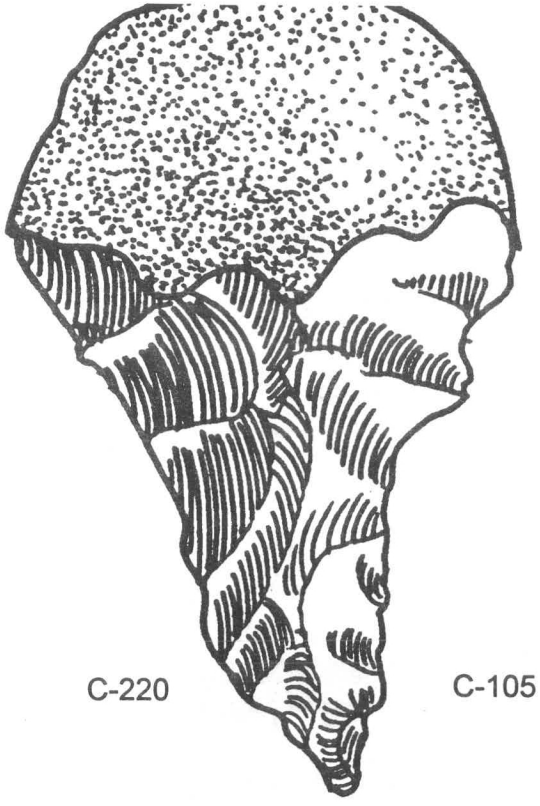
C-242



C-199

HAND AXES
(Early Palaeolithic)





C-220

C-105

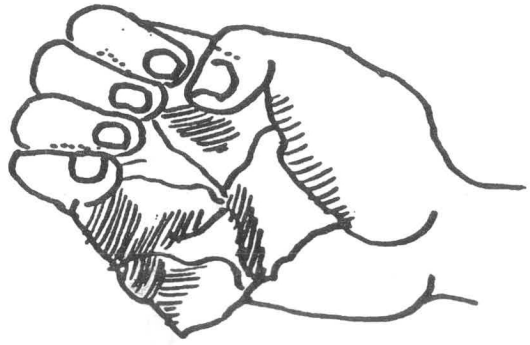


C-161

C-139

HAND AXES
(Middle Palaeolithic)

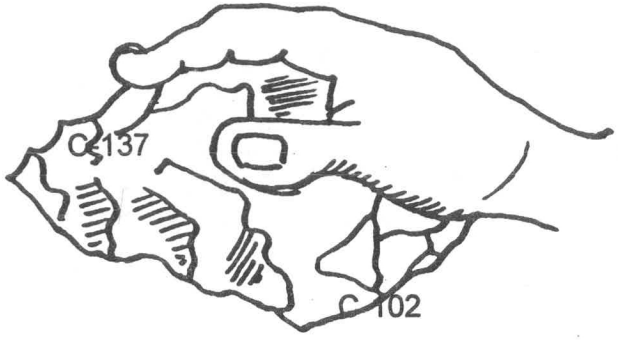




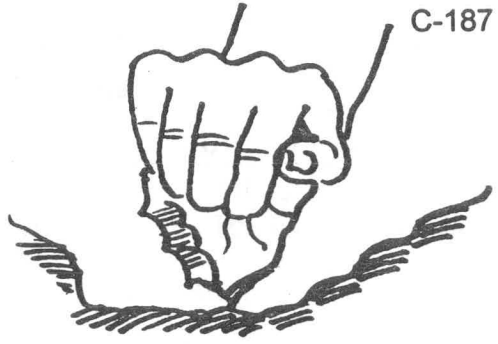
C-173

C-137

C-102



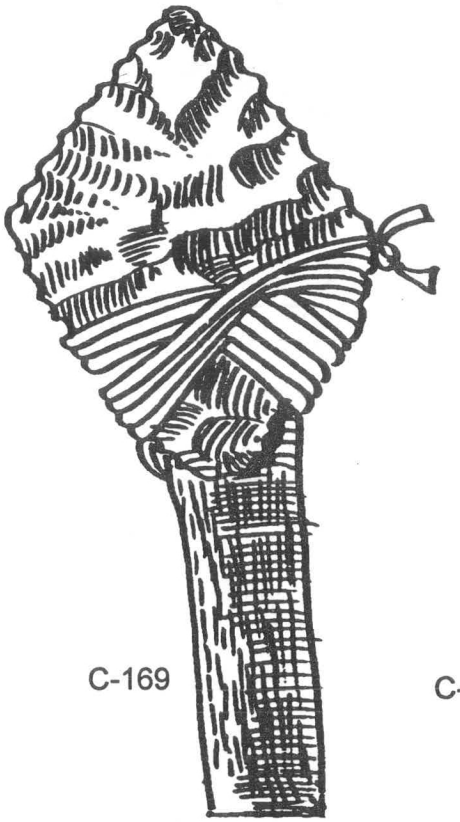
C-187



C-223

HAND AXES
(Middle Palaeolithic)

C-136



C-169

C-216

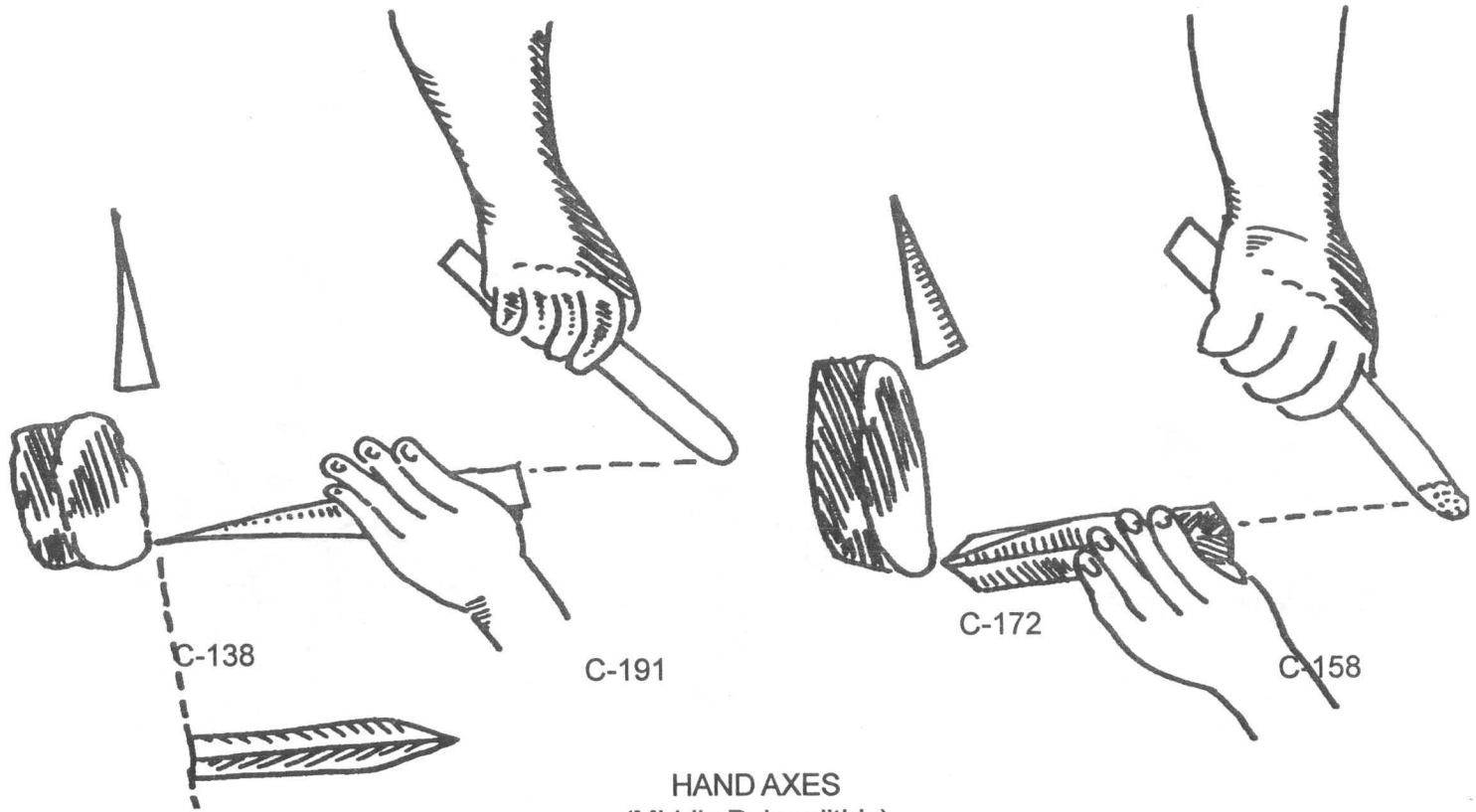


C-160

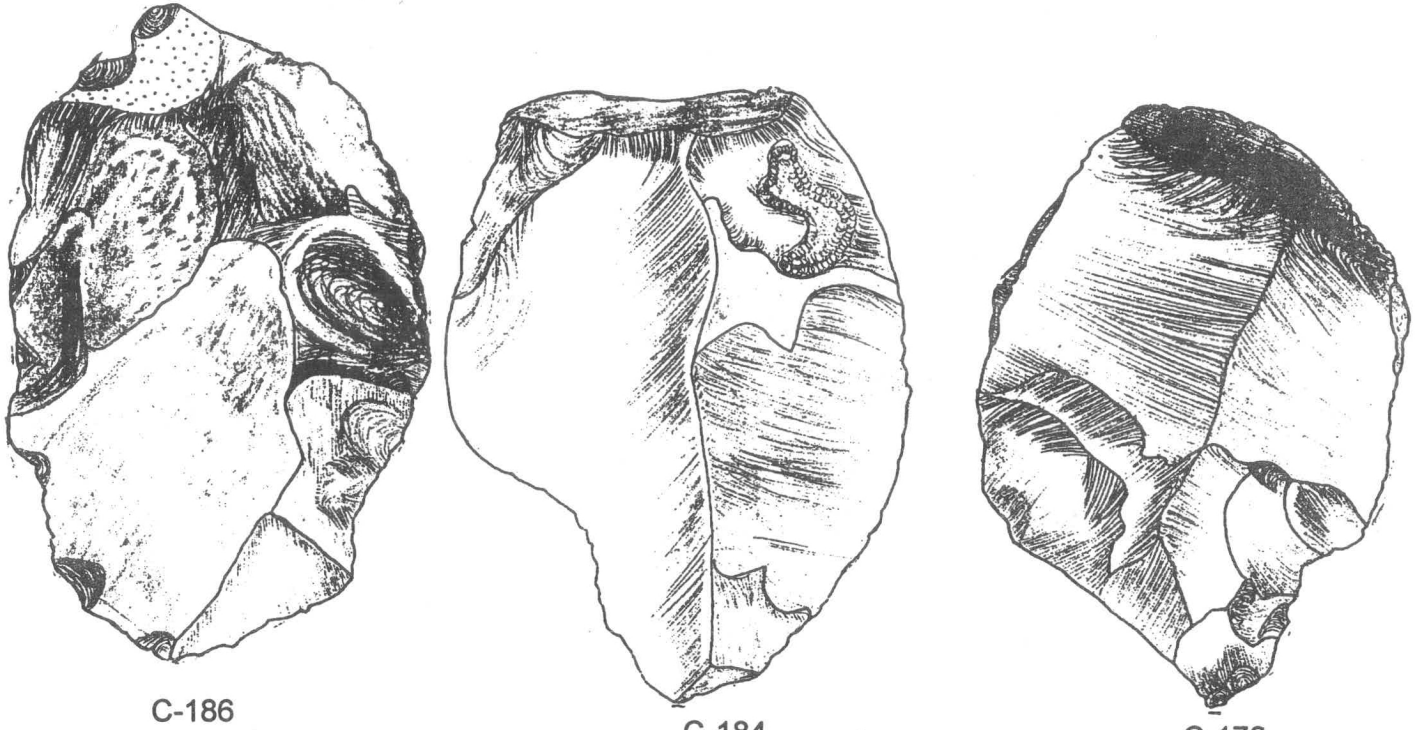


C-179

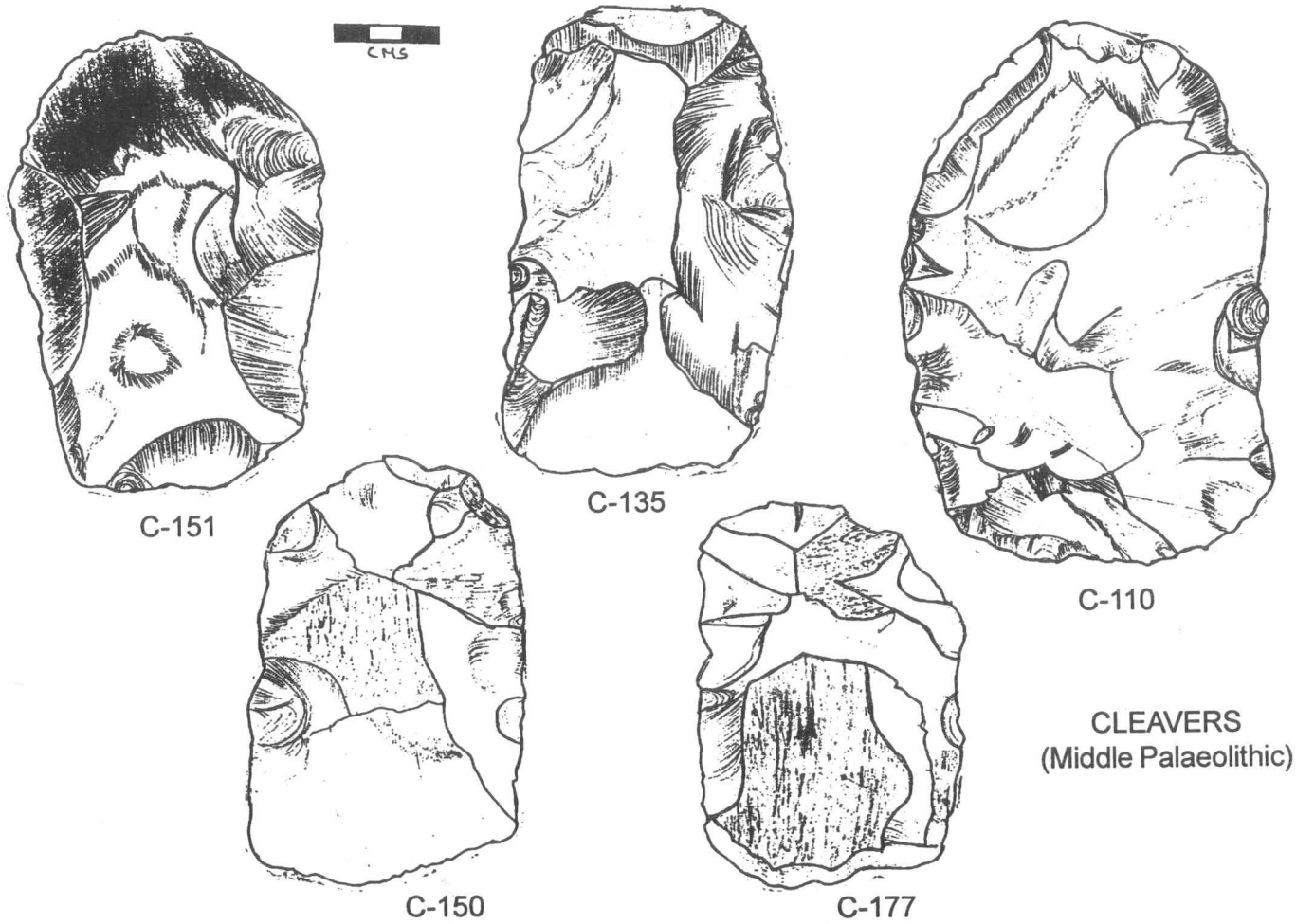
HAND AXES
(Middle Palaeolithic)

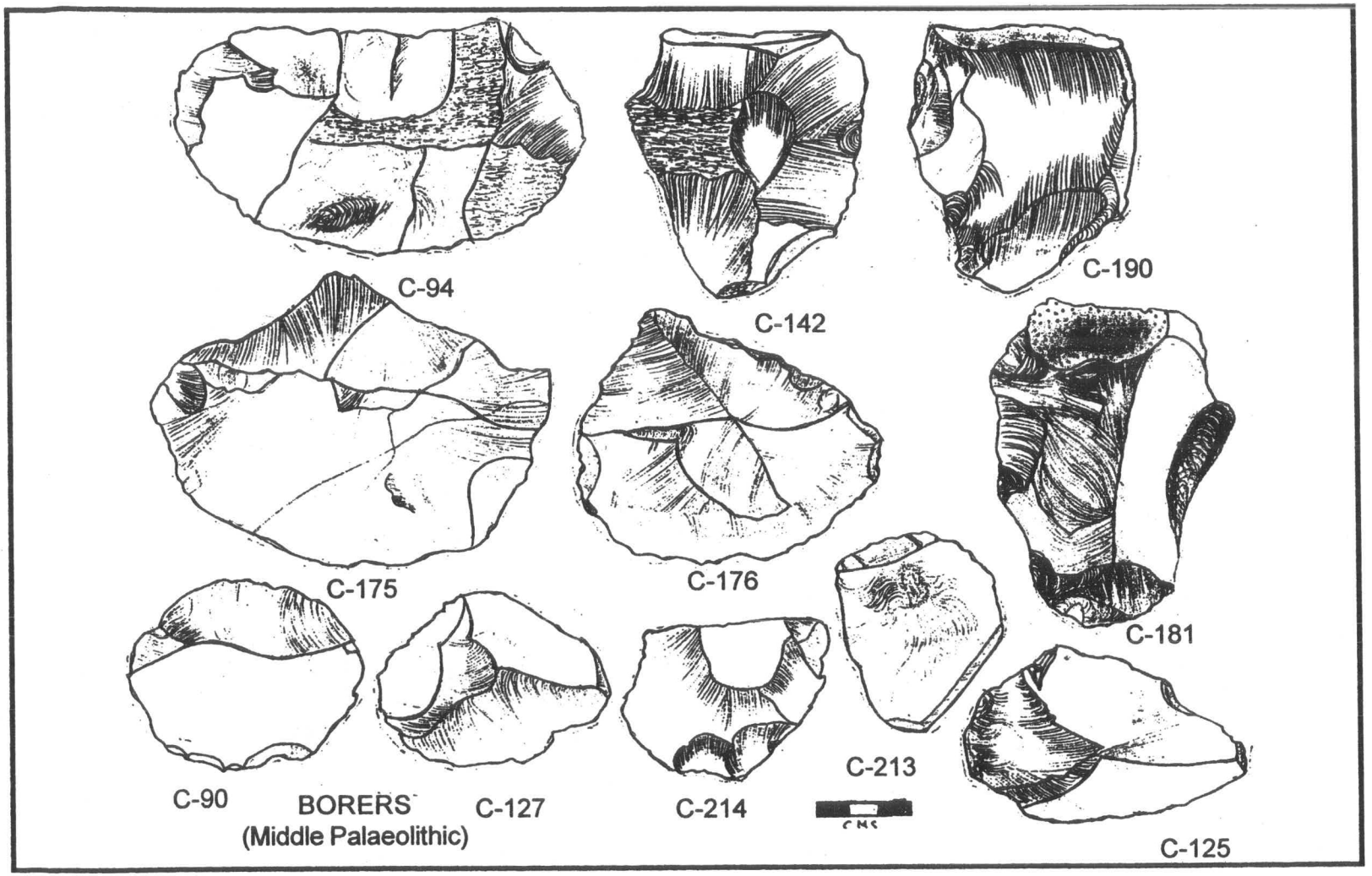


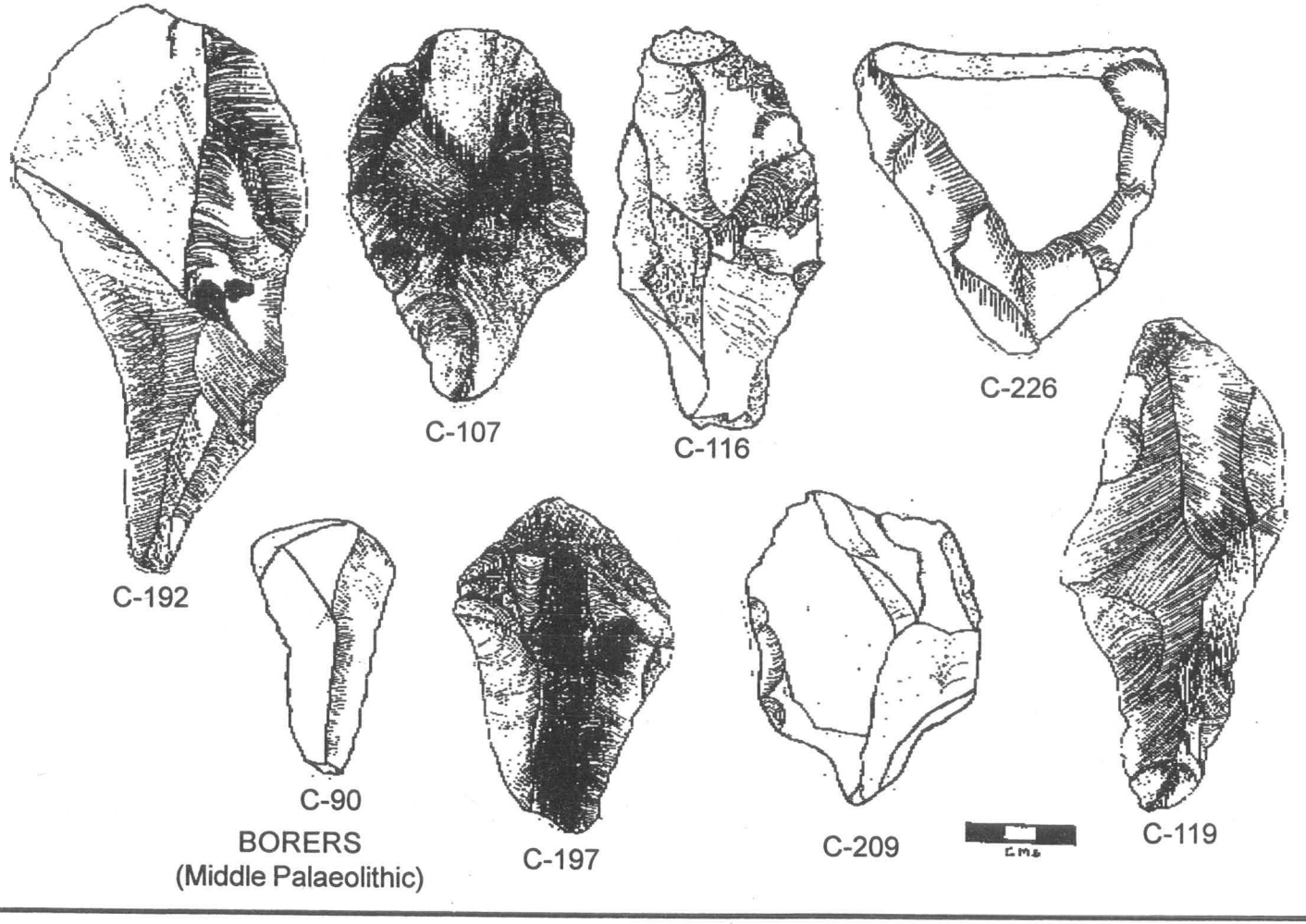
HAND AXES
(Middle Palaeolithic)



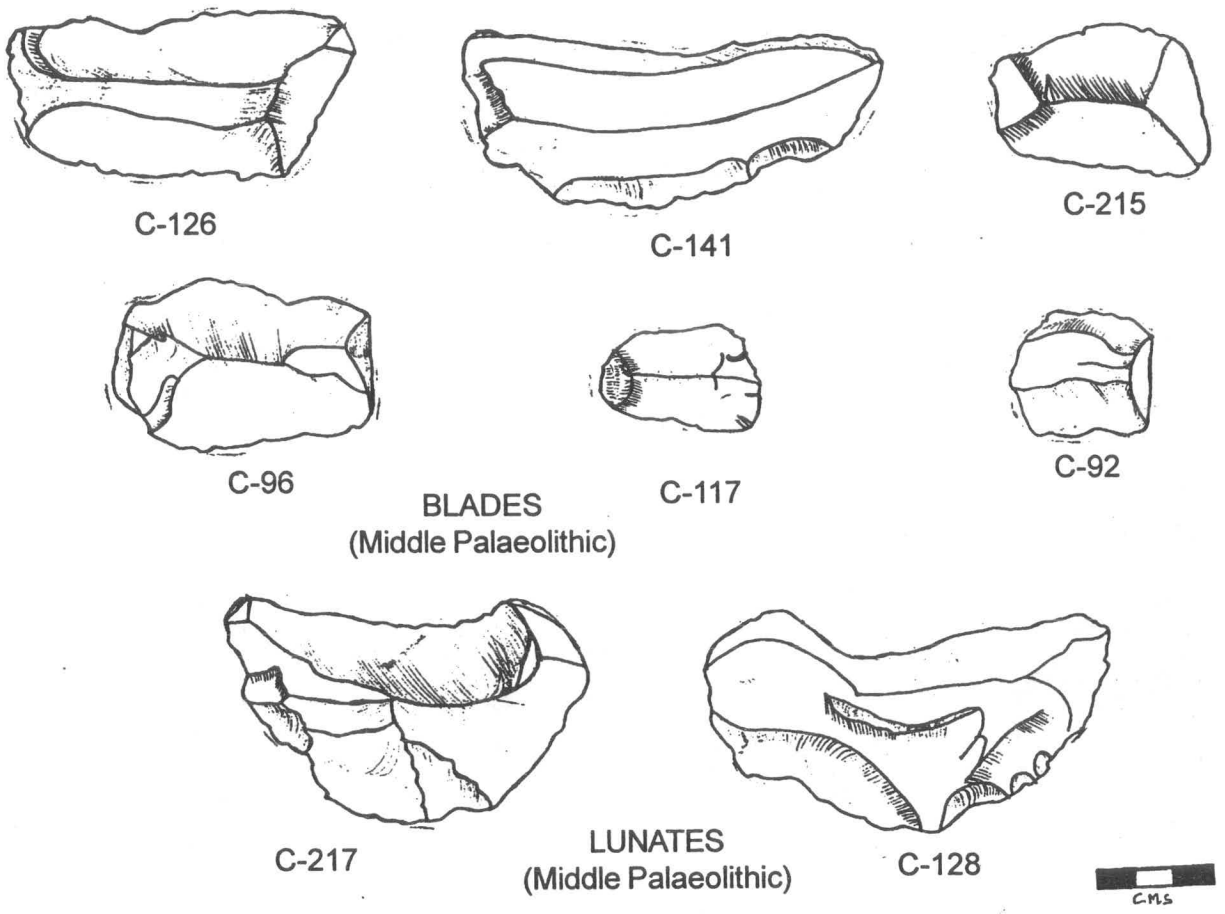
HAND AXES
(Middle Palaeolithic)

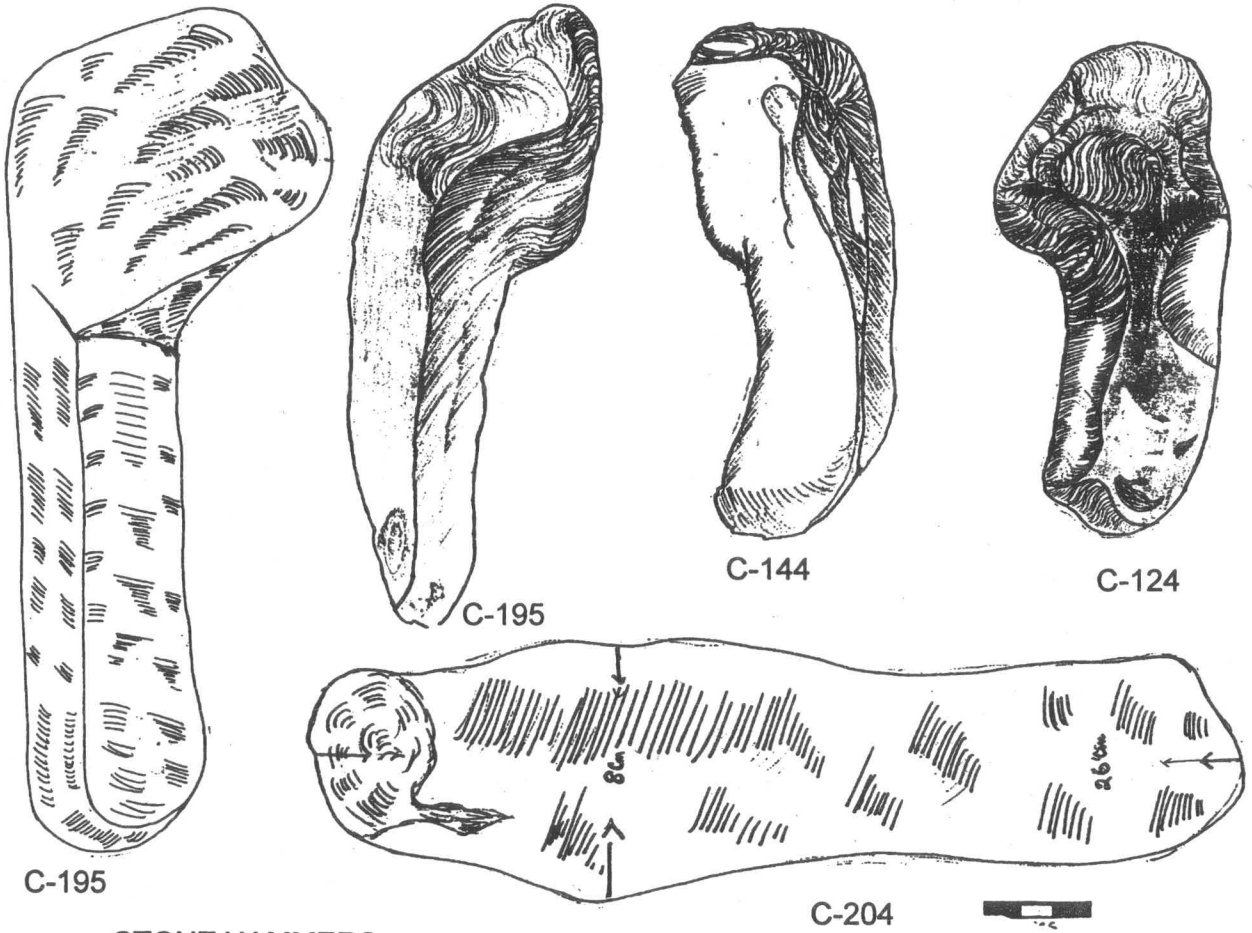

CMS
C-151
C-135
C-110
C-150
C-177
CLEAVERS
(Middle Palaeolithic)


C-94
C-142
C-190
C-175
C-176
C-181
C-90
C-127
C-214
C-213
C-125
BORERS
(Middle Palaeolithic)
CMS

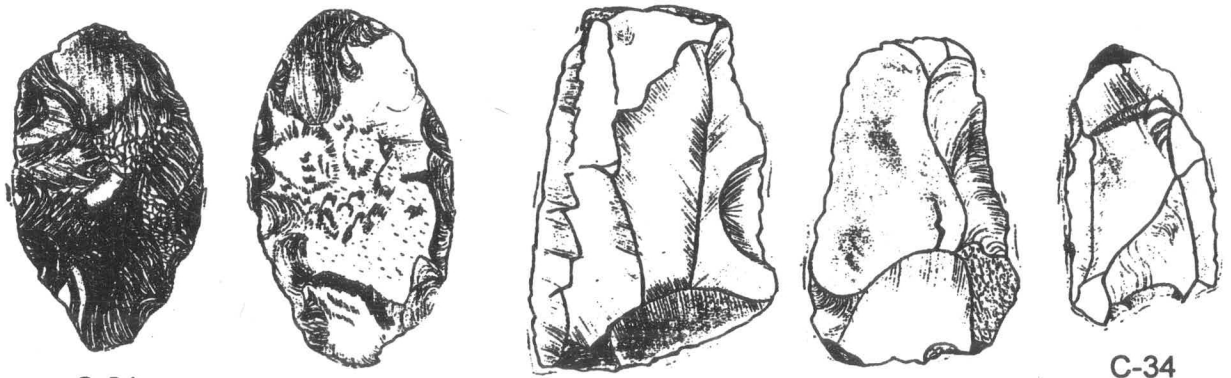


BORERS
(Middle Palaeolithic)


C-126
C-141
C-215
C-96
C-117
C-92
BLADES
(Middle Palaeolithic)
C-217
LUNATES
(Middle Palaeolithic)
C-128
CMS

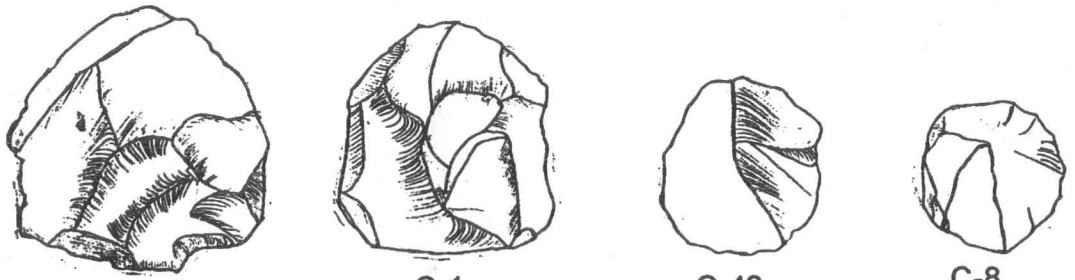


STONE HAMMERS



C-21 C-75 C-31 C-55 C-34

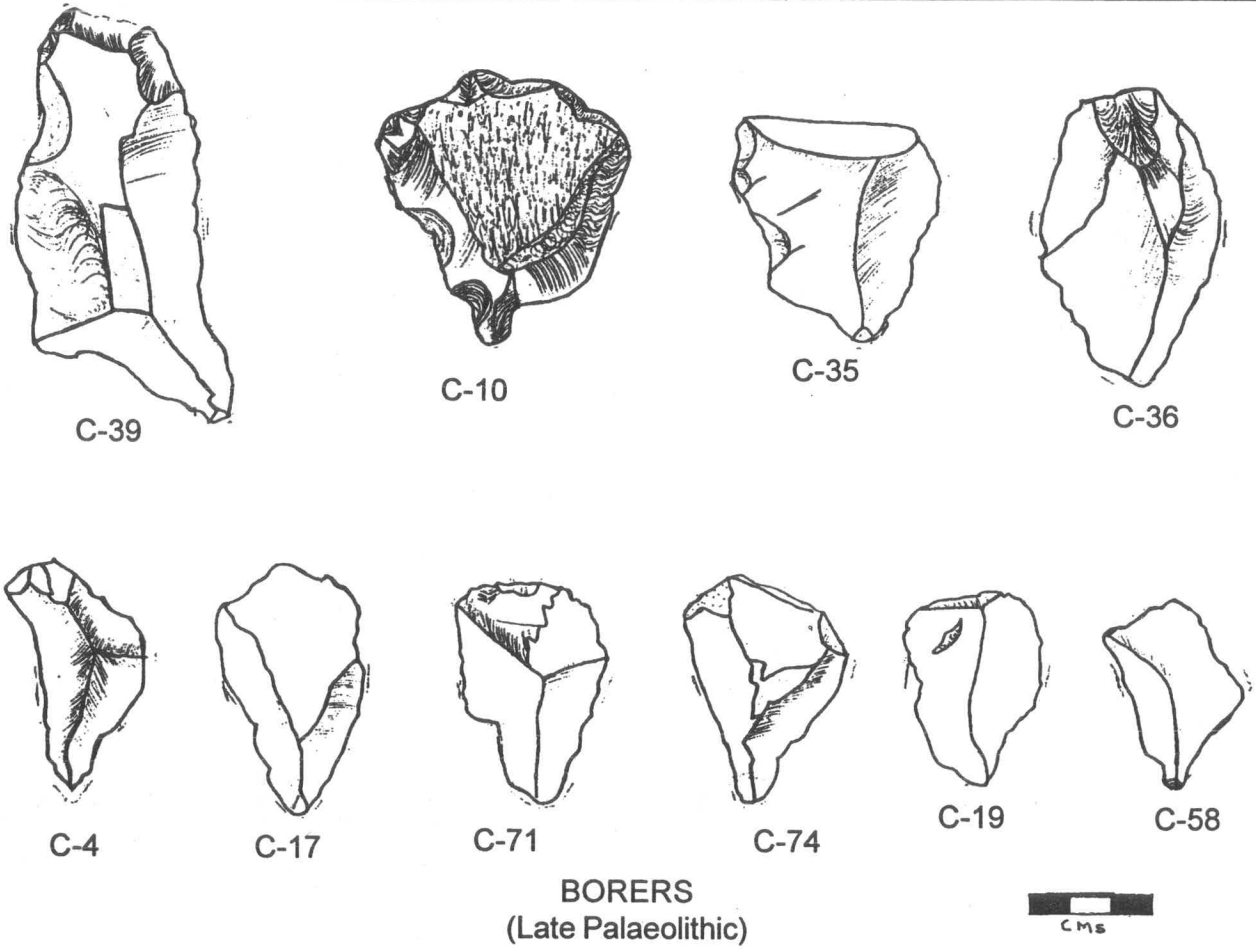
CLEAVERS

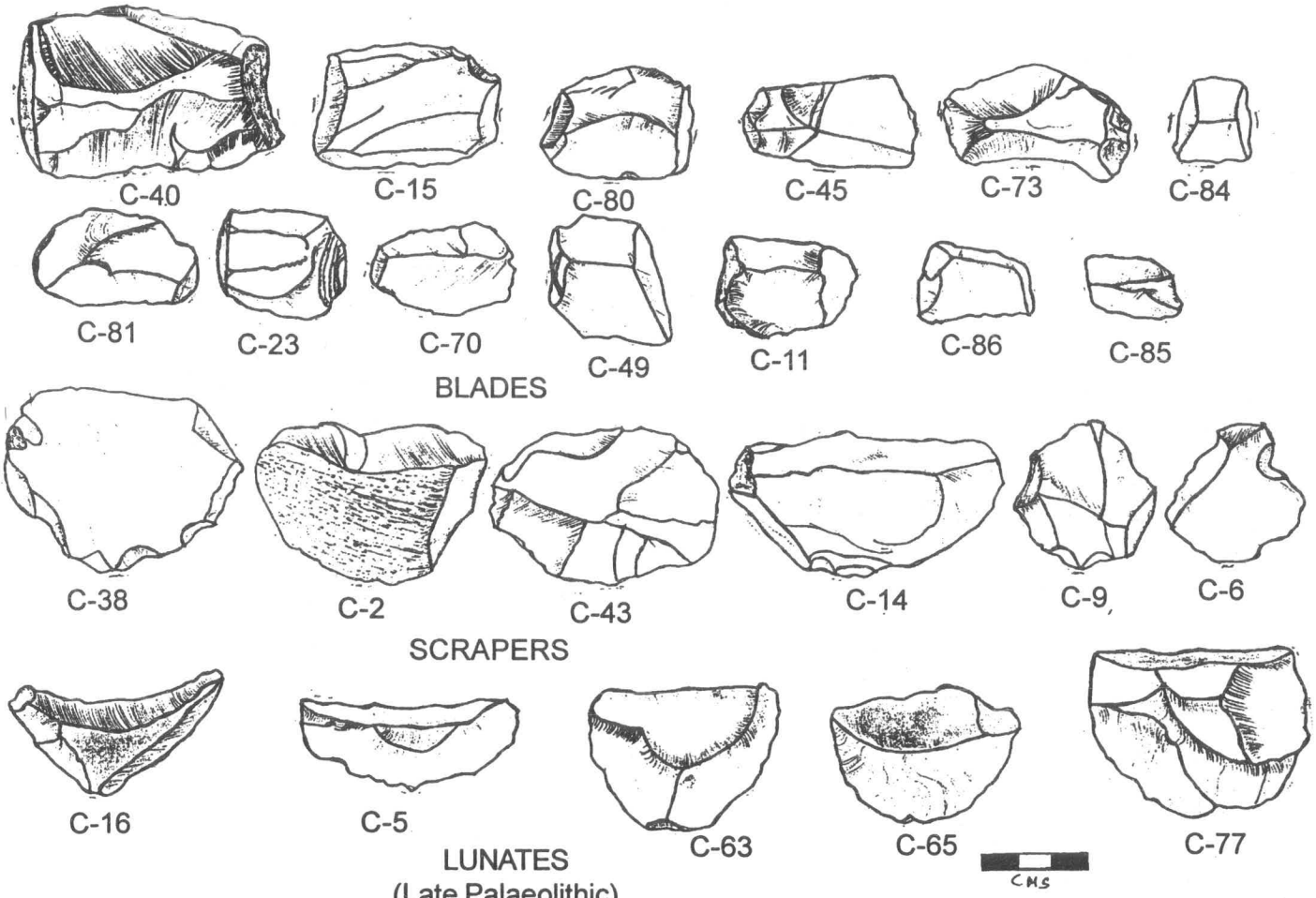


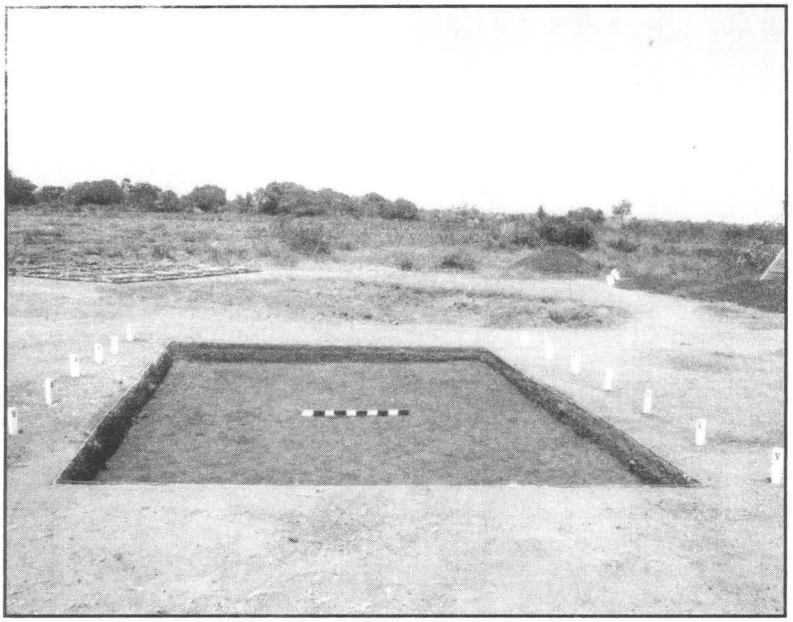
C-28 C-1 C-48 C-8

OVATES
(Late Palaeolithic)

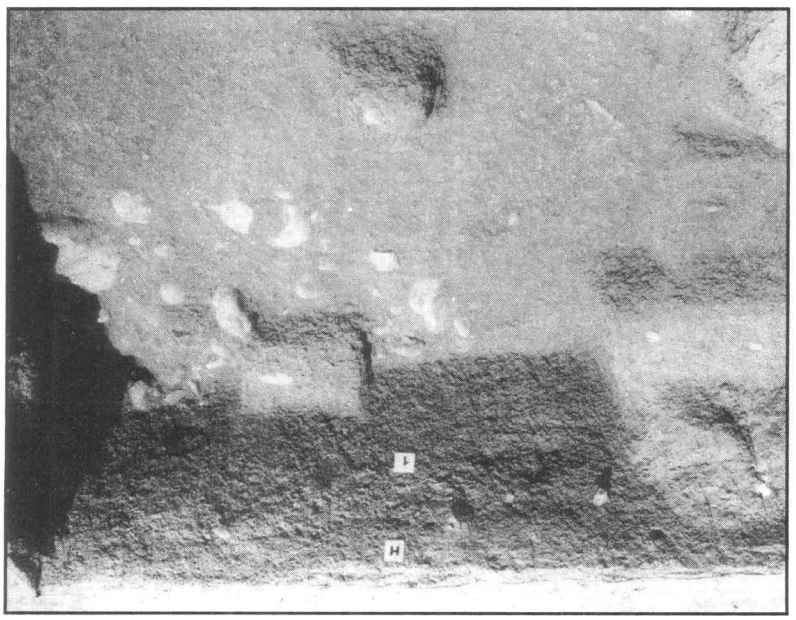
CHS


C-39
C-10
C-35
C-36
C-4
C-17
C-71
C-74
C-19
C-58
BORERS
(Late Palaeolithic)
Cms

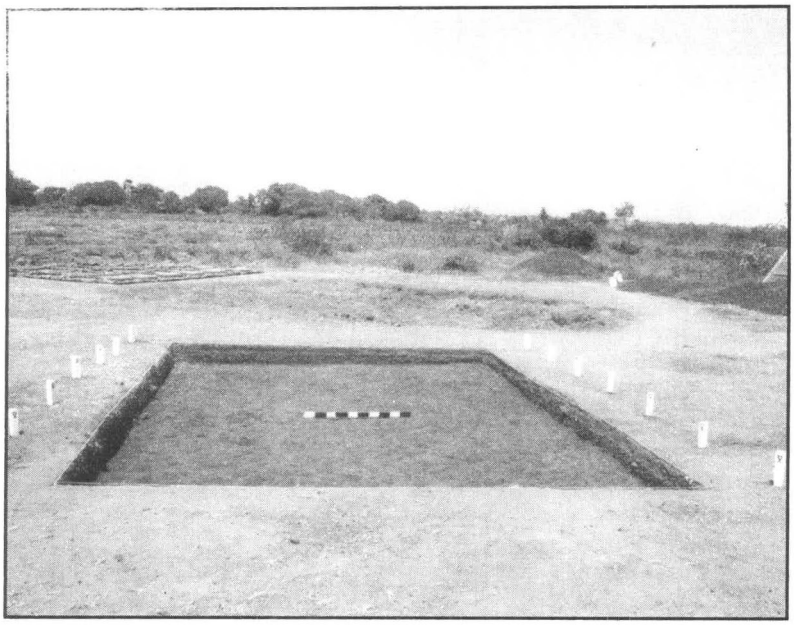

C-40
C-15
C-80
C-45
C-73
C-84
C-81
C-23
C-70
C-49
C-11
C-86
C-85
BLADES
C-38
C-2
C-43
C-14
C-9
C-6
SCRAPERS
C-16
C-5
C-63
C-65
C-77
CMS
LUNATES
(Late Palaeolithic)



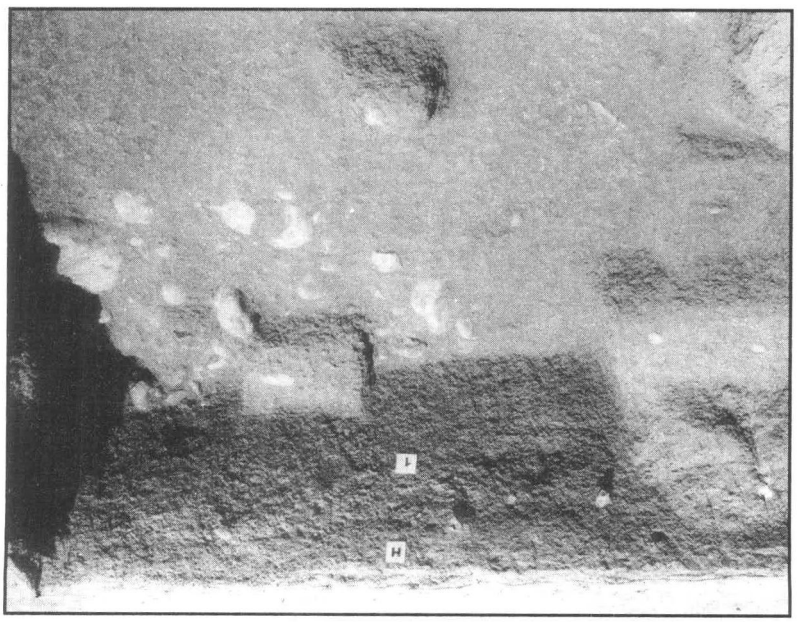
TRENCH - PKM - 1



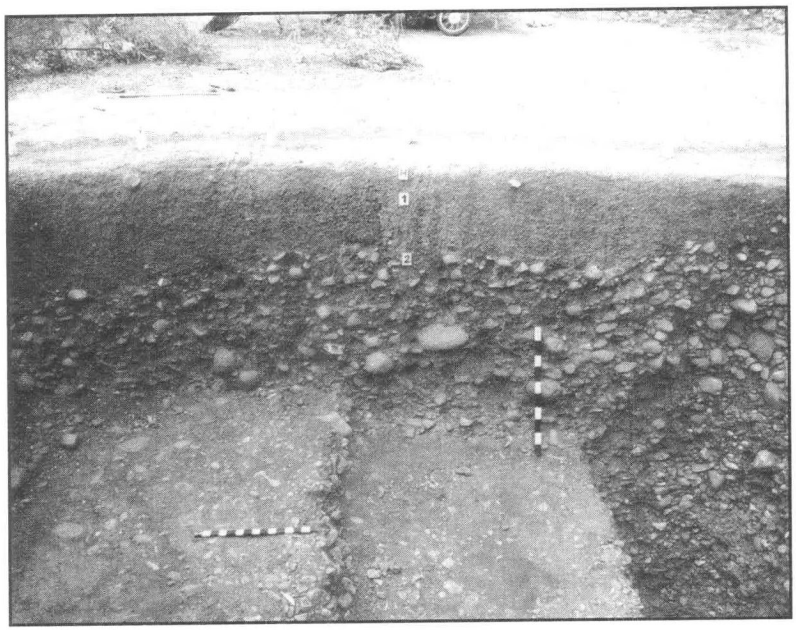
TRENCH - PKM - 2



TRENCH - PKM - 1



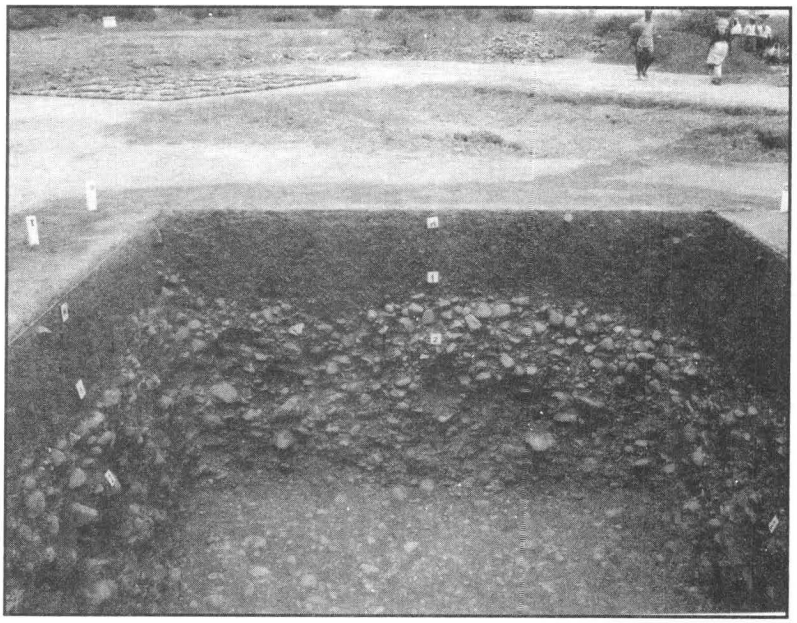
TRENCH - PKM - 2



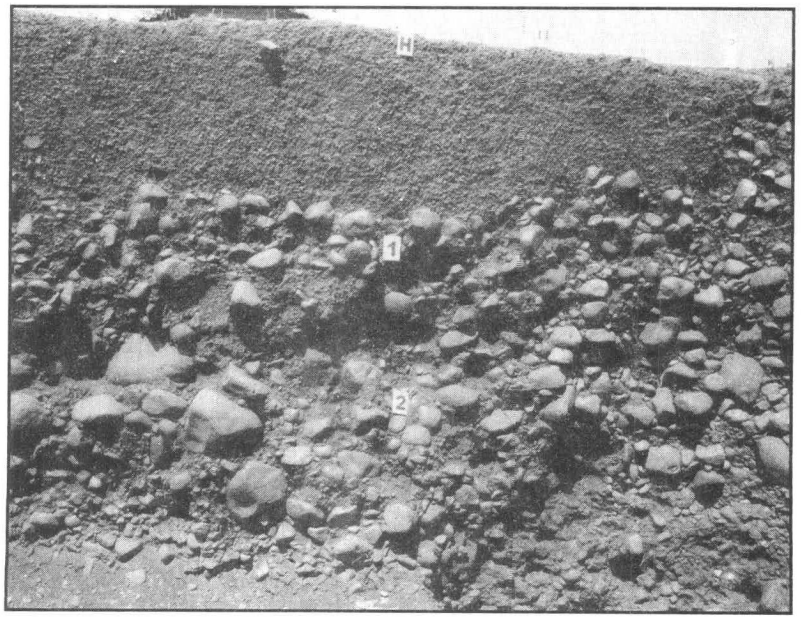
TRENCH - PKM - 1



TRENCH - PKM - 2, STONE TOOLS IN SITU

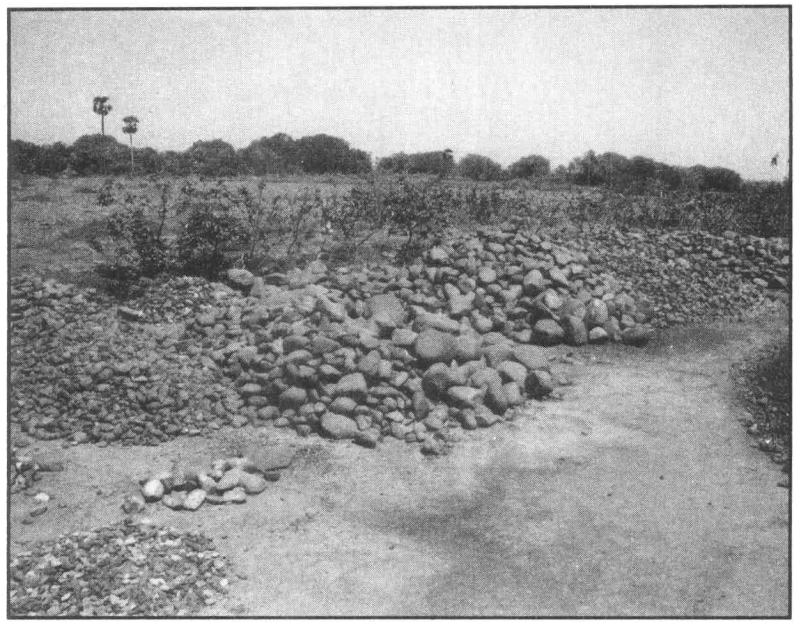


TRENCH - PKM - 1

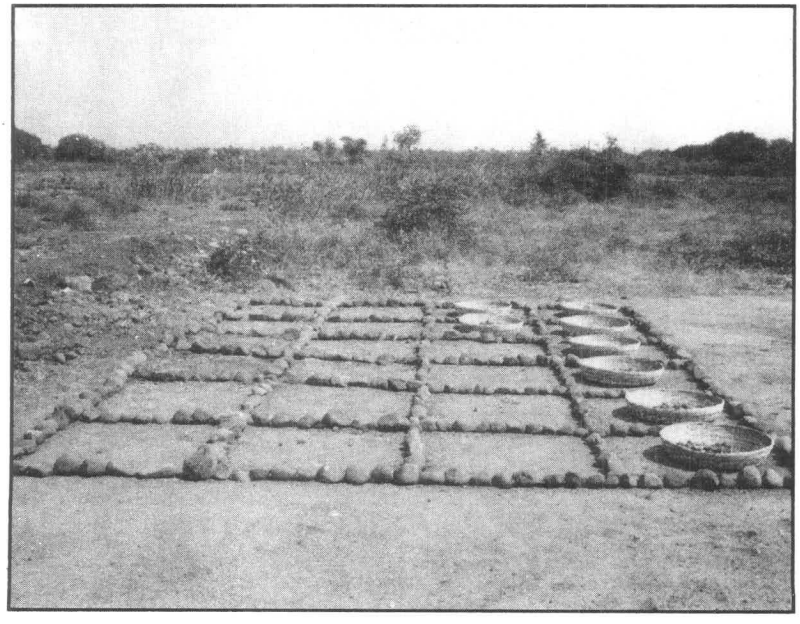


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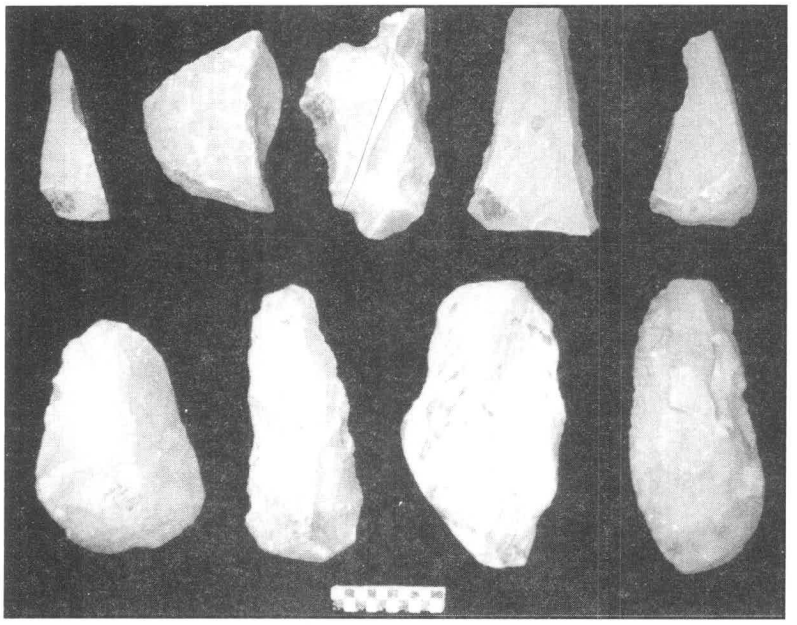
CLEANING OF STONE TOOLS



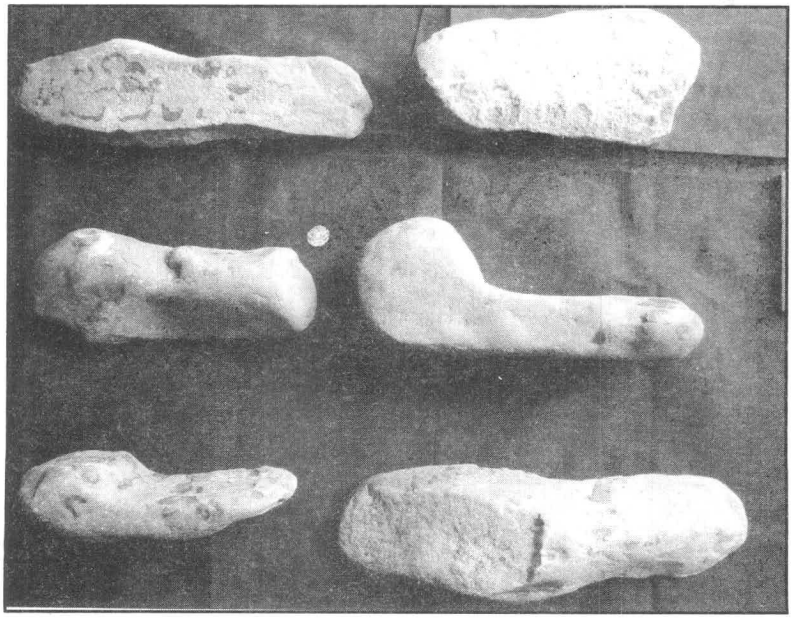
CLEASSIFICATION OF STONE TOOLS



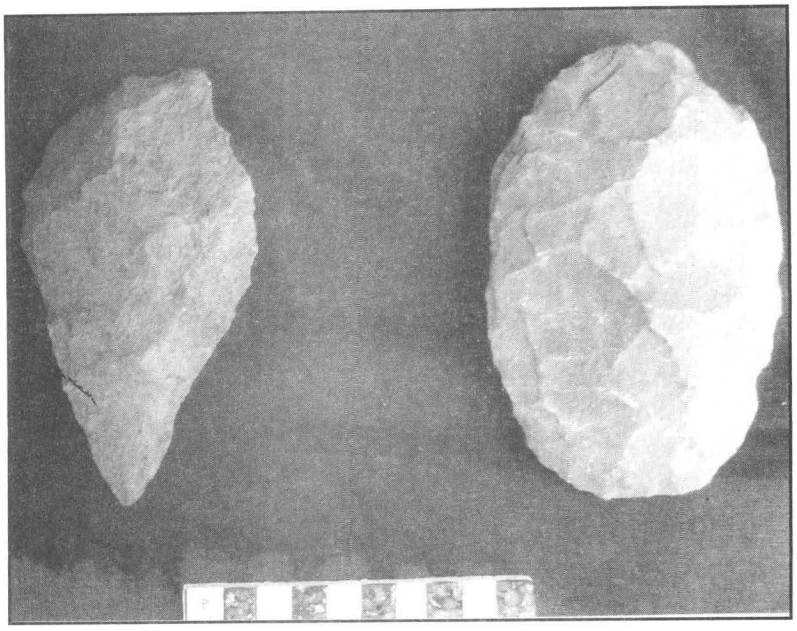
CLASSIFICATION OF STONE TOOLS



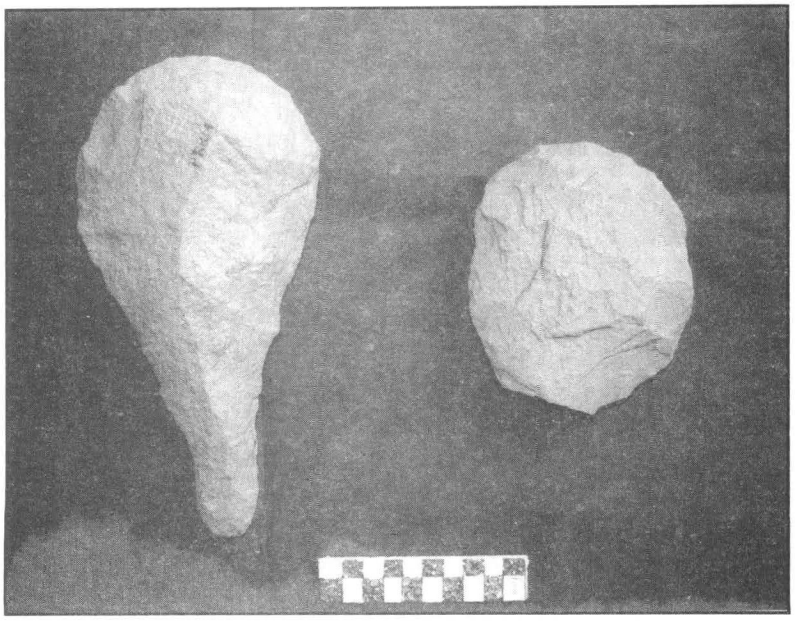
STONE TOOLS - EARLY PALAEOLITHIC



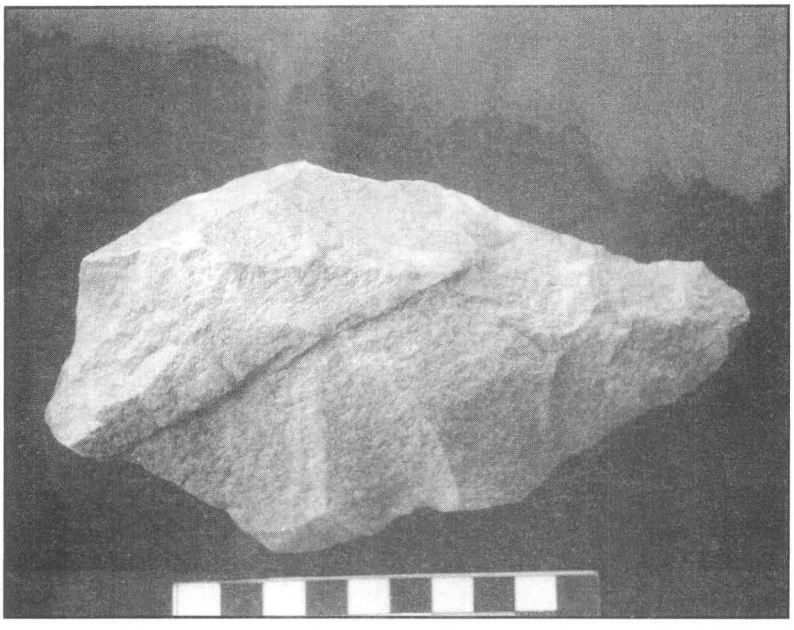
STONE HAMMERS



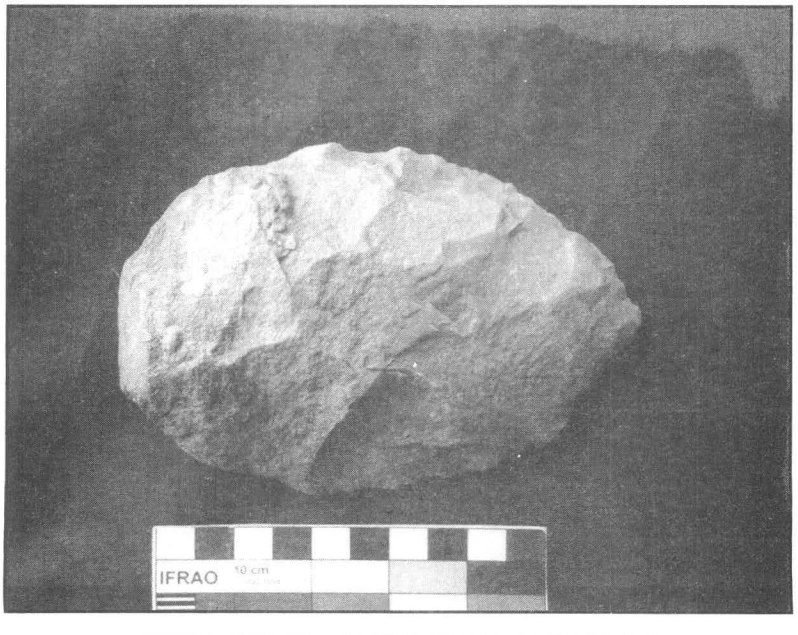
STONE TOOLS - MIDDLE PALAEOLITHIC



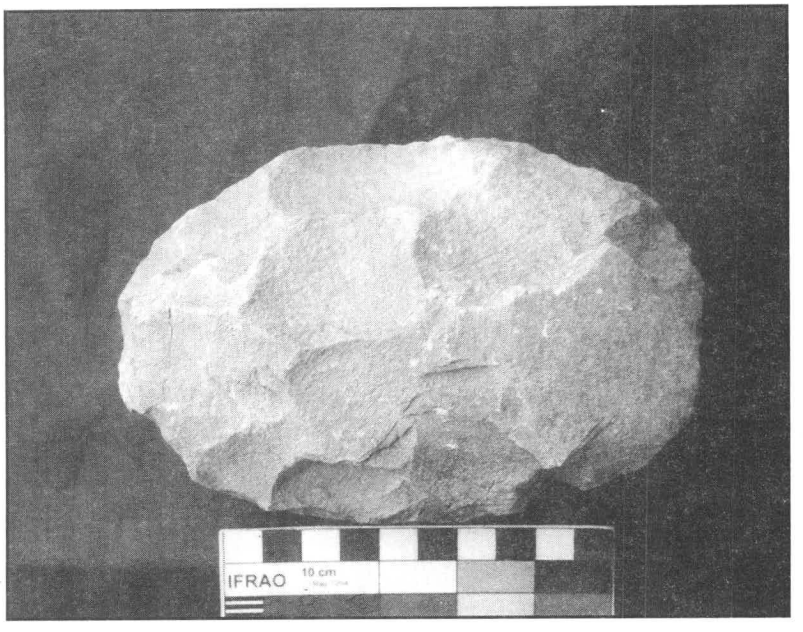
STONE TOOLS - MIDDLE PALAEOLITHIC



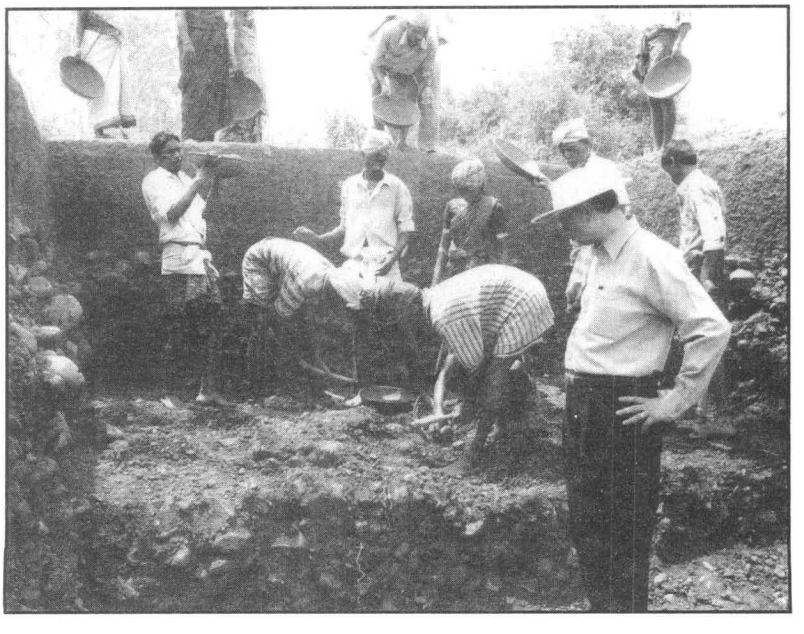
STONE TOOL - MIDDLE PALAEOLITHIC



STONE TOOL - MIDDLE PALAEOLITHIC



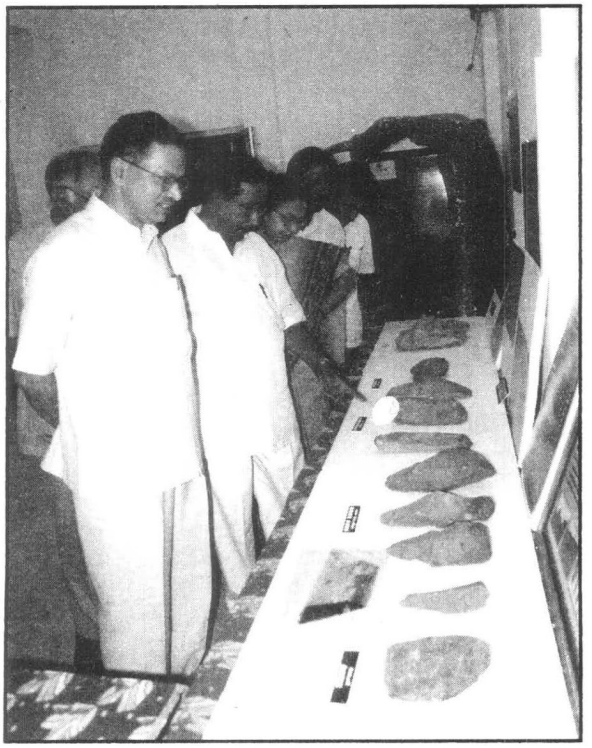
STONE TOOL - MIDDLE PALAEOLITHIC TOOL



EXCAVATION WORK IN PROGRESS



EXHIBITION OF ARTIFACTS
FROM PARIKULAM EXCAVATION



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