
UNIT 3 HUNTER-GATHERERS: ARCHAEOLOGICAL PERSPECTIVE

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3.0 OBJECTIVES

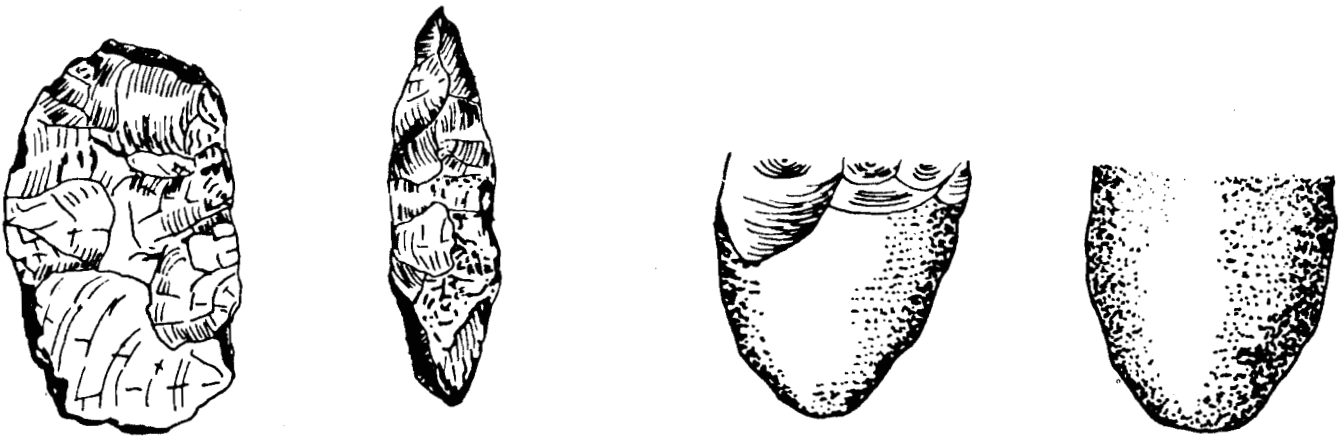
After reading this Unit, you will be able to learn :

- the various ways to study the pre-historic hunters-gatherers.
- about the archaeological evidences which enable us to reconstruct their history.
- about their subsistence pattern,
- about the kinds of tools they used, and to what extent pre-historic art helps us in knowing about their organisation.

3.1 INTRODUCTION

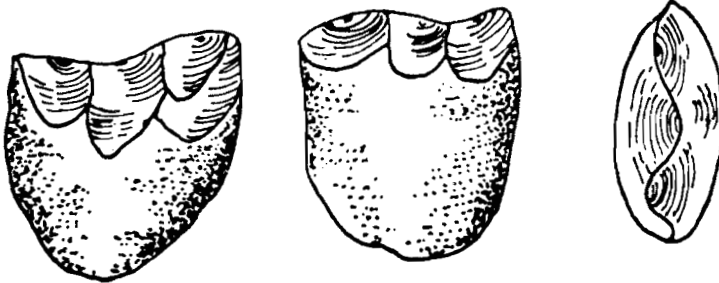
It may seem unbelievable to us, living in the 20th century, but it is nevertheless true that human societies during more than 99% of their existence on the earth have lived as hunters/gatherers. This means that before human beings started producing food about 10,000 years ago, they lived off the resources of nature. This they did by gathering various edible items like roots, fruits, sodd, honey and so on which nature had to offer and by killing animals, birds and fish available in the surroundings in which they lived. The total dependence of human being on nature or their environment during the major part of human existence has many implications. It means that the way they acquired their food influenced the character of their relationship with Nature and also how they viewed Nature. Second, the hunters/gatherers existed in groups was also related to the mode of thus acquiring food. What may be noted is that the formation of groups among hunters/gatherers was much more flexible than in other societies.

Considering the very, very long span of time for which human societies have been in the hunting/gathering stage, it is important that we learn about this stage of human history. There are different areas in the world where human beings still live as hunters/gatherers. It is thus necessary that we learn something about their cultures in addition to learning about culture changes in human history. How do we learn about hunters/gatherers? We get considerable amount of information about different aspects of the hunters/gatherers way of life, their social organization and their environment from the works of ethnographers/anthropologists who study living human communities. Their works provide us with useful insights into the ways and conditions of life of hunting/gathering communities of the past. However, for the past communities we depend primarily on the works of those archaeologists and other scientists who have specialised in discovering studying and analysing the tools which these communities

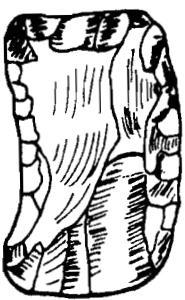


A

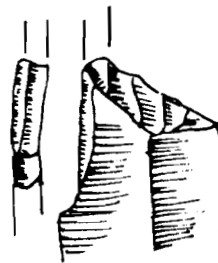
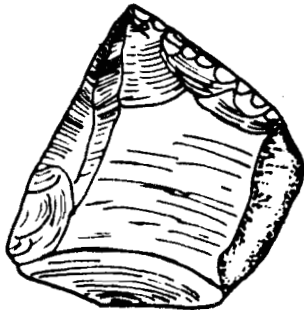
B



C



D



E



F

(A) Clevers (B) Choppers (C) Chopping tools (D) Side scappers (E) Burin (F) Fakes

made, the remains of animals which they killed and ate and the kind of environment in which they lived. This method which involves coming together of many academic disciplines takes into consideration many categories of evidence including the study of all animals, plants and other organic remains when archaeologists associate them with human communities of the hunting/gathering stage, and this gives an insight into the character of the immediate physical environment of the early man and the way it was utilised.

Since the tools made by the hunters/gatherers have survived in the form of stone tools, archaeologists use different terms like paleoliths, mesoliths to classify tools of different types and period. The stones which may not be used for mixing them and the techniques employed in giving them shape are also studied in detail by archaeologists. The faunal study or the study of animal remains provides a framework which can serve as a reference point for measuring variations in the pattern of pre-historic faunal exploitation. The rock carvings and paintings also give us an idea about the economy and society of the pre-historic people.

3.2 PALAEO-LITHIC STAGE

Palaeolithic Culture developed in the Pleistocene period. The Pleistocene period (about 2 million years ago) is the geological period referring to the last or the Great Ice Age. It was the period when ice covered the earth's surface. In India, there has been considerable discussion among archaeologists regarding the terms denoting stone tools of the palaeolithic phase :

- One group of scholars wanted to introduce the term 'Upper Palaeolithic' for denoting the phase characterised by tools like blade and burin;
- The other group of scholars considered the term 'Upper Palaeolithic' specific to European Palaeolithic culture. Now the term Upper Palaeolithic has been widely accepted in the Indian context.

3.2.1 Palaeolithic Tools

Palaeolithic Culture has been divided into three phases on the basis of the nature of stone tools made by human beings as well as due to the changes in the climate and environment.

- The tools of the lower Palaeolithic phase include mainly handaxes, cleavers, choppers and chopping tools.
- the middle Palaeolithic industries are based upon flakes, and
- the Upper Palaeolithic is characterised by burins and scrapers

Let us discuss in detail some of the tools of this period and to what use were they put to.

- **Handaxe** : Its butt end is broader and the working end is narrower. It might have been used for cutting and digging purposes.
- **Cleaver** : This has a biface edge and is more or less transversal. It was used for clearing and splitting objects such as trunks of trees, choppers
- **Chopper** : A massive core tool in which the working edge is prepared by unifacial flaking and used for chopping purposes.
- **Chopping Tool** : It is again a massive core tool like Chopper but the working edge is bifacially prepared by alternate flaking. Used for similar purpose as the chopper, it was more effective due to its edge being sharper.
- **Flake** : A desired crude shape tool produced by applying force on the stone. The flake carries positive bulb of percussion on its surface and the core has a corresponding negative bulb of percussion. The point at which the hammerstone strikes is called the point of percussion and on the flake struck off there is round, slightly convex shape around this point called the positive bulb of percussion. On the core there is corresponding concave bulb called the negative bulb of percussion. There are many Flaking Techniques like Free Flaking Technique, Step Flaking Technique, Block on Block Technique, Bipolar Technique etc.
- **Side Scraper** : Side Scraper is made of a flake or blade with continuous retouch along a border. It might have been used for scraping barks of trees and animal skins.
- **Burin** : It is like flake or blade and the working border is produced by the meeting of two planes. The burins working border does not exceed 2-3 cm. in length. It was used for engraving on soft stones, bones or walls of rock shelters and cores.

3.2.2 Palaeolithic Sites

Let us now see in which regions of India archaeologists have found these tools fashioned by the hunters/gatherers. The distribution of their tools will tell us not only about the areas in which the hunter/gatherers lived and moved but also about their environment.

Let us start from the extreme north:

- i) The Kashmir Valley is surrounded by Pir Panjal Hills on the South-West and the Himalayas on the north-east. A handaxe was discovered near Pahalgam in Kashmir on the River Lidder. However, Palaeolithic tools are not found in large number in Kashmir because Kashmir was intensely cold during the glacial times. The Potwar region (present day West Punjab & Pakistan) lies between Pir Panjal and the Salt Range. This area was experiencing tectonic movement and rivers Indus and Sohan originated in this process. The Sohan Valley yielded handaxes and choppers and the important sites which have yielded such tools are Adial, Balwal and Chauntra. The banks of rivers Beas, Bangange and Sirsa have also yielded Palaeolithic tools.
- ii) The Luni river (Rajasthan) complex has many palaeolithic sites. The river Luni has its source in the Aravalis. Chittorgarh (Gambhirs basin), Kota (Chambal basin), and Negarai (Berach basin) have yielded Palaeolithic tools. The Wagaon and Kadamali rivers in Mewar are rich in Middle Palaeolithic sites. A variety of scrapers, borers and points have been discovered in this area.
- iii) The rivers Sabarmati, Mahi and their tributaries (Gujarat) have yielded many Palaeolithic artefacts. Sabarmati rises in the Aravalis and flows into the Gulf of Cambay. Middle Palaeolithic artefacts have been reported from Bhandarpur near Orsang Valley. The river Bhader in Saurashtra is rich in Palaeolithic assemblage and handaxes, cleavers, chopping tools, points, borers and scrapers have been reported from its banks. The Kutch area has produced many Palaeolithic tools like cleavers, handaxes and choppers.
- iv) The Narbada river rises in the Maikal range and flows into the Gulf of Cambay. The Narbada terraces are rich in Palaeolithic sites. Many handaxes and cleavers have been reported. Bhimbetka (near Bhopal) located in the Vindhyan range is a site in which tools representing the Acheulian tradition were replaced at a later stage by the Middle Palaeolithic Culture.
- v) The rivers—Tapti, Godavari, Bhima and Krishna have yielded a large number of Palaeolithic sites. The distribution of Palaeolithic sites is linked up with ecological variation like erosional feature, nature of soils, etc. The Tapti trough has deep regur (black soil), and the rest of the area is covered mostly by medium regur. There is scarcity of Palaeolithic sites in the upper reaches of Bhima and Krishna. From Chirki near Nevasa in Maharashtra Palaeolithic tools like handaxes, chopper, cleavers, scrapers and borers have been reported. The other important Palaeolithic sites are Koregaon, Chandoli and Shikarpur in Maharashtra.
- vi) In eastern India, the river Raro (Singhbhum, Bihar) is rich in Palaeolithic tools like handaxes, bifacial chopping tools and flakes. From Singhbhum many Palaeolithic sites have been reported and the main artefacts are handaxes and choppers. Palaeolithic tools have also been reported from the valleys of the Damodar and the Suvarnarekha. and the distribution pattern of the palaeolithic culture here is again conditioned by topographical features.
The Baitarani, Brahmani and Mahanadi rivers form the deltaic region of Orissa and some palaeolithic tools have been found in this area.
The Buharbalang Valley in Mayurbhang in Orissa has many Early and Middle Palaeolithic tools like handaxes, scrapers, points, flakes, etc.
- vii) From Malprabha, Ghatprabha and the affluents of the Krishna a number of Palaeolithic sites have been reported. In Ghatprabha basin in Karnataka Acheulian handaxes have been found in large numbers. Anagawadi and Bagalkot are two most important sites on the Ghatprabha where both Early and Middle Palaeolithic tools have been found.
The rivers Palar, Penniyar and Kaveri in Tamil Nadu are rich in Palaeolithic tools. Attirampakkam and Gudiyam (in Tamil Nadu) have yielded both Early and Middle Palaeolithic artefacts like handaxes, flakes, blades, scrapers, etc.

3.2.3 Subsistence Pattern

There is a rich assemblage of animals both of indigenous and foreign origin. Primates, many giraffe-like forms, musk-deer, goats, buffaloes, bovids and pigs seem to be of indigenous origin. The camel and the horse had North-American connection. Hippopotamus and elephants migrated to India from Central Africa. The migratory routes lay east and west of the

Himalayas. However, the wave of migration of most of the immigrant animals was along the north-west borders. There was great deal of interaction between India and Africa.

As regards the relationship between Palaeolithic human beings and their resources, the faunal remains give us some idea about their subsistence pattern. These remains suggest that the people were primarily in a hunting and gathering stage. It is likely that the balance between number of human population and the animal population of the area in which they lived and moved to ensure food supply would have been maintained. The people would have made extensive use of faunal and floral resources in their immediate vicinity. Hunting practices were concentrated on large and middle sized mammals especially ungulates (a type of animal). At the same time deer, rhino, and elephant seem to have been hunted. There is no evidence of selective hunting in this period. In some assemblages few species dominate; it is so because of their abundance in the area and also because they were easy to hunt. It seems that the subsistence patterns of hunter-gatherers were geared to a dry-season/wet-season cycle of exploitation of plant and animal foods. It is likely that the palaeolithic people subsisted on such animals as ox, bison, nilgai, chinkara, gazelle, black buck antelope, sambar, spotted deer wild boar, a variety of birds, and tortoises and fishes and on honey and plant foods like fruits roots, seeds and leaves.

It is argued that the items which were gathered and constituted their diet are generally far more important than the animals which are hunted in the context of modern surviving hunter-gatherers. It has been also observed that the debris from the gathered part of the diet normally survive far less than the debris from the hunted part. It is difficult to work out on this basis the diet pattern of Palaeolithic people because we do not have much evidence of people and plant relationship for the past as we have for the present-day hunters/gatherers. It is likely that Palaeolithic people would have been taking animal diet along with products of wild plants.

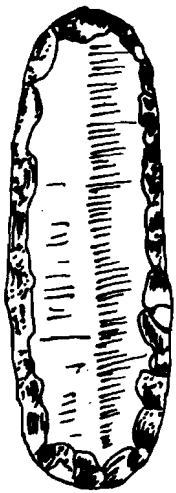
Rock paintings and carvings also give us an insight into the subsistence pattern and social life of the Palaeolithic people. The earliest paintings belong to Upper Palaeolithic age. Bhimbetka located on the Vindhyan range, is well known for continuous succession of paintings of different periods. Period-I belongs to Upper Palaeolithic stage and paintings are done in green and dark red colours. The paintings are predominantly of bison, elephants, tigers, rhinos and boars. They are usually large, some measuring two-three metres in length. There is need to work out the frequency of the different types of animals to have more precise idea about the hunting life of Palaeolithic people. But hunting is reflected as the main subsistence pursuit in the carvings and paintings. It is sometimes possible to distinguish between men and women on the basis of anatomical features. These paintings also reflected that palaeolithic people lived in small band (small groups) societies whose subsistence economy was based on exploitation of resources in the form of both animal and plant products.

Check Your Progress 1

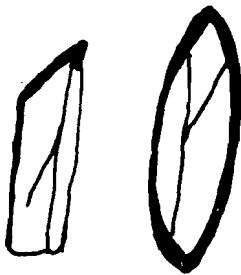
Note : Read the following questions carefully and mark the right and most appropriate answers.

- 1 Which period of Social evolution represents the hunting-gathering stage :
 - a) Palaeolithic Age
 - b) Mesolithic Age
 - c) Palaeolithic and Mesolithic Age
 - d) Neolithic Age
- 2 How are pre-historic hunter-gatherer societies studied?
 - a) With the help of literary sources.
 - b) With the help of numismatic sources.
 - c) With the help of epigraphic sources.
 - d) With the help of archaeological remains
- 3 Pleistocene Period was :
 - a) Very cold
 - b) Very warm
 - c) Temperature was mild
 - d) Very dry
- 4 Palaeolithic Culture has been divided into three phases on the basis of :
 - a) Change in the climate
 - b) The nature of stone tools.
 - c) Faunal remains
 - d) Nature of stone tools and change in climate and faunal remains.

- 5 Palaeolithic economy was based on :
- Food Production
 - Hunting
 - Gathering of products of wild plants
 - Hunting of animals and gathering of products of wild plants



2. Retouched Blade



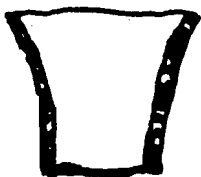
3. Points



4. Triangle



5. Lunates



6. Trapeze

3.3 MESOLITHIC STAGE

The Mesolithic Age began around 8000 BC. It was the transitional phase between the Palaeolithic Age and the Neolithic Age. There was rise in temperature and the climate became warm and dry. The climatic changes affected human life and brought about changes in fauna and flora. The technology of producing tools also underwent change and the small stone tools were used. Man was predominantly in hunting/gathering stage but there was shift in the pattern of hunting from big game to small game hunting and to fishing and fowling. These material and ecological changes are also reflected in rock paintings. Let us examine some of the tools used during this period.

3.3.1 Mesolithic Tools

The Mesolithic tools are microliths or small stone tools. Microliths are very small in size and their length ranges from 1 to 8 cm. Some microliths have even geometric forms. Blade, core, point, triangle, lunate and trapeze are the main types of Mesolithic tools. Besides these, Palaeolithic tools like scraper, burin and even choppers also continue during the Mesolithic Age:

- Blade**: Blade is a specialized flake with parallel to sub-parallel to lateral edge, its length is equal to at least twice its width. It might have been used for cutting purposes. The techniques of Mesolithic blade production is called fluting. Here the pressure is delivered on the core from the edge of the striking platform. We also find some retouched blades which are broad, thick and long. The retouching process sharpens the blade and we find blades with retouching along one or two borders or even at two ends. These blades are more sharp and effective than ordinary blades.
- Core**: Core is usually cylindrical in shape with fluting marks along its length and a flat striking platform at the distal horizontal end.
- Point**: Point is a broken blade in a triangular form. It is retouched along one or both the sloping borders and the border can be rectilinear or curvilinear. The points were used as arrowheads and spearheads.
- Triangle**: It has usually one border and the base, and the border is retouched. These were used for cutting purposes or as arrowheads.
- Lunate**: Lunate is like a blade and one of the borders is prepared by semi-circular retouching. It looks like a segment of a circle. It could be used to obtain concave cutting edge or two of these could be halved back to back to form an arrowhead.
- Trapeze**: Trapeze looks like blade and usually more than one border is retouched. Some trapezes have retouches on three borders. Trapezes could have been used as arrowheads.

3.3.2 Mesolithic Sites

Let us discuss some of the prominent Mesolithic sites in India :

- The Pachpadra basin and the Sojat area (Rajasthan) are rich in microliths. The significant habitation site discovered is Tilwara. Tilwara has two cultural phases, Phase-I is Mesolithic and is characterized by the presence of microliths. In Phase-II wheel made pottery and pieces of iron are found together with microliths. Bagor (Rajasthan) on the river Kothari is the largest Mesolithic site in India and has been horizontally excavated. Bagor has three cultural phases. On the basis of radio-carbon dating phase I or the earliest phase of culture has been placed between 5000-2000 B.C.
- The rivers Tapti, Narbada, Mahi and Sabarmati (Gujarat) has also yielded many Mesolithic sites. Sites like Akhaj, Valasana, Hirpur and Langhnaj are situated east of the river Sabarmati. Langhnaj has been extensively studied and it has revealed three cultural phases. Phase i has produced microliths, burials and animal bones. The microliths are mostly blades, triangles, crescents, scrapers and burins.
- The Vindhya and Satpuras are rich in Mesolithic sites. In Allahabad-Pratapgarh area, Sarai Nahar Rai (Uttar Pradesh) is an extensively studied site. Morhana Pahar (Uttar

Pradesh) and Lekhahia (Uttar Pradesh) are two significant Mesolithic sites in Kaimur range. Bhimbetka (Madhya Pradesh) has yielded many microliths. Bhimbetka has a favourable ecological set up. Adamgarh in Hosangabad and lying to the south of Bhimbetka is another significant Mesolithic site.

- iv) Microliths have been reported from coastal Konkan and the inland plateau. Sites like Kasushoal, Janyire, Babhalgo and Jalgarh have been reported from Konkan. The Deccan basaltic plateau has many Mesolithic sites and microliths have been reported from Dhulia district and Poona district.
- v) The Chhota Nagpur plateau, the coastal plains of Orissa, the Bengal delta, the Brahmaputra valley and the Shillong plateau have yielded microliths. Pre-Neolithic and Neolithic associated microliths have been reported from Chhota Nagpur plateau. Mayurbhanj, Keonjhar and Sundergarh in Orissa have microlithic assemblage. Kuchai in Orissa is an excavated microlithic site. Birbhanpur located on the River Damodar in West Bengal is another excavated microlithic site. Sebalgiri-2 in Garo hills of Meghalaya has yielded pre-Neolithic microliths.
- vi) The Krishna and Bhima rivers have produced many microliths. The microliths in many cases survive to the phase of Neolithic Cultures. Sangankallu situated on the western fringe of the Karnataka plateau has produced cores, flakes, points and crescents. The Godavari delta is rich in microliths. Here the microliths are associated with the Neolithic Culture. The Kurnool area has many microliths. Microliths have also been reported from Renigunta, in Chittoor district in Andhra Pradesh.

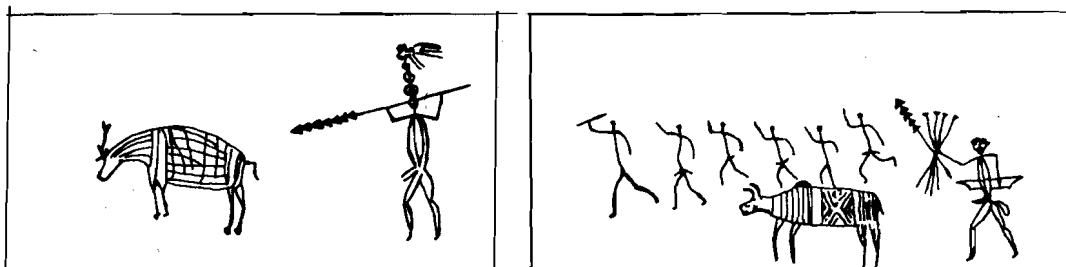
Since the Mesolithic age covers a long span of time and there are many mesolithic sites in India, an attempt has been made to classify different sites chronologically and on the basis of material remains. Some sites are real Mesolithic sites because of the abundance of microliths and chronological sequence and some sites are chronologically of later time and reflect the influence of Mesolithic culture and these sites fall in the category of the sites of Mesolithic tradition.

Sites like Bagor, Sarai-Nahar-Rai, Mahadaha and Adamgarh are truly Mesolithic sites because of their early dates and associated material Culture.

3.3.3 Subsistence Pattern

The early Mesolithic sites have yielded the faunal remains of cattle, sheep, goat, buffalo, pig, dog, boar, bison, elephant, hippo, jackal, wolf, cheetah, sambar, barasingha, black-buck, chinkara, hog deer, hare, porcupine, mongoose, lizard, tortoise and fish. Many of these species continued during the range of Mesolithic tradition. However, wild sheep, wild goat, ass, elephant, bison, fox, hippo, sambar, chinkara, hare, porcupine, lizard, rat, fowl and tortoise are absent at the sites falling in the category of Mesolithic tradition. But wild buffalo, camel, wolf, rhinoceros and nilgai are present in the sites of Mesolithic tradition but these species are absent in the early Mesolithic period. The appearance and disappearance of the animals has to be understood in the context of changing climatic and environmental conditions.

The diet of the people during Mesolithic Age included both meat and vegetal food. The remains of fish, tortoise, hare, mongoose, porcupine, deer and nilgai have been found from different Mesolithic sites like Langhanaj and Tilwara and it seems these were consumed as food. Besides hunting and fishing, the Mesolithic people also collected wild roots, tubers, fruits, honey etc. and these constituted important elements in the overall dietary pattern. The plant food seems to have been more easily available than the hunted animal food. Some areas seem to have been rich in grass, edible roots, seeds, nuts and fruits, and people would have used them as food resources. It is argued in the context of surviving hunter-gatherers that the major portion of the food comes from plant sources supplemented by hunting. It is difficult to establish co-relation between the animal meat and vegetal food in the context of Mesolithic age because the plant remains are perishable in nature. It can be suggested that hunting provided significant portion of the food resource.



7. Mesolithic Rock Paintings (Bhimbetka)

The paintings and engravings found at the rock shelters which the Mesolithic people used give us considerable idea about the social life and economic activities of Mesolithic people. Sites like Bhimbetka, Adamgarh, Pratappgarh and Mirzapur are rich in Mesolithic art and paintings. Hunting, food-gathering, fishing and other human activities are reflected in these paintings and engravings. Bhimbetka is extremely rich in paintings. Many animals like, boar, buffalo, monkey and nilgai are frequently depicted. The paintings and engravings depict activities like sexual union, child birth, rearing of child, and burial ceremony. All these indicate that during the Mesolithic period, social organization had become more stable than in palaeolithic times. It seems that the religious beliefs of the Mesolithic people are conditioned by ecological and material conditions.

Check Your Progress 2

- 1 The Mesolithic tools are primarily:
 - a) Handaxe and cleaver
 - b) Cleaver, Chopper and Chopping tools
 - c) Blade, Core, Point, and Lunate
 - d) Chopping tool and flake.
- 2 Mesolithic sites have been reported from:
 - a) The river Kothari
 - b) The river Tapti
 - c) Godavari delta
 - d) The rivers Kothari, Tapti and Godavari delta.
- 3 Which one of the following statements is most appropriate?
 - a) The subsistence pattern of Mesolithic people was based on hunting of animals.
 - b) gathering of wild fruits and seeds
 - c) hunting of animals and gathering of wild fruits.
 - d) surplus food production.
- 4 Write ten lines. What do the Mesolithic tools and paintings suggest in terms of subsistence pattern and social organisation?

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3.4 LET US SUM UP

The Pre-historic societies of hunter-gatherers are studied on the basis of archaeological remains with the help of anthropological theories. The Palaeolithic and Mesolithic ages represent the hunting-gathering stage of social evolution. The Palaeolithic Culture has three phases in terms of the nature of stone tools and changes in climate. The handaxes, cleavers, choppers and chopping tools are predominantly Early Palaeolithic artefacts. The Middle Palaeolithic tools are mainly flakes. The Upper Palaeolithic Culture is characterized by burins and scrapers. The Mesolithic Age started around 8000 B.C. and the age is associated with changes in climatic conditions. There was further technological development reflected in the production of microliths and small stone tools. The Mesolithic tools are mainly the blade, core, point, triangle and lunate.

Faunal remains give us considerable idea about the subsistence pattern of palaeolithic and Mesolithic people. During the palaeolithic age people were primarily in the hunting and

gathering stage. People seem to have hunted large and middle size mammals such as elephant, ox, nilgai, deer, wild bear and a variety of birds. At the same time they also exploited the plant foods like fruits, seeds etc. The hunting-gathering pattern continued during the Mesolithic age. However, some animals like wild goat, fox etc. appeared during this time. From the palaeolithic age to Mesolithic Age, there seems to have been a shift from big animal hunting to small animal hunting and fishing. The pre-historic paintings give us insight into the economic social and cultural life of the people.

3.5 KEY WORDS

Acheulian : It is used for describing a particular type of Handaxe. Such handaxes were first found in France in the deposits of the early part of glaciation.

Artefact : Any object that has been made, modified or used by human beings. It may range from a coarse stone used in the manufacture of flint to anything of high technical accomplishment in any material.

Assemblage : A group of objects of different types found in close association with each other. Where the assemblage is frequently repeated, and covers reasonably full range of human activity it is described as a Culture.

Calibration : In the context of radiocarbon dating, this term refers to the adjustment of dates in radiocarbon years by means of dendrochronological date so that a date in real, i.e. calendar years is achieved. Un-calibrated dates are raw dates in radiocarbon years, and this is the way that most dates from this technique are published.

Concave : Curving inwards and thinner at the centre than at the edges.

Convex : Curving outwards and thicker at the centre than the edges.

Ethnography : The subject that deals with the descriptive recording of cultures.

Ecology : Interrelationship between animal life and plant life.

Epigraphy : It is the study of inscriptions.

Flora : The plant life of an area.

Fauna : It stands for animal life.

Geology : The subject that deals with the composition, structure, and history of the earth.

Glaciation : A period of cold climate during which the area covered by the ice caps increased. Several glaciations may go to make up an 'Ice Age'

Mammal : The animal that feed their young with milk from the breast.

Numismatics : It is the study of coins.

Pleistocene : The geological period corresponding with the last of Great Ice Age. The onset of the Pleistocene is marked by an increasingly cold climate.

Pollen analysis : This technique is used in establishing relative chronology. It is the analysis of the pollens of flowers.

Primate : Age of the highest order of mammals (including human beings, apes, monkeys and lemur)

Rectangle : A quadri lateral with right angles between all four sides.

Rectilinear : Consisting of straight line.

Radiocarbon : One of the best known chromatic dating techniques which can be used for dating of most organic material up to 70,000 years old. Plants and other living organs consume carbon from the atmosphere during this life time. This carbon also includes carbon 14 (14c) which is a radioactive element. After the death of plants and the living organs the accumulated 14c starts decaying and by measuring its present concentration we can determine the age of the organisms which became extinct a long time ago.

Transverse : Cross-wise, in a direction at right angles to the length of the body.

Terrace : A platform of land created by the river. It is formed beside the river.

3.6 ANSWERS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) (c) 2) (d) 3) (a) 4) (d) 5) (d)

Check Your Progress 2

1) (c) 2) (d) 3) (c)

- 4 You have to use imagination for your answer like whatever the human beings painted reflects their life pattern and surroundings. For example a painting which shows a mammal hunted by human beings indicates formation of small social groups to carry the hunt; it also reflects their food habits as to what animals they ate and the type of tools they used for hunting, etc. See Sub-sec. 3.