

Block

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MESOLITHIC CULTURES

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BLOCK 6 MESOLITHIC CULTURES

Introduction

In the past 15,000 years, humans have undergone minimal changes in physical characteristics; in contrast, human cultural adaptations have grown substantially more sophisticated. The most significant of these cultural shifts relates to subsistence, the manner in which humans obtain food and nourishment.

Upper Palaeolithic populations were probably relatively mobile, nomadic people who followed the migrations of the herd animals they hunted.

Beginning late in the Pleistocene epoch, approximately 15,000 years ago, this pattern of Upper Palaeolithic gradually began to change in some parts of the world. Rather than moving around in pursuit of large animals, humans started to make more intensive use of smaller game animals and wild plants in one area. Fishing and gathering marine resources also yielded valuable food sources as people became less mobile and increasingly focused their energies on the exploitation of plants and animals within particular local environments.

Between the late Pleistocene and the early Holocene (the current geologic epoch), a gradual warming of the earth's temperature caused the great glaciers of the Pleistocene to melt. Sea levels rose in coastal areas, and lands that had been compressed under the glaciers rose. As the earth's climate changed, many species of plants and animals became extinct.

The reshaping of the earth's environments prompted new patterns of technological development. As large number of animals and kinds became extinct humans captured smaller animals and kinds, learned how to fish, and gathered plants to satisfy nutritional needs in a strategy that represented a subtle change, one to broad-spectrum collecting. Because of variation in local environments, many specialised regional patterns and technologies developed, making it increasingly difficult to generalise about developments worldwide. These new subsistence strategies have been referred to as the Mesolithic in Europe, Asia, and Africa and the Archaic in the Americas.

The transition to broad-spectrum collecting began in different regions at different times and had varying consequences. In some areas relatively permanent settlements emerged, whereas in other regions people maintained mobile, nomadic lifestyles. In general, however, percussion-flaked Mesolithic and Archaic tools differ markedly from those of the Palaeolithic. Typically they are much smaller and more specialised than Palaeolithic implements. Some of the most common Mesolithic tools are known as microliths, small flakes of stone that were used for a variety of purposes, including harpoon barbs and specialised cutting tools. The bow and arrow appeared in the Upper Paleolithic, and both Mesolithic and Archaic peoples made extensive use of this technological innovation, which allowed hunters to kill game from a greater distance and with more accuracy than did spears.

A new type of stone tool, ground stone, also became common in many societies. Some of these implements were probably unintentional products of food processing. To make seeds and nuts more palatable, people pulverised them

between a hand-held grinding stone and a larger stone slab or even a large rock. This activity shaped the hand stones and wore depressions, or grooves, into the stone slabs. Using a similar grinding process, Mesolithic peoples intentionally made some stones into axes, gouges, and adzes (specialised tools to shape wood). Tools with similar functions had been produced by percussion flaking during the Palaeolithic, but ground-stone tools tend to be much stronger.

The increasingly sophisticated stone-working technology that characterised the Mesolithic and Archaic periods allowed for a great many innovations in such areas as the harvesting of resources and the shaping of wood for building. Although watercraft was developed during the Upper Paleolithic, ground-stone tools made it easier to cut down logs and hollow out the inside to make dugout canoes. Vessels of this type improved mobility and enabled people to exploit more diverse ocean, lake, and river resources. Ground-stone sinkers and fishhooks made from shell, bone, or stone also attest to the importance of aquatic resources in this era.

In India in addition to their technological accomplishments, the Mesolithic people created an impressive array of art work which includes murals in cave and rock-shelters; petroglyphs and cupules. The murals or cave paintings may have been drawn to celebrate a successful hunt or to ensure a better future.



UNIT 1 MESOLITHIC FEATURES

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- 1.1 Introduction
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Learning Objectives



Once you have studied this unit, you should be able to:

- learn about the culture that flourished in Europe during Post Pleistocene period in Europe;
- know about the environmental background of the Holocene period in Europe;
- learn about the change in tool types and their manufacturing technique during this period;
- learn about Mesolithic man and his culture; and
- learn about Mesolithic ecology that is the mode of adjustment of the Mesolithic people in the changing environmental condition of early Holocene period in Europe.

1.1 INTRODUCTION

Mesolithic is a cultural stage belonging to human beings who were completely modern in their biological characteristics and are known as *Homo sapiens sapiens*. In fact, people lived almost in the same way as they did during Palaeolithic stage. The main difference being they that lived in Europe at a time when the climate was changing from what it was during the previous geological stage, known as the Pleistocene epoch. The geological epoch which follows is known as Holocene. Both Pleistocene and Holocene belong to the Quaternary period. Holocene is also known as the Recent or Neothermal phase. We are living in the Holocene phase. Holocene began around 10,000 years B. C.

In Europe, Pleistocene is considered as a period of climatic fluctuations. Throughout this epoch climate fluctuated between warm and cold phases. At the end of Pleistocene period, climate slowly became warmer. With the change in the climatic environment areas which were under ice or under the influence of cold climate became free from ice or its influence. Plant and animal gradually changed. Faunas of the cold climate were replaced gradually by the faunas of the warm climate. Plant cover changed from arctic to temperate types. Holocene period seen the establishment of the geographical, climatic and biological

conditions of Europe as it is known today. Human beings adjusted with the changing condition by changing this way of life.

The change was quite slow but the change took place mainly in response to the change in the environment. However, in their subsistence level they were much like the Palaeolithic hunter gatherers but their mode of hunting-gathering became intensified. Man's long experience through generations of interaction with plant and animal in search of living, has led to his experience and knowledge about them. For this reason, we find the people who lived in the Post-Pleistocene era were still hunter gatherers but were species-specific hunter and gatherers. This means that they favoured some species of plants and animals over others. Culture that was produced by the people who lived in Europe during post Pleistocene period that is early Holocene, are known as Mesolithic culture. Change of environment was not uniform. Accordingly culture varied from one environmental zone to the other.

Study of Mesolithic culture of Europe can best be studied from the following points:

- *Terminology*
- *Environment*
- *Tool types and techniques of manufacture*
- *Mesolithic cultures*
- *Post Pleistocene/ Post- glacial/ early Holocene ecology*

Terminology

The term Mesolithic has got a long history of origin. In fact A.C. Carlyle (Brown, 1889) had coined the nomenclature on the soil of India. There was a general belief that a cultural break existed between Palaeolithic, the Old Stone Age Culture on the one hand and the Neolithic or the New Stone Age culture on the other (Lubbock, 1865).

Carlyle found a large number of small stone implements from the caves and rock shelters of Vindhyan hill regions of central India. The assemblage comprised of small stone tools in forms of crescents, trapezoids, triangles and delicate knife-lets. No tool was more than 1.6 cm. in length. The tools were never found in association with polished or ground implements. Carlyle found enough stratigraphic evidence to suggest that these small implements were lying intermediate between Palaeolithic and Neolithic stages. The accompanying culture connected with both the stages. Carlyle termed this intermediate stage as Mesolithis. On the basis of Carlyle's findings and on similar evidences from other parts of Asia and Africa, Brown (1889) carried out his investigation in Britain and Europe. His findings were similar. His evidence was based on data found near about East Dean and Sussex, England. He found transitional sequence of culture both on the basis of stratigraphy and typology. Zoologists dominated the scientific discourse at that time, which undermined cultural capability of men. They believed that man left Europe with the animals of the cold period. In spite of the logic put forward by Brown, it was not until Piette's discovery of similar situation at Mas'd Azil in 1895, that the term Mesolithic gained any popularity among the European scholars.

Clark, in 1932, established the term in its proper connotation. He substantiated his opinion with data related geology, archaeology and ecology. His enquiry was based on ecological understanding. Clark's (1980) definition of Mesolithic is as follows; "it is a culture of hunter-gatherers lying intermediate between Paleolithic on the one hand and Neolithic on the other; recent in geochronology; followed the same subsistence pattern as Palaeolithic but difference was emphasised in terms of specialisation". The end of Pleistocene is conventionally placed around 10,000 years B.C. The date for Mesolithic in Europe is fixed around 9500 years B.C. Mesolithic is considered to have ended with the introduction of agriculture around 6000 and 5000 years B.C. (Price, 1991).

In Asia and Africa the terminology differed. In West Asia, mainly Levant, Iraq, Iran and Africa the period just preceding Neolithic is called Epipaleolithic by Garrod, Stekelis, Neuville, Kenyon, Mc. Burney and others. The genesis of the culture lies well before Holocene period and into the terminal Pleistocene at these places. In Africa, excepting in the Nile valley, no true Neolithic culture is found. In these areas Mesolithic-like cultures are known by the term Late Stone age. In India, the culture is also termed as microlithic culture.

1.2 ENVIRONMENT OF EUROPE DURING EARLY HOLOCENE PERIOD

Europe was under the influence of glaciations during Pleistocene period. Snowline marking the arctic tundra was extended up to present temperate zone. At the end of Pleistocene period due to change in solar radiation, Europe was gradually warming up. This led to mass scale change in geography, biology and human culture of Europe. Post Glacial or post Pleistocene environment of present day temperate Europe is better understood with the application of pollen-analysis. Palynologists found that Post-glacial deposits can be divided into zones in which the transformation of forests in response to the curve of temperature is recorded. At first the temperature rose slowly, culminated into a peak and then receded to some extent until present day condition was reached.

Mesolithic culture in Europe can be separated from Palaeolithic on the basis of geological and palaeontological characters, although the criteria vary from one region to the other. It can be distinguished from Neolithic on the basis of its economy. Neolithic had a food producing economy, based on agriculture and animal husbandry. Mesolithic people lived on hunting and gathering. They did not know food production.

K. Jessen in 1934 divided Holocene Europe into nine basic zones based on pollen analysis to understand its climatology. Pollen analysis provided a picture of forest development in north and northwest Europe. Forest in Scandinavian language is referred to as boreal. Europe was under Park Tundra condition (pollen Zone I-III) by the end of Pleistocene. With the warming up of climate park tundra vegetation made way for Birch-pine pollen zone (IV) of the pre-boreal period that was a period through which forest development was taking place. The first phase of forest development is known as early boreal (pollen zone V). This phase was dominated by pine trees but hazel and birch were also found. This is followed by late boreal (pollen zone VI). Pine and hazel trees dominated the forest together with some elm and oak in its first phase and lime and alder at its later phase.

Pollen VII a is known as Atlantic period because the land bridge connecting Great Britain to Europe was submerged and the climate of the area was exposed to the influence of Atlantic ocean. The forest of this period is characterised by the presence of alder-oak-elm-lime trees. This phase continues into a period known as sub Boreal (pollen zone VII b). In it, elm declines slowly and hazel increases. During the Atlantic period a climatic optimum occurred with annual average temperature above 2 degree centigrade than what it is today.

Faunal changes also took place but fauna was not as sensitive as the plants. Some of the most significant changes were gradual and eventual replacement of reindeer by red deer and bison by *bos*.

Movements of the sea level, also known as eustatic movement and the land surface movement known as isostatic movement, took place with the end of the ice age. This has been studied in detail in the Baltic Sea region of the Scandinavian Peninsula. Baltic was an Ice Lake by the end of the glacial period. During Pre Boreal period with the melting of the ice, it became a sea and was known by the name yoldia sea. It was named after the molluscan fauna *yoldia artica*. Land surface rose during Boreal phase and Baltic became a fresh water lake and is known as Ancylus Lake, with the characteristic presence of molluscs, *Ancylus fluviatilis*. During the subsequent Atlantis period the sea level rose again and Baltic became a sea known as Littorina Sea. This phase is identified with the presence of common periwinkle shells known as *Littorina littoria*. Several transgressions and regressions of sea took place in Atlantic. Some of the transgressions are dated.

As the ice retreated there occurred a rapid spread of forest and the development of new subsistence pattern. It is thought that in response to the development of forest man developed new tool types, such as axes, adzes and picks in order to deal with the new environment. The change was gradual.

1.3 TOOL TYPES AND MANUFACTURING TECHNIQUE

Tools of Mesolithic culture are categorised into two groups, those made on stone and those made on bone and antler. The stone tools can further be divided into two categories, the microlith and the macrolith i.e. tiny tools and bigger tools, respectively.

Microliths

Microliths are the predominating and common tool types of this cultural phase. Technologically, this is a continuation of types from the Palaeolithic period. Microliths occur at the last phase of the Palaeolithic culture but predominance of the same is found during the Mesolithic stage. Standardisation of size dimension is made by archaeologists and 3cm is taken as the limit for length for determining a microlith. Moreover, the microliths of Mesolithic period were made by highly skilled tool making technique. This is mainly reflected in retouching of the working edge of the tool or blunting of the hafting edge of the tool.

The technique employed was punch and pressure, which developed during the Upper Paleolithic period. For this reason, identification of Mesolithic microliths largely depend on the context of its finding and dates. Microliths were made by a technique known as notch technique. A small notch was made on the edge of a micro blade by means of abrupt retouch. The point of a small punch or perhaps bone was then placed in the centre of the notch and the bulbar end of the blade was removed by a slightly oblique blow. The bulbar end is found as a waste-product, known as micro-burin. The rest of the bladelet was fashioned into a microlith, also by abrupt retouch. However, some forms of microliths could possibly have been made by retouching blades without using the notch technique.

Microliths are described in terms of geometric and non-geometric shapes. Geometric ones are types such as trapeze, triangle, lunate or crescent. The non-geometric types are named by the nature of blunting of the back, such, partly, fully or obliquely blunted blades or after their functions such as scraper, point, knife, blade, awl, burin and borer (fig. 1.1).



Fig. 1.1: Microliths

The tool kit of the Mesolithic people consisted of a large number of small pointed pieces. Evidences suggest that a large proportion of these elements were employed in composite tools for plant gathering-harvesting, slicing, grating, plant fibre

processing for lines, snares, net and traps, shell openers, bow-drill points and awls. The pieces were hafted on wood, bone and antler. These were set in line to give a straight cutting edge or set with slanting blades, micro-blades, broad trapezes, notched and serrated blades in line, or lunates and triangles set vertically to give varieties of saw edge (fig.1). This tradition of composite tool using must have extended from Palaeolithic into Mesolithic.

The microlithic technique enables the maximum length of edge and number of points to be extracted from a minimal volume of stone. The technique allows the regular exploitation of small, nodular pebbles and even large artifacts. The technique in turn allows permanent occupations of territories without any other stone resources. In this way the Mesolithic people exploited extremely sharp and hard materials like flint, chalcedony, agate, carnelian etc, which occur in small sources. Economy of the technique is observed in the construction of composite tools in terms of small rapidly replaceable and interchangeable, standardised and mass produced units, which were produced in advance in large quantity and kept in readiness for use at times of wear and tear. The procedure was to pull out the worn out piece and plug in a fresh one in its place. A broken Palaeolithic tool needed a complete replacement.

Macroliths

The tools which are beyond the size of microlith may be considered as macroliths. In this category there are tools which are a continuation of the Upper Palaeolithic types, such as, scrapers. New types are axes and picks. These are considered as heavy duty tools. These are made on stone, mostly flint. The tools are made by flaking and making a transverse working edge. According to the nature of working edge these are termed as axe and adze. These are meant for wood working and were mainly associated with cultures, which developed in the forest area. Another type of heavy duty tool is the pick. This has a pointed working edge. There are evidences that the axe, adze and picks were hafted in wooden, bone or antler haft (Fig.1.2). These tools helped the users to cope with forest environment.

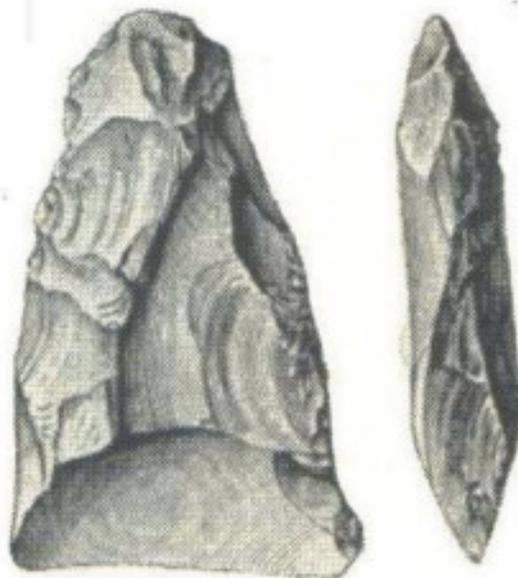


Fig. 1.2: Macroliths (Heavy duty tools)

Bone and Antler Tools

Bone tools are found mainly in the form of barbed harpoons. Harpoon is a type of tool from Maglemosian culture. Harpoons vary in terms of number of barbs; location of barbs along the shaft and in terms of nature and shape of barbs. There are fish hooks and points. Points are grooved and made into needles or made into leister prongs. Chisels on long bones are found. Bones were also used as hafts for making composite tools.

Mostly shredded antlers were used for making tools. The antler were cut down along the brow tine region and shaped into axe, adze or haft for inserting stone axe or adze heads. Animal horn and teeth were also hafted and used as tools (Fig.1.3).



Fig. 1. 3: Bone and antler tools. Bone tools and abraded pebble (Source: <http://www.donsmaps.com>)

1.4 MESOLITHIC CULTURE OF EUROPE

Mesolithic culture of Europe exhibits dynamicity of adaptation to changing environmental condition. Environment in Europe went through changes from tundra park land, open steppe, forested zones and coastal environment. In all the areas culture revealed adaptation to the local environment. According to Clark (1980) this condition may be considered as ecological niche formation by contemporary human beings. In the present study cultures which grew under forest and in open grass land conditions are discussed.

1.4.1 Maglemosian Culture

The Maglemosian culture is named after the type site Maglemose. It is a Danish word meaning “big bog”. The site is located near Mullerup, Zealand in Denmark. This culture is also referred to as ‘forest culture’ and is found near rivers, lake, marshes and other low lying forested areas. The culture developed during period II, the Boreal, that is at the time of full development of forest in northern plains of Europe. Maglemosian culture is found in the whole plains of Europe but richest area is Denmark and south Sweden. It appears that Maglemosian people were especially attracted to rivers, lakes etc, which suggest that fishing and fowling played important role in their economy.



Fig. 1.4. Maglemosian assemblages (Burkitt 1929, p. 35)

This is confirmed by the material culture and faunal remains from the settlement sites of Maglemosian people. Remains of pike fish are present and barbed bone points have been found embedded in pike skulls. Faunal remains represent large number of edible water birds, such as, duck, geese, and swan. They hunted land mammals also for food. Important ones are auroch (wild ox), elk (deer), wild pig, roe deer etc. Microliths of obliquely blunted type were found from the breast region of an auroch, suggesting use of microliths in composite weapons for hunting. There is definite evidence of use of dog for chasing the games. Maglemosian people killed animals for fur also. Collection played an important role in their economy. They collected nuts, berries and other fruits. Vast numbers of hazel nut shells, broken length-wise were found.

Most of the habitation sites are on slight prominence in damp areas. Probably they moved out from the low areas in wet season to dry zones because the areas went under water during wet season. Settlements are small in size suggesting small social groups.

It may be summed up that people lived in small social groups, had seasonal migration and lived on hunting, fishing, fowling and collection.

Material Assemblages of Maglemosian Culture

Material culture of Maglemosian people shows use of diverse tool-making raw material. These may be divided into stone, wood, amber, animal teeth, antler and bone.

Stone tools

Most diagnostic types of tools of this culture are axes and picks. These reflect forest environment. Those made on core outnumbering those made on flake.

There are numerous microliths. Commonest form of all microliths is the simple ones blunted obliquely or down the whole of one edge. They used single microliths as tips for arrows and more than one microlith for making inset on wood or bone. Hollow based points, scalene triangles and crescents are found at all sites. Presence of microburins suggests that microliths were made by notch technique.

Upper Palaeolithic types of tools are burins and scrapers. The latter are more in proportion. Most common scrapers are horse shoe scrapers. Points and awls are also found. Other stone tools are pebbles with countersunk hollows, pebbles with abraded surfaces and so called mace heads with hour glass perforations (Fig.1.1).

Antler and bone tools

Antler and bone tools are difficult to preserve. Even then a large variety of them are found. Barbed bone points, axes or adzes of bone, spear heads, antler sleeves, fish hook and leister prongs are characteristic types. Other bone and antler tools include antler tines worked into sharp points, worked animal teeth, perforated auroch phalanges, awl and bodkins and even whistles. The bone antler tools are frequently decorated with scratched in or incised geometric designs. Stylised animal or human figure are rare.

Wooden objects

Among the preserved wooden specimens, the important ones are: (i) ends of rods, pointed and hardened by fire, (ii) club like objects, (iii) wooden sleeves for inserting stone axes and adzes, (iv) wooden plaques with perforations made by fire, (v) wooden paddle-rudder suggesting evidence of navigation of the culture, (vi) dugout canoe made of Scottish fir tree, 6 feet long and 3 feet in breadth, made by scooping wood out by fire. Fire was used in carpentry. The last two items indicate navigation during boreal period.

There are fishing nets made of plant fibre, sink made of stone and float made of plant bark.

Amber and animal teeth

Tongue shaped pendant, perforated for suspension, amber beads with conical perforations were meant for personal adornment. Animal teeth were used both as personal ornament and as tools. Canines of bear, otters, wild cat, and incisors of auroch, wild boar, deer etc. were used. Wild boar tusks were set in antler sleeves and used as adze.

Development of Maglemosian

As a result of detailed research, Maglemosian culture is divided into five progressive chronological stages. The most significant development is found in the microliths, axes, cores and in the ratio of flake to blade. Ancestral form of Maglemosian culture is found in an industry called KLOsterlund, which is dated to 7250-6950 B. C. The industry is named after a place name in Denmark.

1.4.2 Tardenoisian Culture

Tardenoisian culture is named after the site of Fere-en-Tardenois at Aisne, France, discovered by de Mortillet in 1896. The culture has a wide distribution in France,

Germany and the Iberian Peninsula. The culture seems to be concentrated around Mediterranean basin. On the west it spread up to England and on the east up to Poland and in southern part of erstwhile Russia. This is basically a microlithic culture and is devoid of any heavy duty tools like axes and picks. Traces of Tardenoisian culture is found mainly on sandy soil and on rocky surfaces. The settlement sites showed that makers of Tardenoisian culture avoided the necessity of adaptation to dense forest – for which their material culture was not adequate and they lacked heavy equipment. Their main occupation was fishing, hunting and collecting. Some kind of shelter in the form of wind break was evident in some areas and they sometimes lived in pits. General preference was open air. Tardenoisian men lived through pre-Boreal, Boreal and Atlantic periods. Soil of the areas where they lived was not suitable for agriculture, so hunting gathering way of life continued for a long time in the area.

Material Assemblages of Tardenoisian Culture

No wooden object has survived from the Tardenoisian culture. A few bone fragments, broken at both ends have been found. Microliths were hafted on them and used. Other bone objects were in the form of pins and points.

Microlithic tools

The only objects to survive in any quantity are microliths made on stone, mainly flint. The industries consist of tiny stones chipped into forms of geometric shapes, such as, triangle – equilateral, isosceles or scalene, little crescents or lunates and at a later date, trapezes. Tools are within 3cm in length. They are mostly fine, thin and narrow blades. Large numbers of fluted cores are found. These were formed because blades were removed from them. A technique called notch technique was used for blunting the backs of the blades. Blades were an important component of Tardenoisian culture and were utilised as knives and scrapers and more rarely as saws and awls. Scrapers are a little bigger in size than the blades and there are a variety of scrapers found. Tardenoisian tools are both of simple and geometric varieties. Geometric types are trapeze, triangle and crescent. Blunting of the back is very common. These were meant for hafting and making composite tools.

Development of Tardenoisian Culture

The development of Tardenoisian culture is found in another microlithic industry known as Sauveterrian. The latter culture had a direct link with the Upper Palaeolithic culture, of the region. Origin of Tardenoisian is rooted to Upper Palaeolithic culture through Sauveterrian culture. Tardenoisian culture is divided into three main developmental phases; Phase I or lower Tardenoisian, Phase II or typical Tardenoisian and Phase III or final Tardenoisian. The sequential nature of development is found at site Le Roc Allan in France. Tardenoisina culture is found at Le Roc Martinet at Sauveterre-la-Lemance in France strigraphically lying over a Sauveterrian industry and is having a direct link with the Aurignacian culture of Upper Palaeolithic of Europe. The best radio carbon date so far obtained for Sauveterrian culture is 7045+106 B. C. and date for Lower Tardenoisian is 5400+350 B. C.

1.5 POST-PLEISTOCENE/ POST- GLACIAL/ EARLY HOLOCENE ECOLOGY

Forest ecology

North of Alps and Pyrenees, the zone later occupied by the expanded temperate forest, was initially a cool or cold corridor bounded on the north by Baltic ice cap and on the south by glaciers of Alps and Pyrenees. It was a zone of tundra park land and of open steppe, warmed only by the currents of Atlantic and the Mediterranean. As conditions ameliorated, temperate deciduous forest grew up by c. 10,000 – 9000 B. C. This gradually became an area of high biomass with a high edible productivity exploited by numerous herds of small herbivores and probably broken up into a mosaic of small productive Mesolithic territories. The change in the environment is already discussed.

The birch pine forest of early Boreal phase quickly gave way to thick mixed forest, reaching a climax in dense oak, hazel, alder, lime and elm forest in the warm wet phase of the-Post glacial climatic optimum between 6000 and 4000 B. C. This canopy was mainly made up of deciduous plants and gave rise to characteristic structure. This depended on the annual loss of leaves of the trees in autumn and without any growth of fresh green for three to five months during the long, snowy winter. Ground layer was covered by detritus formed of dead and decaying leaves and trunks and dominated by large quantity of fungi, mosses and liverworts, most of which were edible and available throughout the year. Above the ground layer rose up the field layer of herbaceous plants and strands of grasses and vegetatively propagating roots and tuber plants. The productive field layer of roots, tubers, bulbs and rhizomes were covered by shrub layers of hazel, berry bearing shrubs up to 15 feet height. The structure of the forest canopy was completed by the tree crowns of oak, elm and ash rising to about 25 to 100 feet. It was broken only by outcrops, rivers, lakes, swamps and marshes. The rich ground cover of plants also attracted such herbivorous grazing animals as deer, auroch, and boar in large number. Mesolithic people who lived in the forest took advantage of the vast quantity and variety of seasonal vegetal food, especially, roots, tubers, fruits and nuts. They hunted the grazing animals. The large number of water bodies provided with edible aquatic resources. Wide range of fishing equipment, bone hook, fiber made lines, leister prongs, fish traps, weirs, and fish nets and dugout canoes provided evidence for utilisation of aquatic resources. They lived in the wooded area and took advantage of the forest with the heavy duty tools and with fire.

Open Grassland Ecology

Mediterranean is considered as climatic and ecological buffer zone. Proximity to equator and distance from ice cap and ameliorating influence of the sea fashioned the climate of this region during Post Pleistocene time. The region is marked with the continuity of stone industries from the Palaeolithic into Mesolithic.

Between 10,000 to 7000 B. C. the cool and temperate zone at the head of the Adriatic and Franco-Ligurian Sea was gradually colonised by warmer species of plants. Birch pine gave way to juniper, pine and oak. Mediterranean evergreen and drought resisting flora gradually expanded from southern Iberia, southern

Greece, southern Italy and south Balkan. The moderate annual rainfall and a late summer drought of severe proportions at the sea level limited coastal woodlands to mainly xerophytic and evergreen tree species, interspersed with strands of flowers, grasses, legumes and herbs. Much of these is directly edible and could be harvested throughout the year. Edible root plants like onion, leek and garlic were available. European subsistence during Mesolithic in these areas was based on gathering of pulses, bulbs, grass seeds and nuts in combination with fishing, fowling and hunting of ovicaprids (sheep and goat), deer and auroch. Microliths used as tips for arrows and as knives and scrapers helped the Mesolithic folk to cope with the open grassland environment.



Fig.1.5: Reconstructed view of a Mesolithic man of Europe (Source: wesleyjohnston.com)

1.6 SUMMARY

Mesolithic is a transitional period between Paleolithic on the one hand and Neolithic culture on the other. This culture flourished in Holocene or recent epoch. In Europe, the environment changed gradually during early Holocene period until the climate and environment became same as we find in Europe at present. Prehistoric man continued with subsistence quite similar to those of Palaeolithic men. This meant that they were still hunting and gathering food for their livelihood but there was a vast change in the mode of subsistence in the Mesolithic culture. They became quite specific about the animals they hunted and plant food they collected. To this was added two new activities, fishing and fowling. Most important feature of Mesolithic culture of Europe is the peoples' adaptability to changing environmental condition with their tools, technology and culture. They formed a kind of ecological niche in the specific environment they lived in.

Suggested Reading

Brown, J. A. 1889. *On the Continuity of the Palaeolithic and Neolithic Periods*, Journal of the Anthropological Institute of Great Britain and Ireland. 18: 134 – 139.

Clarke, David L. 1979. *Analytical Archaeology: Studies in Archaeology*. London: Academic Press. Pp. 207 – 262.

Clark, J. G. D. 1977. *World Prehistory in New Perspective*. Cambridge: Cambridge University Press. Pp. 11-115.

Lubbock, J. 1865. *Prehistoric Times*. London: William and Norgate.

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Sample Questions

- 1) Definition Mesolithic culture.
- 2) What is the history of development of the term ‘Mesolithic’?
- 3) What is palynology? bring out the importance of the subject in understanding Post-glacial environment of Europe?
- 4) What changes took place in the vegetation history of Europe during Post Pleistocene period.?
- 5) What change took place at the level of geography of Baltic Sea?
- 6) What were the major tool types of Mesolithic culture in Europe?
- 7) What is a microlith?
- 8) Name some of the microlith types of Mesolithic culture of Europe.
- 9) What technique was employed in making the microliths?
- 10) What other tool types are found in Mesolithic culture in Europe?
- 11) Discuss how the stone axes and adzes were made?
- 12) Describe the material culture of Maglemosian culture.
- 13) Point out the special features of Maglemosian culture.
- 14) What are the characteristic features of Tardenoisian culture?
- 15) Tardenoisian is a microlithic culture. Justify the statement.
- 16) Give an account of the development of Mesolithic culture of Europe.
- 17) Discuss why Mesolithic culture in Europe reflects the dynamicity of environmental Adaptation.

UNIT 2 INDIAN MESOLITHIC CULTURES

Contents

- 2.1 Introduction
 - 2.2 Meaning and Significance of Mesolithic
 - 2.3 Discovery of Mesolithic Tools
 - 2.4 Nature of Archaeological Sites
 - 2.5 Brief Description of Major Mesolithic Sites of India
 - 2.6 Summary
- Suggested Reading
- Sample Questions

Learning Objectives



Once you have studied this unit, you should be able to:

- describe the newly adapted culture and environment;
- write about Mesolithic tools and Archaeological sites; and
- discuss about the different sites of Indian Mesolithic.

2.1 INTRODUCTION

Human Past or History is divided into three main periods, namely, 1) Stone Age, 2) Bronze Age, and 3) Iron Age. These are not simply technological stages implying that tools and weapons were made of stone during the Stone Age, of bronze during the Bronze Age, and of iron during the Iron Age. These Ages imply much more than technology. They imply subsistence economy or ways of acquiring food, social organisation, including caring for the weak, sick and old, mode of disposing of the dead, art, and other aspects of life.

Stone Age is divided into three periods, namely, 1) Palaeolithic or Old Stone Age, 2) Mesolithic or Middle Stone Age, and 3) Neolithic or New Stone Age. The word lithic is derived from the Greek lithos, meaning stone. Palaeolithic means Old Stone Age, Mesolithic means Middle Stone Age, and Neolithic means New Stone Age.

2.2 MEANING AND SIGNIFICANCE OF MESOLITHIC

Mesolithic or Middle Stone Age was a much shorter period than Palaeolithic, having lasted from over thirty thousand years in Sri Lanka and parts of Africa to only about ten thousand years in India and West Asia. Mesolithic period has enormous culture-historical importance in Old World prehistory. The technological hall mark of this period are tiny stone tools or 'microliths'. In addition, the Mesolithic people also used non-microlithic tools made of flakes and blades.

Mesolithic people made a number of technological innovations like bow and arrow for hunting; querns, grinders and hammer stones for grinding and

pulverising plant foods like roots, tubers and seeds; and regular use of fire for roasting meat, tubers, etc. They created a large volume of art in the form of several thousand paintings and engravings, which not only tell us about their aesthetic taste but also about their capability for innovating new technological elements, modes of subsistence economy, items of material culture, social organisation and religion.

Meaning and Types of Microlith

The term 'microlith' is strictly to be applied only to tools made on microblades or bladelets (having a maximum length of 50 mm and a width of 12 mm) or occasionally on small flakes, by blunting one or more margins by steep retouch. Microliths comprise non-geometric forms like rectangular blunted back blades and points, and geometric forms like crescents or lunates, triangles and trapezes. Microliths were too small to be used as tools individually; instead, they were used as components of tools and weapons by being hafted in bone, wood or reed handles and shafts. A groove was cut in the handle or shaft, and a number of microliths were arranged serially into it and were glued together by a natural adhesive like gum or resin. Microblades were intentionally blunted on one edge to prevent the cutting of the haft and thereby loosening of the microliths during use of the tool or weapon.

Function of Microliths

Microliths were used as tips and barbs of arrowheads and spearheads, for forming the cutting edge of knives, sickles, daggers and harpoons. Discoveries of hafted microliths from many excavated sites in Europe, the Near East, Africa, Australia and India, as also their depiction in central Indian rockshelters, testifies to the use of microliths in this manner.

Other Tool Types of the Mesolithic Period

In addition to microliths, Mesolithic people used a variety of non-microlithic tools made on flakes, cores and blades. These comprised choppers, scrapers, notched flakes, borers and points, made on cores, flakes and blades.

2.3 DISCOVERY OF MESOLITHIC TOOLS

Work of A.C.L. Carlleyle

The earliest discovery of microliths and other Mesolithic tools was made by A.C.L. Carlleyle, an Assistant to Alexander Cunningham, founder Director General of the Archaeological Survey of India (ASI).

Carlleyle was the first person to discover microliths, rock paintings, pigment pieces with marks of grinding, human skeletons, animal bones, ash, and charcoal pieces in rockshelters in Mirzapur District of the Northwestern Provinces of Agra or Oudh (present Uttar Pradesh). He also discovered paintings depicting scenes of wild animals being hunted with spears, bows and arrows and hatchets, and living floors containing hearths with ash, charred animal bones. This was the first discovery of the paintings portraying the Mesolithic way of life.

J.C.Cockburn, Rivett-Carnac, and Robert Bruce Foote

Subsequently, discoveries of microliths and bone tools were made by J.C. Cockburn and Rivett-Carnac in rockshelters as well as at open-air sites in the

same area. Robert Bruce Foote, Father of Indian prehistory discovered microliths in Kurnool caves and several other sites in South India as well as at sites on the Sabarmati river and away from it in Baroda, Sabarkantha and Mehsana Districts of Gujarat.

Thus Mesolithic sites are found almost all over India, except the northeast but including the Indo-Gangetic plains where stone, the raw material for making tools and weapons is scarce. This shows that Mesolithic hunter-gatherers had colonised the whole country. This had happened for the first time during the entire prehistoric period of two million years.

2.4 NATURE OF ARCHAEOLOGICAL SITES

Archaeological sites are of two types: primary and secondary. Primary sites are those where cultural material is found in its original context and relatively undisturbed condition. In such a context organic material is relatively better preserved. Secondary sites are those where cultural material from spatially, culturally and chronologically unrelated contexts is found buried in geological deposits after being transported by fluvial agency. However, as most Mesolithic sites belong to Holocene or Recent period and are only a few thousand years old, archaeological material on them is found in a primary context either on the surface or buried in open air or cave/rock shelter habitation deposits. At such sites biological and dating materials are better preserved. For the reconstruction of life ways, environment and dating, habitation sites are ideal.

State-wise names of sites excavated in India:

Rajasthan: *Tilwara; Bagor ; Ganeshwar*

Gujarat: *Langhnaj; Akhaj; Valasana; Hirpura; Amrapur;. Devnimori; Dhekvadlo; Tarsang*

Maharashtra: *Patne; Pachad; Hatkhamba*

Uttar Pradesh: *Morhana; Lekhahia; Baghai Khor; Sarai Nahar Rai ; Mahadaha; Damdama; Chopani Mando; Baidha Putpurihwa*

Madhya Pradesh: *Pachmarhi; Adamgarh ; Putli Karar; Bhimbetka; Baghor II; Baghor III; Ghagharia*

Bihar: *Paisra*

Orissa: *Kuchai*

West Bengal :. *Birbhanpur*

Andhra Pradesh: *Muchatla Chintamanu Gavi; Gauri Gundam*

Karnataka: *Sangankallu*

Kerala : *Tenmalai*

The above excavated sites have provided us a vast amount of information regarding technology, material remains, burial systems, anatomical remains, customs associated with burial, art, and charcoal for dating of the sites.

The diet of the Mesolithic people consisted of leaves, flowers, fruits, seeds, roots, and tubers, flesh of wild land and water animals, and birds.

We have nearly sixty radiocarbon and eight Thermoluminescence (TL) dates from over twenty sites. These show that the Mesolithic people lived between 10,000 and 2000 B. P. In the later part of their history they came into contact with rural and urban people. As a result of this contact the nomadic and hunting-gathering way of life underwent modification. The majority of the hunter-gatherers got settled, took up agriculture and other sedentary occupations and were assimilated into caste-based Hindu society.

2.5 BRIEF DESCRIPTIONS OF MAJOR MESOLITHIC SITES OF INDIA

Teri

Teri sites are located on red-coloured dunes, along the eastern coast of Tamil Nadu. They were first discovered by Robert Bruce Foote, Father of Indian Prehistory, towards the end of the nineteenth century. These dunes were formed during the Terminal Phase of the Last Ice Age or Upper Pleistocene, when sea level had fallen several metres lower than the present one. Because of lowered sea level large areas were exposed along the coast, and sand from exposed beaches was blown by wind and deposited along the coast. Hunter-gatherer groups occupied the surfaces of the dunes to exploit the marine resources of the shallow sea and vegetable resources of the trees and plants growing in the vicinity of the beach. During the post-glacial period when temperatures started rising and rainfall increased, dunes became consolidated and were weathered to a reddish colour. Archaeologists call them *teris* because they are known by that name in the local Tamil language. While the biological material on dune surfaces has decayed due to weathering, large quantities of stone artifacts and their manufacturing debris have survived.

The *Teri* sites, particularly Sawyerpuram, one of the largest, were explored by anthropologist, A. Aiyappan in the early 1940s. Later, in 1949, F.E. Zeuner, Professor of Environmental Archaeology at the Institute of Archaeology, London University examined the dunes, studied the red weathering, and collected stone artifacts from them. Zeuner took the artifacts with him to England where they were studied by archaeologist, Bridget Allchin. Together they published a comprehensive article on them, along with a reasoned interpretation of the climate during and after the formation of the dunes and their occupation by man. Their interpretation continues to be valid to this day.

Sarai Nahar Rai

The site of Sarai Nahar Rai is located in the plain of the Sai river, a tributary of the Gomati, in Pratapgarh district of Uttar Pradesh. The flat ground outside the village was used by the farmers for threshing of harvested crop by trampling under oxen hooves. Because of this activity over many years, stone artifacts, animal bones, and human skeletons buried below the surface got exposed and came to the notice of the village people. The news spread by word of mouth and people of surrounding villages started visiting the place out of curiosity. The news reached the ears of Dr. Ojha, a lecturer in the Department of Ancient Indian History, Culture & Archeology, Allahabad University and Acting Director of U.P. State Archaeology Department. Through Dr. Ojha, it came to the notice of G.R Sharma, Head, of Archaeology department, Allahabad University, who carried

out an excavation at the site and discovered a large quantity of stone artefacts, clay-coated fresh water shells, animal bones, and 14 human skeletons in excellent state of preservation. The skeletons have been scientifically studied by Prof. Kenneth A.R. Kennedy of the Cornell University, Ithaca, New York, U.S.A., and his colleagues and students.

Prof. Sharma organised a systematic exploration in Pratapgarh and neighbouring districts for locating more sites similar to Sarai Nahar Rai. In the course of the next few years more than 200 sites were brought to light. The most important of these are Mahadaha and Damdama in the same district, Chopani Mando in Allahabad district, and Baghor II, Baghor III, and Ghagharia in the neighbouring Sidhi district of Madhya Pradesh. All these sites have been excavated by the Allahabad University, those in Sidhi district, jointly with the University of California, Berkeley, U.S.A. The excavations have thrown a flood of light on the earliest human colonisation of the Ganga plains. Human skeletal material from these sites has been studied by Prof. Kenneth A.R. Kennedy and his colleagues and students like J.R. Lukacs, J. Chiment, T. Disotell, D. Meyers, and N.C. Lovell, and animal remains by P.K. Thomas and P.P. Joglekar of the Deccan College, Pune.

Langhnaj

The site of Langhnaj is located on one of the numerous sand dunes in Mehsana district of Gujarat. These dunes were formed during the hyper-arid climate of the Upper Pleistocene and were stabilised after the monsoon revived during the Terminal Pleistocene. The dunes form a rolling topography, and are clustered around a depression which gets filled by runoff from the dunes during the monsoon and retains till the next monsoon. It is a source of water for humans to wash their clothes and for livestock to drink and be bathed. As the dunes have a thick layer of soil formed during the sub-humid climate, they support a thick vegetation of thorny plants, bushes and grass which provides food for grazing animals. Leaves and fruits of trees and bushes like *ker* (*Capparis decidua*), *kumat* (*Acacia senegal*), *khejri* (*Prosopis spicigera*), *kheenp* (*Leptadenia pyrotechnica*) provide food for humans. Because of the pressure of human population wildlife has considerably declined but until nilgai is still seen and herds of blackbuck (*Antelope cervicapra*), chital (*Axis axis*), and gazelle as well as wild boar, jackal, fox, mongoose, porcupine, hedgehog were quite common until a few decades ago. Their flesh was a rich source of protein-rich and their skins were probably used for clothing and covering musical instruments like drums of various sizes and shapes. With assured source of food and water, Mesolithic human groups occupied almost all the dunes as testified by the presence of stone artifacts, their manufacturing debris, querns, grinders, hammerstones, and bones of wild animals.

Langhnaj was excavated by the eminent archaeologist H.D. Sankalia on several occasions between 1941 and 1949. He invited his colleague, Irawati Karve, Professor of Anthropology, and G.M. Kurulkar, Professor of Human Anatomy at the Govardhandas Medical College, Mumbai, to join him in the excavation to excavate the fragile human skeletons carefully. Besides the stone tool industry of microliths and non-microlithic stone tools, the excavation yielded fragments of querns and grinders, at least one perforated disc, small sherds of hand-made pottery, bone and dentallium shell beads, a copper knife in the middle level of the deposit, fragments of wheel-made pottery, an iron arrowhead and pieces of iron, and charred animal bones, including a scapula or shoulder blade of a rhinoceros.

Bagor**a) *Environmental Setting***

Bagor is a large village on the left bank of the Kothari river, a tributary of the Banas, 25 km west of the town of Bhilwara in Rajasthan. The prehistoric site lies on a large and prominent sand dune, locally known as Mahasati, on the left bank of the Kothari, a non perennial river, about 1 km east of the village. Bagor is located in the centre of the undulating rocky plateau Mewar east of the Aravalli hills. Much of the plateau is covered by an open woodland of *khejri* (*Prosopis spicigera*), *babul* (*Acacia arabica*), *dhak* (*Butea frondosa*), and *khajur* (*Phoenix sylvestris*), and bushes of *kair* (*Capparis decidua*) and *ber* (*Zizyphus jujuba*). Annual rainfall of 60-70 cm occurs mostly during July-September. Extensive tracts of rocky land - what Kipling called the 'stony pastures of Mewar' provide adequate pasture for cattle, sheep, goats and camels. Pastoralism is an important part of the rural economy. Wild life comprising blackbuck, nilgai, wild boar, jackal, fox, monitor lizard, partridge and sand grouse was plentiful fifty years ago used to be common even today.

b) *Site and excavation*

The site, which covers an area of about 10,000 Sq. m., was excavated by V.N. Misra from 1973 to 1977. The dune rising to a height of six metres above the level plain, provides a commanding view of the surrounding countryside. This must have favoured its selection for occupation by prehistoric man. Our estimates, based on the excavated area, show that an area of at least 80 x 80 m or well over 6,000 sq. m. was occupied from the beginning of the settlement.

The habitation material occurs throughout within the sand, thus attesting that the dune was under active formation when prehistoric man occupied it. Five layers were recognised in the 1.5 m habitation deposit. Cultural material was found in the top three of them.

c) *Cultural Sequence*

The excavated deposit reveals an occupation of over a period of five millennia. During this period a culture based on stone technology and hunting-pastoral economy underwent continuous evolution as evidenced by the appearance of new material traits and the decline and disappearance of older ones. The most abundant material which continued all through the occupation was the microlithic industry. No stratigraphical and cultural break is seen in the occupation. On the basis of changes in material culture three phases of occupation can be recognised.

In Phase I (c. 5000 – 2800 B.C.) microliths and animal remains were most profuse, and economy was based on a combination of hunting-gathering and herding. People lived in huts with stone-paved floors and wattle walls, or sheltered behind wind breaks. The dead were buried within the settlement in an extended position laid out east-west.

In Phase II (c. 2800 – 600 B.C.) stone artefacts and animal bones begin to decline in quantity, but copper tools and pottery make their appearance. Pottery is hand-made with incised decoration. The dead were still buried in the habitation area but in a flexed position and oriented east-west. The graves were furnished with clay pots, metal tools, ornaments and food offerings. Increased material

prosperity implies a more secure and stable economy and greater reliance on animal domestication.

In Phase III (c. 600 B.C. – 200 A.D.) occupation was restricted to the central part of the mound. Microlithic industry declined greatly and the animal bones were scarce and highly fragmented. Iron tools come into use, and pottery was more plentiful and entirely wheel made. Glass beads were added to the repertoire of ornaments; kiln-fired bricks and tiles were used alongside stone in structures.

d) *Microlithic Industry*

The flaked stone industry is unusually rich, with several hundred thousand worked pieces, and comprises the most common material at Bagor. No other site in India has yielded microliths in comparable numbers. The finished tools and their manufacturing debris are distributed more or less uniformly all over the inhabited area showing that the tools were manufactured within the settlement and that every family or social unit may have produced them for its requirement. The highest density is found in Phase I, which contains 45 to 55 %, of the material. It declines progressively in phases II and III. No marked typological or technological change has been noticed from lower to upper levels. Quartz and chert were the most common raw materials used. Although quartz predominates in the waste material, majority of the finished tools are made of chert. The greater use of quartz was no doubt due to its ready availability in the nearby quartz veins in schistose rocks.

The lithic industry is truly microlithic in that it is based on the mass production of microblades and their conversion into various microlithic forms. Non-microlithic tools, such as scrapers and burins, made on cores and flakes, are rare. More than forty types have been recognised of which the most common are: 01. Blade with flat retouch; 02. Blunted back blade; 03. Obliquely truncated blade; 04. Obliquely truncated and blunted back blade; 05. Triangle, mainly scalene and isosceles, 06. Trapeze; 07. Transverse arrowhead ;08. Rhomboid 09. Crescent; 10. Point

Besides these there are also some tools made on flakes and cores such as side, end, and round scrapers, and burins.

The microlithic industry is essentially geometric and appears to be most suitable for hunting. Technologically, a distinctive feature of the industry is rarity of the use of crested guiding ridge technique for removal of blades. Although occasional tools measure 40 mm or more in length, the majority are between 15 and 20 mm, and some measure between 5 and 10 mm only. Most microliths, particularly crescents, triangles are very carefully and retouched perfectly symmetric in form. It is indeed a puzzle how such tiny pieces measuring less than 10 mm could have been hafted and used. Another notable feature of the industry is the presence of petit tranchet or transverse arrowheads in good numbers. This type is rare in other Indian microlithic industries. The Bagor industry is characterised by a very high standard of craftsmanship. The only microlithic industries which can compare with it in typology and technology are those of the Morhana Pahar group of rockshelters in Mirzapur district of U.P.

e) *Copper Objects*

Apart from fragments, five well-defined objects were found among offerings with the two burials of Phase II. These include one spearhead, one thin rod, and

three arrowheads. The spearhead is broken at the basal end. Both faces have a distinct mid rib and the sides taper gently towards the tip. The rod is 10.3 cm long, has a diameter of 2 mm., and is thicker near its lower tip, and the upper tip is folded to form a loop. It could have been used as an awl or to apply *kohl* as eye decoration.

The arrowheads are 22-25 mm long, 19-24 mm broad and 1.5 –2 mm thick. Two of these have a concave crescentic base and the third has a barbed base. All three are provided with two holes near, and parallel to the base. These must have been meant to secure the arrowhead to the shaft with the help of a string, metal wire or rivets.

The arrowheads are of considerable typological and cultural interest. Similar specimens but without holes are known from a number of Harappan sites in north Rajasthan, Sind, Punjab and Baluchistan, and from the Chalcolithic site of Azad Nagar in Indore city in M.P. There is no evidence to show that the people of Bagor knew metallurgy and had themselves produced the arrowheads. Most probably they obtained them and other metal objects from itinerant metal smiths who also catered to the metal requirements of the Harappan and Chalcolithic people.

f) *Iron Tools*

Besides many amorphous bits of iron, two well-preserved arrowheads came from the deposit of Phase III. One of them is socketed and the other tanged.

g) *Pottery*

Isolated bits of pottery - 1 to 2 cm in size – appear almost down to the bottom of the deposit but they are too small to indicate any shape, and are certainly derived from upper levels by infiltration. Thus Phase I is best regarded as devoid of pottery. However, as this level is richest in microlithic industry and animal remains, absence of pottery in Phase I does not indicate a lower intensity of occupation. It is only in Phase III that pottery appears in reasonable quantity.

Two main fabrics, named A and B, can be recognised; fabric A is characteristic of Phase II while fabric B is predominant in Phase III. A Ware is made of gritty and micaceous clay. Both surfaces of the pot are treated with a slip of fine clay, and in many vessels the slipped surface is burnished. Bright red slip has faded away in most cases and survives as dull brown colour. Firing has been done at a low temperature, rendering the pots highly fragile. There are no clear striations, and most pots seem to have been made entirely by hand.

Over a dozen complete pots were found which, with one exception, were associated with three burials. They include broad-mouthed jars, small *lota*-like pots, large shallow basins, smaller and deeper basins, and bowls in a range of sizes. There are also a few miniature vessels types which might have been used for ritual purposes. Two large, deep bowls have a pair of holes on the sides, suggesting either that they were suspended by strings for carrying food, for protecting it from pests within the home or for tying on a lid.

Though none of the complete pots is decorated, many sherds bear designs which are all incised and include groups of parallel bands, chevrons, herring bone patterns, criss-crosses, groups of short strokes, and finger nail incisions.

Although absence of the use of potter's wheel and inadequate preparation of clay and low temperature firing, show a simple ceramic technology, the surface treatment and forms are quite sophisticated. Indeed, several carinated forms suggest copying in clay of shapes natural to metal, and it is clear that Bagor pottery belongs to a mature tradition with a long evolution elsewhere.

Phase III pottery or B ware is very different from Phase II pottery and does not develop from the latter. It is entirely wheel made. Firing in this ware has been done at a higher temperature and pots are thinner, lighter and stronger than those of the A ware. They have a brick red surface and a reddish or bluish core. The common shapes are large jars and small cylindrical pots, and bowls. Decoration in this ware is rare and the few designs present consist of simple incisions. In general the pottery of Phase III is utilitarian and lacks any aesthetic appeal. The pear-shaped vessel and the bowl with flat base are typical forms of Shunga-Kushana period. They are very common in the early historic pottery from Balathal in Udaipur District. Therefore Phase III can be described as Early Historic.

h) *Structures*

In Phases I and II the only structures are large floors made of schist slabs and pebbles. In some places the stones appear to be aligned in a circular fashion with diameters of 3 to 5m., which may represent the outer periphery of circular huts or windbreaks. At several places small areas, 40 to 70 cm across, were paved with tightly packed stones, and were associated with concentrations of animal bones. These features might represent butchering floors for although there were plenty of charred bones, no hearths or fire places. In Phase III kiln-baked brickbats and tiles were also used in construction.

i) *Disposal of the Dead*

Five burials were found; one in Phase I, three in Phase II, and one in Phase III. All of them were within the settlement, a practice now well known to have been in vogue at Mesolithic sites in western and central India, and the Ganga plains, and in the Neolithic cultures of Kashmir and south India, and the Chalcolithic cultures of Maharashtra. In Phase I the body was laid in an extended position with lower left arm resting over the trunk and with its head towards the west. No grave goods were offered although a few animal bones found in the vicinity might be associated with the burial. In the three burials of Phase II the body was laid in a flexed position, with arms and legs folded as in a sleeping pose, and with the head to the east. How far this change in the burial practice signifies a change in the ethnic composition of the community is not possible to say as the skeletons of both phases I and II are too poorly preserved to draw any meaningful conclusions about their physical features. According to Kenneth A.R. Kennedy and John R. Lukacs, who examined the Bagor skeletons for their morphology and dentition, the only skeleton from Phase I (Mesolithic) is an adult female while of the three skeletons from Phase II (Chalcolithic) one is a child, one is an adult female, and one is an adult male. The only skeleton from Phase III is an adult female. However, subsequent examination of a small square object found on the neck of this skeleton showed the object to be a Muslim period coin. For this reason this skeleton appears to be a very late interment and cannot be associated with the cultural material of this phase.

The burials were provided with many offerings in the form of pottery vessels (originally no doubt containing food and water), ornaments, metal objects, and cuts of meat. In one case as many as eight pots were arranged near the head and on the left side of the body; two copper arrowheads were placed on the left side, one of them right on the lower left arm, and a large animal femur lay close to the body. In case of another burial four pots were placed near the feet and on the left side, a spearhead and an arrowhead lay near the head, and an awl or antimony rod (all made of copper) was placed below the abdomen. A broken terracotta spindle whorl was kept near the feet. In addition, thirty-six beads, mostly of banded agate and carnelian but some also of bone were found strewn on the chest and around the neck. The beads, from their position, almost certainly were part of a necklace which was worn by the dead person. With the third burial, that of an 8 to 10 year old child, only a single pot was kept near the head.

The teeth of the Mesolithic specimen were free from any dental pathology. Of the two Chalcolithic specimens for which information is available the adult one had suffered from caries while the child was free from any dental disease.

j) *Stone and Terracotta Objects*

Numerous hammerstones occurred all through the deposit but were more common in Phases I and II. All these bear tell-tale bruising marks in one or more places. They were no doubt used in the manufacture of stone tools and for breaking and splitting open animal bones. Some of the stones are of perfectly spherical shape and bear pecking marks. These were probably used as slingstones. Fragments of shallow stone querns and a number of flat rubbing or upper grinding stones were also found in all levels. The small size of these querns and shallow depressions on them contrast sharply with the large and deep quern so common on Neolithic and Chalcolithic sites. This and their small number preclude a significant role for them in food preparation. In Phase II were also found two perforated stones of the type common at Neolithic and Chalcolithic sites and referred to in the archaeological literature as mace heads, or as weights of digging sticks. The only terracotta object found is a broken plano-convex spindle whorl with its flat surface decorated with a frieze of punctured triangles. It was found associated with a burial of Phase II.

k) *Ornaments*

In Phase I only a few stone beads were found. These are similar to those of Phase II and are likely to have been derived from that level in which beads were very common. They are mostly of banded agate, carnelian and garnet, and are of short tubular and barrel shape. A few tiny bone beads are also present. Reference has already been made to a necklace of stone and bone beads found on one of the Phase II burials. In Phase III glass beads were also used and there were several kinds of stone pendants. Pieces of *geru* or ochre were found throughout the deposit. In the absence of painted decoration on pottery, pigment from these pieces may have been used for decorating the human body.

l) *Food and Economy*

The only direct evidence for reconstructing the subsistence basis of early Bagor are animal bones. These are most common in Phase I, begin to decline in Phase II, and are scarce in Phase III. Most of them are charred and fragmentary showing that meat was roasted on open fires and the bones broken and split open for the

extraction of marrow. The abundance of bones in Phases I and II suggests that animal food was more important in the earlier stages of the settlement. The remarkable correspondence in the distribution of animal bones and microlithic industry confirms that hunting was an important activity in Phase I and to a lesser extent in Phase II as well.

A study of the animal remains by P.K. Thomas (1975) shows the presence of both wild and domesticated species from the very beginning. Domesticated species include cattle (*Bos indicus*), buffalo (*Bubalus bubalis*), sheep (*Ovis aries*), goat (*Capra hircus aegagrus*) and pig (*Sus scrofa cristatus*), and wild ones comprise fox (*Vulpes bengalensis*), mongoose (*Herpestes edwardsi*), nilgai (*Boselaphus tragocamelus*), blackbuck (*Antilope cervicapra*), chinkara (*Gazella dorcas*), chital (*Axis axis*), and hare (*Lepus nigricollis*). D. R. Shah and K.R. Alur, who had examined a part of the faunal collection before Thomas, have also noted the presence of barasingha (*Cervus duvauceli*), hog deer (*Axis porcinus*), wild boar (*Sus scrofa cristatus*, Wagner), jackal (*Canis aureus*), rat (*Rattus rattus*), monitor lizard (*Varanus flavescens*, Gray), river turtle (*Lissemys punctata*, Bonnaterre), and fish.

Thus the subsistence economy of the Bagor people during Phase I was based on a combination of hunting and herding. In phase II a decline in the quantity of animal bones and stone tools would suggest a reduced role for hunting and by implication a greater reliance on food production. Other evidence also points in the same direction. First, the introduction of pottery, metal tools, and ornaments, and richly furnished graves all reflect greater prosperity and a more stable and secure economic basis. It should be noted that constellation of traits is otherwise known only from sites where agriculture is established as a certainty. Secondly, perforated stones found in this phase are often interpreted in the archaeological literature as weights of digging sticks used in primitive agriculture.

In Phase III animal bones are scarce and more fragmentary, thereby restricting their amenability to zoological identification. A corresponding decline in microlithic industry would indicate a further decline in the role of hunting. Iron tools, wheel made pottery, and use of kiln-baked bricks, tiles and dressed stones in structures all suggest that agriculture must have been well established by this time.

m) *Chronology*

Five radiocarbon dates based on bone carbonate samples have been processed by the Tata Institute of Fundamental Research, Mumbai. They suggest that the chronology of the occupation of the site by early men varies from 4,480 B.C. to 2, 110 B.C.

Bhimbetka

a) *Location and Associated Sites*

Bhimbetka is a name of a large hill, located near the tribal village of Bhiyanpur, by the side of the Mumbai-Delhi line of the Central Railway, 30 km north of Hoshangabad and 45 km south of Bhopal. The hill is a part of the deciduous woodland-covered Vindhyan Hills of Central India. The hill, with an area of one sq. km. is topped by disjointed monolithic rocks, which contain at their bases and sides as also of many other rocks on the hill a complex of nearly 800

prehistoric rock shelters and caves, the largest concentration at one site in the world, in Sehore district of Madhya Pradesh. While Bhimbeka is the largest hill in the area, several other hills, like Bhaunrewali, Kari Talai, Vinayaka and Jondra, in its vicinity, also contain shelters of varying sizes. The shelters have been formed by natural erosion of the Vindhyan sandstone of which the hill and the rocks surmounting it as well as away from it are formed. While almost all the shelters contain paintings of prehistoric to medieval periods, a few of them also contain evidence of human occupation in the form of stone tools, pottery, copper and iron tools, beads of stone, steatite, faience and terracotta, other objects, animal remains, and human burials. Evidence of occupation in a few shelters goes back to a few hundred thousand years. Because of the quantitative and qualitative richness of its archaeological wealth, Bhimbetka has been granted the status of a World Heritage Site by the UNESCO.

Bhimbetka, discovered by V.S. Wakankar of Ujjain University in 1957, is a complex of nearly 1000 caves and rock shelters in the forested Vindhya hills, 45 km. South of Bhopal and 35 km. North of Hoshangabad in Madhya Pradesh. Over 500 shelters contain paintings of Stone Age to Late Medieval Period, and some of them also contain habitation deposits of Lower Palaeolithic to Early Historic period. A number of the shelters were excavated by V.S. Wakankar and V.N. Misra, from 1973 to 1977. The excavations yielded rich cultural evidence of the Lower Palaeolithic to Early Historical periods and biological evidence of the Mesolithic period.

b) *Environmental Setting*

What is the explanation of the richness of this archaeological wealth? Bhimbetka and its surroundings receive annual rainfall of about 1000 mm. Because of this the hills are covered with dense vegetation. The forest in the valley as well as on the slopes and tops of the hills contains numerous trees, plants and creepers which have edible leaves, flowers, fruits, seeds, roots and tubers. The hills also harbour many herbivores which are a large source of meat. There are a number of perennial springs and seasonal streams which are a source of assured water supply for animal and human populations of the area. Numerous caves and shelters provide ready-made protection against the elements. The hills have an inexhaustible supply of fine-grained quartzite for making tools. A few kilometres south of Bhimbetka there are exposures of Deccan lavas which contain veins of quartz and siliceous minerals from which Mesolithic people made their tools and weapons. Blessed with such abundance of all essential resources, Bhimbetka was indeed a prehistoric paradise, and it is therefore no surprise that the inhabitants of the shelters had enough leisure to produce one of the richest and most beautiful corpus of prehistoric art in the world. The site was jointly excavated by Dr. Wakankar and V.N. Misra..

c) *Wakankar's Excavation*

V.S. Wakankar excavated seven shelters and V.N. Misra excavated three. In one shelter, IIF-24 or Auditorium Cave, Wakankar found evidence of Early Acheulian culture and Pre-Acheulian chopper-chopping tools. In another shelter, IIIA-28, he found a boundary wall made of large boulders to enclose the Acheulian habitation area. In several other shelters, he came across evidence of Middle Palaeolithic, Upper Palaeolithic, Mesolithic, Early Historic and Medieval period occupations. In some shelters he found human bones which he believed were fossilised.

d) *V.N. Misra's Excavation*

V.N. Misra excavated three shelters: IIF-15, IIF-23, and IIB-33. Of these, IIF-23 is the most Mesolithic. The Mesolithic habitation area was partitioned into two by a wall of stone slabs and boulders. While Pre-Mesolithic industries were all made of quartzite. Mesolithic assemblage was made entirely of cryptocrystalline siliceous material. Bones collected from a secondary burial were placed on the floor of the shelter. Shelter IIF-13 produced a lot of ash from a fireplace, small pieces of wheel-made pottery and microliths and other stone tools.

Shelter IIB-33 had the thickest habitation deposit of 1.5 m, and it belonged exclusively to the Mesolithic. The deposit yielded a highly developed geometric microlithic industry, many upper grinding stones, a few ground bone and antler pieces, and some pieces of ground red ochre. All these were associated with several primary burials found one above the other. The deposit also produced plenty of charcoal which was used for dating by PRL and BSIP laboratories. A number of dates ranging from 2000 to 8000 B.P. were obtained from this charcoal.

e) *Contact between Mesolithic Hunter-gatherers and Chalcolithic Farmers*

All the shelters yielded evidence of contact of Mesolithic hunter-gatherers with settled farmers. This evidence consists of copper tools, painted pottery, stone, steatite, faience, terracotta, agate and carnelian beads, and bangles of shell, porcelain and glass.

f) *Rock Paintings*

In addition to its rich and varied evidence of human occupation during the Mesolithic period, Bhimbetka is justly famous for its spectacular wealth of rock paintings. Almost every shelter on Bhimbetka hill contains some paintings. The same is broadly true of shelters on the other hills. A few shelters like the Zoo Rock, Wild Boar and Crab, IIC-9, and Rangmahal are particularly rich in paintings.

The paintings occur on the walls and ceilings and in the niches or hollows in rock walls. They are made in red, white, yellow, green, and, rarely, black colours. These colours were produced by grinding naturally occurring pigment nodules into powder. The powder was mixed with plant sap or animal blood to form the pigment for creating the paintings.

g) *Subject Matter of Paintings*

The paintings depict a large variety of wild animals which comprise oxen, gaur, buffalo, antelopes like nilgai, blackbuck, deer like barasingha, sambhar, chital, hog deer, and barking deer, elephant, rhinoceros, tiger, leopard, hyena, wolf, jackal, fox, porcupine, monkey and rat. They are portrayed as sitting, standing, walking and running individually or in groups. The animals are realistically drawn and are characterised by vitality and dynamism. Next to them are scenes of hunting of animals by using spears, sticks, bows and arrows, traps and snares as also of fishing and digging of rats, tubers and roots, and collection of honey. Small animals are collected in bags or baskets, and carried to camps with the bag slung over the shoulder or back. There are also scenes of sanctified animals like the wild boar which is depicted in several shelters.

h) *Importance of Bhimbetka*

Bhimbetka is thus an archaeological site of exceptional importance in terms of the record of prehistoric technology, economy, biology, and art. When V.N. Misra and his team conducted excavation at the site in the 1970s, access to it was very difficult. The team had to walk over uneven and steep rocks and boulders, and close to deep ravines. Misra's team had to transport their camp and digging equipment on labourers' heads and in bullock carts for which track had to be made every time by dislodging boulders, breaking rocks, and filling depressions with rubble and mud.

Because of its artistic treasure the site received wide publicity through national and international news channels, news on radio and TV, articles which Wakankar and Misra wrote for English, Hindi, and Marathi newspapers and magazines, hundreds of visitors from Bhopal and nearby towns, and visits of a large number of Indian and foreign archaeologists to our excavations. The visit of the charismatic Prime Minister Rajiv Gandhi and Smt. Sonia Gandhi to Bhimbetka in 1984 further boosted its image. Following this visit the Madhya Pradesh Government built a road connecting the site to Itarsi-Bhopal highway, right up to the top of the Bhimbetka hill, a guest house and essential facilities for tourists. In 1978 V.N.Misra organised an international symposium on Indo-Pacific Prehistory at Pune. Nearly a hundred archaeologists from India and over 25 foreign countries who participated in the excavation also visited Bhimbetka. This visit further boosted the national and international image of the site.

The central and M.P. Govt. have all along been very supportive of our research and our efforts to bring Bhimbetka to the notice of the national and international archaeological communities and the public. Even while V.N. Misra's team were excavating at the site, the Archaeological Survey of India (ASI) had declared Bhimbetka a site of national importance. The building of infrastructural facilities has boosted tourist traffic to the site.

2.6 SUMMARY

This unit describes the Middle Stone age or Mesolithic cultures, which is in between Palaeolithic and Neolithic cultures. This stage is much shorter when compared to Palaeolithic stage. Mesolithic period is characterised by Microliths or the tiny tools. The diet of the Mesolithic people consisted of leaves, flowers, fruits, seeds, roots, and tubers, flesh of wild land and water animals, and birds. Mesolithic stage in India represented in the following states: Rajasthan, Gujarat, Maharashtra, Uttar Pradesh, Madhya Pradesh, Bihar, Orissa, West Bengal, Andhra Pradesh, Karnataka and Kerala.

Suggested Reading

Agrawal, D.P. J.S. Kharakwal. 2002. *South Asian Prehistory: A Mutidisciplinary Study*. New Delhi: Aryan Books.

Misra, V.N. 2002. *Mesolithic Culture in India*, In, *Mesolithic India*, (V.D. Misra and J.N. Pal (Eds.)), PP. 1-66. Allahabad: Department of Ancient History, Culture and Archaeology, Allahabad University.

Misra, V.N. and Malti Nagar. 2009. *Typology of Indian Mesolithic Tools*, Man and Environment, XXXIV (2): 17-45.

Wakankar, V.S. and R.R.R. Brooks. 1976. *Stone Age Paintings in India*. Bombay: Taraporewala and Sons.

Sample Questions

- 1) Define Mesolithic and mention its chief characteristics.
- 2) List the principal Mesolithic sites of India, their location and names of their excavators.
- 3) What are microliths. Mention their chief types and features. What Non-Microlithic tools are found in Mesolithic cultures?
- 4) Describe the burial practices of the Mesolithic period.
- 5) Give an account of the art of the Mesolithic period.
- 6) Summarise the evidence of contact between Mesolithic hunter-gatherers and their technologically and economically more advanced neighbours.
- 7) Discuss the economic and social consequences of contact between Mesolithic hunter-gatherers and their technologically and economically more advanced neighbours.
- 8) Write short notes:
- 9) (i) A.C.L. Carlleyle; (ii) V.A. Smith; (iii) Robert Bruce Foote; (iv) H.D. Sankalia; (v) G.R. Sharma; (vi) B. Subbarao; (vii) Grahame Clark; (viii) Langhnaj, (ix) Bhimbetka, (x) Bagor, (xi) Tilwara, (xii) Birbhanpur, (xiii) Teri Sites, (xiv) Ppachmarhi (xv) Kanjars, (xvi) Bahelias, (xvii) Bhils, (xviii) Van Vagris, (xix) Birhors, (xx) Chenchus, (xxi) Kadars, (xxii) Kurubas, (xxiii) Kal Belias.
- 10) Discuss the importance of the Mesolithic in human cultural evolution.

UNIT 3 MESOLITHIC ART

Contents

- 3.1 Introduction
 - 3.1.1 When did First Rock Art Evolve?
 - 3.1.2 The Rock Art Sites in India
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 - 3.2.2 Why the Name Bhimbetka?
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- 3.3 Pachmarhi Rock Art
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- 3.4 Adamgarh Rock Art
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 - 3.4.2 The Rock-Shelters and Paintings
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- 3.5 Art on Ostrich Egg Shells
- 3.6 The Cup-marks and Petroglyphs
 - 3.6.1 What are Cupules?
 - 3.6.2 The Antiquity of the Cupules
 - 3.6.3 How were Cupules Made?
 - 3.6.4 Why were the Cupules Made?
- 3.7 Summary
 - Suggested Reading
 - Sample Questions

Learning Objectives



Once you have studied this unit, you should be able to know:

- how do people express ideas through art? ;
- why do people use images to tell stories and to communicate?;
- what did people use to record important events in their lives or history long ago?;
- how has art been used throughout history to tell stories or to show us what people in other times and places considered important?;
- how paintings and drawings help to convey significant ideas and events and how people today understand the past from putting together stories and history from these images?;
- what do you know about the life of these people shown in paintings? When and where did they live? What animals lived when the cave people lived? what did cave people use animals for? What tools did they have? Why do we call them cave people?;

- how are their lives similar to and different from our lives today? Where do we get our information about the cave people?;
- what was the period of the Lower Palaeolithic, the Middle Paleolithic, Upper Palaeolithic, the Mesolithic, Neolithic?;
- how to identify the images of the bison, ibex, ox, stags, mammoths, reindeer, bears, felines, rhinoceros, birds, fish, etc., human images drawn?
- what were the cave artists trying to say?;
- why there were so many animals and not as many people in the paintings?;
- what can the paintings tell us about other aspects of the life of cave dwellers or Paleolithic people?;
- how did mesolithic men of India make these pictures if there were no stores to buy paint and brushes or tools for carving?;
- what colors are prominent in the paintings, and what natural sources might provide these pigments if they didn't have crayons or markers?;
- what challenges cave people might have encountered in painting on cave walls and ceilings- pitch-black darkness, irregular surface of the rocky walls, steepness and height, adherence of the pigment to the surface, etc. ; and
- speculate how the Palaeolithic people overcame some of these challenges- what did they use for lighting?.

3.1 INTRODUCTION

Rock Art or Palaeoart is our ancestors' earliest signature drawn on rock surfaces either on the open cliffs or inside the rock shelters and caves where they lived. It can be seen in the form of rock paintings (petrographs) and / or in the form of engravings, cupules, etc. (petroglyphs). They provide a unique opportunity to understand the origins of human mind and serve as source for studying the material culture of the society in its ecological setting. These along with other oral traditions, myths and legends of the tribal people help social scientists to reconstruct the ethno-history.

3.1.1 When did First Rock Art Evolve?

It is yet not clear whether *Homo erectus*, the species which preceded ours, had developed art during the Lower Palaeolithic time, though he had made amazingly beautiful well refined stone implements seen in Narmada valley collections which ought to be more than utilitarian and definitely of great aesthetic value. It is widely observed and understood that with the emergence of modern human species, *Homo sapiens*, during Upper Palaeolithic time over 150,000 years ago fast brain or neurobiological evolution of man occurred and the higher faculty of abstraction of ideas and their expressions was achieved by our species. This faculty heralded fast development in the next Stone Age period known as Mesolithic which witnesses behavioural and social and cultural modernity manifested in the creativity of visual representations, various kinds of art artistic skills, the Mesolithic art.

3.1.2 The Rock Art Sites in India

Rock Art is widely distributed in Northern, Western, Eastern and Southern part of India right from Ladakh, (J&K), Manipur and Himachal Pradesh to Tamil Nadu and Kerala. But most of the rock art sites are in the central India, notably in the Chhatisgarh, Jharkhand, Madhya Pradesh and Orissa. This is primarily due to its unique geo-environmental set-up which favoured the evolution of early human culture on the Central Indian plateau. This is therefore that the mountainous region of the Vindhya and Satpura ranges which confine the Central Narmada Valley where Stone Age man flourished, have the largest number of rock art sites. The Vindhyan and Satpura ranges are fractured and elevated to such a way which produced natural shelters and caves of the Block Mountains. These shelters could easily be occupied by early hunter-gatherers and pastorals whose descendants, such as Gond, Muria, Korku, Bhilala, etc. tribal communities still thrive on incipient or marginal farming and continue with their traditional lifestyles. Bhimbetka rock art shelters in the Vidhyan Range and the Adamgarh and Pachmarhi in the Satpura are among the most important rock art sites in India, beside the Daraki Chattan in Chhattisgarh and numerous in the Hazaribagh, Giridih and Kodarmada, Chatra region of the Jharkhand several which have become fairly known in recent years through the efforts of Dr. (Colonel) A.K. Prasad. The rock-arts of Bhimbetka, Pachmarhi and Adamgarh have greater antiquity since the Upper Palaeolithic though Mesolithic, Neolithic, Chalcolithic and early historic periods.

3.2 BHIMBETKA ROCK ART

3.2.1 Location of Bhimbetka

Bhimbetka rock-art-site is in the Raisen District of Madhya Pradesh, located at 22°56'N: 77°36'E latitude, 45km south of Bhopal or 30 km northwest of Hoshangabad on Obaidullaganj – Itarsi national highway. The site looks like a huge fortified segmented ridge from a short distance. The rocky terrain covered by dense forest at the southern edge of the Vindhyan hills. Its topmost peak is 619 meter high from mean sea level. Narmada River flows in the south of the Vindhya and in the north of Satpura range. The lush green dense forests on a rocky terrain and craggy cliffs appear the natural guards of Bhimbetka. In fact, Bhimbetka cluster of shelters starts from the Shyamla hills in Bhopal as a chain towards south along the River Betwa in a 'S' twisted course followed by its tributaries; Bhimbetka hill being in middle. About half of the painted rock-shelters of Bhimbetka are accessible but the rest are in dense forested area infested with wildlife.

The paintings at Bhimbetka are found on the walls, ceiling and hollows in the shelters. They are made in red and white colours and less commonly in green, yellow and black colours derived from minerals in the rocks and earth. The paintings can be divided into two chronological stages: prehistoric and historic. The chief subjects of the prehistoric paintings are scenes of wild animals, hunting, trapping and fishing. Less common are depictions of daily life, dancing, singing, playing musical instruments, celebrating birth, and grieving sickness and death. The scenes in historic paintings comprise processions of caparisoned elephants and horses and fighting with swords, shields, spears, and bows and arrows.

3.2.2 Why the Name Bhimbetka?

The gigantic rocks of Bhimbetka owe its name to Bhima, literally the seat of Bhima (Bhimbethak), the mighty character of Mahabharata, who along with other Pandavas is said to have stayed in these caves. The name of the nearby places is also Pandapur, and Bhiyanpura, which could be a distortion of Bhimpura (meaning the town of Bhima).

Bhimbetka finds first mention in Indian Archaeological Records (1888) as a Buddhist site, but its painted rock shelters were first discovered in 1957-58 by an Archaeologist Dr. Vishnu Wakankar of Ujjain. Without being much aware of the paintings the local villagers used to assemble on the hilltop for annual fair of Shivaratri in the month of March. A Siva devotee and a medicine man, Baba Shalik Ram Das has maintained a temple within the painted rock-shelter premises where he has kept the tribal artefacts, such as bow and arrows.

3.2.3 The Bhimbetka Rock Art

The rock shelter complex of Bhimbetka exhibits the earliest pictorial traces of prehistoric man's life in Indian Sub-continent. It is a natural art gallery-complex of prehistoric man and a land of archaeological treasures serving as invaluable historical chronicle since the Palaeolithic through the Mesolithic until the early history. Bhimbetka rock-shelters were also inhabited by the Middle to Upper Palaeolithic man as is evident from stone tools, and for its quantum and quality of rock paintings as well as for its surroundings still inhabited by primitive tribes who continue with the Stone Age traditions, it has been declared as an important World Heritage Site by UNESCO in the year 2003.

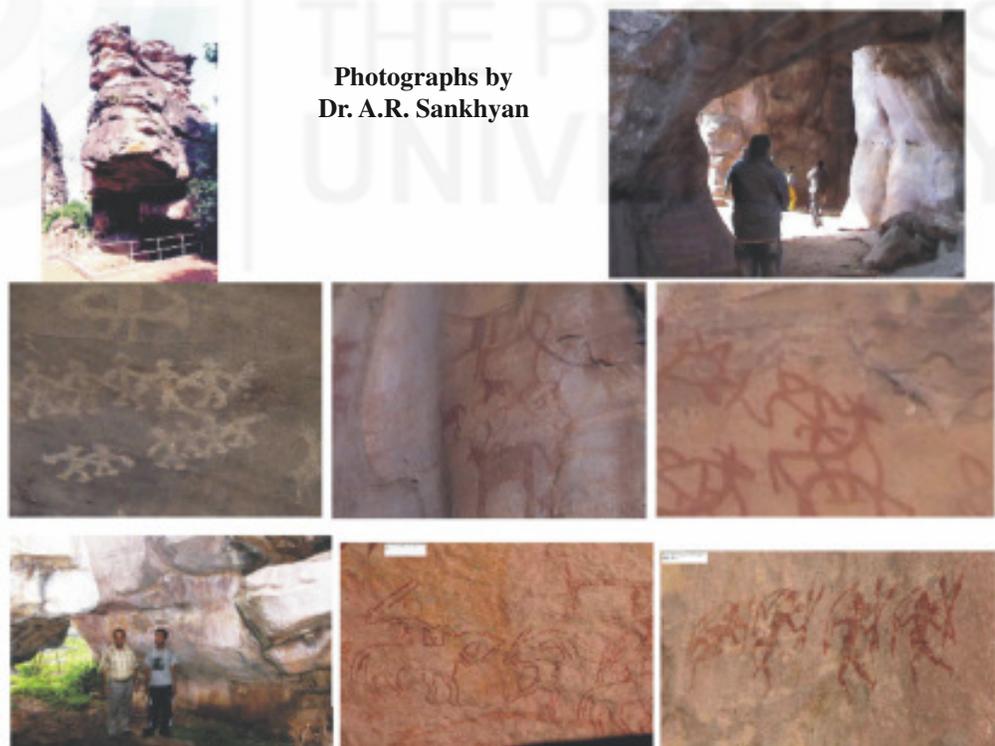


Fig. 3.1: Bhimbetka & Adamgarh Rock-Shelters of India & Rock Paintings

According to Yasodhra Mathpal and Somnath Chakraverty, there are about estimated 6214 rock art motifs in Bhimbetka predominated by zoomorphs (animal art) and a combination of them with human figures (anthropomorphs). A series

of hunting scenes of archers are remarkable in Bhimbetka representing inter-group conflicts and probably within the group clashes as well. The paintings of the later period have human figures and designs in geometric pattern as well as other ritualistic/ religious symbols and conch-shell inscriptions. There are paintings of dance scenes and horse-riding warriors with umbrella-like head gears, scenes of honey collection and fishing, hunting of the wild boar, etc. There are depiction of musical instruments of horns, pipes, drums and tom-toms. We can also notice palm prints, thumb impressions, hand stencils and finger markings. On the whole they bear similarities with the subsistence patterns of the surrounding contemporary marginal cultivators and food-gatherers.

The paintings show different overlapping layer in red and white. The paintings in green are considered the earliest though the haematite (red ochre) was also quite common. The earliest layer mostly represents large figures of wild animals either depicted in red ochre or in white/ grey colour. The black colour from charcoal or manganese was used likely later.

3.2.4 Why were such Paintings Made?

Some of you may think that these paintings were drawn to decorate the caves and for pleasure. K. L. Kamat observed that many of them are not planned or organised nicely; not have taken the trouble even to erase the older paintings and drawings. There are several overlaps of layers of sketches on one another. We can separate them through colour and style differences. Most probably, these were created as a means of escape from suffering and as devotion to supernatural entity since there are red, green, and white colours in all hues and varieties used to decorate the dead. Some paintings appear made with finger, some with brushes of feathers, wood and peacock feather stems or porcupines needles as per the style and the texture. With full freedom of expression the prehistoric man expressed life in a simplified way, drawing the animals and birds in just two or three strokes, and then using symbols; some are single line sketches whereas some are finished with a fair stroke. Interestingly, the engraved figures in Bhimbetka are almost non-existent unlike Pachmarhi, and several other sites in Central India.

3.2.5 Classification of Bhimbetka Rock Art Complex

Yashodar Mathpal and other scholars consider about nine successive developmental phases in Bhimbetka rock art complex as follows:

A) *Prehistoric*

Phase 1: Large size animals (buffaloes, elephants, wild bovids and big cats), outlined and partially in-filled with geometric and maze patterns; no humans.

Phase 2: Diminutive figures of animals and humans, full of life and naturalistic; hunters mostly in groups; deer dominant; colours red, white and emerald green- the latter is with the humans in dancing, S-shaped bodies.

Phase 3: Large size animals with vertical strips and humans.

Phase 4: Schematic and simplified figures.

Phase 5: Decorative; “large-horned animals” drawn “in fine thin lines with body decoration in honey-comb, zigzag and concentric square pattern”.

B) Transitional (Beginning of Agricultural Life)

Phase 6: Quite different from the previous ones; conventional and schematic; body of animals in a rectangle with stiff legs; humps on bovines, sometimes horns adorned at the tip; chariots and carts with yoked oxen.

C) Historic

Phase 7: Riders on horses and elephants; group dancers; thick white and red colour: decline in artistic merit.

Phase 8: Bands of marching and facing soldiers, their chiefs riding elephants and horses equipped with long spears, swords, bows and arrows; rectangular shields, a little curved; horses elaborately decorated and caparisoned; white infilling and red outlining.

Phase 9. Geometric human figures, designs; known religious symbols and inscriptions.

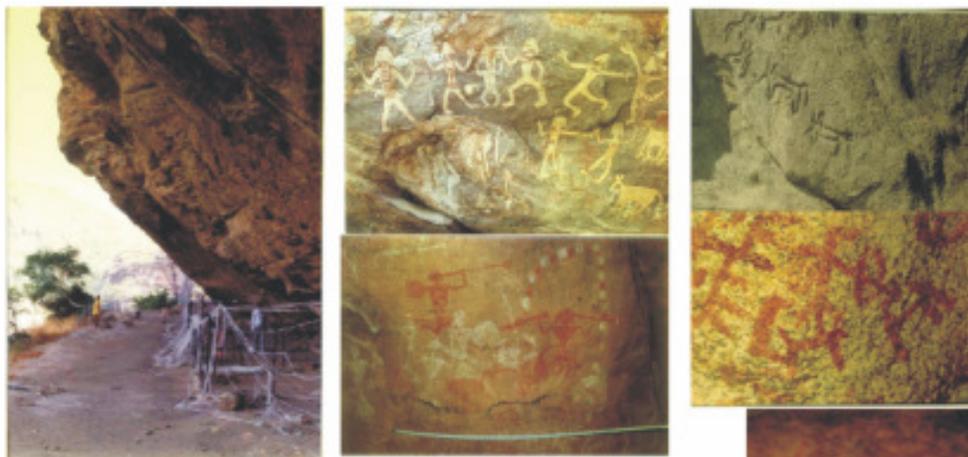
3.3 PACHMARHI ROCK ART

3.3.1 The Location of Pachmarhi

Pachmarhi is more famous for its rock-cut *Pandav caves* associated with the Pandavas of the Mahabharata and gets its name from the seat of five Pandavas. It is the only hill station in the central region of India, situated in the Satpura range and Mahadeo hills at about 1100 meters height above mean sea level. Discovered by Captain James Forsyth of the British army in 1857, it became a hill station and sanatorium for British troops in the Central Provinces of India. It is popular as ‘Satpura ki Rani’. Jatashankar is an important rock formation in Pachmarhi is –a place sanctified by the Shaivite lore; its rocks are indeed shaped like the matted hair of lord Shiva, and inside its natural cavern there is a stone formation like the hundred-headed divine snake Seshnag. The Pachmarhi valley is glorified by ravines and maze of gorges, deep azure pools, sculpted in red sandstone by the wind and weather, and cascading waterfalls flash silver in the sunshine, a natural sanctuary of wildlife and birds.

3.3.2 The Shelters, Paintings and Antiquity

Pachmarhi is an archaeological treasure-house besides being magnificently gifted by nature. There are numerous works of early human workmanship. The cave shelters of the Mahadeo hill are rich in rock paintings, most of which are dated to 500 - 800 AD, but the earliest paintings are about 10,000 years old of Mesolithic period. Most of the paintings are in white, sometimes also outlined in red. They depict scenes from every day life and hunting as well as the warfare. There are about 22 clusters of rock-shelters and caves within about 100 square km which have preserved paintings. Some of the best cave shelters and groups of shelters around Pachmarhi are: Dhuandhar, approached from the footpath to Apsara Vihar.



Photographs courtesy Dr. (Col.) A.K. Prasad & Dr. Minakshi Pathak

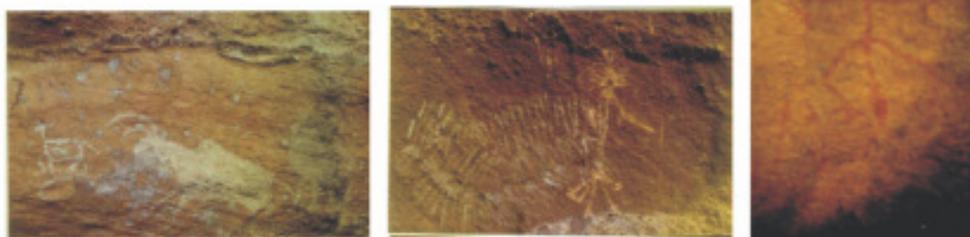


Fig. 3.2: Pachmarhi & Jharkhand Rock Art

At Bharat Neer (Dorothy Deep) there are animal paintings, where 1930s excavations also yielded many potshards and Microlithic tools. Asthachal (Monte Rosa) is another site where four shelters exist with paintings, which are linear drawings. Along the northern side of Jambu Dwip valley there are six shelters with paintings of animals and human figures, including a battle scene. Harper's Cave is another, so named for its paintings, i.e. a man seated and playing a harp close to the Jatashankar Shrine. The Chieftain's Cave derives its name from a battle scene showing two chieftains on horses. A terrace that runs the length of the South, South East and East faces of Kites Crag has some fine cave paintings, the majority of which are in white or outlined in red.

3.3.3 Who are the People in the Paintings?

Several of the Pachmarhi rock paintings depict the traditional way of its ancient inhabitants, and presently too Pachmarhi is an important abode of very ancient semi-nomadic tribal people like, Gonds, Kols, Bhills, Murias, Baigas, Korkus, Kamaras, Marias and Oraons, some of them have preserved very remarkably their distinct way of life in isolation, hunting and shifting cultivation.

3.4 ADAMGARH ROCK ART

3.4.1 The Location of Adamgarh

Around 40 km from Bhimbetka, Adamgarh Hills are a part of the southern edge of the central Indian plateau elevated as Satpura Range, located just 2 km from Hoshangabad town (Madhya Pradesh) along the Nagpur national highway, quite close to the left bank of river Narmada. Since Stone Age Man lived around Hoshangabad, which is evident from its historical back ground revealed by the excavations made on the nearby rivers namely; Narmada, Tawa, Doodhi, Palakmati, Denwa, etc.

3.4.2 The Rock-Shelters and Paintings

Adamgarh rock-shelters have the earliest known Rock art in India maintained by the Archaeological Survey of India (ASI) as is Bhimbetka. We can find numerous stone tools of the Upper Palaeolithic and Mesolithic cultures at and around Adamgarh. Mesolithic tools are tiny flakes of geometric trapezes, triangles, lunates, etc. used in the combined way by the prehistoric man. The remains of Stone Age in the form of cave paintings can be seen in the rock shelters of Mesolithic 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 in pattern of hunting from big game to small game hunting and to fishing and fowling.

At Adamgarh there are twenty painted rock-shelters scattered over a deserted sandstone cliff within four square kilometre area. Depiction of human figures in rock paintings is quite common in various postures — dancing, running, and hunting, playing games, wars and quarrelling made in deep red, green, white and yellow colours. The material and ecological changes are also reflected in the rock paintings. Animals are frequently depicted either alone or in large and small groups and shown in various poses; the domesticated animals include zebu cattle, buffalo, goat, sheep, pig and dog, whereas the wild species painted are *Varanus griseus*, *Hystrix cristata*, *Equus sp.*, *Cervus duvauceli*, *Cervus unicolor*, *Axis axis* and *Lupus nigracollis*.

3.4.3 The Antiquity

Two dates have been obtained for the Mesolithic layers at Adamgarh, viz., 2765±105 BP (TF-116) and 7450±130 BP (TF-120). The found Mesolithic tools, called microliths, are of various types made on chert, agate, chalcedony, quartz, jasper, carnelian, etc., and measure about one to five centimetres in length. The life style of the Late Stone Age or Mesolithic people was primarily hunting, fishing and food-gathering, nicely portrayed on the painted walls.

3.5 ART ON OSTRICH EGG SHELLS

The ostrich eggs are so big and strong that one can carve and cut intricate designs into their shells. The evidences show that engravings on ostrich shell were started as early as 60,000 years ago. A French scholar Pierre-Jean Texier discovered about 270 eggshell fragments in a South African cave known for various archaeological finds, and the engravings came from at least 25 separate eggs, and displayed a very limited set of motifs — only hatched — bands like parallel lines, intersecting lines or cross-hatching. Texier believed that the shell motifs are enough evidence to show that these prehistoric humans were capable of symbolic thought. Contemporary Kalahari hunter-gatherers also collect ostrich eggs as noticed by Texier in some Bushmen groups (e.g. Kung), who used similar graphics. Christopher Henshilwood found a slab of ochre covered in geometric carvings as old as 70,000 years ago in a South Africa cave, Blombos.

The portable art of Indian Mesolithic is meagre. Among many ostrich eggshell objects found in India the Patne (Maharashtra) specimen authenticated by Robert

Bednarik is dated to about 25000 years BP. The Patne engravings resemble those of the Upper Palaeolithic find in Israel; similar borderlines are also seen on the Chinese and other early Palaeoart. Another classical instance is a chalcedony core with delicate geometric engraving found at Chandravati by V.H. Sonawane, considered to be of Mesolithic antiquity because of its context and artefact typology. An engraved human tooth and a few engraved bone objects described by V.S. Wakankar were found at Bhimbetka III A-28, considered authentic by Robert Bednarik.

3.6 THE CUP-MARKS AND PETROGLYPHS

The petroglyphs are often unpatinated or only partly patinated. Body decoration and Petroglyphs might have preceded the visual iconic and non-iconic art. But Robert Bednarik maintains that it is not plausible that the first form of body decoration must have been by beads or pendants, which might or might not necessarily been made of non-perishable materials since recent hunting societies made most of their beads from perishable plant seeds, shell, bone or ivory ornaments. Most body decorations, such as body painting, tattoos, cicatrices, infibulations, headdresses, coiffures, deformation, etc. could never survive in the archaeological record. The Neanderthals of the Châtelperronian used ornamentation (ivory rings, perforated and incised pendants, ochre, fossils and crystals) that is so similar to that of the contemporary Early Aurignacians. Petroglyphs generally last longer than rock paintings, except in deep caves or where a silica skin covered paintings. Among various types of petroglyphs that have the greatest potential to survive include cupules and simple geometric figures. So, the objective record of Palaeoart and related phenomena provides no justification at all for distinct cognitive differentiation between human ‘subspecies’ in the Pleistocene, i.e. between *Homo erectus* and archaic *Homo sapiens*, as between Neanderthals and their late contemporaries in Europe, the pre-Cro-Magnon people.

3.6.1 What are Cupules?

The cupules are hemispherical, cup-shaped, non-utilitarian, cultural marks that have been pounded into a rock surface by human hand. Robert G. Bednarik has used the term “cupule” and raised it to the status of an extraordinary art form among the earliest known prehistoric art and the most common motif type in world rock art. He rules out the similar natural formations since the cupules should display some microscopic signs of percussion, such as crushed particles, and surface bruising, and must possess some non-utilitarian or symbolic function, even though an additional utilitarian function may be present. Therefore *potholes* (fluvial abrasion hollows) and *lithological cupmarks* (tessellated sand-stone pavements caused by cumulative underground stresses) should be excluded.

3.6.2 The Antiquity of the Cupules

Cupules are typically found in groups, normally measuring around 1.5 to 10 cm in diameter and about 10-12 mm in depth, often occurring on horizontal or in many cases sloping at 45°, and also on vertical rock-surfaces. A number of them are found on boulders, e.g., La Ferrassie Neanderthal cave in France dated between 70,000 and 40,000 BC by Bednarik. In Bhimbetka Auditorium Cave as well as in the Daraki-Chattan in India, they occur on very hard erosion-resistant quartzite

rock, gneissic granite and even crystalline quartz dated to between 290,000 and 700,000 BC. They are regarded as the oldest cupules by Bednarik since they occur on immobile hard surface sandwiched between a solid upper level stratum of the Middle Palaeolithic and Acheulian cultural level of the Lower Palaeolithic. Elsewhere too they are found to have been made by the chopping tools using hominins like the Oldowan of Africa. Some of the cupules have been re-worked by later artists, e.g., one cupule at Moda Bhata, India, created about 7000 BC was re-pounded about 200 AD. A large cupule reported from Sai Island (Sudan) is thought to be about 200,000 years old, but the oldest cupule-bearing rock is in the primordial Olduvai Gorge in Tanzania, dating to approximately 1.7 million BCE. In Australia, the Turtle Rock cupules in northern Queensland may be as old as 30,000 or 60,000 BP. Bednarik attributes the earliest cupule-making to *Homo erectus* and thinks that the cupules had clear evidence of symbolic language.

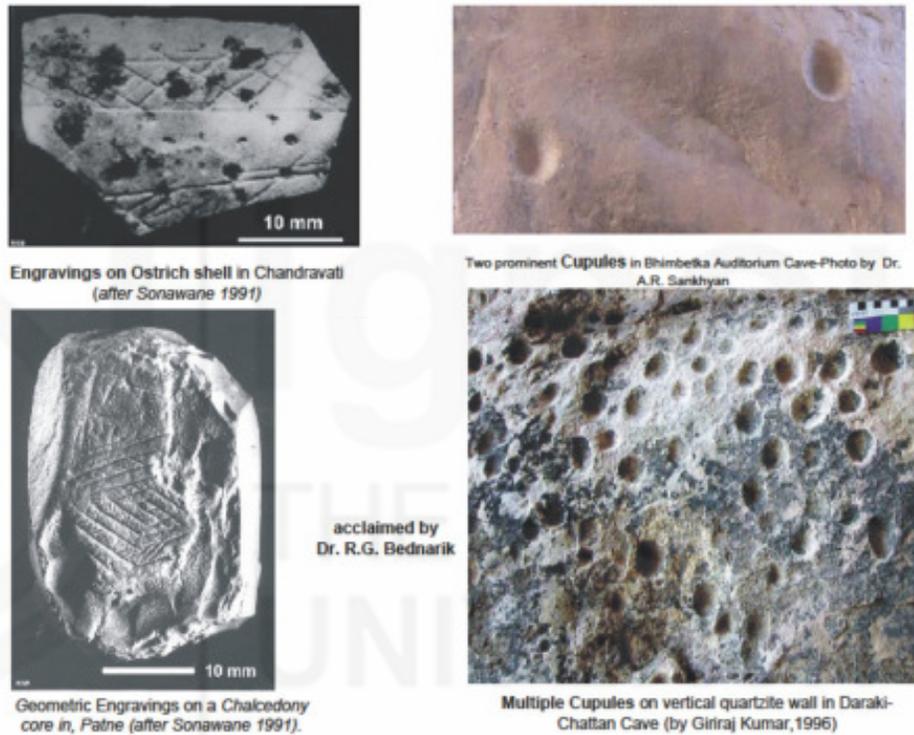


Fig. 3.3: Some Palaeoart Petroglyphs in India

3.6.3 How were Cupules Made?

Giriraj Kumar experimented with cupule-making process at Daraki-Chattan using hammer-stone technique and after five experiments observed that different cupules worked out to different depths required different time span. For instance *Cupule 1* took 8,490 blows involving 72 minutes of actual working time. *Cupule 2*, worked to a depth of 4.4 mm, required 8,400 blows involving 66 minutes of actual working time, before the tester reached exhaustion. *Cupule 3* required 6,916 strikes to reach a depth of 2.55 mm; *Cupule 4* took 1,817 strikes to attain a depth of 0.05 mm (then abandoned); *Cupule 5* required 21,730 blows and reached a depth of 6.7 mm.

The experiments clearly demonstrated that pounding a cupule on a hard rock required a colossal expenditure of energy. Given that Daraki Chattan has over 500 cupules, one can readily appreciate the serious nature of the endeavour. Therefore, the cupule-making was no trivial exercise - at least not where hard stone was involved.

3.6.4 Why were the Cupules Made?

There is yet no convincing explanation of the cultural or artistic meaning of cupules, but they are first and foremost a pattern of behaviour common to nearly all known prehistoric cultures around the globe. Many scholars associate the cupules with fertility rites. For instance, Bednarik cites a report of Mountford who witnessed making of cupules in central Australia in the 1940s as a ritual for the pink cockatoo. The rock out of which the cupules were pounded was believed by the Aborigines to contain the life essence of this bird, and the mineral dust rising into the air as a result of this pounding was believed to fertilise the female cockatoos to increase their egg production, which the Aborigines valued as a source of food. So, Bednarik opines that the meaning and purpose of such ancient art cannot be understood without understanding the ethnographic beliefs of their creators.

3.7 SUMMARY

Rock is our ancestors' earliest signature on rock surfaces in the form of petroglyphs (rock paintings) and petroglyphs (engravings, cupules, etc.), which provide a unique opportunity to understand the origins of human mind and serve as source for studying the material culture of the society in its ecological setting. These along with other oral traditions, myths and legends of the tribal people help social scientists to reconstruct the ethno-history. In terms of petroglyphs, rock art is quite old in India traced back to the Lower Palaeolithic age but it flourished during Mesolithic time. It displays all major developmental phases all through the early historic period, distributed to the length and breadth of the country with special concentrations in the Plateau region of central and eastern India. The most important Mesolithic rock art sites include Bhimbetka, Adamgarh, and Pachmarhi, and many in the Jharkhand region. Based on the subject matter, colour, style, encrustation and superimposition, the rock art of India is in general classified in four broad developmental stages. The *Stage 1* is represented by the hunters and gatherers in symbols/ petroglyphs bearing Palaeolithic to Mesolithic antiquity, whereas in *Stage 2* depicts the hunters and gatherers in hunting and dancing scenes, in addition to the symbols and geometric designs of the Mesolithic period. The *Stage 3* rock art depicts the settled agriculturist and animal keepers using pottery corresponding to the Neolithic/Chalcolithic period. The *Stage 4* rock art represents the people of the early historic period. Among the zoomorphs, the horses and horse-riders predominate within the anthropomorphs in which figures of the archers and armed men/ warriors are quite frequent representing inter-ethnic or intra-ethnic struggles especially in the Central India. The dance-styles and certain rituals portrayed in the rock art find similarity with the contemporary regional tribal way of life.

We have to protect the priceless heritage of humankind from various threatening agencies, which include exposure to extreme hot humidity, the lichens and fungus, the termites, which in fact, is a specialised task of the conservators employed by the Archaeological Survey of India. But, we can certainly prevent the damage to them from rampant ignorant human vandalism.

Suggested Reading

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Sample Questions

- 1) How do people express ideas through art?
- 2) Why do people use images to tell stories and to communicate?
- 3) What did people use to record important events in their lives or history long ago?
- 4) How has art been used throughout history to tell stories or to show us what people in other times and places considered important?
- 5) How paintings and drawings help convey significant ideas and events and how people today understand the past from putting together stories and history from these images?
- 6) What do you know about the life of these people shown in paintings? When and where did they live? What animals lived when the cave people lived? What did cave people use animals for? What tools did they have? Why do we call them cave people?
- 7) How are their lives similar to and different from our lives today? Where do we get our information about the cave people?
- 8) What was the period of the Lower Paleolithic, the Middle Paleolithic, Upper Palaeolithic, the Mesolithic, Neolithic?
- 9) Identify the images of the bison, ibex, ox, stags, mammoths, reindeer, bears, felines, rhinoceros, birds, fish, etc., human images drawn.
- 10) Why do you think that there were so many animals and not as many people in the paintings?

- 11) What can the paintings tell us about other aspects of the life of cave dwellers or Paleolithic people?
- 12) How did they make these pictures if there were no stores to buy paint and brushes or tools for carving?
- 13) What colors are prominent in the paintings, and what natural sources might provide these pigments if they didn't have crayons or markers?
- 14) What challenges cave people might have encountered in painting on cave walls and ceilings- pitch-black darkness, irregular surface of the rocky walls, steepness and height, adherence of the pigment to the surface, etc.

