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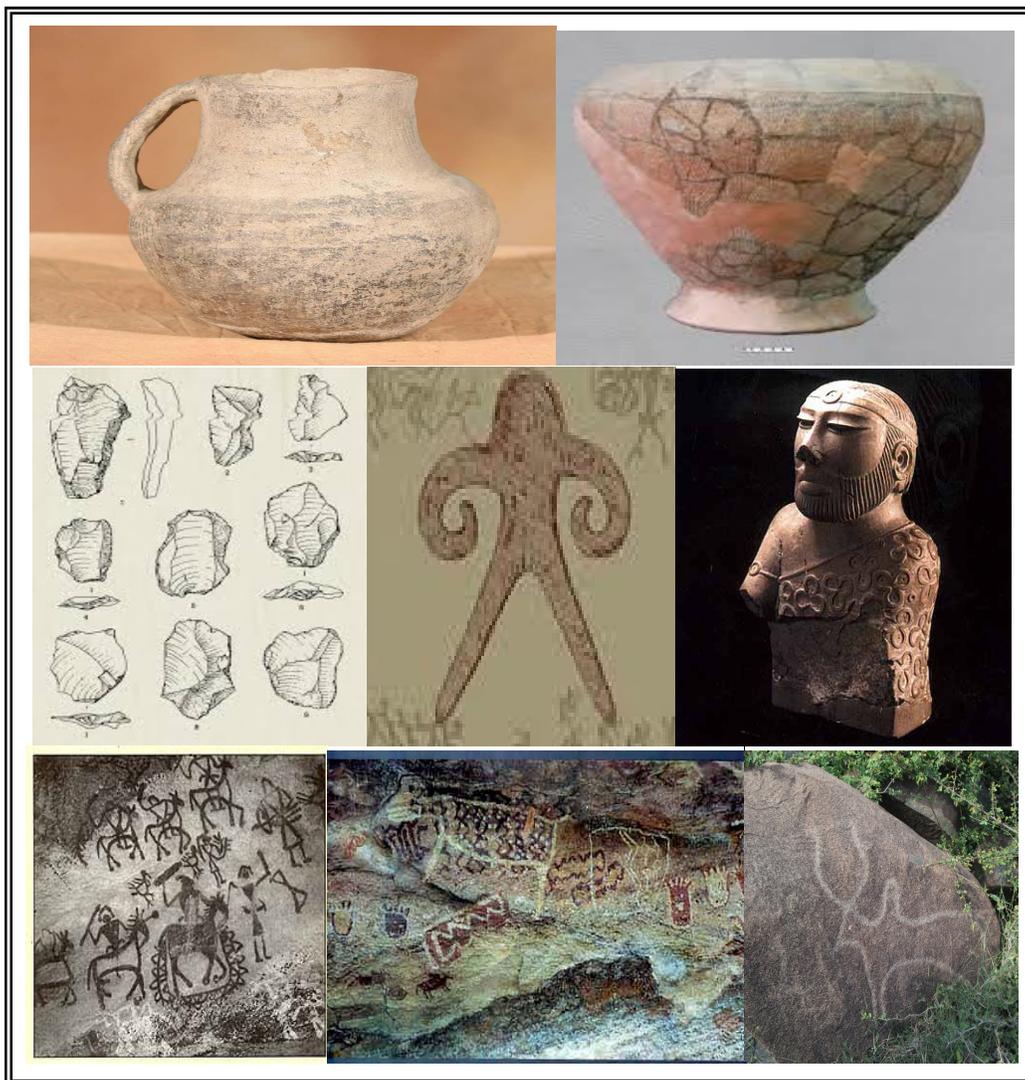


OPEN UNIVERSITY

Muktha Gangothri, Mysore - 570 006

**Master of Arts in
ANCIENT HISTORY AND ARCHAEOLOGY
M.A. Previous**

Indian Pre and Proto History



Course: AHA - 4

Block: 1 – 6

**DEPARTMENT OF STUDIES AND RESEARCH IN ANCIENT HISTORY
AND ARCHAEOLOGY**

M.A. (PREVIOUS)

COURSE – 4: INDIAN PRE AND PROTO HISTORY

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BLOCK INTRODUCTION

Dear Learners,

M.A Previous Course IV entitled Indian Pre and Proto History is divided into 6 blocks.

The block I contains 4 units. It introduces to the Paleolithic culture. The development of prehistoric and protohistoric archaeology in India. Prehistoric environments and lower, middle and upper Paleolithic cultures.

The block II introduces to Mesolithic culture and Neolithic culture in North India.

The block III introduces to the Harappan culture, its origin, characteristics, extent town planning, settlement pattern, Harappan Arts and Crafts, trade, seals, script and the decline of the Harappan culture.

The block IV introduces to the prehistory of South India which enfold Neolithic and Neolithic – chalcolithic culture of South and Ash-mound sites.

The block V introduces to the chalcolithic culture of central India and Deccan and copper technology.

The block VI introduces to megalithic culture, Burials and typology and distribution pattern. The megalithic Iron-technology and pre and proto-historic rock art in India.

Thus the M.A previous course IV contains 20 units providing adequate reading materials to the students and enrich their knowledge.

INTRODUCTION

Dear Learners,

I am extremely happy to invite you to the family of Karnataka state open university. It is my pleasure to welcome you to study Indian pre and proto history. Prehistory and proto history is a fascinating subject, which deals with the dawn of human cultures and its subsequent development through millions of year. The early men were hunter, food gatherer and user of stone artifacts or tools. In short it is the history of mankind in pre-literate stage devoid of any legend, tradition or literature.

This year you will be studying Indian pre and proto history. It covers the development of prehistoric and proto-historic archaeology in India. Mesolithic culture, Neolithic culture Chalcolithic culture, Megalithic culture and Harappan culture. The study materials provided by KSOU, not only makes you to understand Indian pre and proto-history, but also enrich your knowledge.

I hope you will, enjoy the study and wish you good success.

Dr. N.C. Sujatha

Chairperson

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Karnataka State Open University

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BLOCK – 1: INTRODUCTION AND PALEOLITHIC CULTURE

UNIT- 1 DEVELOPMENT OF PRE-HISTORIC AND PROTO-HISTORIC ARCHAEOLOGY IN INDIA – TOOL MAKING TECHNIQUES AND TERMINOLOGY

Structure

- 1.0 Objectives**
- 1.1 Introduction**
- 1.2 Eoliths**
- 1.3 Stone implements**
- 1.4 Evidences of Paleolithic and Mesolithic Man**
- 1.5 The Old Stone Era**
- 1.6 Growth in Skill**
- 1.7 Peoples of Late Pleistocene Times**
- 1.8 Tool Making Techniques**
 - 1.8.1 Direct percussion**
 - 1.8.2 Block-on-Block**
 - 1.8.3 Step or resolved flaking**
 - 1.8.4 Cylinder hammer or hollow hammer technique**
 - 1.8.5 Punching technique**
- 1.9 Terminology**
 - 1.9.1 Paleolithic**
 - 1.9.2 Mesolithic**
 - 1.9.3 Neolithic**
 - 1.9.4 Chalcolithic**
- 1.10 Let us sum up**
- 1.11 Keywords**
- 1.12 Check your progress**
- 1.13 Answer to check your progress**
- 1.14 Suggested Readings**

1.0 OBJECTIVES

After reading this unit you will be able to know the

- Development of Pre-historic and Proto-historic Archaeology in India
- Tool making techniques and terminology

1.1 INTRODUCTION

Here we go back a million years and speak briefly about Eoliths; then the long years and centuries of the old stone Age (the Paleolithic period) are considered, and we see a little of the great progress made by the human race during that great expanse of time.

1.2 EOLITHS

A million years ago the lands we call Britain and Ireland were still joined to the continent. About that time something that puzzles us today was happening in the part of Europe we call Southern England. Irregular pieces of flint were being chipped along their edges and were being given shapes that would make them useful to Man in a variety of ways. Some could be employed as scrapers or perhaps for breaking up the fibers on the back of the skin flayed from wild animals killed in hunting; such treatment would make the skin pliable. Other chipped flints were beak-shaped; they might be handy for skinning animals and preparing them for food.

How were these flints chipped?

Some people have argued that they were produced by natural causes one stone flaked against another without any hand to hold them. Other people are firmly convinced that these are implements purposely made for use by our remote ancestors in the dawn of human intelligence; and so they are called Eoliths (dawn – stones, from Greek).

These chipped flints have been found in large numbers in the southern counties of England.

Whether the eoliths that have so far been discussed really were the work of Early Man or not, it is quite clear that flint implements cannot have originated except through stages which began with the use of the unchipped stone and went on to a form in which chipping was of the rudest description. Tools we can clearly recognize as man's work were the final result of a long period of increasing skill.

It is obvious that this problem of the eoliths is one for people experienced in the study of stone tools, so we ought to pass on to learn something about the more readily identifiable types of later times, those of the Paleolithic, Mesolithic and Neolithic Ages. We can always come back to the eoliths when we have a better mastery of the problems of identification. Although eoliths must be the earliest in date of Man's stone artefacts, we have to admit that they are the most difficult of all early human tools to recognize with certainty.

1.3 STONE IMPLEMENTS

If you watch a gardener finishing off his work for the day you will see him cleaning his tools. You may be fortunate enough to notice him picking up a suitable stone to clean soil off his spade and, of course, as soon as the job is done he throws the stone down again. Also scythe and sickle may still be sharpened with a stone. These uses of stone look like survivals from the remote past. At any rate, they are stone implements still in use.

To some extent in some parts of the world, copper took the place of stone several thousand years before the beginning of the Christian era. In this country about 1900 years before Christ men began to use bronze (an alloy of copper and tin), while implements of iron (which is more difficult to obtain from its ores than copper and tin) came into use here about 500 B.C. but for long after metal was first made into tools, stone implements remained in use. Indeed, in the Bronze Age so highly was bronze prized that men made flint objects which imitated in shape the

rarer, more desirable bronze tool or weapon, just as articles today made in plastics imitate the form and decoration of more expensive products normally made in metal or earthenware.

Flint was the usual kind of material from which early implements were made, but Man has always used any convenient material ready to his hand. In East Africa, for ex: obsidian, a glassy rock, has been used for tool-making in comparatively recent times. A friend of mine was able to match an obsidian implement he brought back with him from East Africa with one in flint which he found on the North Downs of Kent.

Other hard rocks used by the early man for making tools include quartzite and chert; such tools are not easily blunted by use.

Implements are made by Australian aborigines from bottles and telegraph insulators. They chip the glasses or earthenware much as Early Man chipped flints, and produce very similar results.

1.4 EVIDENCES OF PALEOLITHIC AND MESOLITHIC MAN

So remote are the Paleolithic (old stone) Age and the Mesolithic (Middle Stone) Age, and so great is the period of time that they cover, that we cannot expect to have more than a very rough idea of all the changes that must have taken place in human activities and conditions of life over such a vast passage of time as five thousand centuries. Such a period baffles our imagination, but mentioning it in hundreds of years perhaps conveys more to the mind than speaking of half a million years.

We may assume that before the beginning of the Paleolithic era, Man and his ancestors had very many centuries to learn to use wood and bone and shell and stone to aid them in their hunting, fishing and food gathering. It is not surprising when all the circumstances are taken into consideration that neither the bones nor the rude dwelling-places of these very first implement makers have been discovered.

Evidence for the existence and habits of Man in Paleolithic and Mesolithic times is, however, available. It is provided by stone tools, by rare and isolated examples of skulls, generally imperfect, and of other bones. As far as Mesolithic times are concerned, evidence is also provided by implements of bones, in both Upper (late) Paleolithic times and Mesolithic Age the drawings and paintings made by primitive artists on the walls of caves and rock shelters are found.

1.5 THE OLD STONE ERA

Half a million years ago Man had already attained very considerable skill in the shaping of various kinds of stone for a variety of uses. He was already very proficient in the manufacture of the so-called hand – axe.

It was in England towards the end of the seventeenth century that such an object as a hand – axe was first recognized with certainty as human workmanship. The individual implement in question is of flint. And was found in the Thames Valley gravels; it is still to be seen at the British Museum.

The Old Stone Age or technically the Paleolithic Era covered an almost incredibly long period of time. Very careful consideration of a wealth of material gathered , especially from river gravels, rock shelters and caves has enabled the experts to work out a succession of types, each of which is characterized by a special kind of workmanship and by definite forms and shapes in the finished tools.

The frequency with which flint tools of the different sub divisions of the Paleolithic Age occur in the gravels of river terraces indicates that streams. Perhaps these implements were used in connection with fishing. The so-called “hand- axes” could have been used for skinning animals.

These works of Man are of such usual occurrence that where gravel used to be dug by hand labour, the workmen would pick out and shell them to any archaeologist who wished to acquire them. They can readily be recognized with a

little practice, and the best way to become acquainted with the typical forms is to study a good series of these implements in a museum or in a private collection.

From what has already been said, it will be realized that the “cultures” of the clearly defined groups of types of tools found in this country, belonging to different periods of the Paleolithic Age, are likely to represent the work of different races or peoples who came from the eastward in successive movements or waves, bringing their knowledge and skill with them. But the idea of “races” and “peoples” in relation to different styles or fashions or types of workmanship must not be too easily accepted. It does not necessarily follow that all communities using the same type of implement were in blood relationship. Thus a map to show the distribution of well – known types of implements may be no indication at all of racial boundaries.

1.6 GROWTH IN SKILL

During the Paleolithic age there was a great increase of skill in the manufacture of implements. Over the past hundred years investigation has shown that a Paleolithic site may have characteristic stone implements and that, having been studied there, those particular kinds may turn up again and again in other places, and so indicate a similar way of life or culture. Thus implements first suited from the Dorgogne cavern called Le moustier, near the right bank of the River Vezere, and from that fact called Mousterian occur in many places in Europe and Asia. The implements in question form the Mousterian culture. The local examples of any culture regarded individually are called industries; thus we may speak of the Mousterian industry of Kent’s Cavern, Torquary, meaning by that the implements of that culture occurring as the tool of the men living at Kent’s Cavern.

Thus we have the following Paleolithic cultures as important examples:

- | | |
|-------------|---|
| Abbevillian | – Named from Abbeville on the Somme. |
| Acheulian | – From St. Acheul in the somme valley just above amiens. |
| Levallisian | – After the Levallois – Perret quarter of Paris. |
| Mousterian | – From the cavern called Le Moustier, in the vezere valley. |

- Aurignacian – Autignc is in Haute Garonne, 40 miles south – west of Toulouse.
- Solutrean – Called after Solute, department Saone – et – Loire.
- Maalenian – From a place on the right bank of the Vezere, not far from the ancient castle of La Madeleine.

Implements of Abbevillian age are fattish lumps of flint coarsely flaked round the edge from both sides so as to produce a large irregularly oval or pear – shaped hand – axe which is the core of the original flint pebble. Such flaking as this can be produced either by hitting the flint with another flint or lump of rock used as a hammer or by striking it against the edge of a massive stone. It might take thousands of years for the new methods to become known over the breadth of a continent, but eventually the new style supplanted the old.

Contemporary with Abbevillian core – tools we find flakes fashioned as implements. This early flake industry is called Clactonian, from Clacton – on – Sea, Essex, where gravels provided the first – studied implements of this kind. The flakes themselves are coarse, and were probably made by striking the flint against a very large stone. The tools frequently show the bulb of percussion. The edges of the flakes are trimmed. It may be mentioned that a wooden spear – head, of yew, of this age was found at Clacton. This is the only Paleolithic wooden implement so far discovered in Britianl. Another spear, also of yew, was obtained from a Leavalloision site in Germany.

The next culture we must mention is the Acheulian. Its implements are principally core – tools, especially oval to pointed hand – axes for cutting and scraping. These tools are fairly smooth in outline, and have shallow flaking, probably produced by knapping with bone, hard wood or soft stone. They are of a more perfect form than Abbevillian hand – axes and have a more effective cutting edge.

Flake – tools of the Levallosioan culture were more elaborate And more carefully executed than the implements of earlier cultures. They were typically produced from cores previously shaped by preliminary chipping to the form of a

depressed cone. Skilful knapping from the prepared core provided either oval or long narrow flakes which were implements in them and needed no further treatment. Sometimes the butt of the flake bears traces of the preliminary chipping of the core. This kind of butt is termed faceted. In such implements the bulb of percussion is prominent if a hard hammer stone was used to strike the flake from the core. But it is flattered if a softer tool was employed for the purpose.

The Mousterian culture is largely characterized by carefully made flake implements with edges trimmed, probably by pressure against bone.

1.7 PEOPLES OF LATE PLEISTOCENE TIMES

The closing phases of the Pleistocene period during the final glaciations of northern Europe brought with them a remarkable development of skill and the production of a wide variety of implements not only in stone but also in bone, antler and ivory, and many of the men of this period (approximately between 11500 and 14000 years ago) were also real artists, shaping and engraving bone, reindeer- shelters and caves, realistic hunting scenes and other illustrations of their daily life.

The people of this late Pleistocene epoch were:

Those of the Chatelperronian culture (the type site is at Chatelperron) their typical tool was a flint blade fashioned as a knife, one edge very sharp and straight, the other curved up to the point and blunted by trimming.

The Cro-Magnon (=Aurignacian) people were workers in bone and antler. They were also artists using ochre. Cro-Magnon is a cave or rock shelter in a cliff overlooking the valley of the Vézère.

The Gravettian culture followed (named after La Gravette) the typical tool is a pointed blade curved on both edges, one blunted, one sharp. The men of this culture were hunters and artists, and made statuettes of women in bone, ivory, stone and pottery. They used red ochre and made personal ornaments by piercing shells, including fossils and animal teeth.

The solutreans were very skilled in pressure flaking and made beautiful flint implements. They too were artists.

Lastly, mention must be made of the Magdalenian culture, which owed its characteristics to Gravettian and other influences. The implements produced were very varied, and exhibited great skill in working flint (especially blades) reindeer – antler, bone and ivory. The magdalenians made bared harpoons, needles with eyes and many other implements.

The well-known and often illustrated paintings of the Altamira cave in north-east Spain were executed by them, and they decorated their implements with engraved hunting scenes and with animal and human figures after the manner of present-day Eskimos. In England a culture akin to the Magdalenian occurs: it is called the Creswellian.

1.8 TOOL MAKING TECHNIQUES

1.8.1 Direct percussion

This was the most common method adopted by prehistoric man. In this the stone hammer hits the stone in a swinging blow. Maximum amount of force enters the stone in a rather uncontrolled manner. It results in a great deal of shattering effect. The bulb is pronounced and has a fairly large outer circumference. Sometimes this technique is also referred to as free flaking technique.

1.8.2 Block-on-Block

In this technique the pebble or block of stone to be worked is struck against the projecting point of a large fixed stone anvil. The bulbs produced in this kind of flaking can be really pronounced as the force with which the stone hits the anvil is supplemented by the natural weight of the rock.

1.8.3 Step or resolved flaking

As the name signifies the flake scars produced by this technique are shaped like a step. Here the hammer directs the force inside the thicker part of the stone in contradistinction to force directed outwards in the case of free flaking technique. This restricts the force from travelling over the entire thickness of the stone and as such the force gets spent up after travelling half way through. As a result of this a crack develops on the surface of the stone along the periphery of the termination of the force. This results in a vertical cleavage on the surface as also a horizontal scar (when seen from top) It has a chiseling effect which enables cutting the borders without sacrificing the thickness.

1.8.4 Cylinder hammer or hollow hammer technique

Tools with unusually shallow and elongated flake scars were discovered in prehistoric debris. Dr Leakey after experimenting with many kinds of hammers declared that such flaking could only be effected by using a hollow bone or antler or a wooden hammer. On the face of it this method might appear to be improbable, but only experimentation can demonstrate how good flakes can be removed by this technique. The greatest advantage of using these organic hammers is their property of absorbing the reaction of force thus totally eliminating the shattering effect of impact. The bulb produced in this kind of scars is diffused and the flake scars have a more or less parallel running boundary ridge.

1.8.5 Punching technique

It involves the use of an intermediate puncher which receives the blow on its top and transfers it to the core through the other end. Such a method has the advantage of controlling both the magnitude and direction of the force by manipulating the puncher by one hand while the force is being delivered by the other. The pecking in Neolithic Celt preparation is done by this process. This method is quite useful in knocking off undesired corners or protuberances on a rock surface without the risk of undesired damage to the tool.

1.9 TERMINOLOGY

1.9.1 Paleolithic

The earliest of human cultures occur within the Pleistocene period. These essentially comprise stone tools prepared with low expenditure of energy in their manufacture. The subsistence economy at this stage by definition is hunting and gathering. This may further be sub-divided into four stages on the basis of cultural features. The generally accepted features are: (i) Lower Paleolithic mainly contains core tools which are medium to massive in shape; (ii) Middle Paleolithic mainly contains an emphasis on flake tools with a preponderance of side scrapers; (iii) Upper Paleolithic mainly contains thick elongated tools with a good percentage of finished bone tools and a good degree of art execution. (iv) Finally a terminal Pleistocene stage of culture is added with a blade tools which are not as big as the Upper Paleolithic and also not as small as the Mesolithic. This stage has been named as the Epi-Palaeolithic.

1.9.2 Mesolithic

The earliest Holocene culture which shows no indication of a change in economy from the Paleolithic is broadly called Mesolithic. Usually there is a worldwide change towards microlithization observed during this period. It is also accepted as the period in which hafting of a series of tools on suitable organic handles has emerged as a new technological evolution. The tradition of composite tool manufacture has led to a specialization in microlithic types in almost all over the old world during this period.

1.9.3 Neolithic

This is the last of the stone ages in human history. It is best defined as that period which precedes the discovery of metals and which shows the earliest evidence of any one or more of the following socio economic traits:

1.9.4 Chalcolithic

This term is used to designate the cultural period which marked the emergence of metals like copper, tin, lead and gold and subsequently manufacturing and alloys. Since such an emergent technology can never replace the earlier techniques, stone tools continue to occur in this period, hence the name Chalcolithic. There has been prolonged debate about whether the knowledge of metallurgy should be taken as the diagnostic trait of Chalcolithic cultures or the mere presence of metal (even if it is single piece) within a find should be enough to declare it so, since metallurgy is demonstrable only at places of natural occurrence of ore. There is no archaeological way to prove if a given site represents a metal manufacturing community expanding its power larger area and hence away from the actual manufacturing site or it represents a non-manufacturing community who obtained metals by way of trade only. The mere presence of metal, therefore, is taken to designate the find as Chalcolithic. It is needless to emphasize that the culture has to be proved to be pre-iron in technique.

Most of the terms given above are to facilitate student's understanding of accepted usages of cultural terms, but more often than not improvising these terms to suit a given situation is necessary in many cultural areas. Hence in India we have the term Neo-Chalcolithic or in Anatolia the Aceramic Neolithic. These new improvised terms are self-explanatory to anybody who is introduced to basic terms.

1.10 LET US SUM UP

The study of antiquities belonging to periods before history is generally considered within the framework of prehistoric archeology. Protohistory is concerned with those traits which make up civilization.

1.11 KEY WORDS

1. Prehistory – refers to the period of human existence before the availability of those written records with which recorded history begins

2. Hand axe – A hand axe is a pre historic stone tool with two faces.

1.12 CHECK YOUR PROGRESS

1. Discuss in details the development of Pre-historic and Proto-historic Archeology in India
2. Explain the tool making techniques and terminology.

1.13 ANSWERS TO CHECK YOUR PROGRESS

1. See section 1.2, 1.3, 1.4, 1.5, 1.6 and 1.7
2. See section 1.8 and 1.9

1.14 SUGGESTED READINGS

1. Copper. J., Prehistory of the Chitrakot Falls, Central India
2. Sankalia H.D. Pre and Proto-history of India.

**Text compiled by:
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UNIT-2 PREHISTORIC ENVIRONMENTS

Structure

- 2.0 Objectives**
- 2.1 Introduction**
- 2.2 Physical changes during the Pleistocene**
- 2.3 Pleistocene vegetation and animal life**
- 2.4 Early man**
- 2.5 Let us sum up**
- 2.6 Key words**
- 2.7 Check your progress**
- 2.8 Answer to check your progress**
- 2.9 Suggested readings**

2.0 OBJECTIVES

In this unit we will learn about the physical changes during the Pleistocene, Pleistocene vegetation and animal life and about human species.

2.1 INTRODUCTION

Environment encompasses all the living things (other than human) and the physical surroundings which we often call nature. In the very early times, for a span of nearly two million years, during which our ancestors belonging to the earliest human species originated in Africa remained absolutely supreme. But when man began to cultivate the soil and domesticate animals they began unknowingly to change, step by step, many parts of the natural environment in which they lived.

2.2 PHYSICAL CHANGES DURING THE PLEISTOCENE

Physical circumstances varied during the geological age of Pleistocene, which extended for nearly two million years: from about 1.9 or 1.8 million years ago. At the beginning of the Pleistocene age, the *Homo habilis* and the *Homo erectus*, the earliest humans, appeared in Africa, and then, finding their way out of that continent, settled in different parts of Eurasia. By the time the Pleistocene closed, our own modern human species had long supplanted all the earlier human species or sub-species in Africa and Eurasia, and also established itself, without meeting any rivals, in Australia and the New World.

By the beginning of the Pleistocene, the long period when the surface of the earth had been changed by the Continental Drift (Under which India had separated from a vast continent called 'Gondwana land', that contained, besides India, what are now Australia, Africa, Antarctica and South America) was practically over, and so were the great physical uplifts through tectonic stresses which, among other things, had created the Himalayas. By and large, it could be said that the physical features of the earth's surface had, by 2 million years ago, largely assumed a shape

that we can recognize from our current maps. Yet, there continued to be some uplift, and also some erosion, and some deposition of boulder, loess and silt cut away from higher mountains as, for example, in the Himalayas and the Siwaliks. It is even argued that during the last 14 million years the Himalayas have, in the net, been undergoing some subsidence rather than uplift. River courses and coast lines too have shifted.

The nearly two million years of Pleistocene saw a number of Ice Ages, when the earth's orbit increased its average distance from the sun. In such phases, as the earth got cooler, the masses of permanent ice ('thermafrost') around the Poles became denser and expanded. The snow-cover on the high mountains (such as the Himalayas) also expanded, and the glaciers came down further and further into the valleys. Considerable evidence of the greater lengths obtained by Himalayan glaciers at such times survives in the older moraines (stones and earth deposited at their lower ends by glaciers) much below the present ones and in marks of rock erosion by glacier action far below the point (the 'snout') where the glaciers end and turn into river streams today.

2.3 PLEISTOCENE VEGETATION AND ANIMAL LIFE

Changes in climate necessarily affected Vegetation. In the Ice Ages, aridity grew as the rainfall became scantier and the rivers contained less and less water. Steppe and desert expanded at the expense of forest. In parts of Rajasthan and north Gujarat this is attested by the 'fossilized' sand dunes, their age revealed by the weathering and erosion undergone by them; today they stand in areas totally bereft of moving sand. Botanical evidence of Ice Age aridity comes from recent archaeological excavations at Jwalapuram in southern Andhra. It is now estimated that the last Ice Age reached its coolest temperatures around 20,000 years ago, and the sea level fell to about 110 metres below the present level. Thereafter a warming phase began, and by 10,000 years ago the sea level was just 20 metres below the present one. This change is reflected at Jwalapuram. The excavators there found in Stratum D of the site, belonging (by calibrated carbon-dates) to the period 34,000 to 20,000 years ago, evidence that suggests the dominant presence of 'grassland'

(about 75 percent) but in Stratum C, dating to 15,000 to 11,000 years ago, the share of grassland falls to 45 percent, and the 'woodland' expands from just 25 per cent in the older Stratum D to 55 percent in Stratum C. In other words, there was a substantial decline in aridity as the earth began to warm up after the peak of the Ice Age had passed; and woodland and forest expanded at the expense of steppe and grassland.

By the beginning of the Pleistocene, the major present groups of species in both plant and animal life had been formed. Since plants can only diffuse, in the absence of any human agency, by aid of wind and water or through the droppings of birds and herbivores, the areas where individual Plant species flourished in the Pleistocene could have been quite limited. In these isolated areas a plant species would mutate over time into a new one, perhaps with minor adaptations. It is thus generally assumed that species of wild grasses, out of which cultivated cereals originated, were to be found in relatively small regions, from where the cultivable forms could only spread over large areas through human-managed diffusion. This could also be said of many other plants, including fruit trees. Their extensive diffusion occurred only after human beings had learnt to domesticate or control them.

India, for example, might have had fewer plant species than now, simply because those imported into it through human agencies, deliberately or otherwise, were then absent. There is also, of course, the possibility that at each advance of the Age, many species of plants in the northern latitudes were eliminated and some, perhaps, also in the areas of desiccation at lower latitudes. This makes it still more difficult to compare the Pleistocene's plant wealth with that of even early Holocene (beginning about 10,000 years ago), in India as well as other countries.

The Pleistocene, with its cold and warm phases alternating more rapidly in the later portion of its span, that is, after 800,000 years ago, must have been both a testing time and a period of opportunity for many species of animals. As, during the phases of glaciation, the sea levels went down, the isolation of several large areas was broken and land animals could now migrate to them the more easily. Sri Lanka must have received elephants before the land bridge to India was closed for the last

time, after 20,000 years ago. The tiger has never been found on that island shows that it must be a late arrival in south India.

It is also true, however, that several mammals became extinct owing to a failure to adapt to climatic changes, or through displacement by more efficient species competing for the same resources, or – towards the close of the Pleistocene by simple slaughter at human hands.

The water buffalo (*Bos bubalus*) evolved into a separate species much earlier, within or even before the Pleistocene times, and in its wild state existed in a large portion of tropical and semi-tropical Asia, from India eastwards to southern and central China. Though now it is largely domesticated, herds of wild water buffalo still survive in dwindling pockets and are known to have had a much larger range in even Mughal times. Like the Zebu, the buffalo can withstand warm temperatures, but it is particularly attracted to water and so, in the wild, keeps to riverine and marshy tracts. In late-Pleistocene India it seems to have had an extensive habitat, right up to the western edge of the Indus plains.

Both the elephants and the cattle species interest us because of their later relationships to us a domesticated animals (though elephants have remained in a wild state far more extensively than cattle) Yet we must remember that until the very close of the Pleistocene, there was little sign of animal domestication, and wild life was still practically unaffected by human action, except for the animal slaughter that man constantly undertook as a meat-eating animal, like any of the other carnivores.

In the demise of some species of mammals present in India in Pleistocene times, man has had probably no or only a partial role to play, It has been found that many species whose fossils have been found, as in the Kurnool caves (Andhra), from different Pleistocene phases, were more suited to humid climates, and probably died out as aridity grew during the Ice Ages. Some which thrived on grassland could not survive when the warmer and more humid Interglacials arrived.

2.4 EARLY MAN

It was a mark of the success of the hominid species that *Homo habilis* could break out of the environment of grassland and sparse forest in which he had evolved in Africa and move into areas with very different climates, extending from China to Spain. Pakistan too bears traces of these earliest tools used by what was either *Homo habilis* or early *Homo erectus*. These have been found at Riwat in the Soan valley of the Potwar plateau in western Punjab, Pakistan and go back to about 2 million years, Similar artefacts have also been located in the Siwalik rocks in Himachal Pradesh and assigned to a similarly early date, (1.8 million years ago or earlier).

Homo habilis was supplanted in time by *Homo erectus*, whose remains in the old World are fairly extensive. Besides his earlier traces, already mentioned, he penetrated the colder region of northern China, while he continued to inhabit the densely forested island of Java. His strong 'robust' physique, greater control over speech and larger brain gave him a great advantage, even when his tool-kit was still mainly based on roughly fractured pebble cores and flakes. He could use fire, to obtain warmth, scare away wild animals or make clearings, but not yet, perhaps roast meat and bone.

In Pakistan the main flaked pebble, also called 'Chopper chopping' tools in the Pabbi Hills, near Soan valley across the Jhelum, have been dated to over one million years ago similar artefacts without datable strata have been found in the Beas, Banganga and other river valleys of Himachal Pradesh. No fossils of *Homo erectus* of this age have been discovered in the entire region, but it seems almost certain that these tools were the work of this species.

The hand axe marking Acheulean industry (already known in Africa, 1.4 million years ago) appears in the Soan valley in association with chopper chopping tools, around 700,000 to 500,000 years ago Similar tools, including hand axes, are reported from Pahlgam in Kashmir on a terrace datable to a similarly early time. It is possible that armed with the hand axe which could be thrown to good effect, and with control over fire already secured, *Homo erectus* could become a hunter of

smaller animals in addition to being a scavenger (eating flesh of animals killed by other predators) and a gatherer of wild fruits, roots and wild grass seeds, which he had been till then.

The spread of *Homo erectus* into the remaining parts of India took time, largely proceeding within the period the geologists call Middle Pleistocene (730,000 to 130,000 years ago) It is not possible to say how the cold dry phases corresponding to the Ice Ages which denuded the forests, and the warm moist phases of the inter-glacials which made the forests denser, impeded or aided his advance. Many sites in South India including Hunsgi valley in Karnataka, and Attirampakkam, near Chennai, have turned up 'Early Acheulean tools' (of the so called 'Madras industry'), that is, hand axes, etc, made mainly from the cores.

As *Homo erectus* evolved, he also improved his tools, giving them new shapes and adjusting the technique to locally available materials. Such changes occurred very slowly, over tens of thousands of years, but these ultimately led to the rise of regional 'cultures'. The term 'culture' is used when archaeologists find at one or more sites a distinct assemblage of tools, ornaments and other products of human labour, which they call 'artefacts', as well as indications of similar customs and beliefs, such as systems of disposing of the dead, and ritual symbols. Regarding *Homo erectus*, there is little known of custom or belief, and the forms of his stone tools alone supply us with clues to his varied cultures. As the millennia passed, the tendency was for the production of smaller and thinner tools and the apparently independent appearances of the flake blade in many parts of the world were a natural result of such a tendency. The flake blade is supposed to mark the Middle Palaeolithic stage in India. Such stone blades are found in the 'Nevasa culture' (named after the site of Nevasa already mentioned), which seems to have extended over the southern peninsula and central India.

2.5 LET US SUM UP

Pleistocene saw a number of Ice Ages when the earth's orbit increased its average distance from the sun. Several mammals became extinct owing to a failure

to adapt to climatic changes As Homo erectus evolved he improved his tools, giving them new shapes and adjusting the technique to locally available materials. Such changes occurred very slowly, which led rise to regional cultures.

2.6 KEY WORDS

1. Homo erectus – Homo erectus is an extinct species of hominin that lived throughout most of the Pleistocene.
2. Environment – refers to the physical and biological factors along with their chemical interactions that affect an organism.

2.7 CHECK YOUR PROGRESS

1. Discuss in detail the physical change, vegetation and animal life during Prehistoric environment.

2.8 ANSWER TO CHECK YOUR PROGRESS

1. 2.2 and 2.4

2.9 SUGGESTED READINGS

1. Lal B.B., The Saraswati flows on: The Continuity of Indian Culture.
2. Makkham Lal, Settlement History and Rise of Civilization in Ganga,, Yamuna.
3. Irfan Habib, Prehistory.

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UNIT-3 LOWER PALEOLITHIC CULTURE

Structure

- 3.0 Objectives**
- 3.1 Introduction**
- 3.2 Stone Tools**
- 3.3 Siwalik**
- 3.4 Kashmir**
- 3.5 Rajasthan**
- 3.6 Gujarat**
 - 3.6.1 Sabarmati valley**
- 3.7 Let Us Sum up**
- 3.8 Key words**
- 3.9 Check Your Progress**
- 3.10 Answers to Check Your Progress**
- 3.11 Suggested Readings**

3.0 OBJECTIVES

After reading this unit you will be able to know

- That during the Pleistocene period changes took place on physical environment in which man emerged for the first time.
- The stone tools of Early Palaeolithic that have been found throughout India.

3.1 INTRODUCTION

A great change took place in the climate during the Pleistocene period. As a result there came into existence on earth such a physical environment in which man emerged for the first time. Except Sind and Kerala, the remains of Early Paleolithic age have been found throughout India. No human fossils of so early period have so far been discovered most of the stone implements have so far been collected from the surface of the earth but some from the terraces of the rivers. These terraces were so formed because of the change of climate from time to time. Along with the stone tools, some animal fossils have been discovered in these terraces. These terraces, stone tools and fossils help us in determining the Geological Ages and the Stone Ages.

3.2 STONE TOOLS

Taking into consideration of distinct geographical features and different manufacturing traditions, scholars have divided the stone tools of this age into two groups.

- Sohan
- Madras

The Sohan tools named after the Sohan Valley seem to have originated in the Punjab and were generally confined within its boundary. In the Sohan industry itself, there are two component factors.

- a) The pebble element
- b) The flake element

The Sohan Culture is more a pure prepared core culture in which primitive pebble elements occurs as inseparable adjuncts.

Handaxes and cleavers are the main components of the Madras tool which was named after the region, Madras, in which it was first of all discovered. It is an industry in which core and flake techniques are intimately associated with each other. Both the Sohan tools and also the handaxe tools of the Punjab occur earliest in India.

3.3 SIWALIKS

Geologically, the Siwaliks are a formation of water deposit and ranges in age from the late Miocene to early Middle Pleistocene. They run continuously from the north-west from the plains of Bhanu near Peshawar to Brahmaputra in Assam in the east. These are 200,00 feet thick and divided into three groups Lower, Middle and Upper Siwaliks.

3.4 KASHMIR

The right bank of the East Liddar at Pahalgam just below the golf ground yielded a massive flake and a crude handaxe in 1969 from well-stratified deposits dating to the II Glacial and II Interglacial respectively. The discovery of the crude handaxe and the massive flake at the same locality, and in practically the same part of it, but in two different deposits by about eight feet of boulder conglomerate seems to be the product of the same people over the course of time but they do not represent two separate and distinct cultures.

The massive flake embedded in the boulder conglomerate of the right bank of the East Liddar at Pahalgam like the six massive flakes of the Punjab is an earlier flake tool. H.D. Sankalia- regards this massive flake of Kashmir as belonging to the I Interglacial which will fall into the Lower Pleistocene.

During the drier loessic phase at the time of Interglacial Period, people from Kashmir and Punjab appear to have migrated to the different regions of Indian sub-continent when the conditions over there became unsuitable.

They selected places where there were facilities of water, food and raw material for tools. As their tools are sometimes found in large number at one particular place in separate regions, it is inferred that their population settled in pockets.

3.5 RAJASTHAN

The Lower Palaeolithic Culture was concentrated in the south-eastern region of Rajasthan where early stone implements have been discovered in large numbers. First, surface finds have been made available from Jaipur, Bundi and Indergarh. Recently, a survey of the Gambhiri, the Banas and other tributaries of the Chambal, and Chambal itself was made, and the sequence or order of river deposits was determined as follows clay, gravel clay and gravel silt.

Besides a large number of tools were collected from the Gambhiri near Chitor. Ten sites have been discovered on the Banas river between Hamirgarh in Bhilwara District and capped by silt have yielded pebble tools, handaxes and Levallois flakes.

All these tools may be broadly divided into two categories (1) Handaxes and cleavers of the Madras and (2) Flakes and pebble choppers, and scrapers of Sohan. Handaxes range from crude Chellean to advance Acheulian types.

According to some scholars, people representing two different cultures of Sohan tools of Punjab and handaxes of Madras, lived side by side. H.D. Sankalia does not regard the Sohan culture as a quite separate cultural unity but it is only a pebble element in the handaxe culture. The raw material used for making tools is always quartzite and only occasionally sandstone. As most of the tools are handaxes, the Lower Palaeolithic culture of Rajasthan is known as Handaxe Culture.

3.6 GUJARAT

The whole of Gujarat was once the home of early man because not only northern and central Gujarat but recently southern Gujarat, Saurashtra and Kutch have also yielded Early Stone Age tools. Long back, early stone tools were collected from the surface of the earth in Gujarat. Bruce Foote for the first time described systematically the stratigraphy of the Sabarmati. Afterwards H.D. Sankalia surveyed the rivers Sabaramati, Orasang, Mahi, Karjan, Bhadar, Bhajodi, etc, in order to discover stone tools.

3.6.1 Sabarmati Valley

Several early palaeoliths were found on the different sites of the river Sabarmati, such as Warasora, Gada, Hirpura, Agold, Pedhamli, Phuder, Rampur, Hadol and Valasna. The chief types among them are handaxes, cleavers, flakes, scrapers and pebbles. The implements are mostly fresh and only a few are rolled or semi-rolled with worn-out edges and scars. As Madras handaxes and Sohan pebbles were found together here, Krishnaswami and others' expressed the view that this valley was the meeting place of the Sohan and the Handaxe cultures. It is due to the fact that in any handaxe cleaver assemblage, where the tools are made on pebbles the pebble tools are the necessarily of the first stage.

The Lower Palaeolithic is known as handaxe industry because handaxe remained dominant too here. No stratigraphic in the tool types is available. Along with the very fine ovate and almond shaped, primitive handaxes were also obtained from the upper part of the reddish silt. As there is no distinction in the tools of upper and lower terraces, this industry of the tools may be called a mixed one. The tools may be divided into two classes, not on the basis of stratigraphy but on typology (1) the inferior tools with regular outline, wavy edges, comparatively smooth 'step' flaking and no pebble cortex at the butt-end or over part of both the surfaces, (b) the superior tools with regular outline, wavy edges.

The Lower Palaeolithic Industry of Gujarat is later than that of Laterite and Mottled clay. The early Stone tools were found from the Terrace of cemented gravel and the upper Terrace of silt gravel. Definitely, they belonged to the Pleistocene Period. The main source for determining the age of this industry is only by the comparison of tool types because no relation of dry-humid climate of Gujarat can be established with Glacial and Interglacial periods of north India. F.E. Zeuner has assigned the Early Stone industry of Gujarat to the end of III Glacial Age or some later time.

3.7 LET US SUM UP

According to Soundara Rajan, Sohan culture should be the sum total of more than one industry. Other scholars too regard Sohan culture as a separate culture. Krishnaswami assumes the meeting ground of the Sohan and Madras industries in Gujarat and South-east Rajasthan. It is more reasonable to say that the palaeolithic folk need not have been tied down to one single trend only but could have experimented with many techniques particularly in the early stages of tool making.

3.8 KEY WORDS

1. Paleolithic – refers to the prehistoric period when stone tools were made by humans.
2. Glacial – a glacial period is an interval of time within an ice age that is marked by colder temperature was and glacier advances.

3.9 CHECK YOUR PROGRESS

1. Explain the Tool Industry during Lower Paleolithic Culture.

3.10 ANSWERS TO CHECK YOUR PROGRESS

1. 3.2, 3.3, 3.4, 3.5 and 3.6

3.11 SUGGESTED READINGS

1. Pre and Proto-history of India and Pakistan-Sankalia H.D.
2. Archaeology in Karnataka-Sundara A
3. Proto-historic cultures of the Tungabhadra Valley-Nagaraja Rao M.S

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UNIT-4 MIDDLE PALAEOOLITHIC CULTURE AND UPPER PALAEOOLITHIC CULTURE

Structure

- 4.0 Objectives**
- 4.1 Introduction**
- 4.2 Characteristics**
- 4.3 Distribution**
 - 4.3.1 Maharashtra**
 - 4.3.2 Karnataka**
 - 4.3.3 Tamilnadu**
- 4.4 Climatic Condition and Environment**
 - 4.4.1 Fauna and Flora**
 - 4.4.2 Date**
- 4.5 Upper Palaeolithic Culture**
- 4.6 Distribution**
 - 4.6.1 Andhra**
 - 4.6.2 Karnataka**
- 4.7 Paleolithic tools**
- 4.8 Let us Sum up**
- 4.9 Key words**
- 4.10 Check Your Progress**
- 4.11 Answers to Check Your Progress**
- 4.12 Suggested Readings**

4.0 OBJECTIVES

After reading this unit you will be able to know that

- The existence of the middle Stone Age culture was discovered by stratigraphy and tool typology.
- The tools of this culture are of flake in nature and they are smaller than those of the Early Palaeolithic Culture.
- The Middle Palaeolithic Culture not only flourished in the whole of Maharashtra, but also in Karnataka Tamil Nadu etc.
- Upper Palaeolithic Culture consisted of Blades and Burin tools.

4.1 INTRODUCTION

The first clue to the Middle Stone Age Culture by stratigraphy and tool typology was obtained at Nevasa. At Narsinghpur and Hoshangabad, De Terra and Paterson discovered it in the basal gravels of the black soil of Narmada and designated it as the “Black-Soil Industry” or “Proto-neolithic”. As definite proof of independent existence was obtained from Nevasa, it was called Nevasian after the site Nevasa. From both the chronological and typo-technological significance, it is now finally known as “Middle Palaeolithic”

4.2 CHARACTERISTICS

Taking the technique, typology, raw material and stratigraphy into consideration, this culture is different from the preceding and the succeeding ones. The tools of this culture are of flake nature, and they are smaller than those of the Early Palaeolithic Culture. They are of different types such as scrapers, borers of awls, points, small choppers, small handaxes, very rarely small cleaver Taru Tburins or burin-facet tools. Scrapers were meant for dressing skins and barks of trees and knives for cutting and chopping, and pointed tools for piercing wood and bone. The tools of Early Palaeolithic were generally made of quartzite but the tools of this culture are made of new material such as agate, chert, jasper.

It succeeds the Handaxe industry and precedes the Blade and Burin industry in Kurnool and Chitoor in Andhra and Bombay area, and probably in U.P. Orissa, Madhya Pradesh, Maharashtra and Karnataka.

4.3 DISTRIBUTION

4.3.1 Maharashtra

This Middle Palaeolithic Culture seems to have flourished in the whole of Maharashtra. In Ahmednagar District, the most important stratified sites are Nevasa on the Pravara, and Bel Pandhari, Suregaon, Kalegaon and Nandur. In Poona District, the richest site is Koregaon. Among the stratified sites in Khandesh, the most important is Ranka-nala, a tributary of the Tapti River.

4.3.2 Karnataka

This Middle Palaeolithic Culture was in existence in Karnataka excluding the coastal areas. The two important stratified sites known are Taminhal and Alamatti. K.D. Banerjee notes that the Karnataka middle Palaeolithic industry is characterized by a high percentage of irregular flakes, cores and high nodules.

4.3.3 Tamil Nadu

Middle Palaeolithic Culture also flourished in Tamil Nadu excluding perhaps the north area. Tools were recovered from Attirampakkam and Vadamdurai. The Attirampakkam excavation discovered Acheulian flake industry consisting of points, scrapers and longish flake blades. Such an industry was also found in the excavation at Gudiyam in the same district overlain by a microlithic one.

4.4 CLIMATIC CONDITION AND ENVIRONMENT

The climate and environment may be inferred from the study of the nature of deposits found in the rivers. The changes in the deposits may be due to the cycle of a heavy wet phase followed by a drier phase, and then a lighter wet phase. Gradually, the climate became drier. When the rivers again raised their levels and then once again dropped them, owing to a wetter climate, the first Stone Age Man left the valleys. When the rivers rose again for the third time, and shed its load against other deposits, the Middle Stone Man occupied the region. He lived near the foothills, a region where raw material in the shape of nodules of agate, jasper and other fine-grained stones, was easily available. He made smaller tools known as scrapers for dressing the skins of animals, and used wood and bone for handles. There are also points and chisel edged tools. These imply the invention of the bow and arrow for hunting.

4.4.1 Fauna and Flora

From the few recorded finds of animal fossils found at, Hoshangabad, Narsinghapur, Devkachar, Burmaghat Siddhesvara on Narbada in Madhya Pradesh; Nevasa on Pravara and Kalegaon on Godavari in Maharashtra; Nittur near Bellary and Hagargundgi near Gulburga in Karnataka, It might be said that some of the typically Middle Pleistocene animals such as Bos and Elephas had survived, and were the main source of animal food for man. Likewise the flora might not have changed.

4.4.2 Date

Some idea about the date of the Middle Palaeolithic Culture is indicated by the fossils found in association with stone implements in the terraces of the rivers. As far as Maharashtra is concerned, the Middle Stone Age assemblage can be dated to the Late Pleistocene in C. 30,000 B.P. The evidence of C-14 determinations as well as of fossils may help in determining the period of Middle Palaeolithic Culture of India which is placed between C. 50,000 and 20,000 B.C.

4.5 UPPER PALAEOLITHIC CULTURE (C. 20,000-10,000 B.P)

Upper Palaeolithic Culture consists of Blades and Burin tools. R.B. Foote regarded bone objects found from the Billasurgam caves in Kurnool District to be of the Magdalenian type or Upper Palaeolithic. H.D. Sankalla placed the tools found near Baroda under Middle, Upper Palaeolithic and Mesolithic.

Excavations and explorations in the Chitoor and Kurnool Districts of Andhra Pradesh have Yielded definite, stratigraphical, archaeological and palaentological evidence to designate this culture as Upper Palaeolithic.

4.6 DISTRIBUTION

4.6.1 Andhra

The best and most convincing evidence for proving separate lithic culture known as Upper Palaeolithic from Chitoor and Kurnool Districts of Andhradesa. The Blade and Burin industry from Chitoor and Durnool is not different from the classic Blades and Burins of the Upper Palaeolithic Culture from Western Europe and West Asia. There is also paleontological evidence from the Billasurgam caves to place this phase in the Upper Pleistocene. The sites near Reniguntal yielded tools out of which blade and burin can be separated. The material is milky quartz. The collection of blades and burins at Mallagundlu has been made from surface and also from excavation. The number of burins in this collection seems to be the largest so far found anywhere in the Indian sub-Continent. There are different types of tools. The Backed blades form the second largest group of tools in this collection. These tools meet the needs of daily life such as of hunting and of collection of roots and fruits. Several tool types have been found at Rallakalava, and among them there are also blades and burins. None of them show crested ridge technique. Equally rich site is of Yerragondapalem in Prakasam District. This site yielded not only blades and burins but also the tools of the earlier period. Geographically, culturally and chronologically, they belong to the same period.

4.6.2 Karnataka

The Blade and Burin culture existed in Karnataka also. The region of Salvadgi and Meralbhavi, where these tools have been found, forms part of the Krishna-Bhima or Shorapur Doab.

At Salvadgi, this type of tools must be located in stratified context. Paddayya discovered a large workshop at Meralbhavi about three kilometer south of Salvadgi. Out of the collection of 963 tools, 446 belong to the blade tool industry. The industry is exclusively on reddish brown chert and the artifacts from the factory sites are in a mint condition. Paddayyah has classified these tools on the basis of the nature of working under three groups-(1) Edge tools, (2) Non-Edge tools and (3) Multiple tools. No doubt a fairly good variety is seen among the burins, still they lack the finish and refinement of classical Upper Palaeolithic burins. In the Shorapur Industry there is absence of true blades, and the presence of multiple tools, such as blade, borer and point.

4.7 PALEOLITHIC TOOLS

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

- The tools of the, lower Paleolithic phase include mainly hand axes, choppers and chopping tools,
- The middle Paleolithic industries are based upon flakes, and
- The upper Paleolithic is characterized by burins and scrapers

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

- Hand axe: Its butt end is broader and the working end is narrower. It might have been used for cutting and digging purposes.
- Cleaver: This has a biface edge and is more or less transversal. It was for cleaning and splitting objects such as trunks of trees choppers.

- Chopper: A massive core tool in which the working edge is prepared by unoficial flanking and used for chopping purposes.
- Chopping Tools: It is again a massive core tool like Chopper but the working edge is bifacial prepared by alternate flanking. Used for similar purpose as the chopper, it was more effective due to its edge being sharper.
- Flake: A desired crude shape tool produced by applying force on the stone. The flake carries positive bulb of percussion on its surface and the core has a corresponding negative bulb of percussion. The point at which the hammer stone strikes is called the point of percussion and on the flake struck off there is round, slightly convex shape around this point called the passive bulb of percussion. On the core there is corresponding concave bulb called negative bulb of percussion. There are many Flaking Techniques like Free Flaking Technique, Step Flaking Technique, Block on Block Technique, Bipolar Technique etc.
- Side scraper: Side scraper is made of flake or blade with continuous retouch along a border. It might have been used for scraping barks and animal skins.

4.8 LET US SUM UP

The Middle Palaeolithic and Upper Palaeolithic culture flourished in Maharashtra, Karnataka, Tamil Nadu, Andhra etc. The period of Middle Palaeolithic Culture of India is placed between C.50,000 and 20,000 B.C. The Upper Palaeolithic period is assigned to the last phase of the upper Pleistocene. It is from these Upper Palaeolithic Blade and Burin industries that the Mesolithic Culture developed.

4.9 KEY WORDS

1. Typology – is the study of types, division of culture by races
2. Ahirampakkam – is one of the classic sites in the history of Indian Paleolithic archaeology.

4.10 CHECK YOUR PROGRESS

1. Explain the characteristics and Distribution of culture during the Middle Palaeolithic period.
2. Discuss the distribution of culture and categories of tools during Upper Palaeolithic period.

4.11 ANSWERS TO CHECK YOUR PROGRESS

1. See section 4.2 and 4.3
2. See section 4.6 and 4.7

4.12 SUGGESTED READINGS

1. The Roots of Ancient India- Fairservis W.A.
2. The Earliest civilization of South Asia –Lal B.B.
3. Prehistory of India-Sankalia H.D.

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BLOCK – 2: MESOLITHIC AND NEOLITHIC CULTURES

UNIT – 5 MESOLITHIC CULTURE

Structure

- 5.0 Objectives**
- 5.1 Introduction**
- 5.2 Mesolithic Sites**
 - 5.2.1 West Bengal**
 - 5.2.2 Bihar**
 - 5.2.3 Uttar Pradesh**
- 5.3 Mesolithic Dwellings**
- 5.4 Mesolithic Material Culture**
- 5.5 Mesolithic Disposal of the Dead**
- 5.6 Mesolithic Art**
- 5.7 Mesolithic Paintings**
- 5.8 Technological and Cultural Evolution**
- 5.9 Let us sum up**
- 5.10 Keywords**
- 5.11 Check your progress**
- 5.12 Answer to check your progress**
- 5.13 Suggested Readings**

5.0 OBJECTIVES

The study of this unit will enable you to understand:

- How prehistoric culture of a region have influenced on the north Indian history.
- How the Paleolithic stages like lower Paleolithic age, middle Paleolithic age and upper Paleolithic age, etc. played an important role in the evolution and growth of civilization and culture.
- How the Mesolithic culture and its tools, etc. played an important role in the evolution and growth of civilization and culture.
- Besides, the study offers us an opportunity of have vision on natural resources of region and their impact in shaping the polity, religion and economy of the north Indian history.
- Microlithic distribution of north India has been said, ‘the foundation of all historical knowledge and link between the Paleolithic and Neolithic stages’. The history is the product of two great forces, environment and personality; the course of action that the famous figures of history can take, must of necessity take into account the surroundings in which they are place. In other words, the physical feature of a country its normal conditions, its climate, hills, coast-lines, rivers, borders etc. have always influenced the course of its political, social and economic history. They go a long way in molding the life and character of the people.
- They came as far as the mighty river which appeared to them like an ocean and called the river Sindh and gave the same name to the country. It is through this word that later on the terms India, Hindustan and Hinduism, have come into vogue. The inhabitants of the land in historical times called their country Bharatavarsha, Bharat and Bharatakhanda.

5.1 INTRODUCTION

The term Mesolithic is used to distinguish a transitional phase from the Paleolithic to Neolithic Culture, and it bridges the gulf between the two. It is different from the early period in climate, technology and other spheres. The old

glacial conditions had more or less disappeared, and the dry period had started. With the climatic changes, the florae and fauna altered, consequently also the implements. Technologically, tiny tools known as 'microlithic' highly improved upon the earlier ones were devised. Hence this culture is also famous by the name of microlithic. There is the continuation of the Paleolithic economy, but the emphasis shifted from big game to small game hunting. The occupation of sites was more extensive and intensive than that of any of the two preceding Stone Age Cultures. But all microlithic do not suggest or stand for a Mesolithic stage of culture, but context and stratigraphy can only prove their genuineness. They may be placed between C. 8,000 and 2,000 B.C. They are post-Pleistocene (Holocene) and post-Paleolithic. Even up to very late period, the use of microlithic continued but not in true sense.

5.2 MESOLITHIC SITES

From the wide distribution and nature of the sites, it is clear that the Mesolithic occupation of India was much more extensive and intensive than that of any of the two earlier Stone Age Cultures. Whereas Paleolithic Man had largely confined himself to river banks, Mesolithic man had ventured into territories hitherto unoccupied, away from river banks. Taking into the consideration of raw material and environment, these Mesolithic sites may be divided into following types: (1) Open rocky areas, (2) Sandy areas, (3) Coastal area, (4) Caves and rock-shelters and (5) River banks. No microlithic have been reported from Assam, Bengal, Nepal, generally the Gangetic Valley proper, the plains of the Punjab. The absence of microlithic in Assam and Nepal may be due to thick forests and altitude and in the Punjab plains generally the Gangetic Valley and deltaic Bengal, for want of suitable raw material and environment. The same may be the case with Kerala.

5.2.1 West Bengal

In West Bengal, several microlithic sites have been explored in the Districts of Bankura, Birbhum, Burdwan and Midnapore. Among them, the site of Birbhanpur near the Durgapur railway station on the bank of the Damodar river in

Burdwan District, West Bengal discovered and excavated by B.B. Lal is very important. The Microlithic Industry of this place is pre-pottery in age and essentially non-geometric in character. Another noteworthy point about the industry is the absence of the 'crested ridge'- a feature so typical of the microlithic industries of the Chalcolithic Period. The chief raw material used is quartz. The chief types of tools are core, flake, blade, lunate, trapeze, triangle, point, borer, burin and scraper. This industry may be dated 4000 B.C. The area around Birbhanpur brought to light three other microlithic sites, viz. Dejuri, Malandighi and Gopalpur.

5.2.2 Bihar

Marvania and Pratappur in District Palamau were found to be rich microlithic sites. A large number of microlithic tools, both geometric and non-geometric, representing lunates, burins, points and blades were picked up along with a few Upper Paleolithic blades. Microlithic tools, again both, geometric and non-geometric were collected from Kuchajharia, District Ranchi and its neighborhood. Microliths of the geometric type were found at Ambarpur, Dhal-Taur, Hainchula, Kurmahat, Lagba and Rajapokhara in District Bhagalpur and at Buddudih, Bheladih, Chawdhridih, Chora-dih, Dabur, Dubarkunda, Dumar, Gholajuri, Ghoralash, Indapahari, Kamkarshola, Karnakolajore, Khutiya, Madhuban and Tepra in District Santal Parganas.

5.2.3 Uttar Pradesh

The important microlithic sites of Uttar Pradesh are Sarai Nahar Rai, Lekhania, Morahana Pahar and Belan Valley. The site of Sarai Nahar Rai is situated on the bank of a horse-shoe lake, and it is situated at a distance of 15 Km. from Pratapgarh in south-westerly direction as the crow flies. Not only in Uttar Pradesh but in India, this site carries great significance because so far the earliest date of the Microlithic Culture is known from it. It is a rich microlithic culture which comprises scrapers, points, parallel-sided and blunted back blades and lunates. The preferred raw material is chert though occasionally chalcedony,

agate, quartz and carnelian were also used. The nodules of all these were imported from the Vindhya which are situated at a distance of 40 Km to the south.

5.3 MESOLITHIC DWELLINGS

Our knowledge of the dwellings and material culture of the Mesolithic people is very limited, mainly because of the poor survival of the items made of organic materials. In central India in many cases these people inhabited readily available rock shelters. But from one shelter at Bhimbetka it is evident that they raised stone walls inside the shelters to partition off some areas. Rock paintings show circular huts made of three branches and leaves. There is also evidence of circular stone-lined huts at Bagor and Tilwara. At Sarai-nahar-Rai a rectangular floor made by ramming clay has been found. Post holes found at the corners of this floor suggest some kind of a superstructure over the floor.

5.4 MESOLITHIC MATERIAL CULTURE

The material possessions of Mesolithic people were meager. They included bows, arrows, spears, traps, nets, grindings stones for processing food, stone hammers, sling balls, ring stones, bone and antler tools, and ornaments. Rock paintings show that both men and women wore some kind of dress around the waist, probably made of leaves. Hunters are often shown wearing masks. The burials from Mahadaha in the Ganga valley indicate the use of ear-rings and necklaces made of rings cut from antlers.

5.5 MESOLITHIC DISPOSAL OF THE DEAD

The earliest evidence of intentional disposal of the dead in India is known from the Mesolithic period. The only known method of disposal of the dead among the Mesolithic people was inhumation. Both in rock-shelters and at open air sites the dead were buried within the habitation area. In the Ganga valley at Sarai-nahar-Rai, Mahadaha and Damdama the dead were placed in shallow graves in an extended position with the head to the west and the right forearm placed

diagonally over the abdomen. At these sites there are examples of double burials in single graves. At Sarai-Nahar-Rai microlithic were found embedded in the bones of some skeletons, suggesting violent death. At Bagor the only burial from Phase I was similarly laid. At Morhana Pahar a single burial in a rock-shelter was laid in an extended position and the rock was dressed to provide raised platforms for head and feet. Most of the burials from Bhimbetka were also placed in an extended position, with legs only slightly folded. At these sites, as also at Langhnaj, there are examples of secondary burials, with only a few bones being interred. At Lekhahia near Morhana Pahar as many as 17 burials were found in a single shelter with a very thin deposit, and all skeletons were incomplete. Many of the burials at Langhnaj and those in Phase II at Bagor were placed in a crouched position, with legs and arms tightly folded.

5.6 MESOLITHIC ART

Not much is known of the portable art of the Mesolithic people. From Chandravati in Gujarat a stone blade core with incised lattice design is known. Evidence of bone and antler rings used as earrings and components of necklaces at Sarai-nahar-Rai and Mahadaha has already been mentioned. At Bhimketka a few pieces of bone with incised lattice decoration and a rib with perforation, probably used as a pendant, were found.

We have, however, rich evidence for the art of painting of the Mesolithic people. In the sandstone region of central India several thousand painted rock-shelters are known, their major concentration being around Bhimbetka, Bhopal, Raisen and Pahmarhi in Madhya Pradesh and south Mirzapur in Uttar Pradesh. Though there are minor differences both between and within the sites, there is a broad uniformity over the whole area in terms of subject matter, technique, style and pigments used, and there can be no doubt than the entire stone age rock art of central India belongs to a single cultural tradition. Since pieces of hematite with ground facets produced in the process of making pigment for the execution of paintings are common in the habitation deposits of the shelters and since the older paintings depict only a hunting-gathering way of life, the latter can be certainly associated with the Mesolithic people.

5.7 MESOLITHIC PAINTINGS

Most of the paintings are in shades of red-scarlet, purple, chocolate, orange, etc., and in white. On the basis of superimposition many layers of paintings can be seen. Broadly, however, the paintings can be divided into two chronological stages: (1) Pre-historic and (2) Historic. Most of the prehistoric paintings are in shades of red but the oldest among them are green in color. The most common subject of the paintings is wild animals. These include gaur, humped cattle, buffalo, rhinoceros, elephants, tiger, leopard, boar, Sāmbhar, chital, chinkara, nilgai, blackbuck, monkey, jackal, fox, dog, porcupine and rat. The animals are shown standing, sitting, grazing, moving slowly and running. They are very realistically drawn and are characterized by vitality and dynamism. The size of the animals ranges from a few centimeters to life size. However, even in very small paintings the artists portrayed the animals and their moods with remarkably effective realism.

5.8 TECHNOLOGICAL AND CULTURAL EVOLUTION

Mesolithic technology from a majority of the sites belongs to a highly developed stage, and there are very few sites where the evolution is clearly seen from a simpler stage. In the rock-shelters and open air sites at Morhana Pahar the excavators have reported a four-phase evolutionary sequence: (1) non-geometric microlithic industry, (2) geometric microlithic industry with pottery. We need, however, more detailed information from these and other sites to clearly establish the process of evolution. In rock-shelter at Bhimbetka the stone industry of the lowest layer is characterized by a cruder blade technique and a lower proportion of geometric forms than that of the upper layers. The microlithic industry of Birbhanpur, lacking triangles and trapezes and with large crescents made on flakes or broad blades is certainly more archaic than the industries of western and central India. Unfortunately, in the absence of radiocarbon dates we do not know its precise antiquity. The Teri industry with its flake points, asymmetric geometric forms, and large tools like discoids and choppers also tends to represent an older technological stage. At the other extreme of the technological spectrum are the

industries of Bagor and Bhimbetka which are characterized by a low proportion of flake tools, a very high proportion of microliths made on microblades and of geometric forms, and an extreme miniaturization of microliths.

5.9 LET US SUM UP

The history of north India is well known for her vast dimensions and the varied cultures. There are chains of hills and the highest mountain ranges, vast plains and lofty plateaus, dense forests and sandy deserts and the fertile river valleys in north India. All these factors tended to separate India into different local zones each with a regional spirit of its own. In other words the natural barriers largely determined the different political and cultural units. The north India, the Deccan plateau, the peninsular plains, the Ghats and the coastal regions have marked political and social characteristics. Thus the prehistoric culture and historic cultures have profoundly influenced the course of north Indian History.

The term Mesolithic is the combination of two words, meso and lithic. In Greek 'meso' means the middle and 'lithic' means stone. Hence, the Mesolithic stage of prehistory is also known as the Middle Stone Age. It was the transitional phase between the Palaeolithic and the Neolithic Ages. On the basis of archaeological discoveries, the beginning of the Mesolithic Age in Indian subcontinent is dated to around 10,000 BC. This period witnessed the rise in temperature, as a result of which the climate became warm. These changes further resulted in melting of ice of the earlier period and brought about changes in flora and fauna. Though man was still in hunting-gathering stage, he now started fishing and some domestication of animals. The main tools they used are called the microliths or small stone tools. The Rock paintings found at Bhimbetka (near Bhopal) belonging to the period indicate the artistic taste of the people. The microliths used during the Mesolithic period were very small in size varying in lengths from 1 to 8 centimeters and were largely made out of chipped or flaked pieces. Some of these tools have geometric forms such as triangles, lunates and trapezes. These tools could be tied or fixed in other objects to form an arrow or a spear.

5.10 KEYWORDS

1. Technology – is the collection of tools including machinery, modifications, arrangements and procedures used by humans.
2. Hunter – is the practice of killing or trapping any living organism.

5.11 CHECK YOUR PROGRESS

1. Give an account of the main characteristics of dwellings of Mesolithic culture.
2. Examine the main features of Mesolithic culture.

5.12 ANSWER TO CHECK YOUR PROGRESS

1. See section 5.3
2. See section 5.4, 5.5, 5.6, 5.7 and 5.8

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UNIT- 6 NEOLITHIC CULTURE IN NORTH INDIA

Structure

- 6.0 Objectives**
- 6.1 Introduction**
- 6.2 Neolithic Sites**
- 6.3 Neolithic Settlements**
- 6.4 Neolithic Pottery**
- 6.5 Neolithic tools**
- 6.6 Neolithic Technology**
- 6.7 Let us sum up**
- 6.8 Keywords**
- 6.9 Check your progress**
- 6.10 Answer to check your progress**
- 6.11 Suggested Readings**

6.0 OBJECTIVES

The study of this unit will enable you to understand:

- How prehistoric culture have influenced on the Indian history.
- How the Neolithic culture and its various stages have played an important role in the evolution and growth of civilization and culture.
- Besides, the study offers us an opportunity of have vision on natural resources of region and their impact in shaping the polity, religion and economy of the nation.
- New Stone Age has been said, ‘the foundation of all historical knowledge’. For this reason, before we begin to study the history of India, we must make ourselves acquainted with her important characteristics and features, and consider how far they have determined the course of events.
- The history is the product of two great forces, environment and personality; the course of action that the famous figures of history can take, must of necessity take into account the surroundings in which they are place.
- It was well said by Foote that Neolithic culture is a revolution of the history. The history of India, like that of other countries, cannot be understood without a careful study of its prehistoric cultures.

6.1 INTRODUCTION

The beginning of the Neolithic Culture is assigned to 9000 B.C. in the world context, in the Indian subcontinent that earliest Neolithic settlements in at Mehrgarh, Baluchistan (now in Pakistan), and to around 7000 B.C. Some Neolithic settlements in North India may be as old as 5000 B.C, but in South India may not be earlier that 2500 some in southern and eastern India may be as late as 1000 B.C. Overall, the period between 5000 and 3000 BC has been accepted to be the Indian.

The term ‘Neolithic’ was coined by Sir John Lubbock in his book Prehistoric Times, first published in 1865. The term denotes an age in which stone implants were made more skillfully and were more varied in form that an earlier. V

Gordon Childe defined the Neolithic-Chalcolithic culture as a self-sufficient food economy, Miles Burkit put forward the following four characteristics a culture should fulfill to be known as a Neolithic culture : i) agriculture practice, ii) animal domestication, iii) grinded and polished stone tools, and iv) pottery manufacture.

Neolithic age, The Neolithic Culture witnessed considerable changes in the socio-economic life of the people. Human communities entered a new stage of culture when they started cultivation and domestication of animals, both for milk and meat and for amassing their labour for various purposes. The development of agriculture in the real sense was a remarkable development of the period. Tools of the Neolithic Culture were also more advanced than those of the Paleolithic and Mesolithic Culture.

6.2 NEOLITHIC SITES

The earliest evidence of the cultivation of wheat and barley has been found in present-day Afghanistan and Pakistan. Punjab, Kashmir, West-Pakistan, and Afghanistan were the original places of bread-wheat and spelt-wheat cultivation. Excavations at Mehrgarh in Baluchistan have revealed the evidence of cultures ranging from pre-pottery Neolithic to the mature Harappan period. The Neolithic levels at Mehrgarh have been classified into two phases: (i) the early a ceramic without pottery (Period I); and (ii) the later phase (Period II). The cereals at the site included two varieties of barley and three varieties of wheat. Plum and date seeds have also been found. The beginning of the pre-pottery settlement phase in Mehrgarh has been fixed at about 6000 BC. Period II represents the Chalcolithic phase (5000 BC). It is assumed that the Harappans inherited the knowledge of wheat, barley, and cotton cultivation from their ancestors in Mehrgarh.

Burzahom and Gufkral in the Kashmir valley, where village settlements appeared by about 2500 BC, are other important Neolithic sites in Kashmir. The Neolithic culture in the valley is characterized by pit-dwellings with well made floors smeared with red-ochre, and dwellings in the open. The eastern phase in Gufkral is a ceramic (pre-pottery), discovered for the first time in India. According to C-14 dates, the Neolithic culture in the Kashmir valley existed between 2500

and 1500 BC. The important excavated sites of the Belan valley (Belan river is tributary of Tons which joins the Ganga near Allahabad) include Chopani-Mandi Koldihawa and Mahagara. Excavations at these sites inculcate transition from the food-gathering stage to the food producing stage. At Chopani-Mandi, a three phase culture, sequence-epi-Palaeolithic, late-Mesolithic and proto Neolithic, has ~ discovered. The excavations at Koldihawa have also revealed a three-fold cultural sequence: Neolithic Chalcolithic and Iron Age. The combined evidence from Chopani and Koldihawa indicates sedentary life, and do mastication of rice and of cattle and sheep / goat. It has been suggested (though the idea has not been accepted by) that Belan valley emerged as the earliest rice-farming community in India (6000BC).

The Gangetic valley of Bihar was occupied by sedentary village settlements much later-2000-1600 BC. Chirand (Saran district), Chechar, Senouwar (Rohtas district) Taradhi, etc are the important Neolithic sites. They throw significant light on the life pattern of the Neolithic people of the region. Chirand and Senouwar are known for their remarkable bone tools. The grains cultivated at Chirand were wheat, barley, rice and lentil. South India. The Neolithic settlements in South India, are found on the hilly and dry Deccan plateau. Important excavated sites include Sangankallu, Nagarjunakonda, Maski, Brahmagiri, Tekkalakota, Piklihal and Hallur. Ragi (millet) was one of the earliest crops cultivated by the South Indian Neolithic farmers. It is believed that the domesticated ragi came from East Africa. Other crop cultivated in the region included wheat, horse gram and green gram (moong). Domesticated animals like cattle, sheep and goat, buffalo, ass, and fowl are also reported from same sites. Abundance of cattle and other kinds of food articles suggest that the economy of South Indian Neolithic people was agriculture-cum-pastoral. According to C-14 dates, the Neolithic culture of South India has been placed between 2600 and 1000 BC.

This Neolithic sites includes Assam, Bengal-Bihar-Orissa cultural sites. In Assam Neolithic sites, a type of small ground cells with rounded contour, shouldered cells, etc which are conspicuously lacking in the Neolithic sites of North and Central India are found. These Neolithic finds are associated with the common occurrence of 'Megalithic monuments' widely distributed in entire hill

areas of Assam. The raw materials for such tools are flat slabs of chert, sand-stone and slate. Brahmaputra valley, Khasi, Garo and Kachar hills are the prominent Neolithic sites of Assam. In some places, tanged axes, grooved hammer-stones could be noticed in addition to above-mentioned tools.

The districts of Midnapur, Bankura, Burdwan, Birbhum and Purulia in West Bengal together form a triangular zonal shape which offers significant Neolithic cultural tools. Polished elongated Celts, rectangular polished chisels, black colored polished pottery, etc have been discovered from these Neolithic sites. In addition, some iron implements and oval-shaped ovens and copper fish hooks belonging to Chalcolithic stage have also been unearthed. Modern Radio-Carbon dating suggests them to be of 1380 B.C to 855 A.D period. In Mahishadal on the bank of Kopai River in Birbhum district, numerous microliths, polished Celts, copper implements, clay models, bone tools, red-black pottery, scriptures on stone, earthen pots with delivery tube, grains of boiled rice, iron arrow heads, spear-heads have been found. In Burdwan (Baneswar Danga) a type of long, triangular polished Celts have been unearthed. In Susunia, Bankura district, polished Celts and ring-stones have been found. A type of shouldered chisel has been found in a site, known as Bon-Asuria, near to Susunia. In Baghmundi P.S. of Purulia district of West Bengal, a variant of polished Celt has been discovered on Ajodhya hills. Pandu Rajar Dhibi on Ajay river valley in the district of Burdwan points definitely towards a Neolithic-Chalcolithic culture complex dating between 2000 B.C. to 1012 B.C. In some sites, the evidences of human dwellings with mud-walls and circular bamboo roof-framing have been found.

It is quite interesting to note that Neolithic industries in the eastern zone have been found mostly in association of microliths and iron-copper implements for which the dating those sites posed a serious problem for the pre-historians. Megalithic monuments and painted glassed black-red pottery occur in some sites. The shouldered cells speak mainly about Assamese significance. The Neolithic culture had been established in India at a stage when a far more advanced urban culture exhibiting Chalcolithic features flourished in the extreme north centering round Indus valley. This urban culture as found in Indus valley might have positive influence of Western Asiatic Neolithic cum Chalcolithic mixed cultural thrust. On

the other hand, the eastern Neolithic culture shows striking similarities with the Neolithic typologies of China and other sites of South-east Asia. Again, Burzahom tradition of Kashmir links north India with the south as 'pointed butt polished axes' of the former are found occur in the south. The Western Indian and Malwa forms of Neolithic tradition may better be termed as Neo-Chalcolithic, have had, their origin from a 'self-evolved' microlithic base. Thus, it is safer to say that the Neolithic culture developed in different parts of India not from a single source. Philological researches have established a definite link between these Neolithic peoples of India and the primitive tribes that lived in Indo-China, the Malayan Peninsula and the Indian Archipelago.

Sir Martimar Wheeler discovered an important Neolithic site at Brahmagiri in Mysore where he found profuse occurrence of polished cells. Later on, Dr. B. Subba Rao discovered another site about 4 kilometer north-east of Bellery in Mysore, Sanganakallu in 1946 where he could notice a number of polished cells, other polished tools and hand-made pottery. Varieties of polished chisel, hammer-stones and ring-stones, mostly prepared on black basalt stone are also found. Incidentally, it may be mentioned that most of the Neolithic sites lie in the zone between river Tapti in the north-west and Tungabhadra and lower Krishna Rivers in the south-east. Most of these sites may be declared as Neo-Chalcolithic sites, excepting Brahmagiri and Sanganakallu which are referred to as orthodox Neolithic sites occurring in this part of this sub-continent. Piklihal site in Andhra Pradesh discovered by F.A. Allchin in 1960 and Maski site excavated by B.K. Thapar in 1954 are inclined to show Brahmagiri Neolithic characters. A Mysorian site, known as T. Narsipur, presents Neo-chalcolithic industries. It includes many polished Neolithic Celts, ring-stones, and painted potsherds.

6.3 NEOLITHIC SETTLEMENTS

Although in the world context the New Stone Age began much earlier, in 7000 B.C., Neolithic settlements in the Indian sub-continent are not older than 6000 B.C. Some settlements found in south India and eastern India is as late as 1000 B.C. The people of this age used tools and implements of polished stone. They particularly used stone axes, which have been found in large numbers

throughout the greater part of the country. This cutting tool was put to various uses by the people, and in ancient legends Parasurama became an important axe wielding hero.

Based on the types of axes used by Neolithic settlers, we notice three important areas of Neolithic settlements. One area is to be found in the north in the valley of Kashmir at a place called Burzahom at a distance of about 20 km from Srinagar. The Neolithic people lived there on a plateau in pits, and probably had hunting and fishing economy. They did not seem to have been acquainted with agriculture or domestication of animals. They used not only polished tools of stone, but what is more interesting, they used numerous tools and weapons made of bone. The only other place which has yielded considerable bone implements in India is Chirand, which is 40 km west of Patna on the northern side of the Ganga. These bone implements have been found in a late Neolithic set up in an area with about 100 cm rainfall. The settlements became possible, because of the open land available on account of the joining together of four rivers, Ganga, Son, Gandak and Ghaghra at this place.

The Neolithic settlers in Piklihal were cattle-herders. They domesticated cattle, sheep, goats etc. They set up seasonal camps surrounded by Cowpens made with posts and stakes. In these enclosures they accumulated cow dung. Then the entire camping ground was put to fire and cleared for camping in the next season. Both ash mounds and habitation sites have been discovered in Piklihal.

The later Neolithic settlers were agriculturists, who lived in circular or rectangular houses made of mud and reed. It is held that the primitive people living in circular houses owned property in common. In any case these Neolithic people led a settled life. They produced ragi and horsegram (kulathi). Their polished tools also included microlithic blades.

Since in the Neolithic phase several settlements came to be acquainted with the cultivation of cereals and the domestication of animals, they needed pots in which they could store their food grain and milk. They further needed pots for

cooking and eating. Hence hand-made pottery is found in the early stage. Later they used foot wheels to turn up pots.

6.4 NEOLITHIC POTTERY

The people of Burzahom used coarse grey pottery. It is interesting that the Burzahom domestic dogs were buried with their masters in their graves. Pit dwelling and the placing of domestic dogs in the graves of the masters do not seem to be the practice with Neolithic people in any other part of India. The earliest date dated for Bruzahom is about 2400 B.C., but the bones recovered from Chirand cannot be dated plateaus near the river banks. They used stone axes and also some kind of stone blades. Fire-baked earthen figurines suggest that they kept a large number of cattle. They possessed cattle, sheep and goats. They used rubbing stone querns, which shows that they were acquainted with the art of producing grains.

6.5 NEOLITHIC TOOLS

The third area from which Neolithic tools have been recovered is in the hills of Assam. Neolithic tools are also found in the Garo hills in Meghalaya on the north-eastern frontier of India. We have no means of dating them. In addition to this we also find a number of Neolithic settlements on the northern spurs of the Vindhyas in Mirzapur and Allahabad districts of Uttar Pradesh. Neolithic sites in Allahabad district are noted for the cultivation of rice in the sixth millennium B.C. Those found in Baluchistan also seem to be fairly old.

The people of the Stone Age suffered from one great limitation. Since they had to depend entirely on tools and weapons made of stone, they could not found settlements far away from the hilly areas. They could settle down only in the hilly river valleys. Further, even with great effort they could not produce more than what they needed for their bare subsistence.

6.6 NEOLITHIC TECHNOLOGY

Neolithic Celts have also been found in the Orissa hill areas, and it is likely that rice cultivation and small-scale settlements began in this part of the country quite early. The period between 9000 B.C. and 3000 B.C. saw a remarkable progress of technology in Western Asia, because the people developed the arts of cultivation, weaving, building houses, domestication of animals, etc. But the Neolithic Age in Indian subcontinent began around the sixth millennium B.C. Some of the important crops, including rice, wheat and barley, came to be cultivated in the subcontinent in this period and a few villages appeared in this part of the world. It appears that the people were now on the threshold of civilization.

6.7 LET US SUM UP

The history of north India is well known for her vast dimensions and the varied cultures. There are chains of hills and the highest mountain ranges, vast plains and lofty plateaus, dense forests and sandy deserts and the fertile river valleys in north India. All these factors tended to separate India into different local zones each with a regional spirit of its own. In other words the natural barriers largely determined the different political and cultural units. The north India, the Deccan plateau, the peninsular plains, the Ghats and the coastal regions have marked political and social characteristics. Thus the prehistoric culture have profoundly influenced the course of Indian History.

The beginning of the Neolithic Culture is assigned to 9000 B.C. in the world context, in the Indian subcontinent that earliest Neolithic settlements in at Mehrgarh, Baluchistan (now in Pakistan), and to around 7000 B.C. Some Neolithic settlements in North India may be as old as 5000 B.C, but in South India may not be earlier that 2500 some in southern and eastern India may be as late as 1000 B.C. Overall, the period between 5000 and 3000 BC has been accepted to be the Indian.

The term 'Neolithic' was coined by Sir John Lubbock in his book Prehistoric Times, first published in 1865. The term denotes an age in which stone implants were made more skillfully and were more varied in form than an earlier. V Gordon Childe defined the Neolithic-Chalcolithic culture as a self-sufficient food economy, Miles Burkit put forward the following four characteristics a culture should fulfill to be known as a Neolithic culture : i) agriculture practice, ii) animal domestication, iii) grinded and polished stone tools, and iv) pottery manufacture.

Neolithic age, The Neolithic Culture witnessed considerable changes in the socio-economic life of the people. Human communities entered a new stage of culture when they started cultivation and domestication of animals, both for milk and meat and for harnessing their labour for various purposes. The development of agriculture in the real sense was a remarkable development of the period. Tools of the Neolithic Culture were also more advanced than those of the Paleolithic and Mesolithic Culture.

6.9 KEYWORDS

1. Indus Valley – was a Bronze Age civilization.
2. Period – refers to time frame, a length or era of time.

6.10 CHECK YOUR PROGRESS

1. Explain in detail the Neolithic Culture in North India.

6.11 ANSWER TO CHECK YOUR PROGRESS

1. See section 6.2 to 6.6

6.12 SUGGESTED READINGS

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BLOCK – 3: HARAPPAN CULTURE

UNIT -7 HARAPPAN CULTURE – ORIGINS- CHARACTERSTICS - EXTENT

Structure

- 7.0 Objectives**
- 7.1 Introduction**
- 7.2 Origin**
 - 7.2.1 The Diffusion Theory**
 - 7.2.2 The Indigenous Theory**
- 7.3 Extent of the civilization**
- 7.4 Characteristic feature of Harappan culture**
- 7.5 Let us sum up**
- 7.6 Keywords**
- 7.7 Check your progress**
- 7.8 Answer to check your progress**
- 7.9 Suggested Readings**

7.0 OBJECTIVES

After reading this unit you should be able to understand that,

- The Harappan culture is one of the oldest cultures of the Bronze Age (the other three were Egyptians, Mesopotamians' and Chinese).
- We have no written records about the Indus valley civilization good number of seals have been discovered with a few letters engraved on it, but they still remain undeciphered. But the Excavations have thrown flood of light on Harappan.
- The Indus valley civilization developed on the Hartappa- Ghaggar-Mohenjodaro axis (representing the heartland) in the north- western part of the Indian sub-continent. It was also known as the Harappan civilization because it was discovered first in 1921.
- You will understand that Harappan culture had not only flourished on the Indus river valleys it had spread to a vast area flourishing in north-western region of Indian sub-continent, present Pakistan, Iran and Afghanistan. Nearly 1500 Harappan sites have been discovered, Around 971 are in India and 400 are in Pakistan and 2 in Afghanistan.

7.1 INTRODUCTION

The greater Indus region was the home to the largest of the four ancient urban Civilization of Egypt, Mesopotamia, South Asia and China. The Indus civilization is one of the oldest civilizations of south Asia, which flourished in the North and North West of the Indian Sub-Continent. Unfortunately the people of Indus valley have left no written source material. The scripts have not been deciphered, as a result the Archaeology remains serve as the only source to know about this civilization. The Indus valley civilization developed on the Harappa-Ghaggar Mohenjo-Daro Axis in the North western part of the Indian Sub-Continent.

The Indus valley civilization was known as the Harappan culture after the name of one of the cities named Harappa in Ravi valley of Punjab. The Harappan

culture was not a single river valley civilization, it was a great civilization spreading over 7 to 8 river valleys namely Indus, Theelum, Chenab, Raavi, Beas Sutlej, Saraswathi, Drishadwathi (River and Rocks) In course of time Time Saraswathi changed its course towards south and joined the Ganga river and come to be called as river Yamuna.

Harappa site was mentioned first by Charles mason in 1842 in 1856, General Alexander Cunningham, later director general of the Archeology survey of northern India, visited Harappa where the British engineers John and William Brunton were laying the East Indian Railway company line connecting the cities of Karachi and Lahore. In 1872-75 Alexander Cunningham published the first Harappa seal. In 1912 more harppan Seals were discovered under sir John marshall in 1921-22, resulting in the discovery of the civilization at Harappa by Sir john Marshall, Rai Bahadur Dayaram Sahini and M.S.Vats. mohenjodaro was discovered by Rakhal Das Banerjee, E.J.H Mackay by 1931 mush of Mohenjodaro had been excavated, Excavations continued led by Sir Mortin Wheeler director of the Archaeology Survey of India in 1944. Excavation continues even in the modern times.

7.2 ORIGIN

The origin of the Harappa culture is a matter of debate. There are two theories reading the origin of this culture, namely

1. The Diffusion Theory- Medonal, M.Wheeler
2. The Indigenous Origin Theory- Allachin, Sankalia.

7.2.1 The Diffusion Theory

McDonald believes that the Harappa civilization was a colonial offshoot of the Mesopotamian civilization,

1. The Human figure found in both the places are similar.
2. Evidences of trading relations between Mesopotomian and Harappan has many Indian Seacoast have been mentioned in the Mespotomian texts.

3. There are striking differences in area such as town planning, skill in burnt bricks and in the design of their seals between the Indus and the Mesopotamian civilization.

A few scholars have tried to trace the origin from the Amri culture on the basis of similarity of a few articles found at the two places. The pottery and unbaked brick-types of Amri are similar to those found in the later stage of the Harappan Civilization.

But this theory has been rejected on the ground that the basic features of Indus valley are absent in Baluchistan.

7.2.2 The Indigenous Theory

From the Excavations of number of sites in Baluchistan Sindh and Punjab, it is clear that the emergence of civilized like of Indus valley was Indigenous in origin. Several pre-Harappan settlements have been found in Baluchistan between them and the mature Harappan culture is not clear.

As far as the evidence of the Indigenous theory of the civilization is concerned we many refer to wheat, pottery and the concept of permanent settlements of the Harappan people which were known earlier in India, on the basis of the similarities between the Harappan and pre-Harappan cultures, it has been argued the origin of Harappan culture was indigenous and it is the result of qualitative transformation of already existed culture traceable to the 6th Millennium .B.C

Historians have divided this transformation into four phases:-

1. 550-3500 B.C:- In this phase Beluchistan Indus plains, settlements like Mehrgarh and Kalighul Muhammad came up.

- Beginning occupation Pastoralism
- Seasonal occupation of the villages and emergence of permanent villages

- Evidence of Mud-houses, pottery and craft production.
2. 3500-2600 B.C- largest number of villages emerge in this period (early Harappan period)
 - Use of copper, wheel and plough
 - Extra-ordinary range of potteries were made.
 - Origin of motifs like papal, humped bulls, cobras pored deity, etc.
 3. 2600-1800B.C –Mature Harappan civilization efficient technology and exploitation of the fertile plains.
 - Emergence of large cities and towns.
 - Planned townships and long distance trade
 - Non- farming crafts such as metallurgy pottery, priesthood and creation of a ruling class.
 4. 1800 B.C onwards- many harappan sires were abandoned.
 - Decline of the city life and reverse to village in Punjab.
 - Continuation of Harappan crafts and pottery tradition.
 - Village life in the Sutley-Yamuna, Gujarat imbibe the Harappan crafts and pottery tradition the urban characteristics fade away.

7.3 EXTENT OF THE CIVILIZATION

The Harappa culture was not confined to any restricted areas. It covered parts of Punjab, Sindh, Beluchistan, Gujarat, Rajasthan and the western Uttar Pradesh. It extended from Manda (Jammu) to Narmada Vally in south and from Sutkagendor in west (Pakistan-iran border) Alamgirpur (Meerut) in the east.

Nearly 1500 Harappa sites have been discovered; of winch 1400 sites are catalogued. Around 971 are in India and 400 in Pakistan and two in Afganistan (Mundigak and Shortughai) some sites are associated with the pre-harappan phase (Kotdiji , Kalibangan, Banwali) some of the sites of the mature phase (Harappa, Mohenjodaro, lothal, Kalibangan, Banawal, Surkotda and Surkagender) and some of the late Harappan phase (Rangpur). The most interesting Harappan sites

are Amri, Chanhudaro, Kotdiji Kalibangan, Banwali and Lothal, Harappa and Mohenjadaro are situated at a distance of 483 Kms. The 3rd city was Chanhudaro, 4th at Lothal, 5th Kalibangan and Banawali. The mature phase has also found in the coasted cities of sutkagendor (Baluchistan) and Surkotada (Gujarat). The late harappan phase is found in Rangapur Rotdi in (Gujarat) Dholavira in Gujarat is the latest excavated site. Mitabal (Harayana) and Ghanweriwal (Bhawalpur) are other important sites awaiting excavations.

Major cities which were excavated

1. Mohenjo-Daro (UNESCO site) (Sindh) situated on the right bank of the Indus.
2. Harappa (UNESCO site) (Punjab, Pakistan) is located on the left bank of the Raavi.
3. Channudaro (Sindh) lies on the left bank of the river Indus, about 130km south of Mohenjo-Daro
4. Kalibangan (Rajasthan) was on the head of the river ghaggar which got dried up centuries ago.
5. Lothal (Gujarat) is at the head of the gulf of company.
6. Banawali (Harayana) was situated on the banks of the now extinct Saraswathi River.
7. Surkotada (Gujarat) is at the head of the Rann of Kutch.
8. Dholavira (Gujarat) the latest city excavated, which is in the Kutch district.

The Main Sites of Harappan Culture

Site	Archaeologist	Excavated year
Harappa	Pakistan (Montgomery Dist) Dayaram Sahini	1921
Mohenjodaro	Pakistan (Larkan District) R D Banerjee	1922
Amri	Sindhu River valley N.G.Manjumdar	1929
Channudaro	Sind (Pakistan) N.G.Manjumdar	1931-35
Rangapur	Kathewar (Gujarat) N.G.Manjumdar	1953-55

Rupar	Ambala district (Punjab) Y D Sharma	1953-55
Prabhasa	Kathewar Dt(Gujrat) Subbarao	1955-57
Kotdji	Pakistan F.A Khan	1955-56
Alamgirpur	U.P-meerat Dt Y.D Sharma	1958-59
Sutyajender	Pakistan aralspeen- Dels	1931-62
Lothal	Gujrat (Cambay Dt) Dr. S. R. Rao	1959
Kalibangan	Ganganagar B.K Thapur, ghosh	1960-69
Balkot	Karachi dels, B.K Ghosh	1963-76
Surkotji	Kutch- Gujarat, P Joshi	1972
Banawali	Haryana, R.N. Bisht	1974
Rakhigarhi	Punjab	1990
Ganwerival	Cholistan (Gujarat)	1990
Dolavira	Kutch Dt., Gujarat,Dr. R.S Bist	1990-91
Desalpur	Gujarat, P.P pandey M.A Daki	1991

Major cities:

Indus cities emerged in the provinces of Punjab, sindh, Baluchistan, Haryana, Gujarat, up, Rajasthan and nearby areas. 1000 sites have been discovered in north-west area by 2007.

Town	District	States
Mahenjodaro	Lakhana	Sindh
Chanhudaro	Lakhana	Sindh
Lohenjodaro	Surendranagar	Sindh
Aladeno	Karachi	Sindh
Kulli	Sindh	Sindh
Harappa	Sival	W-punjab
Baraand rupar	Ambalay	W-punjab
Rakigarhi	Hissar	Haryana
Kalibhangan	Ganganagar	Haryan
Koduval	Bahawalpur	Rajasthan

Ajneergoa	Rajkot	Gujarat
Koth	Ahmedabad	Gujarat
Lothal	Ahmedabad	Gujarat
Gonveriwala	Chowlistan	Gujarat
Gajjisha middle	Sourashtra	Gujarat
Desalapur	Kutch	Gujarat
Dolaveeara	Kutch	Gujarat
Dambasadt		South Baluchistan

7.3.1 Chronology

The dates given by various Archaeology for the existence of the Indus valley are as follows-

1. John Marshall - 3250-2750 B.C
2. M. Wheeler - 2500-1500B.C
3. R.S. Sharma - 2500-1750 B.C
4. D.P Aggarwal - 2300-1700 B.C

Recent Archaeology gives the data as 2350-1750 B.C

7.4 CHARACTERISTIC FEATURE OF HARAPPAN CULTURE

In the mature period, the social stratification and complexity. The varies and highly specialized crafts, variation of house sizes, the localization of blocks and barrack like dwelling and disposition of dead bodies in the graves are the main indicators of social hierarchy. In many areas within and around the Indus system tribal populations including hunting, fishing and collecting groups continued to flourish and contributed to the Indus life, through supplies of honey, wild fruits, firewood, etc. Cities acted as the market for such products. There must have been pastoral groups farming separate communities within the main structure of the society. The rural population including agriculture and village craft specialists,

engaged in the manufacture of agriculture and domestic equipment. The cities introduced a wider range of specialist crafts group such as potters, stone cutter metal workers in copper, bronze, silver and gold, jewelers, seal cutters, bangle makers, bead makers, sculptors, masons, cart and wheel makers, boat-ship makers etc. Groups of merchants who were specialists in city, intercity and inter regional trade other specialist groups. Who were the products of urbanization were the exponents of the art of writing, measuring, surveying and urban planning and not the least religious and ritual specialists. The wide spread drainage system remind as that there must have been a class of menials. At the same time the highly development civic life also show the presence of a class of administrators who maintained the whole system.

A. Life of the people: People used wheat, barley, milk, vegetables, legumes (lentils, chickpea, field pea) oil (mustard, linseed, sesame) millets, (finger millet, ragi, bajra, sorghum, jawar) and fruits (date, grapes, jajube) were included in their diet in addition to this, animal food such as beef, mutton, pork, poultry, river, water fish and dry fish were also used by them. Grinding stones were used for grinding species and cereals.

B. Costumes: Cotton was used by them. As revealed by the terracotta figurines of the mother goddess tells that the ladies were scantily dressed. They were a short skirt that reached up to the knees and it was held by a girdle, it was worn over the left shoulder and under the right arm. A man on a sherd from Harappa wears a closer clinging dhoti. No footwear has survived.

C. Hair styles: the dancing girl from Mohenjo-Daro has a pony tail. Some females have a plait tied with a bow at the end. Hair was parted in the middle and tied with a fillet. Sometimes the hair was gathered up in a bun form or coiled in a ring on top of the head. The crawling child depicted on a clay figure from Mohenjo-Daro has cur hair, beards were trimmed and upper lips were shaven completely shaven faces with a small beard on a chin are also noticed. Mirrors of bronze were found represents that it was commonly used by the Harappans.

D. Ornaments and Jewellery: Men and women, both rich and poor, decorated themselves with ornaments. Women wore a fan-shaped head-dress. The forehead was decorated with a fillet or a headband. Earrings were made of coils of gold, silver, copper or faience. There were a wide variety of necklaces having pendants in the middle with a number of rows of beads of various shapes and materials arranged using spacers and terminals. Gold, silver, copper, bronze, faience, shell and pottery were used by the people. Gold and silver bangles, bracelets are the excellent specimens of workmanship. Girdles were worn round the waist. Anklets were used by few women. Varieties of ornaments were used by the men such as fillets, necklaces, finger rings and armlets.

E. Cosmetics: Toilet jars were made of ivory, metal, pottery and stone. It is found that women used collyrium, face paint and other cosmetics. Small faience vessels were used for keeping perfumes. Channudaro finds indicate the use of lip-sticks. Carbonate of lead, a face paint, may also have been employed as an eye-ointment or hair wash.

F. Hunting and Fishing: The remains of buffalo, pig, turtle, goat, ox and fish have been found. Sometimes in large jars, the bones of oxen, sheep and goats have been found. Models of seven hunting dogs including bull dogs have been found. Cock-fighting is seen on one of the seals. A good number of the fish hooks have been traced.

G. Games and Sports: A large number of toys and objects used in games have been unearthed from all the important sites. Such as a backed clay cart, bulls with nodding heads, monkey with movable arms, figures which ran up and down a string were complex toys and must have been produced by professional toy-makers. Chess of stone, Dice are also found. A brick has been marked out for a game played with pebbles. It has been found.

H. Candle sticks: A pottery candle stick which has been found tells us how the houses were lighted.

I. Polity: there is no clear cut evidence about the nature of the polity . If Kosambi views the priests constituted the ruling class, R.S. Sharma is of the opinion that the merchants were the rulers. Whatever might be the nature of political organization, it is evident that the Harappans had a very efficient and well-organized, administrative machinery.

J. Religion: In the absence of any written sources it is very difficult to say anything regarding the process and formation of Harappan religion. However, based on available sources specially from the seals, seal impressions, amulets and copper tablets, (fire altars at Kalibangan) we may derive a series of items which must have belong to the religious iconography of the Harappans. A good number of figurines of terracotta, faience, portray a standing and semi-nude female figure wearing a girdle on band round her lions with an elaborate head dress and collar, occasionally with ornamental check cones and necklace, sometimes the ear-ornaments are like caps suspended on either side of the head. This figure is taken to represent the mother or Nature Goddess> However, we can say the Harappan people had many features of later Hinduism such as workship of mother goddess, pashupathi shiva, sacred animals trees and river.etc.

K. Pashupathi Shiva: Among the male gods, the most remarkable is a three faced deity wearing a horned head-dress, seated cross legged on a throne, and surrounded by elephant, tiger, buffalo and Rhinoceros with deer appearing under the seat. This representation has at least Three concepts which is associated with shiva That is:-

- Trimukha (3 Faced)
- Pashupathi (Lord of Animals)
- Yogiswara Or Mahayogi.

The deity is sitting cross-legged in a Padmasana posture with eyes turned towards the tip of the nose which evidences the Yogishwara aspect of the deity. Two more seals of Shiva have been found which marshal boldly called it proto-shiva the Lord of beasts. The discovery of phallic (lingam) gave the due that phallic workship was prevalent which is closely associated with Shiva in later

times. The earliest known shiva- lingas are found at Gudimallon and the other at Bhita datable from the 1st century B.C.

L. Animal worship: The representation of animals on seals and sealing indicate the workship of animals by the Harappans. The most common animal found on the Harappan seals is the bull, which is usually depicted with a single horn and has often been referred to as “Unicorn Bull”

M. Tree workship: The workship of tree, fire and water seems to have been in vogue the leaves of the tree appear like those of the papal.

N. Workship associated with fire: From excavations at Kalibangan series of fire altars on mud bricks platforms were discovered Each pit measuring about 75X55 Cm. A noteworthy point about this was that these Fire altars were located in such a way that anybody offering workship was required to take a ritual bath. At Banawali, in the habitation area there was only 5 altars, around it there is an enclosed wall.

O. Funerary Customs: Three forms of burials have been found at Mohenjo-Daro namely

- Complete burials
- Fractional Burials
- Post- Cremation Burials.

Complete burial means the burial of the whole body, ceremonially performed in various forms, along with the grave furniture, offerings etc. About 30 skeletons, evidencing complete burials have been found in different groups.

Fractional burial represents a collection of some bones after the exposure of the body to wild beasts and birds. Five such burials have been found, as the best specimen being on urn containing a skull and some fragmentary bones along with a number of earthen ware vessels and a variety of small objects including balls, beads, shell spoon, bits of ivory and miniature vessels.

Post cremation burials: A large wide mouthed urns containing a number of smaller vessels bones of animals like lambs, goats, etc and of birds or fish and a variety of small objects such as beads, bangles, figurines etc are found generally underneath a floor or a street number of graves took the form of brick chambers or cists as in the case of those founder at Kalibangan. At Lothal, in one case the pit was lined with mud bricks, which suggests that coffins were probably in vogue At Harappa traces of a wooden coffin and bodies covered by a reed shroud were found. From Surkotda comes the evidence of the practice of pot-burial from Lothal.

Cemetery comes evidence of another burial type with several examples of pains of skeletons, one male and one female in each case interred in a single grave. Through these may not necessarily indicate the practice of Sali but it suggests some sort of ceremonial burial of the wife or servant or dependent after the husband or the master.

7.5 LET US SUM UP

We have learnt that the Harappan culture as one of the earliest known urban culture of India. It was a great civilization spreading over 7 to 8 river valleys namely Indus, Thelum, Chenali, Raavi, beas Sutlej, Saraswathi and Drishadwathi. In course of Time River Saraswathi changed its course towards south and joined Ganga River. Its banks are lost and dried up slowly But the Archaeologists have traced out a new set of ancient towns and cities. The first city excavated was Harappa and due to the discovery of more and more sites far away from the actual river valley, it has come to be called the Harappan civilization.

The origin of the Harappan culture have excited much controversy, however it is believed that the civilization merged out of a local settlements in the Indus region. Archaeological Research over the past seven decades has established a continuous sequence of strata, showing the gradual development to the high standard of the full fledged Indus civilization. These strata have been named pre-harappan, early Harappan, mature Harappan and late Harappan phases.

7.6 KEY WORDS

1. Collyrium – is an antique term for a lotion or liquid wash used as a cleanser for the eyes.
2. Harappa – planned cities that flourished on the Indian subcontinent.

7.7 CHECK YOUR PROGRESS

1. Explain the two theories of the origin of Harappa culture.
2. Describe the characteristic features of Harappa culture.

7.8 ANSWER TO CHECK YOUR PROGRESS

1. See section 7.2
2. See section 7.4

7.9 SUGGESTED READINGS

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UNIT - 8 TOWN PLANNING AND SETTLEMENT PATTERN

Structure

- 8.0 Objectives**
- 8.1 Introduction**
- 8.2 Town Planning of the mature Harappan period**
 - 8.2.1 Building**
 - 8.2.2 Drainage System**
 - 8.2.3 Streets**
 - 8.2.4 Bricks**
- 8.3 Settlement Pattern**
 - 8.3.1 Harappa**
 - 8.3.2 Mohenjadarо**
 - 8.3.3 Dholavira**
 - 8.3.4 Kalibangan**
 - 8.3.5 Rakhigirhi**
 - 8.3.6 Chanhudaro**
- 8.4 Let us Sum up**
- 8.5 Key Words**
- 8.6 Check your progress**
- 8.7 Answer to Check your Progress**
- 8.9 Suggested Readings**

8.0 OBJECTIVES

After reading this unit, you should be able to understand,

- the unique town planning system.
- the way houses have been built with unique drainage system with broad streets, lamp posts and man-holes.
- notice the enormous use of bricks than stone.
- the settlement pattern of many cities with citadel and lower town.

8.1 INTRODUCTION

Our knowledge is restricted to the study of important urban sites and not much work is done on the rural settlement of the Indus valley civilization. The cities are Harappa, Mohenjodaro, Chanhuda, Lothal, Kalibangan, Banawali and many more smaller cities also existed of these Harappa and Mohenjodaro are the most important from the point of view of town planning. The lay-out of these cities are similar and each city had its own citadel to the west, fortified by crenelated walls. The citadel was possibly occupied by members of the ruling class. Below the citadel lay a lower town containing brick houses inhabited by common people. The remarkable thing about the arrangement of the houses is that they followed the grid system.

For example: At Mohenjo-Daro and Harappa there was only upper citadel with fortification. Whereas at Kalibangan both the upper citadel and lower citadel town was fortified but there was a partition wall and a door between the two citadel. For the fortification, mud, bricks were used. The fort wall was provided with regular bastion walls and watch towers. Inside this, the streets were straight and intersected each other at right angles, dividing the city in large rectangular blocks. Some of the streets were 30feet width.

This rectangular town planning was a unique feature of the two cities and was not known in Mesopotamia or Egypt the remains of drain have been found at Banawali. This drainage system reflects the Harappans health and cleanliness.

8.2 TOWN PLANNING OF THE MATURE HARAPPAN PERIOD

8.2.1 The Building

The buildings so far unearthed in the Harappa cities fall into 3 main categories

1. Dwelling houses.
2. Large building.
3. Public baths, granaries etc.

There is much variation in the size of dwelling houses. The smallest have not more than two rooms. While the largest are so vast as to rank almost as palaces. The buildings were mostly plain, without any plasters. Only in the floor of one house at Kalibangan ornamental bricks were used. The ground floor of a small house measured 8 into 9m and of the large one was double its size. The houses were separated from one another by about a foot, probably to avoid dispute with the neighbor and the space in between was bricked up at either end to prevent the thief from scaling the walls. Some of the houses were double storied. Square holes on the walls remind that the upper floors and roof rested on wooden beams. The roofs were made of reed matting and then covered with thick coating mud. The matting was tied to the wooden beams with cords – some impressions of the cord are still noticeable. A few staircases of burnt bricks have been discovered.

The drain ways were narrow and high sometimes 38cm high and 13cm wide to economise space. The roofs were flat and were enclosed by a parapet.

To drain the rainwater, gutters of pottery were made, number of them have been found at Chanhudaro. No roof tiles have been traced so far.

The houses were dividing into well- sized rooms containing wells and bathrooms and provided with covered drains, connected with street drains, the open court was the basic feature of house planning. The courtyard was usually paved with bricks laid flat, which was surrounded by chambers, doors and windows opened into it. The kitchen was placed in a sheltered corner of the courtyard and the ground floor contained store rooms, well chambers, bath etc.

Ordinary houses had windows in their outer walls. There were ventilators at the top of the wall. Stairways led to the upper storeys which contained the bath and the living and sleeping apartments.

The kitchen was small, cooking was done mostly in the open courtyard. Round bread ovens have been unearthed. Pottery vessels with a hole in the bottom were sunk in the kitchen for waste water. The water gradually ran into the earth.

Every house had its bathroom which was on the side of the street, latrines, lay between the bathroom and streets for the convenient disposal of water. The walls of the bathrooms were wainscoted with bricks laid on edges so as to stand three inches above the level of the floor. Pottery pipes, each provided with a spigot so that they fitted together were used for drainage.

Several dwelling houses, large and small have been unearthed at Mohenjodaro. There were to large khans (inch) store houses and watch tower. There is an extensive building on the west of the stupa mound, which measures 69 into 23.5m. it was priestly corporation . it contains the great bath which was excavated by sir john marshall. The whole complex is a single architecture unit with walls sometimes 1.2m thick. It might have been a college.

On the south of the stupa at mohenjodaro has been discovered a hall, 8m sq with a roof having 20 rectangular brick piers in four rows of five piers each. There are four well paved aisles which are separated by rows of pillars.

The hall was used for some religious assembly. Mackay calls it a large market hall with lines of permanent stalls along the aisles.

At Harappa a building has been discovered measuring 50 into 40. Meters with a central passage 7 meters wide. It was a gigantic store house for grain, cotton and other merchandise.

At Mohenjo-Daro there was a palatial building of excellent masonry. It has two spacious court-yard servant quarters and store rooms. It might be a temple or residence of a governor.

8.2.2 Drainage system

This kind of elaborate drainage system has not been found in any other city of the same antiquity, below the streets and many lanes ran a main drain, 1-2ft deep, covered with bricks or stones and provided with sumps and inspection traps at regular intervals. Individual house drains, each one with its own sump pit, opened into the great culverts emptying into the river. All soak pits and drains were occasionally cleared by workmen, drains were provided with manholes at intervals for cleaning. The extent of the drainage system, the quality of the domestic bathing structures, drains are remarkable and together they give the city a character of its own, particularly indicating some sort of highly effective municipal authority. These features of urbanization and town planning are reflected in the Harappan cities and towns.

8.2.3 Streets

The streets ran in straight lines and crossed one another at right angles. The streets aligned from east to west or from north to south. The most famous street called the "first Street of Mohenjo-Daro" was 10.5m wide and would have accommodated seven lanes of wheeled traffic simultaneously. The other roads were 3.6 to 4m wide, while the lanes and alleys were 1.2m wide. The streets were not paved but the first street was however, surfaced with broken bricks and potsherds.

8.2.4 Bricks

Harappa, Mohenjo-Daro and other major towns were built entirely of bricks. All the bricks were well proportioned. The sun-dried bricks were at Mohenjo-Daro mainly for filling but at Harappa it sometimes alternated with burnt-

brick, course by course at Kalibangan, if anything more common, burnt-brick being almost exclusively reserved for wells, drains and bathrooms. The predominant bricks size was 7into14into7 that is a ratio of 1:2:4. Very large bricks measuring 51cm were used to cover drains. The bricks were made from alluvial soil and shaped in an open frame mould kilns of brick have been discovered at a number of places and some of them were probably associated with copper working. Sometimes the bricks were stocked in large heaps with wood fire in between the outside of the pile was covered with mud plaster to retain the heat. The bricks were well laked to a light red colour. Wedge-shaped bricks were used in the lining of wells, while for making the bathroom pavements waterlight, small bricks (5into11into24cm) were employed. L Shaped bricks were preferred for corner

8.3 THE SETTLEMENT PATTERNS

The settlements patterns of the Harappans were conditioned by the behavior of the river providing an active flood plain and ecology, navigability of the river for internal trade, climate, accessibility to natural resources and trade routes, both internal and external. Development of a city greatly dependent on these factors.

The ghahhar-sarawathi-hakra system had three major economic pockets. The first was on the north along sirhind where in an area of 120km in mansa district, Punjab, seven cities. 6 towns and fourteen villages have been located at a distance of 3-5km are indicative of an ideal situation of an urban complex and commercial interaction. The second or the central pocket was in Bikaner Bhawalpur area where 400 sites have been located in an area of 1000km from Yazdan to Derawar fort belonging to the pre-harappan and Harappan times. The third in Kachchh, which is geographically half way between Sind and Gujarat and has a concentration of about 50 sites of the Harappan and late harappan periods. These three economic pockets of the Harappan provided a strong economic base that is the foundation of the urban boom. Thus it may be inferred that Harappan settlements are largely located along the major and perennial rivers. It is also seen that the urban phase of the civilization had technological potentialities to raise high defenses and platforms

which needed resources, builders, planning, engineering skill and instruments and a large man-power. It has been reported that 21 rural Harappan sites have been identified in district Mahesna, Gujarat besides Vallabhi which has yielded evidence of a cattle breeding centre during the Harappan times, it has been observed that the settlement size of matured Harappan sites. The four sites which has been excavated in recent years, Mehrgarh, Amri, Kalibangan and Lothal.

These four sites reflected the four stages of in the prehistory and proto-history of the north-western region of the Indian sub-continent.

The stages begins with the transition of nomadic herdsmen to settled agriculturists in eastern Baluchistan(1st stage), continues with a growth of large village and the rise of towns in the Indus valley(2nd stage), leads to the emergence of the great cities(3rd stage), finally ends with their decline(4th stage). Each of these stages is exemplified by each of the 4sites firstly by Mehrgarh, the secondly by Amri, the third by Kalibangan and the fourth by Lothal.

The excavations at Mehrgarh show that in this area of Baluchistan there was a continuous cultural evolution from the 6th millennia. The discovery of several Neolithic settlements in Beluchistan, including the oldest mound at Mehrgarh, had led to the conclusion that the Indus civilization was the outcome of an indigenous evolution which started in the north-west of the Indian sub-continent. The excavations at Amri demonstrate that the most crucial step towards the establishment of settlements in the Indus valley was made in the fourth millennium B.C. and that it was an extension of indigenous developments and not a mere transfer of a cultural pattern by migrants from Mesopotamia or central Asia.

The rise of indigenous crafts led to an increase in the long-distance trade with western and central Asia. But this trade did not have the unilateral effects of cultural barrowing as an earlier generation of scholars had thought. Those scholars did so, far they were naturally puzzled by the discovery of a mature civilization which did not seem to have any local antecedents.

Unfortunately, not much is known to us about the rise of the specific mature Harappan culture. The exact date of it is still a matter of debate.

There has been general agreement upon an overall span of 2500-1500BC. But in the past 35 years little additional evidence had come to light to change this view, so far as archaeological cross-dating is concerned. The advent of radio-carbon dating has provided a new source of information. In 1964 D.P Agarwal was able to fix two dozen dates including those for Kot-Diji, Kalibangan and Lothal. He concluded the total span of the culture should be between 2300 and 1750B.C. it must be admitted that there is still plenty of uncertainty particularly regarding the late dates and the final stages of the mature Harappan Indus civilization.

The following Harappan sites give evidence of town planning, draining system, defenses and water management of an organized urban society.

8.3.1 Harappa

It was the first Indus site to be discovered and excavated in 1921. The vast mound at Harappa were first reported by Masson in 1826 and visited by Cunningham in 1853 and 1873. Their re-discovery some sixty years later led to the excavation between 1921 and 1934, under the direction of Mortimer Wheeler, it was excavated by D.R. Sahni. The site has two large mounds located some 25 kms south-west of the district town of Montgomery Punjab (Pakistan) on the left bank of the river Ravi. The western mound of Harappa, smaller in size, represented the citadel parallelogram on plan 420m from north to south and 196m from east to west. It was 13.7-15.2m high. The wall of the citadel was reinforced by bastions at places. The buildings of baked bricks which stood on the platforms inside the citadel were constructed six times in succession. Outside the citadel at Harappa, there were some important structures identified with workmen's quarters, working floors and granaries situated over a 275sqm area.

The workmen's quarters, ten small oblong dwellings situated close to the north-west corner tower of the citadel, were of uniform size and shape. Close to these workmen's quarters here were 16 furnaces, pear-shaped on plan, with

cowdung and charcoal. A crucible used for something bronze was also found, the granary buildings lay at a distance of 32m with a group of structure, each measuring 15.24 into 6.10m arranged symmetrically of 6 each with a 7m wide central passage. The podium of rammed earth was riveted on the eastern and western sides. On the southern side of the rows of circular bricks platforms meant for thrashing grains.

This city followed grid planning, it is the only place with evidence of coffin burial. The excavations have also yielded 57 burials of different types. The skeletons were disposed of in the pits cut in the ground along with the grave goods. There is also evidence of mud-brick lining ground the grave. In twelve grave bronze mirror have been found, in one these was an antimony rod, in another a shell ladle and in a few other stone blades were found.

The finds Harappa include pottery, chert blades, copper and bronze implements, terracotta figures and the seals and sealings, from Harappa 891 seals have been found. It has yielded two interesting stone sculptures not available at any other Indus site. Both the sculptures have drilled sockets to take dowel pins to attach the head to limbs, a technique not found in later sculptures.

The first figure is a small nude male torso of red sand stone with a pendulous belly. The figure had been identified as jina or yaksha. The second male figure is made of gray stone in a dancing pose. Marshall identified it as the icon of shiva as nataraja.

Some other interesting finds at Harappa includes a water reservoir lined with bricks and provided with a narrow covered channel, a seal of ivory and a handy combination of three copper instruments soldered together by their looped ends. They are a sharp pointed awl, double edged knife and a pair of pincers intended for surgical instruments.

8.3.2 Mohenjo-Daro

The site Mohenjo-Daro is situated in Larkana district of Sind (Pakistan) some 483kms south of Harappa has 2mounds. Mohenjo-Daro literally means the mound of the dead. The mounds were excavated by R.D. Banerjee (1922) Sir John Marshall (1922-30) E.J.H Mackay (1927-1931) S.M. Wheeler(1930-1947) and G.F.Dales (1964-1966) Bringing to light seven levels of building phases, besides many relics related to the Indus civilization.

The most famous building of Mohenjo-Daro is the great bath. Situated on the citadel area (6m high in the south and 12m, in the north) it is a specimen of beautiful brick worth.

It is rectangular tank measuring 11.88m from north to south, 7.01m broad and 2.43m deep. It had a flight of steps on the north and south sides, leading to the bottoms of the tank. To make it watertight, the burnt bricks in edges were set in gypsum mortar, with a layer of bitumen sealer sandwiched between the inner and outer brick skins.

The flight of steps was also originally finished with timber tread set in bitumen. The water for the bath was provided by a well in an adjacent room. There was an outlet on the west site for emptying it occasionally. This bath must have served as a ritual bathing site.

The great granary (according to wheeler) Found here is the largest building, measuring 150feet (length) into 50 feet(breadth). It is located within the citadel and next to the great bath.

There is also an ablong multi-pillared assembly hall and a big rectangular building which must have server for administrative purpose.

In the lower town particular building identified by wheeler as the temple, has a monumental entrance and twin strain ways leading to a raised platform on which was found on of the rare stone sculpture of a seated figure.

The noteworthy and recurrent features are the insistence water supply, bathing and drainage together with the substantial stairway to the upper floor. In some houses, a built seat latrine of western type is included on the ground or first floor, with a slopping and sometimes stepped channel through the wall to a pottery receptacle or brick drain in the street outside.

Mohenjo-Daro is a great city about 1398 seals discovered from the site. The discovery of a numbers of stone, bronze and terracotta figure speak about the level of the aesthetic sense of the citizen. A few vessels of copper-bronze and a large numbers of pottery have been recovered from mohenjodaro .the depictions on the seals throw light on animal sacrifice, mother goddess cilt, animal and tree worship and a belief in the protoform of shiva-pashupathi.

8.3.3 Dholavira

At present it is a modest village in the Bhachau taluk of district Kutch in Gujarath. Dholavira is the latest ant one of the two being rakhigarhi in harayana, probably the fourth in the sub-continent in terms of area. The mounds of dholavira were first explored by J.P. Joshi of the archaeological survey of india(ASI) but extensive excavations were conducted there in 1990-91 by a group of archaeologists lead by R.S.Bisht of the Asi.

The recent excavations of Dholavira have revealed the spectacular remains of yet another Harappan city which are highlighted by enormous properties intricate planning by an elaborate fortification, architecture, fine water structures and huge accumulation of successive settlements.

The excavations have shown the existence of all the three phases of the Harappan culture. Dholavira has many unique features, not found at any other Harappan site, it is divided into three principal divisions two of which were strongly protected by rectangular fortifications no other site has such elaborate structure but that could be because there was no precedent of such a provision of a common peripheral enclosure incorporating walled parts of an Indus settlement also cohere. Nor is there any match for the vast open areas as wide as 70m to

140m, trying together at outer and inner defensive walls, especially at strategic points in Dholavira. So there was an inner enclosure too the first inner enclosure hemmed in the citadel which probably housed the supreme authority.

The rectangular main site is surrounded by the wall made of stone rubble and mud brick, some 700m east to west and 600m north to south. In the eastern side is located the lower town. To its west is the square areas (middle town) of around 300m and adjoining it to the south are two smaller square walled areas known as the castle and the bailey. The middle town is probably meant for the relatives of the supreme authority and administrative brass. This middle town is a Dholavira-exclusive none of the other Harappan sites have it.

The so called castle has of maximum height of 16metres surrounded by stone-faced yamparts with mus-bricks filling, measuring around 140-120m. The bailey is also similar to castle. There are also reports of impressive water supply and drainage structures.

Other materials finds recorded from Dholavira are remains of a horse, many copper objects including a bronze animal figurine, evidence of copper-working, lead-working and other craft activities. Number of typical Harappan seals have been found here. Some inscribed seals are also found.

Another extra ordinary find is Harappan inscription with 9letters each 37cm long and 27cm wide, composed of inland cut pieces of a milk-white materials. This inscription was found on the ground under one of the gates in the outer fortification. The access to these fortified settlements at Dholavira was provided through an elaborate gate- complex, furnished with possible guard rooms. Behind the north-gate in the central zone of the citadel. There had been unearthed a 12.80m wide water reservoir furnished with a 24m long and 70 m broad inlet channel for carrying the rain water which is so precious in that semi-arid environment.

The discovery of stadium is the unique feature of dholavira. The entrance to this stadium was from the castle and bailey parts. A stone mangoose has also been found.

Another interesting place of Dholavira are the reservoirs holding an amazing 250000 cubic meters of water. They even knew to conserve water in reservoir. Enough water was collected to meet the city water requirements. These reservoirs were connected to wells which in turn, filled cisterns for drinking and bathing excavations in the cemetery lying to the west of the city has yielded a variety of funerary structures peculiar to Dholavira. The burials give clue about their belief of life after death. It also proved the presence of different ethnic groups each with its distinctive customs, indicating a thriving trade community, attracting people from all round.

8.3.4 Kalibangan (black bangles)

It is situated on the southern bank of the Dryghaggar river, about 200km south-east of Harappa. It is situated in the Ganganagar district of Rajasthan, excavated between 1960-61 and 1968-69.

Its plan is similar to Harappa and Mohenjo-Daro the plan of the Kalibangan citadel was clearly revealed, consisting of two almost equal rhomboids divided from one another by a strong wall of these the northern part, contained series of brick platform and perhaps scenes of sacrifice. The lower town had a regular grid of streets recalling those of Mohenjo-Daro. At Kalibangan the citadel is approximately 120into240m and the lower town 2000into400m. the excavations at Kalibangan was conducted by B.B. Lal and B.K. Thapa from 1959 onwards. The early harappan remains and found, with a mud bricks wall consisted of five building phases. The excavations have revealed the plan of a parallelogram citadel with well laid out houses, oriented roughly along the cardinal direction an average house consisted of a courtyard, Fai rooms and cooking ovens of the underground and above the ground varieties. There are evidence of the earlier ploughed field is found.

Kalibangan, in the mature phase like other Harappan towns was divided into 2 parts, fortified towns (citadel) and a lower town the citadel was in the form of a parallelogram measuring 240X120m with east west division forming two rhombus with walls. The northern half of the citadel had residential houses with limited occupancy. The southern portion of the citadel has mud brick platforms having seven-fire altars in a row. The evidence of a platform with a well and rectangular pit-lined burnt brick fire-altars, containing bones of cattle and deer indicates that animal sacrifices were performed there.

Even the lower at Kalibangan was also fortified 240X360m. it had 2 gate ways and the north-western sides gate meant for river side approach. The house floors had rammed earth. One of the houses had a floor made of baked bricks with incised intersecting circles. The uses of burnt bricks at Kalibangan has been found only in wells, bathing pavements and drains.

The steatite seals and terracotta sealings were important writing materials found from Kalibangan.

Kalibangan has given evidence of the earliest earthquake ever revealed through an excavation, dating back to 2600B.C.

8.3.5 Rakhigarh

A three year long excavations at Rakhigarh in Harayanas Hissar district has unearthed another Harappan town. Excavation being carried out by the archaeological survey of India ASI since December 1997, has revealed, the distinct cultures of this site. Namely the early Harappan and mature.

The discovery of circular structures at the entrance of the valley, a unique feature of early Harappan days, has also been reported. The structures are outlined by 2 or 3 courses of mud bricks with post-holes at intervals. The mature Harappa, a period of urbanism characterized by walled settlement, writing and use of standardized weights and measures had been traced at the site. The evidence of

mud brick structure of granary sub-divided into cubicles indicates surplus production of food grains and storage system barley wheat and rice have been found from this site.

The dead were buried in a long pit in a north south orientation grave goods generally consisted of pots kept behind the head of the dead. A couple of female burials also had shell bangles in their left hand while one had a miniature model of fillet in gold.

Several township of the Harappans which served as ports had been developed on the coastline of the Arabian sea. The significant ones are Suktagndor, Balakot and Allahdino. Likewise, Lothal situated in Kutch was linked with sea by river Bhagavo.

8.3.6 Chanhudaro

It is lying 130km to the south of Harappan times. It was a famous centre of bead-making, shell-work, seal-making and bone tools for the people of the Indus valley. A row of shops of artisans in Chanhudaro had been found certainly prove that it was an industrial town.

Excavation reveals the existence pre-Harappan and Harappan culture. It has an evidence of the use of drains and baked bricks houses. A notable feature is that the town continued to grow even after the disappearance of the mature Harappan phase as corroborated by the evidence of Jhukar and Jhangar culture which are distinguished from the Harappan culture by their pottery which is ill-fired and coarse as also by their seals which are made of steatite and have a radiating sun as a general motif-not seen in the Harappan seals. A large number of metallic implements which were used for cutting the seals have also been found. The boards of copper and bronze tools, castings and evidences of the crafts like bead-making, bone items, bangles and other items of conch shell and seal making suggest that Chanhudaro was mostly inhabited by artisans and was an industrial town.

It was the only Indus city without a citadel was flooded more than once. The excavations unearthed a furnace with a brick floor provided with two doors, used for glazing minute steatite beads. Two other finds are a terracotta model of a bullock cart and a bronze toy cart. A small pot look like inkpot was also found here.

8.4 LET US SUM UP

Excavations have revealed about the well-planned cities and towns built on massive mud-brick platforms that protected the inhabitants against seasonal floods. In the larger cities the houses were built of backed bricks, while at smaller towns most of houses were built of sun-dried mud bricks.

The settlements had major streets running North-South and East-West with smaller streets and connecting neighbourhoods to the main through fares. The houses were generally storied and had a bathing area supplied with water from the adjoining well. All the houses were connected to an elaborate city wide drainage system that reflects a well organized civic authority.

Hundreds of Harappan settlements have been discovered and archaeologists have been able to excavate different types of sites in each of the major regions. The earliest excavations were focused on large cities located along the Indus River and its tributaries, Mohenjo-Daro, Harappa on the Ravi River. Later other large cities have been found along the dried up Hakra-nara river to the east including the sites Ganweriwala (Pakistan) Rakhigarshi (Haryana), several smaller towns' rural villages, mining, trading and coastal settlements have also been excavated in both Pakistan and western India.

Mohenjo-Daro, Harappa and Kalibangan shows an identical town lay-out plan of the metropolis-the citadel and the lower city. At Kalibangan the citadel shows a bipartite plan with six mud-brick platform. These platforms have ritual structure like row of fire altars, wells, sacrificial-pits, etc. which are not found at Mohenjo-Daro and Harappa. The lower city Kalibanga is fortified. Ay Dholavira

the city had 3 main divisions the citadel or acropolis, middle town and lower town. The first two are fortified, with vast open areas around them. Divergent trails are present in the burial practices of the Harappa people.

At Harappa, Mohenjo-Daro and Kalibangan had a citadel and a fortified lower town separately and at Surkotada and Banawali a closely knit citadel and a lower town annex there is an evidence of an acropolis and lower town at Lothal. The other fortified settlements, Rojdi, Balu appear to have been castles of the merchants. Thus it appears that the Harappan culture had spread to a vast geographical area,. Some 6,50,000 square K.M.J.P Joshi suggests the existence of 210-pre Harappan and 721 Harappan and later Harappan sites.

The various settlement patterns, their general formations and developments from pre-Harappan to matured Harappan urban phase. Show different geometrical shapes based on utilitarian angles.

8.5 KEY WORDS

1. Seals – A device for making an impression
2. Burial – Burial is the ritual act of placing a dead person or animal into the ground

8.6 CHECK YOUR PROGRESS

1. Discuss the town planning system of the mature Harappan period.
2. Explain the settlement pattern of Harappa, Mohenjodaro, Dholavira and Rakligarhi.

8.6 ANSWERS TO CHECK YOUR PROGRESS

1. See section 8.2
2. See section 8.3.1, 8.3.2, 8.3.3 and 8.3.4

8.7 SUGGESTED READINGS

1. Vipul Singh – Indian History Manual
2. Dilip. K. Chakrabarti – Indian an Archaeological History
3. Dr. Mahesh Vikram Singh – Indus valley Dr. Brij Bhushan Shrivastava

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UNIT – 9 HARAPPAN ARTS AND CRAFTS

Structure

- 9.0 Objectives**
- 9.1 Introduction**
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 - 9.2.1 Metal**
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9.0 OBJECTIVES

This unit will help the reader to understand;

- The great strides the Harappans had achieved in the field of craft production and technology. The people of Harappan culture had high technical knowledge. Their knowledge of metallurgy was remarkable. Their splendid copper, bronze vessels are the outstanding examples of the Harappan metal workers crafts. Washing of gold dust were probably the principal means employed to obtain gold. The exquisite jewellery making, bead making is an indication of special craftsmanship. The statues of bronze, terracotta, stone figurines are perfect pieces of art. Ivory carving, inlaying shells are well developed craft in the Indus cultures, the lapidary craft was widely practiced.

9.1 INTRODUCTION

The unearthing of the potters wheel the spindle whorls, casting and alloy of metals, burnt bricks, kiln, the boring of hard substances like carnelian indicate the great advancement of the Harappan technical knowledge. Thecire Perdue process of casting method an exquisite bronze figure of a dancing girl is a perfect piece of work. Equally is the high aesthetic sense shown by the beautiful design of ornaments, the superb relief figures and engravings on seals and figures and engravings on seals and execution of fine statues indicate the high artistic skill. Many statues and figurines, both of animals and men. clearly prove that these people had made a great progress in the art of sculpture, the people were good even in carving and painting is proved by their pottery painting.

9.2 HARAPPAN ARTS AND CRAFTS

With the available artifacts the Harappan art objects can be classified into five groups -

- Metal
- Stone
- Terracotta

- Pottery
- Miscellaneous

9.2.1 Metals

The Harappans used varieties of metals such as copper, bronze, gold, lead and silver. The Harappan had evolved a new technique in metallurgy. Silver seems to have been first used by them. The main tools made of copper are razors, chisels, knives, arrow-heads, spear-heads, hooks, saws, swords etc. Metals like copper and bronze were used for domestic and agricultural purposes, toileting items, weapons, pots, pans etc. These metals were used for producing human and animal figurines i.e. the dancing girl from Mohenjo Daro. is the best example of a sculpture.

She is nude and her right leg somewhat straight, but left leg is bent, her one hand is decked with bangles and the other is on the left knee, the right hand is posed against the right hip there is necklace around her neck. The hair is curly and has an elaborate hairstyle unfortunately the ankle and feet are missing. Prof. A. L. Basham writes Perhaps the most striking figure is that of a dancing girl. She is standing in a provocative posture with one arm and on her hip and one leg half bent. Various other sculptures of gold and bronze have been found from excavation sites. The animal figures included elephant, ram, swan, buffalo and bull.

Metals like gold, silver, copper and bronze were used for Manu fracturing ornaments variedly of amulets', pendants, finger rings, ear-rings, bracelets, bangles, brooches were used by the Harappan. Inch of the Indus gold was light indicating a high silver content. Ornaments were never buried with the dead, but were passed on from one generation to the next these ornaments were hidden under the floors of wealthy merchants or goldsmiths. Silver was relatively more common than gold is indicated by the number of vessels made of silver and by the frequency of other finds. Silver Buckle found at Harappa with soldered across pattern of gold wire and gold-capped beads and a boss of silver inlaid with conch-shell are among finer examples of workmanship.

Lead, arsenic, Antimony and nickel were also used by the Harappan people. Arsenic was used to increase the hardness of artefacts by alloying it with copper. Arsenic could have been used to act as a deoxidiser for closed castings or may have been added to increase hardness. The Harappan metal crafts were manufactured by hammering over a given shape. In the late Harappan period an additional technique, that of lapping or joining two parts to make a composite jar appears. There is little doubt that such special objects as the cast bronze figures of people or animals or the model carts were the products of specialists' workshops in one or other of the cities. These products of the casting of copper and bronze illustrate that the process was well understood throughout the Harappan period. Copper bun-shaped ingots are among the finds kiln of bricks have been discovered at a number of places and some of them were probably associated with copper-minerals e.g. chrysocolla, chalcopyrite, malachite etc are rare at Harappan phase sites. Some of the metallic ores may have been used in copper smelting and alloying processes such as for colourants, medicines or even poisons. except for the site of Shortugai, where there is evidence for gold processing, most of the indicators for metal processing [viz. fragments of ores, kilns, slag, tools and metal objects both finished and semi-finished] at Harappan sites are associated with copper processing. Copper or copper alloys can be classified into four categories. Crude copper [derived from smelting and rich in sulphur] Refined copper. Arsenical bronze.

Tin bronze. No confined iron objects or brass objects have been identified from Harappan sites. Many Terrecotta bangles were originally painted with black or red designs. The copper, bronze, bangles were made from a round hammered rod bent in a full circle, there prevailed gold and agate ornaments found both at Mohenjodaro and Harappa. The other ornaments include bangles, chokers, long pendent, necklaces, rings earrings, conical hair ornaments and broaches. Ornaments were made from beads, gold agate, jasper, green stone, glassy faience ornaments, shell ornaments is an indication of special craftsmanship and remarkable progress in craft technology.

9.2.2 Stones

It is very surprising to know that stone was imported from other places and not found there, hence stones were sparingly used.

Stone sculptures: The most monumental products are the stone sculptures which were distinctly urban in character. Of the examples the great majority come from Mohenjo-Daro and a small number from Harappa, the stone was usually soft-either steatite limestone or alabaster. The foremost is the priest. A badly weathered limestone head 14cm high, is too worn for description. Another limestone head 18cm high with wavy hair held together by a fillet shaven upper lip and shell shaped ears, has been discovered from Harappa. A third Sculpture is the seated headless alabaster male figure, 28cm high he is wearing a thin shawl on left shoulder and under arm. It was found on the citadel building from Mohenjo-Daro. A fourth limestone head 19cm high, has been found at the southern wall of the citadel in Mohenjo-Daro. The tilt, much weathered alabaster statue of a squatting man 42cm high from Mohenjo-Daro has lost most of its details-only the face seems bearded. The sixth is the fragment of limestone figurine, polished, showing a hand on the knees. The seventh is much damaged 22cm high, figure of a seated man with hands on the knees which is found at Mohenjo-Daro. The 8th is an unfinished figure of a squatting man in limestone, around 22cm high with a fillet round the head. It was found at Mohenjo-Daro. The 9th is the fragment of a small limestone figure of an animal 11cm high, possibly a Ram. It was found at Harappa. The 10th is a limestone figure 25cm high of a composite animal: it has a Ram's head an elephants trunk. It was found at Mohenjo-Daro. Too more statues just 10 in height were found from Mohenjo-Daro.

Whetstone: A few pedestals of stones, designed to support a cult objects have been found. These were required to polish metals.

Stone ware bangles: The manufacture of stone ware bangles is an important urban craft in Harappan context. The Harappan's adopted a sophisticated technique the result was the production of high quality ceramic ornaments unparalleled in the ancient and modern world.

The bangles are generally made with highly refined clays. After firing the greatest tamper inclusion does not exceed in many cases 20 microns. Kenoyer demonstrated that these were formed by throwing clay cylinder on a fast wheel and trimming and burnishing them with sharp pointed tools which left distinctive, fine parallel marks on them. The manufacturing operation also included the fabrication of small firing container or saggars in which the unburnt articles for firing was stocked. However this technology died with the decline of its social context.

9.2.3 Terracotta

It was another important raw material used by the Harappas to express their artistic craft. Out of Terracotta they made human, animal and other varieties of objects. Generally the figurines were hand made, but few were made out of moulds one of the prominent figurines is identified as mother goddesses. The animal figurines of terracotta included elephant, bull, cow, Rhinoceros, Pig, Monkey, Dog, Bears Many terracotta toy model carts with solid wheels was brought to light from excavations.

9.2.4 Pottery

Pottery making was another important industry of the Harappan people the discovery of a number of pottery kilns shows that there used to be a potters colony in the city. There were two kinds of pots. One kind of pots were handmake other one was wheel made (Plain and painted pottery).

The Harappan pottery is termed as black and - redware. There are 4 categories - Red ware buffware, grey ware and the black and red ware the black and redware was confined to Kutch and saurashtra regions alone. The painted pottery does not constitute more then ten percent of the total field of the pottery. The paintings occur in black on the red surface chocolate or purple black on the buff ware does not bear paintings and the percentage of this ware is fairly low.

The clay used by the Harappan potters was of mainly good quality as revealed by the cohesion of the clay particles. There has been a mixing of the tempering materials such as sand, lime or mica in the clay, but certain pots provides a clue that the wheel was rotated both the sides i.e. clock - wise and anti-clock wise some of the pots were made in parts and later Joined together off the wheel with a very slow momentum.

About 50% of the pottery was dressed by way of applying slip the red ware consisted of red oxide. The other slips on the Harappan pottery are creamy ranging from whitics to yellowish hues chocolate or purplish. Thus Harappan painted pottery shows that the pot - painters predilection for the geometrical designs. Naturalistic patterns depict the floral and faunal wealth of those times impressions of different types are found on pottery even decoration and ornamentation can be noticed on the pottery.

The different wares suggest various methods of firing by and large the Harappan pottery is well fired. But the kiss Marks, black blotched and cramped pots do indicate bad firing the red ware including various shades of red and buffware was fired in the fully oxidizing conditions the grey ware though contained ferrous - oxide may have been fired under the reducing condition i.e not sufficient oxygen was permitted in the kiln about black and red ware there are different views but the honoured view lucas is the result of inverted firing.

Harappan people used various types of the pottery such as glazed, polychrome, incise, perforated and knobbed. The glazed Harappan pottery is the earliest example of its kind in the ancient world. Then polychrome pottery is rare mainly comprised small vases decorated with geometric patterns mostly in red, black, green, white, and yellow. Perforated pottery has a large hole at the bottom and small holes all over the wall and was probably used for straining liquor. Knobbed pottery was ornamented on the outside with knobbs.

At Mohenjo-Daro the pottery workshops were setup inside the habitation areas. Similar was the case with Harappa but recently a series of kilns on the mound E have revealed the presence of pottery workshops indicating long term

hereditary craft activities in a segregated area of the city. On the basis of stratigraphical analysis at Lalshah a series of six pottery firing kilns with perforated gate supported by six pillars were excavated by Pracchia suggest they were probably used seasonally for a period of 10-15 years.

The Harappan pottery on the basis of shapes can broadly be classified into 4 groups:

A. group: this includes goblets, and beakers, perforated jars, certain types of jars, and vases.

B. Group: consists of such shapes which occur n the pre Harappan culture and continue the post Harappan period. Common shapes namely Dish on - stand, cup-on - stand, bowls, dishes, basins, caskets, vases. Jars, lids and ring stand etc.

C. Group: consists of zoomorphic containers.

D. Group: Different types of vases were also found from the excavational sites. Burial pottery:

There were even burial pottery without any painted designs on it these vessels have come from one of the later burials towards the end of the Harappa period possibly dating to 1900 B.C painted burial pottery from Harappa cooking pottery was available in large number.

Several devices were employed by the people for the decoration of pottery. Geometrical patterns, circles, squares and triangles, figures of animals, birds, snakes, or fish are frequent motifs found in Harappan pottery. Another favourite device in the tree, plants, trees, and pipal leaves are found on pottery. A hunting scene showing two antelopes with the hunter is noticed on a pot-herd from cemetery H'. A jar found at Lothal depicts a scene in which two birds are seen perched on a tree. Each holding a fish on its beak below it is an animal with a short thick tail which according to S.R. Rao as a fox.

9.2.5 Miscellaneous

- Ivory and Faience Work
- Lapidry
- Shell Manufacturing

- **Ivory and Faience Work**

Few examples of ivory carving have been found. They include combs, carved cylinders used as seals, small sticks and pins during the mature phase glassy or vitreous paste, commonly referred to as faience reached a very high level of production. Faience objects were made using a unique technological that first required the manufacture of a glassy frit, the powdered frit was then moistened with water and plant ash flux was then formed into objects and referred [kenoyer]. The glassy matrix and external glaze of their objects was glassy faience which was used to make bangles, tiny beads, the miniature vessels and miniature animal figurines. no other region of the ancient world is known to have produced this type of glassy faience.

- **Lapidry**

The lapidary craft was widely practiced and its products included the manufacture of ornaments from semi-precious stones such as agate, carnelian, jasper, quartz, lapis lazuli, turquoise, amazonite etc. The beads were considered minor antiquities, but the current studies have demonstrated their importance for understanding social and ritual status, ethnic identity, economic controls and trade exchange networks that united the distant settlements of the Indus tradition. The discovery of agate bead making workshops at Mohenjo-Daro, Harappa, Chanhudaro, Nagwada, Lewan, Ghazishah, Rahmandheri, Banawali, Dholavira, Lothal, Surkotada etc and bead processing and market area are found at many other sites indicate the special feature of all Harappan settlements.

Mackay was able to reconstruct the manufacturing sequence of carnelian beads including the beautiful long barrel specimens which is subject of long distance trade with Mesopotamia. Long bead, produced at Chanhudaro required an

expensive manufacturing sequence probably involving multiple cycles of firing, sawing with metal tools, and chipping, smoothing, and multistage drilling process with highly specialised drills. Drills used for agate and carnelian at Harappa. Mohenjo-Daro and Chanhudharo, Nagwada and Dholavira were made with distinctive rock named "emestite "after Ernest Mackay.

- **Shell Manufacturing**

Working in shell was another specialised craft whose products are found in cities to make bangles, beads inlays, ladles and figurines. The conch shell was one of several marine species favoured for this. Three areas namely the western coast, the eastern coast and the coast of Oman were exploited for raw material. Excavations at coastal sites like Balakot, Lothal, Nageswar, and Kuntasi have revealed that they were all resource centers having local workshops to produce bangles and other items. There are evidence that raw materials were carried to inland sites and to work shops in the major cities. At Mohenjo-Daro, Chanhudharo and Harappa are seen a wide variety of objects being produced for markets with in the city or at near by settlements. A study made by Kenoyer (1993) has indicated that the saw used for cutting the shell had a long convex cutting edge that was extremely thin, between 0.4 and 0.6 mm and was bidirectionally denticulated.

Lithic industries: from the study of the sites it is believed that the Harappans used chert implements and other types of chipped and ground stone tools for specific technological and subsistence activities which could not be undertaken with metal tools. The Harappans used blade and flake technologies to produce specialized forms of drills, scrapers, cutting tools, sickle components as well as unmodified blades and flakes. These tools were used for processing other materials in specialized crafts such as lepidaryandthe manufacture of objects from soft stone, wood, shell, ceramics and possibly even for metal working [engraving. drilling] The techniques used for making chert flakes included heat treatment. direct hammer percussion, indirect percussion using a punch. Bipolar flaking, backing retouch, pecking, grinding, polishing, Kenoyer has identified the use of inverse indirect percussion for blade production for the manufacture of chert weights and chert burnishers and for the production of bead blanks.

9.3 LET US SUM UP

The people of sophisticated craft technology they extensively used metals like copper, bronze, lead, gold and silver for making variety of tools for domestic purposes and weapons art objects were which made by them clearly indicated their skill metal figurines, reflect their quality and artistic ability. Their knowledge of making bangles, beads, jewellery were remarkable. Shell manufacturing bead making and pottery industry was of high standard. Their ivory and faience works are exemplary.

9.4 KEY WORDS

1. Terracotta – baked earth
2. Lapidary – relates to the engraving, cutting or polishing of stones and gems.

9.5 CHECK YOUR PROGRESS

1. Explain the arts and crafts of the Harappan culture.

9.6 ANSWERS TO CHECK YOUR PROGRESS

1. See section 9.2

9.7 SUGGESTED READINGS

1. Fair Servis W.A. 1961 – Harappan Civilization – new evidence and more theory
2. Mackay E.J. 1935 – The Indus civilization London
3. Dales G.F. 1962 – Harappan outposts on the Makran coast Antiquity XXXVI

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UNIT – 10 HARAPPAN TRADE

Structure

10.0 Objectives

10.1 Introduction

10.2 Harappan Trade

10.1.1 Inland trade and overseas trade

10.3 Transportation

10.4 Weights and Measures

10.5 Let us sum up

10.6 Key words

10.7 Check your progress

10.8 Answers to check your progress

10.9 Suggested Readings

10.0 OBJECTIVES

After reading this unit you should be able to understand,

- The economy and trade system of the Harappan period.
- The brisk trade activities of the Harappan culture
- How the inland and overseas trade activities flourished during the Harappan period.
- The different means of transport used by them. Lothal is identified having dockyard. The trade and contacts with Mesopotamia and other countries, the accurate weights and measures are remarkable achievements of Harappans.

10.1 INTRODUCTION

The Harappan civilization was organised around cities and towns that were located at major cross - roads and in rich agricultural regions. The earliest excavations focussed on large cities located along the Indus River and its tributaries. Mohenjodaro on the Indus (Sind, Southern Pakistan) and Harappa on the Raavi River (Punjab, Northern Pakistan) other equally large cities have been found along the dried up Hakra -Nara River to the east, including the two unexcavated sites that are as large as Mohenjodaro, Ganweriwala and Rakhigarhi (Haryana, India) Dholavira, is located on a small Island that controlled the trade through the greater Rann of Kutch (Gujarat, India). Several smaller towns, rural villages, mining, trading and coastal settlements have also been excavated in both Pakistan and Western India.

10.2 HARAPPAN TRADE

The Indus cities were connected with rural agricultural communities and distant resource and mining areas through strong Trade systems. Let us understand producer - consumer trade system. Our knowledge about the extent of the Harappa culture has increased considerably which has a bearing on the long distance Harappan trade as well as highland - lowland interaction for economic needs. Beyond Indus Valley we have now a cluster of 7 sites at Shoturgai, near

Aikhanum, northern Afghanistan on the oxus - kokeha confluence. Its location is so strategic that it must be controlled the import of Lapis lazuli, turquoise, Silver and other minerals and metals from Afghanistan and soviet central Asia and Northern Iran required for the highly Industrialized economic activities of the Harappans. The discovery of Mandana - a site in the Himalayan foot hills on the Chenab in District Jammu near modern town of Akhnoor should be taken as a highland site controlling the inflow of Himalayan timber for the Harappans. Sites like Bhagatrav on the western coast must have provided semi-precious stones like agate, Carnelian and Chalcedony for Harappan bead making factories. Metals, minerals and timber of Northern Baluchistan must have come to the lowlands through a number of sites including Gumla and Rahman Dheri in the Gomul valley. From southern Baluchistan men and material must have come directly to places in Sindh - Allahdino and Balakot, both have yielded enough evidence for this. Harappans had specific economic interests in several regions peripheral to their culture area.

10.2.1 Inland Trade and Overseas Trade

The discoveries have confirmed the belief that the Harappan people had trade relations not only with the people of their own country but also with the Traders abroad. Gold, silver, copper and other precious stones discovered in Mohenjodaro and Harappa probably imported while cloth from Harappa must have been exported. Harappans carried out both internal as well as external trade. inter-regional trade was carried on with Rajasthan, Saurashtra, Maharashtra, south India, parts of western Uttar Pradesh and Bihar.

Coming to the question of External trade, a good number of literary evidences from Mesopotamia prove the existence of trade with Harappa. The Harappan trade is of joint venture of Merchants, agents, expert sailors, port authorities and others.

During the mature Harappan period we can understand that the Merchants were organising the raw materials from the neighbouring region and also from the Industry i.e, Lothal and Chanhudaro are known for their bead factories. Probably

the head merchant was looking after the production. The unit which was looking after the sale of good was also taking care of the transportation of goods. The agents of the manufacturers must have traveled to the different stations for the promotion of the sale of goods. They carried only the samples of precious items, such as the etched carnelian beads, along with them. In these entrepots they negotiated the trade with the agents of other countries, severing orders from them. It was absolutely essential because the trade was based on barter system and exchange items were negotiated on the basis of the requirements of the home market. Next comes the joint-venture of the agents and the expert sailors. After coming back to the production centre, they would have shipped the consignments directly from some Harappan port with the help of ship captain and the crew after packing the goods carefully with the name of consigner, and also with the trade mark. The crew was to carry goods from one port to the other. In all likelihood, in a few selected Mesopotamian towns authorized Indian agents might have stationed permanently. This can be inferred from the evidence of Seals.

The Harappan agents stationed themselves at places like Lagash for generations together so much so that some 300 years after the Sargaon of Akkad, their village was called Meluhha and some of their personal names included Meluhha. Between Meluhha and ur there were 2 places Magan and Dilmun - which must have served as most viable areas for entrepots. The entrepots were favourable to the merchants as there were situated at very convenient points between Mesopotomia and India. Navigation between Sutmagen-dor and the Persian Gulf Islands must have been difficult because the coastal regions are absolutely inhospitable for people to settle down permanently. There may be few temporary stations on the coast but we have no knowledge about them yet.

Let us examine the importance items exported from Meluhha as we have come to know from the cuneiform records and also determine to what extent they were the Indian products. Various kinds of woods, chank-shell, ivory, copper, gold, silver, carnelian, cotton, etc. were found their way into Mesopotomia from Meluhha. (Meluhha has been identified with the Indus region).

Wood: Ur was a ship building centre. For the construction of ship hard wood was required in huge quantity, which was obtained from Magan and Meluhha. Even hill-forests of Gujarat were providing these kinds of wood. Indian teak was in great demand.

Chank-shell: Chank-shell objects have been found at Ur, Brak, Kish and Susa. Probably they were exported from Lothal and other Indus cities. According to Rao, Kathiawar coast was the nearest source of chank-shell for the Sumerian cities.

Ivory: it was the main product of Kathiawar and the Indus basin. Lothal, Mohenjodaro and other sites like Surkotada are likely to have been exporting worked pieces of ivory rods, combs, inlay pieces and gamesmen to the Persian gulf ports- Mesopotomia and the north Syrian coast were their occuranccs has been reported in several excavations.

Carnelian beads: etched carnelian beads have been found almost on all Indus sites, Mohenjodaro, Harappa, Gumla, Amri III, Kalaibangan, Surkotada, Lothal, Chanhudaro and also on some Persian gulf, Iranian sites such as Shahdad, Susa and Mesopotomia.

According to Caspers (1971), Rao (1973) and Gupta (1977) Lothal and Chanhudaro were the main production centres as workshops with bead making Kilns and many unfinished carnelian beads and waste have been discovered at these sites. From the Indus region they were exported to Mesopotomia and Susa.

Cotton: the discovery of a terracotta sealing with the impression of woven fabric from lothal the cotton cloth piece sticking to the base of a silver vase from Mohenjodaro a number of accessories of cotton weavers found at Lothal and other Indus cities and the seal impression with the cotton cloth from Umma indicate cotton may be one of the item of export.

Cubical dice: another object is cubical dice made of terracotta, clay and bone discovered from Ur Tell Asmar and Tepe Gawara. The dies from Ur are comparable with an agate dice from Mohenjodaro.

The Mesopotamian texts refer to import and exports. The recovery of 65 terracotta sealings, bearing the impression of packing material on the other side, from the warehouse of Lothal leaves no doubt in accepting the suggestion that the Indus seals were the commercial tools used for sealing the cargo. After packing the goods properly the consigners seals were affixed on the labels of wet clay at the knot.

According to S.R.R 30-35 ships could be accomadated near Lothal ports. The chief items of import were

- Tarquoise from Persia Amethyst from Maharashtra
- Carnelian from Saurashtra
- Gold from Afghanistan, Persia and Karnatak
- Tin from Bihar

Export: Harappan exports were - cotton goods, agricultural products such as wheat, barley, peasoil see, pottery, ivory goods to Mesopotomia, Central Asia, Afghanistan and Bahrin.

10.3 TRANSPORTATION

Trade was undertaken by both land and sea routes. For the transportation on land routes they must have been made use of Bullock Carts. Many terracotta cart models of Bullock of the cart. For sea route they have made use of boats and ships. Several representations of ships are found on seals from Harappa and Mohenjodaro whereas, the terracotta model of ship from Lothal and ship design on graffiti Carts unearthed from the excavational sites indicate the exist fit indicate the use of water ways for trading activities. From Harappa and chanhudaro, copper or Bronze models of carts with seated drivers and also nearly identical models of little carts of the modern Ikka or ekka type, still common in the punjab. These have a framed

canopy over the body in which the passenger sits, for longer journeys and more wooded country the chief means of transport would have been by caravans of pack-oxen.

10.4 WEIGHTS AND MEASURES

The people of Harappa had achieved great accuracy in measuring length, mass and time. They were the first to develop a system of uniform weights and measures. Harappans must have used a large number of weights. They ranged from large ones to be lifted with a rope to very small ones used by jewelers. Cubical weights were most common. The unit weight had the value of 8,750 gms, the largest weight being 10,970 gms. A bronze bar with suspended copper pans was used as a scale. It appears that the decimal system was known to the people of the Harappan culture. Their smallest division, which is marked on an ivory scale found at Lothal, was approximately 1.704mm, the smallest division ever recorded on a scale of the Bronze Age.

10.5 LET US SUM UP

The Indus people had a well-organized trading system. They enjoyed both inland and overseas trade. They used boats and ships for sea routes, bullock carts, and pack animals as the means of transport. They even maintained proper weights and measures.

10.6 KEY WORDS

1. Accuracy – Accuracy is how close a measured value is to the actual value.
2. Economy – consists of the production, distribution, or trade.

10.7 CHECK YOUR PROGRESS

1. Discuss in detail the trading system during Harappan culture?

10.8 ANSWERS TO CHECK YOUR PROGRESS

1. See section 10.2

10.9 SUGGESTED READINGS

1. Dales G.F. 1962 – Harappan outposts on the makran coast *Antiquity* XXXVI.
2. Fair servis W.A. 1961 – Harappan Civilization – new evidence and more theory.

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UNIT – 11 HARAPPA SEALS AND SCRIPT

Structure

- 11.0 Objectives**
- 11.1 Introduction**
- 11.2 Harappan Seals**
- 11.3 Harappan Script**
- 11.4 Let us sum up**
- 11.5 Key words**
- 11.6 Check your progress**
- 11.7 Answers to check your progress**
- 11.8 Suggested Readings**

11.0 OBJECTIVES

This unit will help the reader to understand;

- The seals were used for trade.
- The seals were also used as amulets.
- The seals depict male and female figurines and also the animals too.
- The seals have small writings which are undeciphered, although many archaeologists have attempted to read it.

11.1 INTRODUCTION

Seals are one of the major Archaeological source material providing valuable information on the Harappan culture. The greatest artistic creation's of the harappan culture are its seals. More than 2000 seals have been discovered so far from various sites. In 1872-75 Alexander Cunningham published the first Harappan seal. The ancient stamp seals were first discovered in 1873, the exquisite carved steatite seals from Harappan gained world attention because of their style and script. After many years of excavation, the British Archaeologist Ernest MacKay studied Harappan seals. Sir John Marshall in his 1922-1927 expedition at Mohenjo-Daro found a total of 558 seals. Par polo in his corpus of Indus seals and Inscription says Harappan had give importance to Bulls. On the seals even today in Hindu South Asian countries the Bull is an important symbol and there seen to be a continuity in the symbolic importance in south Asia where it continues in the modern era.

The Majority of seals have animals, male and female figurines engraved on them with some writing. The animal depicted on a majority of seals at sites of the mature period has not been clearly identified. Part bull, part zebra, with a majestic horn, has been a source of speculation. Yet there is insufficient evidence to substantiate claims that the image had religious or cultic significance, but the prevalence of the image raises the question of whether or not the animals in image of the Indus valley civilization are religion symbols. Some Indus valley seals show

swastikas which are found in other religions worldwide especially in Indian religion such as Hinduism, Buddhism and Jainism.

11.2 HARAPPAN SEALS

Every merchant or mercantile family had a seal, bearing an emblem, often of a religious character with a brief inscription. The standard harappan seal was a square or an oblong plaque usually made of steatite. The primary purpose of seals is to mark the ownership of property, but they seem to have also served as amulets and were regularly carried on to the person of their owners.

Seals with brief inscription, never more than 20 symbols and usually not more than ten are the only significant examples of the Harappan script.

The Indus seal was found between 1927 and 1931 during the initial excavations at Mohenjo-Daro, modern Pakistan. It was discovered by the British archaeologist Ernest MacKay. According to MacKay seals were used for both internal and external trade. Impressions of seal bundles of trade on ceramics and tags used to seal bundles of trade goods. The impression might have been applied to denote ownership. Numerous impression of seal have been found on ceramics to seal bundles of trade goods trade of rope impression on the back of many tags indicates that they were applied to bundles of goods, possibly to denote ownership or for security purposes. The sealing or the seal itself could possibly carry the symbol of power or authority of office. The motif on the seal or impression may have function as an amulet as well. The agricultural scientists Frederick Elizabeth Simoons report that the unicorn animal on the seal may represent a pre-domesticated form of bull. Dimension of the seal. The seals range in size from half an inch to just over two and half inches. The technique of cutting and polishing the seals with white lustre was a unique invention of the Harappans. Though there are different types of seals such as the square, rectangular, button, cubical, cylinder and round types the two types are main types such as the square type with carved animal and inscription on the rectangular type with inscription only

The square shape of the seal is the most common form of these stamp seals although there is great variety in their external dimension and thickness. Dales (1976) reports that the seal measures 28mm x 28mm.

But MacKay suggests that most of the seals were uniform in cut and shape. The perforation always, runs in the direction of the animal's body, so when suspended, the representation of the animal is properly oriented.

Marshall remarks that most of the bosses on the seals found occupied approximately a third of the area of the width of their back. He further noted that the bosses, or handles, appear to be hemispherical in shape although a groove down the centre can give them the illusion of being double. Coughs for seals are not provided by earlier researchers.

The unicorn seal from Mohenjo-Daro measures 29mm inches on each side and is made of fired steatite. It is an easily carved soft stone that become hard after firing on the top are 4 pictographs of an yet undeciphered Indus script.

A good number of seals have been unearthed from mohcnjodaro also, depicting a collection of animals and some script symbols. This sealing may have been used in specific rituals as a narrative taken that tells the story of a myth.

One of the square seal depicting a nude male deity with and faces, seated in yogic position on a throne wearing bangles on both arms and an dab orate headdress. 5 symbols of the Indus script appear on either side of the headdress is made of 2 outward projecting buffalo style curved horns with 2 upward projecting point. A single branch with 3 papal leaves rises from the middle of the head dress. This seals may not have been fired, but the stone is very hard. A grooved and perforated boss is present on the back of the seal. Several script signs are interspersed with the figures along the top of the seal and a single sign is placed at the base of the free continuation, inspite of many attempts of decipherment it is still undeciphered. The average inscription contains 5 signs and the longest inscription is only 17 signs.

Some of the early scholars starting with Cunningham in 1877, thought that the system was the arch type of the Brahma script, Cunningham's ideas were supported by few school link G.R. Rao and the late F. Raymand Allchin.

The early examples of the symbol system are found in an early Harappan of the context. In the nature Harappan period from about 2600 B,C strings of the Indus signs are most commonly found on flat, rectangular stamp seals.

After 1900 B,C systematic use of the symbols ended and after the final stage of the mature Harappa civilization onshore explorations near Bet Dwarka in Gujarat revealed the presence of late Indus seals depicting a and headed animal, earthen vessel inscribed in what is claimed to be a late Harappa script. The Tamil nadu Archaeological dept in may 2007 found pots with arrow - head symbol during the excavation in near Poompuhar. These symbols this scene may represent a special ritual sacrifice to a deity with 7 figures in procession. The other seal found at Mohenjo-Daro depict the totemic animal, the bull, the unicorn and the antelope. This seal has no script.

One of the interesting silver seal with a unicorn motif is found at Mohenjo-Daro. Other animal motifs appearing on seals found include wild animal such as Rhinoceros, the water buffalo, the crocodile the tiger and birds too. Their brief inscriptions, never of more than 20 symbols and usually of not more than ten are the only significant examples of the Harappan script.

11.3 HARAPPAN SCRIPT

Like the people of ancient Mesopotamia the art of writing although the earliest specimen of the Harappan script was noticed in 1973 and the complete script was discovered by 1923, it has not been deciphered so far. Although attempts have been made to compare the Harappan scripts with the contemporary scripts of Mesopotamia and Egypt, but it is clear that it is indigenous product, which does not show any connection with the scripts of western Asia.

This script had about 270 characters which are pictographic in nature, but which had syllabic character.

The script had about 270 characters, which are pictographic in nature. A notable feature of this writing is its clarity and straight rectilinear character. The direction of writing has been found from right to left and from left to right. This is based on the discovery of the script in a fragment of pottery found at Kalibangan the Harappans did not write long inscription link the Egyptians and Mesopotamians. Altogether we have about 250 to 400 pictographs and in the form of a picture each letter stands for some sound, idea or object around 4000 inscribed.

Objects have been discussed scholars like Parpola and Iravatham Mahadevan attempts a reading of the terminal signs on some of the seals through computer aided analysis Mahadevan concludes that none of the published claims of decipherment are correct. He states that the script does not represent Indo-European language, on the contrary the Harappan script may represent a proto-Dravidian language and the script was probably read from right to left. Mahadevan argues that the Harappan seals probably give the names and titles of users.

Claimed to have striking resemblance of the seals of Mohenjo-Daro, S.R. Rao the Indian Archaeologist argued that the late phase of the script represented the beginning of the alphabet. He finds similarities in shape and form in the late Harappan characters and the Phoenician letters, arguing that the Phoenician script evolved from the Harappan script.

The characters are largely pictorial but includes many abstract signs the inscriptions are thought to have been mostly written from right to left, but sometimes follows a boustrophedonic style. The number of principal signs is about 400, comparable to the typical sign inventory of a logo syllabic to syllabic.

The most important scholars who were working in this line of decipherment of Indus script are Hunter, Langdon, Parpola, Travatam Mahadevan, Kinner Wilson, S.R Rao and others.

11.4 LET US SUM UP

The Greatest artistic creations of the Harappan culture are its seals. There are around 2000 seals. The seals are of various types used as amulets, for trade and also has some religious figures and figurines.

Seals give us an idea of the religious life and beliefs so the information culled out from the seals are of great value.

11.5 KEY WORDS

1. Steatite – is talc – schist, which is a type of metamorphic rock.
2. Artistic – natural creative skill.

11.6 CHECK YOUR PROGRESS

1. Give an account of the Harappan seals.
2. Write a note on the Harappan script.

11.7 ANSWERS TO CHECK YOUR PROGRESS

1. Answer to the Question No. 1 can be found under section 11.2
2. Answer to the Question No. 2 can be found under section 11.3

11.8 SUGGESTED READINGS

1. Parpola, S. Parpola A and Brunswig R. 1977 The Meluhha Village JESHO vol. XX.

2. Iravatham Mahadevan- The Indus Script Texts, Concordances and Tables New Delhi.

3. Sankalia H.D. 1969 Excavations at Ahar, Poona, Deccan College.

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UNIT -12 DECLINE OF THE HARPPAN CULTURE

Structure

12.0 Objectives

12.1 Introduction

12.2 Causes for the decline of the Harappan culture

12.2.1 Continuing traditions

12.3 Let us sum up

12.4 Key words

12.5 Check your progress

12.6 Answers to check your progress

12.7 Suggested Readings

12.0 OBJECTIVES

This unit will help the reader to understand,

- Different reasons for the decline of the Harappan culture.
- How the cities like Mohenjodaro, Harappa and Kalibangan gradually declined in urban planning and construction of the houses. Slowly the cities like Harappa and Mohenjodaro were abandoned.
- Even after the decline of the Harappan culture here existed many small rural cultures which are known as post Harappan cultures.

12.1 INTRODUCTION

Harappa is an important site in the Montgomery District now in Pakistan. It is 162 kilometers from Lahore, like Mohenjodaro, the excavations have yielded valuable results. The people lived in cities and their houses were made of bricks. Their town planning, public buildings, roads, state granary and public bath etc., denote marvelous engineering skill.

Around 1750 B.C, the Harappan culture began to decline for various reasons we see in all the Harappan sites, planning and construction became inferior in the upper levels. Brickbats from former houses are revised and new motifs appear on pottery. At Mohenjodaro, more than anywhere else, clear indications of a progressive degeneration are available. It has been suggested that the calamities alteration in the course of the Indus and the Ravi rivers led to the disreputation of the surrounding countryside. The city of Mohenjodaro became weak under the pressure of population there was an influx of refugees into the Indus cities. The Indus cities must have suffered on account of this influx. At Mohenjodaro, rooms were divided into smaller ones, mansions became tenements. The street plan was no longer maintained evidently, the city was overpopulated, law and order suffered. Uniform weight and measures pottery and as chitecheral monuments disappeared. These evidences have been interpreted by scholars as indicative decline of the urban centers.

12.2 CAUSES FOR THE DECLINE OF THE HARAPPAN CULTURE

How the Harappan culture was destroyed is only a historical speculation. However some conjectures have been made by scholars as how it declined. Historians believe in the ecological imbalance theory given by Fairservis suggest that decreasing fertility was caused by increasing salinity of the some scholars hold the view that the rainfall of sindh, which must have been much more copious than it is now, might have decreased about the second millennium before Christ and sindh might have shown signs of turning into a desert as it is now. Or, the inhabitants of the Indus valley, whose great prosperity and wealth must have induced the wild tribes from the hills to attack, were invaded and put to the sword. Groups of skeletons, including those of women and children, have been discovered, some in a big room, others at the foot of a staircase leading down to a well and others again in street. All this suggests that they met a violent death now a forgotten tragedy.

Desert others attribute it to a sudden subsidence or uplift of land which caused floods. Excavations reveal that Mohenjodaro itself was flooded more than once, traces of at least main phases of deep flooding can be detected here. Chanhudaro was also twice – destroyed by massive inundations. The devastating floods resulting from violent geomorphologic changes in the lower Indus region and obstructed the normal process. Of irrigation, leading in turn to the economic decline of some of the Harappan settlements.

It is more probable that the Indus valley civilization reached a state of decadence and was over-whelmed by continuous attacks of the Aryans who were more vigorous and perhaps better equipped than the Indus Valley people. “The organization of the pre-Aryan people went down before the Aryans, another example of recurring fact in history that decaying civilizations, whatever their material advancement, cannot stand p to barbarian invasions.” Obviously, the pastoral Aryans slowly conquered the indigenous non-Aryan population and assimilated their civilization.

Some scholars hold the view that earthquakes or cyclones might have caused its destruction. Epidemics like malaria, cholera might have spread all over and the whole civilization. According to some historians political and economic disintegration (chaos in leadership) invited domestic and foreign forces to end this civilization.

Mortimer wheeler believe that the fatal blow the Harappan civilization was perhaps clue to barbarian invasion into India at several places in Baluchistan, thick layers of burring imply the violent destruction of the whole settlement by fire. In the later phase of the Harappan culture, some exotic tools and pottery indicate the slow percolation of new people in the Indus basin. Half a dozen groups of human skeletons belonging to the latter phases of occupation at Mohenjodaro indicate that the city was invaded. Further proofs of invasions comes from Harappa where a cemetery has come to light. It is believed to have been of an alien people who destroyed the older Harappa. New type of pottery occurs in the Harappan site of Baluchista. In Punjab and Harappa, painted grey were generally associated whit. Vedic people has been found with some late Harappan period the Rigvidic Aryans settled down mostly in the lands of the 7 rivers, in which Harappan culture flourished. However are have no strong evidence of any mass scale confirmation between the Harappan and the Aryans. But these evidences does not hold good.

Based on recent archaeological evidences the scholar have given the natural causes such as both man made and natural causes for the decline of the Harappan culture. Archaeologically, some of the sites were abandoned and the tradition of literacy seals and sealing were lost. It simply meant the end of the urban phase. Many smaller sites continued to exist. The Archeological finds show a stylistic continuity form the Harappan agricultural communities emerged in large numbers in the succeeding periods. From a regional perspective the period succeeding the urban phase can be treated as one of flourishing agricultural communities scholars now talk about cultural change, regional migration and modification of an integrated system of settlement and subsistence. Even after the decline of the Harappan culture their existed many small rural cultures which are known as post Harappan cultures. Many such post Harappan sites are found in Punjab, Haryana, Rajasthan and Sing region though they represent the rural cultures at the same time they carry

a lot of the Harappan traits. Thus they are known as the post Harappan cultures for example barabar and so on.

12.2.1 Continuing Traditions

There were strong elements of both survival and continuity in the Harappan culture. Though certainly there was decadence and disappearance of features like town planning, steatite seals and the Indus script, many others have survived traditions involving the worship of nature like Rivers, water, mother goddess, pipal trees were integrated into the tradition of the Indo Aryans. The traditions and beliefs of the Harappan culture contributed to the rise of Hindu religion and laid the foundation of all subsequent civilization in south Asia, thus many of the tradition of south Asia have survived for millennia continue to this day.

Religious practices of the Harappan culture had strong elements of survival. The mother goddess and the fertility goddess were the concepts which survived to become the supreme goddesses in Hinduism from 600 B.C onwards. The proto-Shiva of the Harappan culture immediately recalls to our mind the traditional image of Pashupati Mahadeva of later Hinduism. The worship of linga intimately associated with Shiva survives to this day. Worship of trees especially pipal trees is held sacred even to this day Animal worship was held and revered even today.

In terms of weights and measurements, for trade and transactions, weighing was done mostly multiples of 16. Interestingly this tradition for 16 continued in India till modern times and till recently 16 annas made one rupee.

As regards fine arts it seems probable that the earliest stringed instrument and drums can be traced to the Harappan culture. A drum found in one of the terracotta figures is said to be the precursor of the modern mridangam, a crude stringed instrument depicted in some pictographs is said to be the proto type of the modern veena. All these aspects clearly indicate the cultural continuity.

12.3 LET US SUM UP

Now you have studied different theories for the decline of the Harappan culture. Such as ecological imbalance theory Aryan invasion. The scholars now think that was an end of the urban phase that is the end of Harappan culture, but Archaeological finds show a stylistic continuity from the Harappan phase.

The scholars further believe that even after the decline of the Harappan culture there existed many small rural cultures, which are called as post Harappan cultures. Which are called as post Harappan cultures. Many such post Harappan sites are in the region. Although they represent the rural cultures, they carry a lot of the Harappan traits.

Another strong aspect of the Harappan culture is its tradition involving the worship of nature like Rivers, water, pipal tree, Religious practices of the Harappan culture, had strong elements of survival. The tradition and beliefs of its people contributed to the rise of Hindu religion.

12.4 KEY WORDS

1. Mortimer Wheeler – Archaeologist
2. Humped Bull – An animal on the seal of Harappan culture.

12.5 CHECK YOUR PROGRESS

1. Discuss the causes for the decline of the Harappan culture

12.6 ANSWERS TO CHECK YOUR PROGRESS

1. See section 12.2.

12.7 SUGGESTED READINGS

1. Indus Valley Civilization - Dr. Mahes Vikram Singh
Dr. Brij Bhushan Shrivastava.
2. Indian Historical Manual - Wipul Singh.

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BLOCK – 4: PRE-HISTORY OF SOUTH INDIA

UNIT -13 NEOLITHIC AND NEOLITHIC – CHALCOLITHIC CULTURE OF SOUTH

Structure

- 13.0 Objectives**
- 13.1 Introduction**
- 13.2 Neolithic Settlements**
- 13.3 Neolithic Sites**
- 13.4 Neolithic Pottery**
- 13.5 Domestic Animals and Religion**
- 13.6 Stone and Metal Tools**
- 13.7 Neolithic Art**
- 13.8 Neolithic Burials**
- 13.9 Neolithic –Chalcolithic Culture of the South**
- 13.10 Neolithic – Chalcolithic Houses**
- 13.11 Neolithic – Chalcolithic Pottery**
- 13.12 Neolithic – Chalcolithic Stone Tools and Blades**
- 13.13 Neolithic – Chalcolithic Metal Objects**
- 13.14 Neolithic –Chalcolithic Head-Rests and Edge-Ground Potsherd**
- 13.15 Neolithic – Chalcolithic Art**
- 13.16 Neolithic –Chalcolithic Religion**
- 13.17 Neolithic – Chalcolithic Domestic Animals and Agriculture**
- 13.18 Neolithic – Chalcolithic Burials**
- 13.19 Let us sum up**
- 13.20 Keywords**
- 13.21 Check your progress**
- 13.22 Answer to check your progress**
- 13.23 Suggested Readings**

13.0 OBJECTIVES

The study of this unit will enable you to understand:

- How prehistoric culture have influenced on the Indian history.
- How the Neolithic culture and its various stages have played an important role in the evolution and growth of civilization and culture.
- Besides, the study offers us an opportunity of have vision on natural resources of region and their impact in shaping the polity, religion and economy of the nation.
- New Stone Age has been said, ‘the foundation of all historical knowledge’. For this reason, before we begin to study the history of India, we must make ourselves acquainted with her important characteristics and features, and consider how far they have determined the course of events.
- The history is the product of two great forces, environment and personality; the course of action that the famous figures of history can take, must of necessity take into account the surroundings in which they are place.
- It was well said by Foote that Neolithic culture is a revolution of the history. The history of India, like that of other countries, cannot be understood without a careful study of its prehistoric cultures.

13.1 INTRODUCTION

Prehistoric period is generally divided into Old Stone Age or Paleolithic age and the Neolithic age. The Paleolithic Age is again subdivided into lower (early) Stone Age and upper Stone Age. The upper Stone Age is a transitional stage from the Paleolithic to the Neolithic period and is called as Mesolithic or Mesolithic. This was followed by Megalithic or big Stone Age when the use of iron was also known.

The transition from the old to the new stone (Neolithic) age was not sudden. There was an intermediate period in between called the Mesolithic age. The implements of this period were sound in size and were made by quartzite. Such stone prototype, have been discovered at Sayarpuram in tinnavelly district and on

the banks of the rivers Krishna and Godavari. Types of pottery belonging to this stage have been found at Gundladurga, Tesna, Patpad and other places. Men of the Mesolithic age were hunters. The custom of burial of the dead began with them.

13.2 NEOLITHIC SETTLEMENTS

South India is reckoned as the most ancient habitation of man. Anthropologists and historians fossil remains of fauna found along with primitive stone tools in the terraces of river valleys of Godavari and Narmada show that Deccan was the most ancient habitation of man. The antiquity of human life goes back to about 500,000 years.

Agree that man's first habitation was Deccan. The man appears to have lived for a long time in the Paleolithic age. Some stone implements said to have been used by the man have been discovered. But it is not certain whether they actually belong to this period. In at the time of discovering for the first time ancient inscriptions of South India at Pallavaram, also found at Karnool and the Godavari valley tools like hand axes, adzes, blades and barins belonging to the old stone age. These tools are very crude indicating that the Paleolithic man had not yet learnt the art of polishing and sharpening his tools. Wooden implements have also been discovered at various places in South India. During this period man remained as a food gatherer rather than as food producer.

The earliest find of the stone-age period in India was a hand-axe at Lingasugar in Raichur district discovered in 1842. This discovery stimulated research in the prehistoric studies. The credit of doing in on a large scale goes to who excavated many sites in Tamilnadu, Andhra and Karnataka.

13.3 NEOLITHIC SITES

This age yielded place to the New Stone age. A number of Neolithic sites found in different parts of South India indicate the advancement in the technique of stone tool chipping. In Bellary, Kuppagal, Kurnool and Hyderabad, the caves were

occupied by the Neolithic people for several centuries. The chief implements consists of the well ground Mesolithic axe head called the cell and the so called 'Neolithic pick'. The Celt is usually in the form of a 'flat blade approaching an oval in section with the sides more or less straight and with one end broader and also sharper than the other'. Among other implements common we can mention, unbaked pottery, marked with geometrical design, combs, bangles, needles of bone, basket, various kinds of adzes, mace heads, scrapers, borers, harpoons etc.,

13.4 NEOLITHIC POTTERY

The pottery appears deliberately modern and consists of various types bowls, caps and rural as found in Adichanalar, Chandravalli and other places. These funeral urns about 4 or 5 ft high with 3 logs show close affinity to Babylonian pottery probably the people were buried in these urns.

13.5 DOMESTIC ANIMALS AND RELIGION

The most remarkable advance is found in the beautiful paintings in the walls of the caves. These show bulls, camels, elephants and other animals being hunted and the colours are so bright that even now they retain their freshness. Some religious belief was also associated with the early painting for example there is a scene in which masked men are performing a dance and one figure is crossing a river holding a tail of the cow. Various amulet, ring stones etc show that the power of fertility being worshiped.

13.6 STONE AND METAL TOOLS

In India in the late Neolithic period, are already visible signs of a microlithic culture. This is found in Brahmagiri, Chandravalli and the Godavari valley. Iron had become popular at that time. Long swords, arrowheads, plate with a handle, all made of iron are found. Their flint implements are beautifully made. Their stone chamber tombs have remained made of iron they have an opening at the top or at the front. In some places larchers coffins with short legs were used for burial.

They were provided with a lid. Known as sarcophagus they were seen at Brahmagiri.

13.7 NEOLITHIC ART

In some places of Karnataka, paintings of the Neolithic Age have been found. They include men mounted on horse, men assembled in groups with hands held together to form a circle and long horned bull. Some hunting scenes are also depicted.

13.8 NEOLITHIC BURIALS

The dead were buried with head laid towards the Northeast. Small children were buried in pots as seen in Brahmagiri. Inner surface of these were smeared with red soil. At times four or six pots were joined by breaking their bottoms and the dead were placed in them after joining them. Such burials are found at Tekkala Kota. Various belongings like vessels, food grains, weapons, jewels, etc were buried together with the dead. This shows their belief in life after death.

13.9 NEOLITHIC –CHALCOLITHIC CULTURE OF THE SOUTH

The excavations carried out at several sites viz., Brahmagiri, Maski, Piklihal, Sanganakallu, Tekkalakota, Hallur, Utnur, Kupgal and T.Narsipur give an idea of the Neolithic Chalcolithic Culture of the people – their houses, arts and crafts, food habits and burial customs. In this region, Neolithic Culture was followed by the Neolithic-Chalcolithic Culture in about 1800 B.C. At Brahmagiri, Piklihal and Tekkalakota, copper occurred in the upper strata of the Neolithic occupation because of the contact with the Chalcolithic Cultures of the Northern Deccan. This Chalcolithic Culture was continued to be known along with the original connotation. Neolithic because many ground tools were found here in comparison with the North Indian Chalcolithic Cultures in which only a few are noticed.

13.10 NEOLITHIC – CHALCOLITHIC HOUSES

The excavations at different sites enlighten us about some plan of the houses and settlement pattern of these people. As known from the excavations at Tekkalakota, Sanganakallu and Hallur, there were generally one room circular houses with a low mud plinth strengthened by a covered split bamboo or other locally available flexible reed and creeper screen. The sloping thatched roof of these houses is conical. The floors were (occasionally) thinly plastered with lime, but the walls were probably not. The structure at Sanganakallu and Tekkalakota were built on a murrum surface. At Sanganakallu, a Chula made with three stones was found. Storage jars are found placed in these houses. Some idea of the sense of sanitation can be had from the fact that pits were found in the habitation area containing animal bones, besides ash and pottery.

13.11 NEOLITHIC – CHALCOLITHIC POTTERY

These houses were furnished with some peculiar pottery fabrics and types. The Burnished Grey Ware is a distinctive trait of this Neolithic-Chalcolithic Culture. Besides there were other fabrics attributed to the cultural intrusion from the north. There is the Black-and-red or Red and Black Ware-occasionally painted in white. Only bowls and small dishes are represented, and these two occur exclusively as grave goods. In addition, there is small percentage of painted Black-on-red Ware at almost all the sites, but particularly at Piklihal, Tekkalakota and Sanganakallu. The common types of vessels found are dishes, bowls, lotas, small and large water vessels and storage jars. These served most primary needs of the household such as eating, drinking and storing respectively. The pot types such as spouts, small jars with constricted neck and a lamp having flat ovalish surface, with a central depression for a wick and incised design motive have been borrowed because of the contact with Jorwe and other Northern Chalcolithic Cultures.

13.12 NEOLITHIC – CHALCOLITHIC STONE TOOLS AND BLADES

Ground and polished stone tools and blades were recovered in large number from the different sites. These have been grouped under various heads primarily on the basis of the functions, and secondarily on the form of the object. Among these tools, the axes are the most important and common. Other stone tool types are adzes, chisels, scrapers, wedges, pointed tools, picks, pointed hammers, querns, hand-hammers, sling stones, grooved hammerstones, mace-head or ring-stone, etc. Lithic blades are made of chert and chalcedony.

13.13 NEOLITHIC – CHALCOLITHIC METAL OBJECTS

Along with stone object, metal objects are poor in comparison to those found in Northern Chalcolithic sites. Besides it is not sure whether they are locally manufactured or imported. So far a few copper objects have been found at Tekkalakota, Brahmagiri, Maski, Piklihal and Hallur at Tekkalakota, and copper axe was found in Phase I, and a copper spiral, a piece of copper wire, a copper ring with three coils, a copper nailhead and a copper piece belong to Phase II. At Brahmagiri, a chisel and a rod were found. A copper chisel and fragments of the rim of a small copper bowl occurred in Phase II. At Hallur, three objects were found from deposits of Phase I. One of them is a simple fish-hook, but the remaining two are unusual. There is a small miniature, double-edged axe, made on a thin sheet of copper with a broad edge and concave middle. Since it is very small and delicate and it has been rightly regarded as a cult object. The second object is a flat miniature axe with a broad cutting edge, concave sides and a narrower handhold. The surface specimen from Brahmagiri has a triangular outline, with straight sides, and a very small or narrow butt. The object is like the present day cobbler's rafi for cutting and scraping leather.

The ornaments which these people wore seem to have been primarily necklaces. This may be inferred from the fact because the small variety of beads of shell, steatite, agate, carnelian, terracotta, gold and copper found here. Whether

these were used as ear pendants or for some other purpose, it is difficult to say. Of these, the earliest are of shell. Those of steatite occur in Phase II. They might be made from the local material. The steatite beads are usually of disc type, whereas those of carnelian, etc., are of barrer, bicone, facetter or circular varieties. Tekklalakota and Brahmagiri have produced a peculiar or unique ornament of gold and copper respectively, whereas at T.Narasipur a simple spherical gold bead and a biconical copper bead were found. The former comes from the earliest level, and consist of solid coils in the centre, with trumpet mouth-shaped solid terminals ending in opposite directions. The weights of two from the smaller excavation are 7.49 and 5.37 gms. Respectively. These ear-ornaments could hhave served as ornaments. The discovery of these gold ornaments would take the history of gold in this region back to about 2000 B.C.

13.14 NEOLITHIC –CHALCOLITHIC HEAD-RESTS AND EDGE-GROUND POTSHERD

There are certain objects whose use or significance is not precisely known. A fragment of head-rest made of burnished grey ware was found at Hallur. The stem and base are missing. A head-rest was also discovered at T.Narsipur by BRUCE FOOTE. The head-rests were a regular feature of Egyptian burial furniture. This implies the culturaleal contact between ancient Egypt and Proto historic Deccan. These highly concave objects might have been used rest-like objects were found in a kiln. The objects known as edge-ground potsherds were recovered from Hallur, Tekkalakota and Maski. They may be regarded as sharpeners or skin rubbers. These are also believed to be spindle-whorls. These seem to have been used by the potter as burnishers.

13.15 NEOLITHIC – CHALCOLITHIC ART

People of this culure during this period gradually developed some aesthetic sense, and they are supposed to be the authors of the early rock paintings, bruising and etching in Andhra-Karnatak-as well as domestic art comprising painting and pinhole decoration on pottery. At Tekkalakota is bruised a magnificent bull on a

rock and a human palm on a rock overlooking the terrace on Locality I. there are paintings in red ochre on various rock-shelters around these localities. ALLCHIN notes three kinds of paintings: i) Paintings in white, usually a lime wash, ii) Paintings in red over a white background and iii) numerous paintings in red. The subjects painted or bruised, include bulls, the sambhar deer, the gazelle, sheep and the goat and the horse, stylized human beings, trisula but rarely trees and flowers. This tradition of painting and bruising is indicated by the occurrence of a rare decoration on a Grey Ware lid found in Phase I at Tekkalakota. Here have been depicted a peacock and three animals – a serpent, and two kinds of deer. Two of the animals can be compared with those shown in rock-shelters. It is possible that a few paintings might belong to the period of Neolithic –Chalcolithic Culture.

13.16 NEOLITHIC –CHALCOLITHIC RELIGION

Some idea of religious beliefs may be gathered from the findings. Some terracotta bulls were discovered from Piklihal and other sites in Karnatak. There is no doubt that ox/cow was worshipped in various ways. The excavations at Utnur as well as Kupgal have shown that there was huge heaps of cow-dung which were probably ceremoniously burnt on specified occasions. At Hallur occurs a unique or rare bowl in phase 2, period I made of a brown and black blotchy surface, it has a circular hole at the centre of the bottom. The interior is decorated with thick dots in red ochre at close intervals. This peculiar bowl and the decoration might have some religious significance.

13.17 NEOLITHIC – CHALCOLITHIC DOMESTIC ANIMALS AND AGRICULTURE

It seems that the occupants of those sites were agricultural communities depending upon animal husbandry and cultivation of grains. These people were pastoral and kept large herds of cattle (cows and buffalo) and they played an important part in the life of these people. Their large number might also be inferred from the existence of several ash mounds, near or at these sites. These

people cultivated grains such as ragi (*Eleusine corocana*) and hulgi (*Dolichos biflorus*). It is possible that hulgi is indigenous whereas ragi is believed to have come from Africa. If this is correct, it proves maritime contact.

13.18 NEOLITHIC – CHALCOLITHIC BURIALS

After examining the data of burial practices at Tekkalakota, Hallur, Paklihal and others, it may be said that the adults were buried in specially dug pits in an extended position, in a north-south direction, though occasionally the east-west orientation also. As grave goods, a few pots and pans and sometimes stone blades or a polished axe were kept with the body. One of these pots was smeared with red ochre. Later on, the practice of burying the adult in multiple pots is noticed, and thus in association with black-and-red pots. The children were buried within the house floor and the adults nearby. This child burial was usually in one or two urns, placed horizontally face to face. The exception so far noticed is at Brahmagiri, and in one instance at Nevasa, where the urn is kept vertically.

13.19 LET US SUM UP

The history of north India is well known for her vast dimensions and the varied cultures. There are chains of hills and the highest mountain ranges, vast plains and lofty plateaus, dense forests and sandy deserts and the fertile river valleys in north India. All these factors tended to separate India into different local zones each with a regional spirit of its own. In other words the natural barriers largely determined the different political and cultural units. The north India, the Deccan plateau, the peninsular plains, the Ghats and the coastal regions have marked political and social characteristics. Thus the prehistoric culture have profoundly influenced the course of Indian History.

The beginning of the Neolithic Culture is assigned to 9000 B.C. in the world context, in the Indian subcontinent that earliest Neolithic settlements in at Mehrgarh, Baluchistan (now in Pakistan), and to around 7000 B.C. Some Neolithic settlements in North India may be as old as 5000 B.C, but in South India may not

be earlier than 2500 BC in southern and eastern India may be as late as 1000 B.C. Overall, the period between 5000 and 3000 BC has been accepted to be the Indian.

The term 'Neolithic' was coined by Sir John Lubbock in his book Prehistoric Times, first published in 1865. The term denotes an age in which stone implements were made more skillfully and were more varied in form than an earlier. V Gordon Childe defined the Neolithic-Chalcolithic culture as a self-sufficient food economy, Miles Burkitt put forward the following four characteristics a culture should fulfill to be known as a Neolithic culture : i) agriculture practice, ii) animal domestication, iii) grinded and polished stone tools, and iv) pottery manufacture.

Neolithic age, The Neolithic Culture witnessed considerable changes in the socio-economic life of the people. Human communities entered a new stage of culture when they started cultivation and domestication of animals, both for milk and meat and for harnessing their labour for various purposes. The development of agriculture in the real sense was a remarkable development of the period. Tools of the Neolithic Culture were also more advanced than those of the Paleolithic and Mesolithic Culture.

13.20 KEYWORDS

1. Neolithic – The New Stone Age
2. Axe – is an implement that has been used for millennia to shape split and cut.

13.21 CHECK YOUR PROGRESS

1. Describe the Neolithic-Chalcolithic Culture of the South.

13.22 ANSWER TO CHECK YOUR PROGRESS

1. See section 13.9 and 13.18

13.23 SUGGESTED READINGS

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UNIT -14 ASHMOUND SITES

Structure

- 14.0 Objectives**
- 14.1 Introduction**
- 14.2 Features of Ash-mounds**
- 14.3 Prof. Paddayya's Observation**
 - 14.3.1 The Area**
 - 14.3.2 Ashmound sites**
 - 14.3.3 Locational Analysis**
- 14.4 Let us sum up**
- 14.5 Keywords**
- 14.6 Check your progress**
- 14.7 Answer to check your progress**
- 14.8 Suggested Readings**

14.0 OBJECTIVES

After going through this unit you will be able to know about

- Ash-mounds Sites
- Features of Ash-mounds
- Recent observations of Prof., Paddayya's
- Ash-mounds sites of Kurnool, Tsallakudlurru.

14.1 INTRODUCTION

Ashmounds are huge imposing Mounds of scoriaceous slaggy ash of irregular plan, usually located within vicinity of an ancient site with Neolithic, Megalithic or early historical remains or only those of the first two. The local legends associate them variously within the burning of Bali, Hidambasura or other personages of the Ramayana and the Mahabharatha. They have been noticed in the region of the Krishna – Tungabhadra valleys comprising parts of districts Belgaum, Bijapur, Gulbarga, Raichur, Bellary, Mahbunagar and Anantapur. Newbold was the first to excavate one such mound at Kupgal to ascertain the nature antiquity and cause of the formation of the mounds and observed that they were probably due to funerary burnings. Subsequently Foote (1872-84), Fawcett and Know Sewell (1899), Longhurst (1916), Modi (1927), Munn (1928-36), Yazdani (1936) investigated them variously opined that they were due to the burning of cow-dung on a large scale at a high temperature in the Neolithic period.

Since 1948 considerable work on the problems of the Ash mounds on systematic lines has been carried out notably by Allchin 1963, Majumdar – Rajaguru 1966, Sundara.A 1971, Rami Reddy 1972, Paddayya 1973. Till now 64 localities (48 in Karnataka) 13, in Anantapur, 3 Mahabubnagar, both in A.P are known to have remains of Ashmounds, a few of them having two mounds each.

Ashmounds are one of the important issues dealing with the archaeological remains related to Neolithic culture in South India. It attained the most debatable topics among the archaeologists as it essentially resulted either due to an economic

activity or religiously significant that began in the second half of 3rd Millennium BCE. Ever since the first discovery of ash mounds by Colonel Colin Mackenzie in 1952, including the famous ash mound at Kudatini on the Bellary-Hospet road, several individual scholars and have brought to light over a hundred such sites: both partially disturbed with mound features to a meager extent or completely erased to a greater extent leaving behind only the sub-surface features with traces of the original spot by shifting the vitrified lumps of ash to the field boundaries and intact mounds.

14.2 FEATURES OF ASHMOUNDS

Ashmounds are large mounded features comprised of stratified deposits of decomposing burned and vitrified cow dung and others culturally modified soils bearing a variety of artifacts.

Constructed primarily during the South Indian Neolithic period (circa 3000-1200 B.C), these features vary greatly in size with recorded surface areas ranging from 1.5 to 10M. To date, more than 100 Ashmound sites have been documented within the South Deccan/North Dharwar region of Southern India.

Excellent summaries are found in Allchin (1963) and Paddayya (1991). 19th century exploration of Ashmounds in the region of present – day Northeastern Karnataka and western Andhra Pradesh by Colonial surveyors and administrations may be characterized as a debate on the historical features. Bruce Foot conclude that Ashmound matrixes were composed primarily of fired cattle dung. Another observation was the discovery and identification of many Neolithic objects, such as ground stone celts, Mealing stones rubbing stones and pottery during the course of surface survey and excavations at many Ashmound sites.

The construction of Ashmounds took place during Neolithic period and that many Ashmounds were rounded by significant scatters of occupational debris. Allchin's survey and excavations at the site of utnur has led him to conclude that

Ashmounds were the remains of cattle pens which had been regularly and perhaps ritually burned over the course of their many years of use.

Ashmounds are strong indicators of a production emphasis on pastoral production. Ashmound features also contrast with their natural background. In many recorded instances Ashmound and their surroundings settlements are situated in locally prominent points on the landscape. These include on the top of promontories or natural platforms, at the foot of granite inselburgs or clusters of small rocky out - crops or in a small valley passes between the hills. Many Ashmound settlements contain only a single mound, at several sites there are as many as four.

Neolithic Ashmounds were embedded In an agro-pastoral landscape in which small village communities emphasized the production of pastoral products. Sites and settlements marked by Ashmounds were located in similar landscape elements ecologically favourable to pastoralism and small scale agriculture.

Ashmound were constructed incrementally, synchronized with the social and ritual rhythm of cattle keeping.

14.3 PROF. PADDAYYA'S OBSERVATION

Prof. Paddayya's recent observations at one of the major habitation-cum-ashmound sites, Budihal located in the Gulbarga district of Karnataka, under gone for scientific excavation between 1990-91 to 1996-97 (earliest date ranging from 2565 to 2540 BCE calibrated from vitrified Upper layers of the ashmound) which in fact once again revived the problem of ashmounds. His work along with visiting several such sites over a vast areas of Raichur, Bellary, Gulbarga, Belgaum and Bijapur districts of Karnataka and Mahabubnagar, Ananatapur districts of Andhra Pradesh made him to put forward the following four specific aspects dealing with the formation of ashmounds in a landscape approach looking into this problem as:

1. Concentration of ash mounds in the hilly tracts occupied by the Archaean granite-gneiss formations which support plentiful pasture but are ill-suited for agricultural purposes on account of poor, sandy soils;

2. Location of sites close to perennial water sources (large or small rivers, ephemeral nullahs with year-round water pools and natural springs;
3. Availability of large stretches of open land around ashmounds, ideally suited for purposes of human occupation;
4. And the presence of thick and extensive occupation deposit in the open area around ash mounds, yielding rich Neolithic cultural material of various kinds.

14.3.1 The Area

The area under discussion covering the western half of the present Kurnool district of Andhra Pradesh. However, an area of 1000 sq. km lying between the Northern Latitudes of 15° 30' and 16° 00' and the Eastern Longitudes of 77° 45' and 78° 00' including both banks of Tungabhadra River and its affluents flowing in the Yemmiganur, Kodumur and western part of Kurnool taluks has been surveyed by following village-to-village survey. Physiographically the area comprises of granitic outcrops with boulders intervened with black and red loamy soils and patches of sandy and brownish soils derived from traps and granite overlooking the fields under dry farming. It is an open country from the plains of which rise a number of granite outcrops with intervening dolerite formation at regular interval. The major rivers that flow in the region are the Tungabhadra and its tributary Handri along with many local nullahs. It experiences an average rainfall ranging from 620 to 675 mm.

The sites with thick habitation are less in number as most of them are subjected to dry farming and hence modified in their physical features but retaining considerable sub-surface habitation debris ranging from 30 cm to 1 m thickness and 0.25 to 0.5 hectares in extent, except at Tsallakudluru where it exhibited a mound of 1.5 hectares, 1.5 to 2 m thick, 1.5 m height from the surrounding fields.

14.3.2 Ashmound sites

1. Kambadahal (15° 49' 40" N; 77° 37' 30" E) is a hamlet situated 52 km south-west of Kurnool town and 14 km north-east of Yemmiganur town, on the

Kurnool-Yemmiganur road at a distance of 12 km west of Belagal. Peddavanka, an affluent of river Tungabhadra flows in a south-north direction to the west of present hamlet located on it's right bank. The ashmound is located 100 m east of the right bank of the stream mentioned above. The mound has an elevation of 2 m with vitrified ash layer on top and series of soft ash down below as seen in the dug out sections. It is locally called 'Gumma', which is more or less circular in plan but slightly vary in dimensions of 40 m east-west, 35 m north-south with a height ranging from 2-1.5 m. The village people have been quarrying the central part leaving behind the circular body of 2.5 m wide and hence exposed sections facing all directions with thick vitrified upper layer approximately 60-70 cm thick followed by less vitrified but hardened ash layer of 20 cm thick, followed by 4 to 5 layers of soft ash each measuring 10 to 15 cm thick bluish grey and grayish white in color. As a result of removing the upper vitrified ash layer and bottom soft ash in the centre resulted in leaving a central portion of bottom soft ash measures 10 x 10 The bottom part of the quarried central part has red murram soil of foreign origin, perhaps brought from the outcrop of dolerite/trap formation located on the right bank of the local nullah situated 250 m north-west of the mound proper. The upper vitrified ash layer is covered with lots of dolerite and granite boulders, rubber stones, hammer stones perhaps lifted and thrown on the surface while quarrying the soft ash. The author noticed Neolithic habitation debris of 20 m wide, especially in the east but comparatively low on the southern side and absent on the other two directions, exposing pottery, stone objects and animal bones (well burnt and heavy in weight) less in quantity unlike noticed at the regular habitations. The author also noticed broken querns, hammer stones, rubber stones, sling balls, animal bones from the dugout area of the mound perhaps the collection from soft ash layers while quarrying operation by the village folk. Tsallakudluru (15° 49' 05" N; 77° 32' E) is a village situated 9.5 km north-east of Yemmiganur town and 2 km north of Timmapuram village which is situated on the Yemmiganur-Kurnool main road. The Neolithic-Early historic habitation is a mound of 2.5 m in height from the surrounding fields. At present it measures nearly 100 m north-south, 110 m east-west with a thickness of 2 m exposing lots of pottery, stone objects, tools, animal bones, etc noticed in the plough zone upper surface as it is under dry-land cultivation. It was, originally, a circular mound. However, its western part, about 2 acres all along north-south has been cut down to

a depth of 1.5 m leaving a section facing west, on which lying the vitrified ash lumps, giving a longitudinal cut of the mound proper. The mound has slope surface towards east and its southern part also brought under cultivation by cutting up to a depth of 1.5 m The north-western corner perhaps possessed the ashmound, has been completely ploughed and hence erased off from its original position. It has resulted in exposing soft ash layer in the plough zone which is pulverized completely. Pottery, stone objects and tools, shell bangle pieces, animal bones, etc. were found from ploughed zone and other material from the surface of the mound. The occurrence of Neolithic pottery, soft ash, vitrified ash and stone objects and tools from the low-lying ploughed zone indicate the limited occupation of Neolithic horizon belonging to lower layers of the mound.

The Neolithic habitations, so far found in the concerned area, measure range between 1-3 hectares in size and at certain sites the sparse representation of habitation along with meager remnant of cultural material suggests a satellite settlements attached to main sites indicate that the Neolithic populations had vigorous movement between their settlements and hence lot of information and material flow might had been possible. The cultural material consists of pottery of different fabrics, pecked and ground stone and blade tool industry, especially made on chert. The yellowish-brown chert nodules found at several of these sites show that the raw material was procured from river-born pebbles as nodules derived either from the limestone formation of Kurnool-Kadapa system of rocks or from other source. The Neolithic populations exploited the dyke formation and dolerite outcrops for the edge tool manufacturing as it is found exposed intervening black soils and granite boulders are seen as outcrops every where perhaps served for the ground stone objects. Earlier, perhaps, from the same site pottery, iron slag, animal bones, broken pieces of stone objects were reported besides finding grey ware, dull red ware, red ware, black ware, Russet-coated-painted ware, Black and red ware, a fragment of each of a ring stone and a Neolithic Celt were collected in addition to the shell bangles, terracotta beads and iron objects. However, it is claimed that the cloddy and scoriacious type of grey soil was noticed in an area of 250 sq. m adjacent to the mound perhaps been the exact location of the ash mound. The material collection from this site shows a mixture of Neolithic and early historic cultures and hence it is clear that the lower levels belong to Neolithic as there is

evidence of soft ash and exactly similar situation has been noticed by the present author.

14.3.3 Locational Analysis

From the above phenomena of cultural behavior the ashmound site at Kambadahal stands as a best example when we look at its location amidst many Neolithic settlements recently located which are located along the river system in a ribbon band fashion. The present ashmound at Kambadahal is located 100 m away from the right bank of a local nullah, Peddavanka indicate its attachment to water source which is seasonal at present but had been active during Protohistoric period, i.e., around 2nd Millennium B.C. It can be well compared to that of Utnur ashmound and its location exemplifies the feasibility of resource potential which is culturally determined. The availability of raw material for pecked and ground stone tools in the form of granite and dolerite outcrops, water source, arable land for cattle pastoralism signify its locational importance. As noticed at Budihal, Utnur and other sites, the present ashmound also contains upper vitrified ash layer followed by soft but hardened ash divisible into 3-4 bands each measuring 10-15 and 15-20 cm thick. The composition of vitrified upper ash layer indicate the dumping activity of these people (the cow-dung accumulation out of daily clean or collection of cow-dung from daily pastoral activity). The selective objects such as broken querns, rubber stones, grinding stones, potsherds of limited shapes, animal bones and thin habitation debris found on its eastern side indicate that it is a pastoral camp which might have also been acted as a nodal point for the congregation of Neolithic people where some sort of material exchange or information flow was possible.

14.4 LET US SUM UP

Thus, from the above study many Ashmounds continued to be important monumental places involved in ritual activities central to Iron – Age landscape production. Yet with this transition, the social lives of Ashmounds were significantly transformed. Ashmounds have formed an integral part of the

experience and perception of these inhabiting the cultural landscapes of South Deccan / North Dharwar region from the Neolithic and Iron-Age through to the present day. All the literature dealt with the formation of these specific archaeological sites and material culture, thereof by exposing different opinions and tentative conclusions and hence still remained as an unsolved problem.

14.5 KEYWORDS

1. Ash mounds – remains related to Neolithic culture.
2. Ritual – prescribed procedure for a religious or other rite

14.6 CHECK YOUR PROGRESS

1. Explain briefly the features of Ashmounds.
2. Explain the important sites of Ashmounds in India.

14.7 ANSWER TO CHECK YOUR PROGRESS

1. See section 14.2
2. See section 14.3.2

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BLOCK – 5 CHALCOLITHIC CULTURE

UNIT -15 CHALCOLITHIC CULTURE OF CENTRAL INDIA AND DECCAN

Structure

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15.0 OBJECTIVES

After Reading this unit you will be able to know about:

- General characteristics of Chalcolithic culture of Central India and Deccan.
- Chalcolithic sites
- Ahar culture
- Madhya Pradesh Chalcolithic culture
- Northern Deccan chalcolithic culture.

15.1 INTRODUCTION

The end of the Neolithic period saw the use of metals of which copper was the first consequently, several cultures came to be based on the use of stone and copper implements. Such a culture is called chalcolathic which means the stone – copper phase. As the name indicates, during the Chalcolithic (chalco=copper and lithic=stone) period, both metal and stone were utilized for the manufacture of the equipment in day-to-day life. Since this is the first metal age, copper and its alloy bronze which melt at low temperature were use for the manufacture of various objects during this period. By far the most important sites of this period are the Indus valley sites. The Indus valley civilization is basically urban civilization with all advanced amenities. On the other hand, the Chalcolithic culture of Central, Eastern and Southern regions of India show somewhat entirely different features than those of the Indus valley sites, and deserve to be dealt in a different footing. The Chalcolithic cultures of the above regions basically represent the farming communities that existed during 2000-700 BC.

15.2 GENERAL CHARACTERISTICS OF THE CHALCOLITHIC CULTURE OF CENTRAL INDIA AND DECCAN

15.2.1 Residences

Though the Chalcolithic people of Harappa made extensive use of bricks, the Chalcolithic people in the rest of India did not use any such material. The walls

were constructed out of mud or mud and wattle. The houses were either circular or rectangular on plan. The houses usually had only one room, but multi roomed houses also existed as evident at Inamgaon. The houses used to be plastered with cow dung and lime. They had some light roof supported on wooden posts as post-holes were encountered in large number in all the Chalcolithic sites. Inamgaon also has yielded evidence of a pit house which is circular on plan (3 M.Dia) with post holes on the periphery.

15.2.2 Substance Pattern

The Chalcolithic people subsisted on farming and hunting-fishing. They reared cattle, sheep, goat, buffalo and pig, which were also slaughtered for food. A variety of crops were grown. The principal cereal was barley though wheat was also cultivated. Rice is reported from Inamgaon. Other crops included Bajra, Jowar, Millets, Ragi, Green Pea, lentil, green gram, black gram, etc. absence of dishes in Jowar ware indicated the preparations were semi-liquid. Neither plough nor hoe has been attested at Chalcolithic sites, but perforated stone discs, which were used as weights for the digging sticks abound.

Fish and animal flesh formed an important part of the diet of the Chalcolithic people. Fish bones and fishhooks attest to active fishing. Hunting also was an important occupation for bones of wild animals like wild pig, deer, stage, sambhar, cheetah, etc. were found in the excavations. Cattle, buffalo, goat, sheep, pig and rarely horse were among the domesticated animals.

15.3 Chalcolithic sites

A Residences large number of chalcolithic sites have been discovered in the valleys of the rivers, and this shows the wide spread of the culture. The mounds of the chalcolithic sites are sometimes inhabited, sometimes deserted, or in some cases cultivated. The chalcolithic cultures of India may be divided into six regional groups: (1) The Ahar-Banas Chalcolithic Culture, (2) Chalcolithic Culture of Madhya Pradesh, (3) Northern Deccan Chalcolithic culture, (4) The Neolithic-

Chalcolithic Culture of the Deccan, (5) Chalcolithic Culture of Gangetic Doab and (6) Eastern Chalcolithic Culture. The main excavated sites Ahar, Bagor and Gilund of the Banas Culture; Kayatha, Maheshwar, Navadatoli, Nagda, Avara, Manoti and Earn of Madhya Pradesh; Prakash, Bahal, Chandoli, Jorwe, Nevasa, Inamgaon and Nasik of Northern Deccan; Piklihal, Brahmagiri and Maski of the Deccan; Bahadrabad, Ambakheri, Hastinapur and Atranjikhera in the Gangetic Doab; Lothal, Rangpur, Somanath and Rojdi of Saurashtra and Chirand and Pandu Rajar Dhibi of the East give a fairly good picture of Chalcolithic India. We have evidences to show the mutual contact among these Chalcolithic Cultures of different regions.

15.4 The Ahar or Banas Chalcolithic Culture

The Chalcolithic Culture of South-east Rajasthan is called 'Ahar' Culture after the principal and well-known site Ahar (Ahad), a small suburb of Udaipur. At this place, a big mound called Dhulkot, about 500 m. long, 275 m. broad and about 12.8 m. high, was excavated. Stratigraphically and culturally, it was divided into two main periods, I and II, each having three phases a, b and c. The principal pottery type of this culture is the Black-and-Red Ware everywhere. As there is complete absence of microliths, H.D. SANKALIA called this culture as the Copper Age culture. It is also called by the name of Banas Culture because several other sites of this culture are found on the banks of the Banas and its tributaries in the Districts of Udaipur, Chitor and Bhilwara. The beginning of the Ahar Culture may be placed about 2000 B.C. The one common trait, which binds the Bagor (Districts Bhilwara) Microlithic Culture and Ahar Culture, is the distinctive pottery Red, Grey and Black-and-Red with paintings in white. Through this Mesolithic or Microlithic site had a much earlier beginning, (C.4,500 B.C.), still it was flourishing when Ahar was first founded in a period assignable to about 2000 B.C.

The factors due to which people settled here are various. A hill girt valley of this type was chosen for security purpose. There was sufficient rain for drinking and cultivation. The enough forest was meant for wild animals forming the prime necessity of life. The finding of copper ore in some of the rocks attracted them. For building houses, stone was easily available.

15.4.1 Houses

At Ahar, remains of stone-and-mud houses have been discovered in excavations. Their foundation walls are of stone. That masonry-the art of laying stones was known to them. The walls were made with mud or mud-bricks. Timber was used for pillars and beams which supported the roof, generally sloping. The roof was thatched with bamboos and occasionally covered with grass and leaves. Some of the big houses were 30'x15' while smaller houses have a range between 22'x17' and 10'x9'. There were two ways for constructing the floors by mixing clay with gravel and by using hard burnt clay. Among the structures of Gilund, two are important. One is a new parallel-walled mud brick structure 100'x80', and another is of kiln burnt bricks. Such a building built of kiln burnt brick of a size 14x6x5 inches in Chalcolithic period is not noticed anywhere except in the Indus Valley. At Gilund and other sites, the houses were made of mud bricks and not stone because it is not easily available.

The houses at Ahar were furnished with Chulhas or hearths for cooking. Some of the cooking. Some of the Chulhas are quite big and they indicate that some houses had large families, and cooked two or three dishes together in equally large vessels. Probably, they were used in ceremonial purposes at the time of big gatherings. In one house, there were six ovens (Chulhas) in a row. It is possible that they could be used for smelting copper or such industrial purpose. More frequent than ovens (Chulhas) were saddle querns, and clay baking pans. These clearly indicate that grinding of grain and baking of bread were practiced by the people.

15.4.2 Grains

About the grains, it is certain that rice was included in the diet of the people because abundant impressions of these on potsherds have been found. Wheat also must have been known and eaten, because it was used at this time in the neighboring region of Malwa as it was found in the excavated sites at Kayatha, Navadatoli, etc. About other cereals, we are not definite. People also used non-

vegetarian food because from the kitchens of their houses, bones of the animals such as fish, turtles, fowl, cow or ox, buffalo, goat, sheep, deer and pig have been found.

15.4.3 Pottery

There were several types and varieties of pottery used by the people, but the principal one was Black-and-Red Ware which comprises bowls, dishes-on-stand and small globular of jars. It has a smooth, sometimes shining or lustrous surface in various shades of red, tan, Chocolate and orange. Made of well-levigated lay, thin or thick, it has a metallic ring. Its form 'dishes-on-stand and fabric are believed to have been inspired or borrowed from the Harappans. Ahar's contact with contemporary cultures of Saurashtra and Malwa is proved because this Black-and-Red Ware has been found in the excavated sites. The Black-and-Red ware reached the Deccan very late. According to H.D. SANKALIA, These small goblets also characterize the earlier and Baluchi culture. This proves that there was contact between Rajasthan and Iran in early times. As this ware was hardly available to the common men the Red Ware was used in much quantity. Both were table wares as they were used both for eating and drinking . The storage vessels were of Red Ware, with the lower portions left rusticated. Their tops or upper portion rim, mouth, neck and shoulder were beautifully made, but their lower portion was not only plain but also intentionally made coarse by the application of sand, because probably the vessels were kept buried in the ground or because they were meant for rough use as cooking.

15.4.4 Copper Tools and Weapons

The total absence of stone tools and weapons in the excavations suggests that the inhabitants must have relied mainly upon copper or its alloys which is found in abundance in the neighbourhood of Ahar. Copper, which is locally available, was evidently smelted at Ahar from the very beginning of its settlement and might have formed the basis of its economy. Probably, it was the magnet which drew the earliest colonizers at Ahar and other sites in the Banas Valley and

made them live there for several years. Only four or five copper axes, one knife blade, a copper sheet, a bangle and two rings have been found. The people might have used these for chipping stone, cutting up the carcasses of animals they hunted and dressing their skins, for domestic and agricultural purposes. Copper bangles and rings served the purpose of ornaments. Ahar people rely solely on copper, but people at Guilund and other sites rely partly on copper and partly on lithic blades.

15.5 CHALCOLITHIC CULTURE OF MADHYA PRADESH

A large number of Chalcolithic sites have been discovered in the valleys of the Chambal, the Narmada and other rivers of Madhya Pradesh. Excavations at some of the chalcolithic sites such as Kayatha, Maheshwar, Navadatoli, Nagda, Avara, Manoti, Earn, Azad Nagar and Besnagar brought to light the stratified chalcolithic layers along with their respective antiquities. No doubt these excavated sites have their own peculiar features, but they give a good picture of chalcolithic Madhya Pradesh. Among the different kinds of painted pottery, painted Black-on-Red ware remained predominant, and it is found in abundance at all sites. It was not confined to Madhya Pradesh, but it is found to have crossed the boundary and reached Khandesh and the heart of Maharashtra. Along with pottery, lithic tools specially parallel blades, copper objects, beads, grains and terracotta figures are also associated with this culture. Among the chalcolithic sites, the earliest seems to be Kayatha dated 2000 B.C.

15.5.1 Settlements

From the excavations of some sites, it would appear that these chalcolithic sites were founded on black soil. The black soil itself is a weathering in situ of the brownish alluvium owing to thick vegetation which had to be cleared. These settlements were generally clusters of mud huts though at Manoti, we find baked brick structures; at Nagda, the houses were built of mud bricks. At Manoti, a high rectangular platform of sun-dried bricks of different dimensions was raised in order to protect the habitation from the floods of the Chambal. The people also erected a

huge defence wall of seminar bricks, nearly eleven feet in width and at least ten to twelve feet in height. Inside the wall, more brick structures were located. At Nagda, there were massive structure of mud and brick, mostly for residential purposes, though one of them is a bastion of rampart. The discovery of mud defence-wall at Eran is very important.

15.5.2 Plan of the Houses

No regular plan of the houses could be discovered at these chalcolithic sites except at Maheshwar and Navdatoli. The houses here were adjacent to each other. Between a row of four or five houses. There is a narrow passage. These houses were framed by thick wooden posts, and round these were put bamboo screens, which were then plastered with clay from outside and inside. The houses were of different shapes, circular, square and rectangular. The size of these houses varies. Sometimes, a circular hut was only three to four feet in diameter, and it is doubtful if it were meant for habitation. Such small huts have been used for storing grains, hay, etc. The size of the largest rectangular house was twenty feet by forty feet. Normally, the size of a house was ten feet by eight, and not more than four persons could live in such a house.

The floor was made of clay mixed with cowdung. It was made smooth, firm, and insect-proof by spreading lime on the black soil or yellow silt. If there were depressions, the hollows were filled up with black alluvium, or sometimes the burnt debris of the earlier period was spread and plastered with lime.

15.5.3 Earthen Pots

These houses were furnished with small and large earthen pots for storing, cooking and drinking. Generally, these were wheel made. The large storage jars were strong and sturdy but mainly decorated with an engraving or appliqué work along the neck. The most remarkable pottery vessels are cups, bowls and dishes. A large number of them have stands. These vessels are decorated with many designs.

The inhabitants had a large number of vessels which, according to their fabric, shapes and designs, fall into distinct groups associated with a particular period.

15.5.4 Kayatha Ware

Kayatha ware known after the type site 25 Km to the east of Ujjain is said to be the earliest in this region, and it is placed between 2000 and 1800 B.C. Its genesis suggests some affinity with the Sothi or the Pre-Harappan or the early Harappan, according to one interpretation. It has distinct ceramic industries. Its principal pottery was a study ware having broad zones of thick chalcolithic slip, usually from lip to shoulder, sometimes upto the base, and with painted patterns executed in violet. Shapes included jars with globular profile and wide flaring mouth, and bowls having thickened incurved rim and carinated shoulder. The majority of vessels in this ware had ring bases. Vessels with disc bases were also present in small numbers. The rest painted buff ware, of well-levigated clay and fine fabric, was another distinguished industry. The third ceramic industry known as 'combed Ware' comprised plain red ware without slip or wash, with incised decorative patterns. Only birds and dishes were presented in this ware.

15.5.5 The Black and Red Ware

The Black-and- Red Ware seems to be an import from Ahar where it occurs in profusion, and it is dated 1800-1200 B.C. It was made on the inverted firing technique. In Kayatha, the people using this ware arrived, and lived from 1800 to 1600 B.C. As Avara and Manoti were not at a great distance from Ahar, it is found at the lowest level, and in plenty. At Navdatoli, this ware, comprising mostly bowls and cups, was confined only to period I. It has been traced at Nagda and Eran. From Rangai, near Besnagar, three kinds of pottery namely red, Black-and-Red and grey and red ware discovered.

15.5.6 Malwa Ware

The most common is a Red Pottery painted with black designs. Since this is found throughout Malwa, it is called the 'Malwa Ware'. This occurs as a major

pottery fabric from the very first occupation and runs through the entire chalcolithic habitation at Navdatoli. However, in the earliest period only certain designs and shapes figure, both becoming more varied later. The most remarkable is the advent of the channel-spouted bowl with its characteristic begins round the rim on the outside, and the figure of a man-warrior with a matted disheveled hair, constricted waist, and a spear-like weapon in his right hand. At Nagda and Eran also, this pottery remained dominant, and was excavated at the lowest layer. At Kayatha, Manoti and Avra, it appears just underlying the Black-and-Red Ware of Ahar culture.

15.5.7 White Slipped Fabric

Another important fabric is the white slipped one. It was associated with the first two periods only at Navdatoli but disappeared afterwards. It is found in small numbers. Through the white slip is a distinguishing feature, the fabric is not uniform in texture. The shapes are more varied than in Black-and Red Ware. In addition to a large number and varied types of bowls or cups, there are boels and addition to a large number and varied types of bowls or cups, there are bowls and dishes-on-stand, and a water vessel like lota. A band of running antelopes and dancing human figures seem to be characteristic designs in this fabric. A small number of sherds have been also recovered from Avra.

15.5.8 Jorwe Fabric

In period III at Navdatoli, a new fabric called 'Jorwe', named after the site in the Deccan has been discovered. It is a grayish black ware. It has a well backed core with a metallic ring, and a mat red surface. It was in existence along with the Red Ware. A limited number of shapes and designs figure in this ware such as carinated bowls, tubular spouted pots, and narrow high-necked (through comparatively few in number) water pots with a stereotyped geometric designs and the graffiti. The tea-pot like bowls were used probably for some sacrifice or ritual. A vessel indential in size and shape, but in copper or bronze, was found at Parbatsar.

15.5.9 Other Types of Pottery

The coarse Red and Black Ware sherds have been found all over Malwa in the Deccan. Though small in number, this ware by its finish and peculiar type of vessels indicates some definite and limited use in the chalcolithic period. The Incised ware, though small in quantity, had a definite place in the life of the people. Incised decoration is generally confined to storage vessels, usually of a large size, but it is also found on small vessels of a specialized type. It remained confined to the two lower most layers at Avra, and about a dozen sherds have been recovered. The Tan Ware appears to be rare both at Maheshwar, Navdatoli and at Avra.

15.5.10 Grey Ware

In the Chalcolithic phase, in association with the black painted red and white painted Black-and white painted Black-and-Red wares, Grey Ware in large quantities has also been recovered at Avra. This ware was used continuously by the people from 1750 B.C. to 700 B.C. The thinner sherds of this ware are usually of finer fabric. It seems to be different from painted Grey Ware in the Gangetic valley, nor has it any similarity with the Neolithic Burnished Grey Ware of south India.

15.5.11 Designs on the Pottery

The designs primarily appear on the outside, above the belly, preferably on the shoulder, neck, or round the rim. The inside decoration is confined to the inside only of the rim of an averted or flaring rimmed vessel, so that it could be seen. The decorative designs are primarily geometric, and include simple bands, Lattice, squares and diamonds, hatched triangle and parallelograms, 'ladder' or flag, circles within circles, and circle with rays. Besides this, they have taken the motifs from the animal and vegetable world. They have delineated the different kinds of deer, tigers or panthers, and even a lion, dogs and cats, tortoise and fish, peacock, geese and other birds, a few leaves and flowers, and what looks like a sunrise or sunset.

15.6 SOCIO-ECONOMIC CONDITIONS

A study of the above pottery shapes, types, varieties and designs gives an idea of the socio-economic condition, new influences, emergences of new fashions, and the likely contacts with other cultures in India and outside.

15.6.1 Cultivation of Different Kinds of Grain

Besides the manufacture of different types of pottery with many designs, the people started to produce various kinds of grains at an early period in this area. This was very significant, and clearly proves that they were not barbarians or seminomadic, but had settled at some particular place. No site in India except Navdatoli has yielded so many cereals, legumes, oilseeds and fruits. That wheat was known to them from the very beginning of their settlement is clear from the excavations at Kayatha and Navdatoli, where it was found in large quantity. Barley had also been found. Though rice was absent in Phase I, it was present in Phases II-IV. From the beginning, the inhabitants used five kinds of legumes viz. (i) masur or lentil, (ii) urd or black gram, (iii) mung or green gram (iv) vatana (Hindi batata) or mutter or green peas, and (v) lathyrus; besides four other leguminous weeds, the identification of which is not certain. The food was probably cooked with linseed oil, the grains of which are found from the earlier phase. The fruit stones identified with Ber (Bor) and Amla have been discovered. There is also another unidentified fruit type as well. The distribution and antiquity of wheat, lentils and linseed, suggest Western Asiatic contacts, whereas rice is believed by most authorities to be indigenous to India.

15.6.2 Methods of Cultivation

Wheat was probably cultivated with a plough, as it was in the pre-Harappan and probably in the Harappan. Ploughing might have been done with digging sticks. It is quite possible that a number of heavy stone rings which have been found, were probably cut with sickles set with stone teeth, as thousands of such stone tools have been found. They crushed them either dry or wet, in deep, basin

shaped stone patas called saddle querns, with the help of a pounder or rubber. A number of such saddle querns were found both at Navdatoli and Avra. They show concavity in the both longer sides.

15.6.3 Food

Food was cooked on hearths or chulhas. In the debris of their houses, remains have been found of bull, pig, sheep, goat, deer and occasionally also horse. All these seem to be domesticated and eaten. But since the grains were varied and plentiful, they relied less on animal food, and hence their remains are fewer in number in comparison with those found in other regions. Economically they seem to have been essentially farmers, but they might have lived by hunting and fishing. Beef was the most popular item of food, and the next important being pork and venison.

15.6.4 Metal

People knew copper and bronze, but these were used sparingly. The objects of this region show improvement over the Banasians in metal forging. In Kayatha were found 2 thick copper Celts and a chisel. In their craftsmanship, the copper Celts of about 1.5 c.m. thickness, double sloped edge and of a beautiful cast shape are superb and unequalled in the whole range of Proto history . At Avra, the most noteworthy of the excavated finds, is a small bronze Celt recovered in the top most chalcolithic layer. Some objects in the shape of simple handleless axes, fish hooks, pins and rings, have been found at Maheshwar and Navdatoli. Possibly in a later phase, they used daggers or swords with a mid-rib, as suggested by a fragment found at this place.

With the emergence of metal tools, the blades remained dominant at the expense of the early stone tools, because of their greater utility. They served the daily needs of cutting vegetables, scraping leather, and piercing stones. They were manufactured from nodules of agate and chalcedony found abundantly in this region. They were made out of long parallel- sided flakes. A special technique was

employed for their manufacture. They vary from 1.75 to 0.50 inches. These small, delicate, stone blades, were hafted in a wooden handle.

15.6.5 Ornaments

People were fond of ornaments which were made of different material. At Kayatha, people used copper bangles, round in section, with featureless terminals. In one house alone were found 29 copper bangles, kept in a pot. This unusually large number suggests that the Kayathans were also affluent, as were the Harappans. Bangles and rings of copper and clay have been found at Maheshwar – Navdatoli, and they were used as ornaments. The ear ornament at Navdatoli is simple in design, with trace of a stem at the back. A thin gold disc (diameter 2.5c.m.s, weight 20 grams), was found at Eran, but the exact purpose of it was difficult to guess. A large number of beads made of terracotta, shell, steatite, jasper, agate, carnelian and other stones, have been discovered at Maheshwar, Kayatha, Avra and Eran and a few unfinished beads were also recovered. This indicates that bead making was a flourishing local industry at these place. They are of different shapes and sizes, being small, medium and large, and of spherical, biconical, square, cylindrical and barrel shape, in addition to the arecanut-shape. These beads must have been strung into necklaces which were worn by the people. Bangles, rings, lids, amulets and several other fragmentary objects of shell found at Maheshwar and Navdatoli, show that it was a local industry.

15.6.6 Terracotta

People decorated their houses with different kinds of terracottas. Besides decoration, they served some other purposes also. A large number of unique figures of bulls discovered at Kayatha are either naturalistic or highly stylized. The stylized forms, depicting the hump and the horns, had either a rounded or pedestalled base. At Navdatoli, an interesting specimen of a tiny bull with a tail shown in an appliqué method, has been recovered. Terracotta bulls have been obtained from Avra and Eran also. The bird figurines from Navdatoli are remarkable. These are flat based beaked figures.

Pottery discs were found at Navdatoli, Avra and Eran. Of all the terracotta objects, these were the most abundant. They confirm to a graded series of fixed weights, and may, possibly, have been used as weights. Some might have been used as skin rubbers. Solid stone balls were found to stand in simple ratios with one another, and perhaps they served the purpose of weights too. People also used skin rubbers, which are actually the barrel-shaped pieces.

Terracotta Wheels are also very important. Two specimens came from Navdatoli. One is biconvex in outline. It is important from the point of view of tracing the development of hubbed wheels. It denotes the intermediate stage between single hubbed and double hubbed wheels. A toy-cart wheel was also available at Eran. Terracotta wheels, with or without hubs, were obtained from Avra. The most important find of this place consists of a perforated wheel showing eight spokes painted on it. The spokes are red. No painted wheel of this kind has so far been recovered from any of the other Indian sites. Though no wooden wheels were found, these terracotta specimens should imply the existence of large wooden carts, which served as means of transport and communication.

Other terracotta objects were found such as human and animal figures, seals, spouts and crucible lids. One disc-like object of bone found at Navdatoli, seems to be the spindle wheel for the spinning of cotton. Potter's or cloth dyer's stamps recovered from Avra, were perhaps meant for dyeing.

15.7 RELIGION

From the indirect evidences, some ideas about the religious belief of the people may be gathered. The discovery of a large number of terracottas at Kayatha, Avra and Eran may prove the possible existence cult of revering of the bull. The bird figures from Navdatoli seem to be the dove figures associated with the cult of Mother Goddess, as suggested by MACKAY and V.G. CHILDE on the basis of the evidence from Crete, Sumer and the Indus valley. A small appliqué female figure on the storage jar found at Navdatoli may be the worship of Mother Goddess of Western Asiatic type. The man with matted disheveled hair holding a spear-like

weapon in his right hand-apparently a warrior-painted inside the base of a channel-spouted bowl may be some warrior like deity. Some vessels found were meant for storing water or some liquid type ghee for performing sacrifice and ritual at Avra and Manoti also.

15.8 NORTHERN DECCAN CHALCOLITHIC CULTURE

The excavated sites of Jorwe, Nevasa and Daimabad in Ahmednagar District and Chandoli, Songaon and Inamgaon in Poona district, Prakash and Bahal furnish information regarding the Chalcolithic Culture of Northern Deccan. Geographically, this region is a transitional zone between the Deccan and Madhya Pradesh. Its cultural assemblage shows a comingling of the cultural elements of the Deccan and Madhya Pradesh. In comparison with the Madhya Pradesh Chalcolithic Culture, it seems to have retained too much of the features of Neolithic Culture of the Deccan. There seem to be some different in pottery types and fabrics and house plans in this culture.

15.8.1 Settlements

Generally, this Chalcolithic Culture was riverine confined to the basis of the major rivers like the Godavari and Pravara, and tributaries such as the Ghod and the Mahalungi. Such earliest remains of habitation are found on black soil. It is believed to be weathering in situ. The weathering was caused by thick vegetation as a result of a damper climatic phase. Thus when the Chalcolithic people entered the river valleys, there must have been thick forests. Sometimes the settlement was concentrated in the semi-arid region. Even it is noticed talking place on the earlier remains. These settlements are regarded as colonization because their occupants possessed the knowledge of arts and crafts, and there is no evidence of indigenous development.

15.8.2 Houses

No structural remains of Chalcolithic Period were discovered at Prakash. As the excavations at Daimabad, Chandoli and Songaon were restricted in nature, not

much details about the houses are available. The remains found at Nevasa and Inamgaon give an idea of the plan of the houses. Both at Nevasa and Inamgaon, pit-houses were discovered. Among such pit-houses at Inamgaon, one is over 8 feet (3metres) in diameter, and has post-holes around it. Even a step has been cut into the side to get into it. Many 'Malwa sherds' were found inside it. These pit-house dwellers seem to be the first settlers at these sites. Afterwards, people started to construct rectangular houses. Of the eight house so far expose at Inamgaon, the biggest measured about 8.50 M.(about 30 feet) in length and 3.30 M. (about 12 feet) in breadth. At Nevasa, there was also evidence of large structures, one measuring 45 X 20 feet, though the normal size was 8 X 7 feet. These houses had dwarf walls with rounded concerns. The roofs were supported by wooden posts, usually flat. Some of the houses had well-defined courtyards. Elaborate provision was made to drain away the rain water. Both at Chandoli and Songon , lime floor of the house was found. A regular passage of 5 feet was left between two houses at Inamgaon.

People of Inamgaon possessed the knowledge of building something like a mud-rubble fortification, and an embankment for storing the river water and a highly advanced kiln to bake their pots and pans. This kiln had a separate fire-chamber and air ducts to serve as channels for hot gases. The occupants may be differentiated from the subsequent ones judged on the basis of pottery, and probably they did not bury the dead in the house.

The latest occupants known from the excavations of Inamgaon lived in round or circular houses, and these vary in size from 2 M. to 4.30 M. One of the best preserved had an inner diameter of 3 M. It had a 40 cm. thick wall, retaining traces of nine post-holes, 50 to 55 cm apart. One of the post-holes was found rammed with stone chips. Two groups of four flat stones and a burnt surface possibly of a hearth, were found inside the house. The floor was made of black clay and plastered successively with a clay solution. The roof was probably conical in the round houses. The largest circular house found so far had 16 post-holes all round. All these 38 small and big circular houses were laid out very closely. In the western quarter, we have found houses of craftsmen, potter, lime-maker and goldsmith.

15.8.3 Pottery

The above houses were equipped with different types of pottery for eating, drinking, storing and burying the dead. The earliest pottery seems to be the Pale Grey Ware with white painted designs found at Prakash and Nevasa. It has bowls, lotas and globular vessels of various types. Prakash, Daimabad, Chandoli, Songaon and Inamgaon possessed many forms and fabrics of the Malwa ware. There were large rimless globular vessels with or without tubular spouts, straight and concavesided bowls, bowls with a pinched or channel spout, and small lotas. All these have red slip and mostly painted in black.

The most dominant ware known in this region is Jorwe Ware known after the type site. It is made from well levigated clay, giving a metallic ring, painted in black on matt red surface. At Nevasa, the common vessels are bowls of varied sizes, and lotas (globular vessels) for storing and pouring liquids. The carinated bowls and the spouted pots found at Nevasa at Nevasa are characteristic. Thalish are conspicuous by their absence in this ware. The decoration is mostly geometric; though delineation of a dog and deer is realistic. Though important additions are made by Chandoli and Songaon, Inamgaon contribution not only new shapes but also showed slow changes within the basic Jorwe forms and fabrics. The bowl with svastika design is unique. One cylindrical vessel is exceptionally tall. One large pot has an engraving of a cart drawn by two humped bulls.

15.8.4 Clothes and Ornaments

From the excavation of Nevasa, Chandoli and Inamgaon, it is clear that there was the existence of cotton, flax and silk clothing. Since threads of these materials were used for stringing the copper-bead necklaces at Nevasa and Chandoli, this suggests the spinning of silk and cotton. Then garments of all these material seem to have been made but we have not discovered their specimens.

Ornaments as usual consisted of necklaces, ear pendants, bangles, anklets and rings. Beads of semi-precious stones such as agate, jasper and carnelian, terracotta,

shell and steatite and less frequently of copper and rarely of gold were used for stringing necklaces. An almost complete example of copper beads round the neck of a dead child was found at Nevasa. Bangles were generally of copper, burnt clay and bone or ivory. Rings were worn on the fingers of the hand.

15.8.5 Tools and Weapons

A few copper tools were discovered at these Chalcolithic sites. Chandoli gave two chisels, one celt, one dagger, three fish hooks and one copper rod. An antennae hilted dagger from Chandoli has been compared with similar swords from Fatehgarh (U.P) but there are a few points of difference. From Nevasa were discovered a chisel, a plate, a rod and a pot. The axe from Nevasa has a peculiar triangular blade broken at its narrow top. From Jorwe are reported six flat celts. Besides stone tools such as anvils, mullers, hammerstones, polished axes, chisels, adzes and balls have been found from Nevasa, Chandoli and other sites. As copper was rare and dear, these stone tools appear to be of much use among the people. Stone sickles made with thin blades of chalcedony embedded in a wooden or bone handle were evidently used for other household activities-for cutting fruits, vegetables and working on wood and ivory. Boat shaped querns were also manufactured locally for grinding grains as well as stone axes.

15.8.6 Food

For food, the inhabitants of these Chalcolithic villages largely depended upon beef and venison, to some extent on buffalo, fish and mussel-shell as known from the remains of these animals. According to recent studies, chalcolithic inhabitants of Nevasa were acquainted with *Bos* sp. Buffalo, sheep/goat, pig, horse/donkey of wild ass, small cat, three types of antelope, nilgai, four horned antelope, blackbuck, deer, sambhar, swamp deer and domestic fowl. Some of these animals might have been consumed as food.

The grains known to be cultivation here are wheat, lentil, barely and perhaps millets. Wheat occurred for the first time at Songaon. At Inamgaon were found

barley, wheat, lentil, green gram, horse-gram (Kulatah), common and grass pea, Indian jujube and wild date. At Nevasa, Vegetable cells and epidermal hairs from the stem of miller or allied grasses besides fungal spores in the earth sticking to the copper beads were noticed.

15.8.7 Terracotta

Terracottas have been discovered in these excavated sites. At Nevasa was found one of the largest terracotta figurines of a female with a short conical head but no face, short, stumpy, outstretched arms, small breasts, featureless lower part flat but was otherwise featureless. It had a concave base, evidently made for fixing on (clay) base. Similar but a smaller figurine was also found. At Inamgaon, several terracotta female figurines were found. These are nude with a head and without head. The later ones are seated on a bull. A clay box not more than six inches in length and about two inches broad in the centre, with the nude goddess within is remarkable. Another headless clay female figurine was shown standing on the back of a bull. A few male figures were recovered.

15.8.8 Bronzes

Besides terracottas, four unique bronzes were discovered at Daimabad – namely an elephant, rhinoceros, buffalo and a chariot driven by a man to which a pair of bulls is yoked.

15.8.9 Burials

Of the 131 burials found at Nevasa and a few at Bahal, Chandoli, Daimabad, songaon and 50 at Inamgaon, it is clear that dead bodies were buried under the floor of the houses. After exposing the body and allowing the flesh to dry up, the skeleton of the child was placed usually in two urns, but occasionally, they were three, four or five. The grow-up children and adults were buried in specially made pit, in storage jars with extra coverings and right on the time floor of the houses. While in all cases, the skeletons were kept in an extended but in one case, it was in

a flexed pose. These were placed in a north-south direction. The great number of child burials at Nevasa 126, Chandoli 23, Songaon 4, Daimabad 3 and Inamgaon 50 prove that if the number is the criterion, the infant mortality was very great. It seems that the chalcolithic people of this region borrowed it from the southern Neolithic Culture.

Pots such as bowls, spouted pots and globular vessels (lotas) used for eating and drinking, and beads found along with the dead bodies prove that people were provided with things required by them during the life time at the time of their burial. The fact that some children were found buried wearing necklaces of copper beads at Nevasa and Chandoli and shell at Songaon proves that they belonged to a wealthy family. The dead body of one child seems to have been anointed with oil and cowdung.

15.9 LET US SUM UP

A number of regional chalcolithic village based culture in central India are coming into prominence. In the absence of a unifying force, which usually characterizes urbanized cultures, these culture-complexes grew in comparative isolation but with greater flexibility. About the chalcolithic cultures of the Deccan, Central India, Prof. Sankharia has drawn our attention to certain pottery types, painted designs and beads which go a long way to establish India- contacts in the 2nd Millennium B.C.

15.10 KEY WORDS

1. Weapon – a device used in order to inflict damage
2. Malwa ware – is a red – slipped black painted ware on a red or cream ground in geometric, plant, and animal motifs.

15.11 CHECK YOUR PROGRESS

1. Discuss the general characteristics of the Chalcolithic culture of Central India and Deccan.
2. Explain briefly Ahar Chalcolithic culture.
3. Describe the Chalcolithic culture of the Deccan.
4. Explain briefly the Northern Deccan Chalcolithic culture.

15.12 ANSWERS TO CHECK YOUR PROGRESS

1. See section 15.2
2. See section 15.4
3. See section 15.5
4. See section 15.8

15.13 SUGGESTED READINGS

1. Pre history and Jain K.C.: Protohistory of India
2. Shashi Asthana History and Archaeology of India is contracts with other countries from earliest times to 3.00 B.C.
3. Agrawal D.P. The Copper Bronze Age in India.
4. Sankalia .H.D. The Pre history and Proto history of India and Pakistan
5. Deo S.B. Recent Researches on the Chalcolithic and Megalithic Cultures of the Deccan.

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UNIT – 16 COPPER TECHNOLOGY

Structure

16.0 Objectives

16.1 Introduction

16.2 Origin of copper Metallurgy in India

16.3 Copper Industry

16.4 Copper Implements

16.5 Copper Coinage, Images, Pillars, Copper plates, utensils

16.6 Let us sum up

16.7 Keywords

16.8 Check your progress

16.9 Answer to check your progress

16.10 Suggested Readings

16.0 OBJECTIVES

After reading this unit you will be able to know about,

- Origin of Copper Metallurgy in India
- Copper Industry
- Copper Implements
- Copper Coinage, Images, Pillars, Copper plates, utensils.

16.1 INTRODUCTION

Copper is a salmon-pink and highly ductile metal occurs in native form contain Ag, Bi, Pb etc. and some of their minerals used as a natural pigments. It is also one of the few base metals like iron which is found in its natural state in quantities large enough to be worked in this way, and therefore, like gold, it is one of the first metals ever used by man. Since it is a base metal means it can readily form oxides or sulphides in the nature therefore, its principal ores are malachite, CuCO_3 , $\text{Cu}(\text{OH})_2$, azurite, $2\text{CuCO}_3 \cdot (\text{CuOH})_2$; cuprite, Cu_2O ; melanconite or tenite, CuO ; copper pyrites, CuFeS_2 and erubescite, Cu_2FeS_3 . The most important family of alloys based on copper is the bronze and brass. Here bronzes is a general term originally reserved for copper based copper-tin alloys, in which low tin contents of the order of 3-4% provide wrought materials suitable for war and agriculture implements in the yore, while tin contents of 10% or so give good casting properties e.g. Gunmetal, and tin contents of 15 to 18% provide a hard, sonorous, castable and corrosion-resistance alloy used for bells. The brasses are essentially a copper-zinc alloys containing upto 50% Zn. Thus in modern connotation, bronze is a copper-rich alloy other than a brass e.g. in gunmetal 85% Cu, 5% Sn, 5% Zn and 5% Pb is present.

16.2 ORIGIN OF COPPER METALLURGY IN INDIA

The history of copper (tamra) and bronze (kamsya) in ancient India was almost parallel to that of iron but the latter was available in plentiful than copper probably owing to geological causes. However, the earliest evidence of copper is

mentioned in white Yajurveda as loha (from lohita or red) in a list of six metals. The connotation loha has been replaced by the word lohitas or 'red metal' which is nothing but copper. The Atharvaveda composed during circa. 1000 B.C. refers to copper as lohitas used in contrast to shyamamaya or 'black metal' evidently iron. In another passage a knife made of 'red metal' is mentioned. The modern term for copper viz., tamara is also found used and it came to be current in the 3rd century B.C. as it occurs in the ancient medical treatises of Charaka and Sushruta.

In the Brahman Age (Circa 1000 B.C.), copper is found mentioned in the Maitrayni Samhita (II, 11, 5 and IV, 44) and in the Kathaka Samhita (XVIII, 10). Loha occurs in the Satapatha Brahmana (XIII, 2, 2, 18), Chhandogya Upanishad (IV, 17, 7 and VI, 1, 5) and jaimini Upanishad Brahmana (IV, 1, 4). Further lohayas is clearly distinguished from avas and gold in the Saptapatha Brahmana (V, 4, 1, 2) Karsnavas or 'black metal' is referred in jaimini Upanishad Brahmana (III, 1, 7, 3) P. Neogi states that copper was unknown to the early Aryans at the time when Rigveda was written (Circa. 2000 B.C.) as it is not mentioned in it and in turn there is ample testimony for the use of iron and iron weapons well-known during the period of Rigveda. It can be surmised that copper came to general use amongst the early Dravidians and Aryans by about 1500 B.C. which is corroborated by Sanskrit literature and archaeological findings. In the Rigveda we come to see that arrows were 'tipped with iron' though we come across with a 'copper knife' in the Atharvaveda. Though the vedic people (1500 B.C-1200 B.C) had attained a high degree of skill in the working of copper metal, the vedic hymns are silent regarding the descriptions of the methods of extraction of the metal. It is due to the religious sanctions copper was used by the Hindus in sacrifices and "so long as the process of hardening iron by quenching or the process of steel-making is not discovered, there is not much to choose between malleable iron and copper, though bronze would certainly be more preferable to copper being in point of hardness more approachable to iron". Bronze was not in the vicinity in the Vedic Age. As both copper and tin are found mentioned in the Rigveda; Macdonell and Kieth's assumption that 'ayas' in the Rigveda means 'Bronze' is ruled out. The method of hardening iron by quenching as well as steel were certainly discovered in India as early as the 3rd cent B.C., as both are mentioned in the well known medical treatise of Sushruta.

In the Epic Age (C.500 B.C.-200 B.C.) the law giver Manu (V.114) gives directions for the purification of copper utensils. Kautilya (3rd Cent. B.C.) mentions the ores of copper as heavy and green, grey and red in colour probably meaning thereby malachite, pyrites and red copper ore. It further explains the process of gilding by “covering the copper article with gold leaf and then polishing its outer surface and sides”. Even the Greek ambassador who visited India in 302 B.C. Points out how vessels of Indian copper set with precious stones contributed to the brilliancy of the public ceremonies during Chandragupta’s reign;” and we also learn from him the big copper bolt discovered in the Asoka Pillar near the frontier of Nepal was quite considerable In India during the 3rd and 4th century B.C.

Copper was smelted in the Singhbhum district of Bihar, Rajputana, Certain areas of Karnataka and Hyderabad and other regions of the outer Himalaya like Kullu, Garhwal, Nepal, Sikkim and Bhutan. The ores lying in the above said places were extracted and converted into metal ingots near the mining sites. The art of making the finished products had spread over most parts of the country covering the deltaic Ganga basin, Bengal, Orissa and Andhra Pradesh. Sushrutha mentions that “Copper had a sweet and astringent taste and acts as a liquefaction and corrosive agent. It is laxative and cooling in its potency”. The Periplus (Section 36) refers to the large scale export of copper in large vessels from Barygaza to Apologus and Ommana. It not only refers to the export at Barygaza (Section.49) and at Muziris (Section. 56). Periplus statements leads us to presume that copper was imported at Barygaza (Broach) from Egypt via Cana only to be reshipped to the ports on the Persian Gulf. Because of the war between Rome and Parthia the above mentioned route was opted for indirect trade, Pliny (VI 26) also points out to copper as the export of carmania to the ports on the Persian Gulf and the Red Sea. Homer in his Iliad mentions about Hephaestus the God of fire and metal, forging a copper shield for the hero of the Trojan War. Achilles says: ‘Himself he did plunge the impregnable copper into the flames of that glowing fire...’ ‘Rostowzev locates some of the copper mines in the west like Egypt, Cyprus, Palestine, Arabia and Lebanon. Besides in C.A.D 230, Philostratus of Lemons refers to a shrine in Taxila in which were hung pictures on copper tablets representing the achievements of Alexander and Porus. Based on this fact we can assume the

workmanship of copper in the first three centuries of our era. Even McCrindle speaks very high of the Indian workmanship in copper in historical times.

Kautilya in his treatise speaks of copper coins and of the manufacture of copper under the superintendent of metals. By 3rd century A.D. copper was treated as an important metal. The coins of ancient India contained lead and were slightly alloyed with either copper or tin. Further, Kautilya (I, XII, 84) Confirms about copper being used as an alloy in the manufacture of silver coins. The Periplus (Section 49) gives additional information about the debasement of Indian coins. Copper was used extensively in preparing copper-plates for issuing charters during the Gupta period. Copper image covers were also manufactured on a large scale to meet the demand of the temples. Panchanan Neogi speaks about the copper mines in ancient India, chiefly at Magadha. A series of oven marks, dug out from the spoils of Nalanda obviously points out to the melting and casting of copper. Excavations at Sultanganj in Bihar yielded a copper statue of Buddha which is 71/2 feet high and weighing nearly a ton. It is considered to be the largest metal work of ancient times extant in India and a monument of the early proficiency of the Hindus in melting and casting metal. A copper made image of Budha 80 feet at Nalanda is also mentioned by Hiuen Tsang, the Chinese traveler. He also speaks of Nepal as another source of red copper where “in commerce they used coins made of red copper”. Hence it is possible that this red copper should have crept into the workshops of Bihar trough the Nepal-Vaisali-Pataliputra route. In ancient texts copper has been named as Malechchha and Nepalaka, the latter copper was evidently obtained from Nepal and superior to the Melachchha copper.

16.3 COPPER INDUSTRY

In ancient Tamilakam copper was used in the minting industry. Numerous punch marked coins have been excavated from Manigramam near Pumpuhar in the Thanjavur District, besides the square coins of the early Cholas and Pandyas bearing the tiger and fish crest. These coins were manufactured in earthen moulds having numerous square sockets as evidenced from the discoveries in Kaverippumpattinam and Kanchipuram. Ancient Tamil literature mentions that the

poor were unable to possess gold and silver vessels and hence used copper (sembu). It also refers to the coppersmiths who were technically skilled enough to shape out copper-plates and vessels because of adroitness in copper lathe works. Copper was also widely used for the construction of forts i.e., barricade, and in the manufacture of musical instruments chiefly the bow (Yal) is considered to be the earliest stringed instrument.

Several epigraphs of ancient and medieval times refer to the household vessels made of copper used by the commoners. Numerous endowments of copper vessels (tamradabhajanani or tamrakrtayam sthalyam) to temples for preparing rice are found mentioned in inscriptions. The state offered incentives in the form of lands for the neat and sincere workmanship of the coppersmiths (kamsiga). Bronze (kancu), utensils like basins, cups (battalu), plates (talige), spoon (sattuga) etc., are frequently found mentioned in the medieval Kannada works. Also to naote a tax was imposed on bronze merchandise (kancina bhandava kondali kottalli). Authentic illustrations regarding the casting of metallic images are not wanting and this is substantiated by the finding of bronze images, are of deities like Nataraja, Siva and Parvathi near Channapatna of Bangalore district. There bronzes are supported to be : “Some of the rare of valuable metallic sculptures discovered in the state” and palaeographically dated to the 11th century A.D. It is clear that the brasiers and their guilds (bogara mahanakharanigalu) of medieval Karnataka had made some progress in the manufacture of alloys and casting them into exquisite and live structures. Likewise the Bhatara copper plate inscription of Govinda kesava refers to the kamsya-kavas (bronze workers) who had grown rich and were able to donate houses. Similarly the reference to pittalahaya or coppersmiths suggests the prosperity of copper industry and several sacrificial utensils were made to order by the temples and on ceremonial occasions. Independent trading associations are found to be dealing with metallic images and other articles for sale.

Allied with copper in early times arsenic was used to make arsenic/copper alloys. Arsenic (AS) occurs in sulphate rocks as regular (70%) and orpiment (61%) Another ore is mispickel (46%) or arsenical pyrites and is found everywhere.

16.4 COPPER IMPLEMENTS

Many copper implements have been found in ancient India and when analysed they are found to be made of pure copper. Most of are flat celts, bar celts, swords and daggers, harpoon or spearheads and arrow heads.

A. Campbell regarding the method of construction of the axe-heads found in different parts of Bihar and Orissa writes as follows:

“The method of manufacturing these axe-heads seems to have been to run the metal into a mould, of the shape of but thicker and smaller than, the finished article. It was then beaten out to the required thickness. This appears to me to account for the variety of the shape of those that have been found. A little difference in the thickness of the cast in the mould or else the metal beaten irregularly would result in the slight differences in shapes which exist. I possess one of these rough castings.”

It is understood from the numerous findings of copper objects, the Aryans started using copper (loha) only by 1000 B.C. but it was used by the original inhabitants of northern India who passed from the neolithic period to the iron age through an intermediate copper age before the conquest of northern India by the Aryans, who taught then the use of iron . V.A. Smith commenting on the copper age in ancient India says that all the Indian copper implements are very old and must be dated previous to 1000 B.C. Probably they are much earlier “and that the primitive celts of northern India which are obviously copies of Neolithic patterns, may be as old as 2000 B.C.” He further states “the guess hazarded above as to the possible date of the northern examples has really little foundation being, largely based upon the dates assumed for Ireland”. In the greater part of India a copper age intervened between the Neolithic period and the Iron Age. In the central provinces of India, chiefly the Gunjeria deposits a large variety of weapons including agricultural and domestic implements goes to prove that copper implements were mostly utilized in north India. V.A.Smith pointing out to the celts from upper India says that it is primitive in form “closely imitating common stone models and obviously referable to a period when metal was only beginning to supersede

stone”. Also it is obvious that the copper antiquities of south India may be assigned from 1000 B.C. to 800 B.C. the aboriginal inhabitants of south India subordinated by the Aryans, and that the latter were well acquainted only with gold and iron, thus leaving the copper metal to be an innovation by the indigenous inhabitants.

16.5 COPPER COINAGE, IMAGES, PILLARS, COPPER PLATES, UTENSILS

Copper was primarily used in coinage and preparation of useful alloys such as brass and bronze. Archaeological specimens are mostly of pure copper in the form of status, plates, caskets and utensils. The best and unique specimen of ancient Indian copper is the big solid copper bolt found in the Rampurwa Ashok Pillar near the frontiers of the Kingdom of Nepal. It was evidently employed in fastening the colossal lion-shaped stone capital to the Pillar itself. The bolt is barrel-shaped in appearance slightly tapering at the two ends. It is 24 1/2 inches long, circumference at the centre being 14 inches and at the sides about 12 inches. “The copper is exquisitely worked into shape apparently with hammer slight marks of which are still visible and altogether is a surprising piece of metal work for so early an age, for I doubt not that this bolt is the original one placed in the pillar simultaneously with its erection being so true in form”. The bolt appears to have been shaped by the hammer though initially manufactured by casting copper, as the shape is uniform and the flat ends quite smooth. They were “cast in the first instance and then finished by the hammer”. Reginald Smith states that “several of the British Museum specimens exhibit ridges which apparently indicate the line of junction of two open moulds face to face. When the two moulds had thus been applied and closed the metal was probably poured in through an aperture at the narrow end. The pachamba of Karharhari find permits of no doubt that in Bengal roughly cast ‘blooms’ of copper were knocked into shape as celts by hammering. The more highly finished articles from northern India and Gunjeria were no doubt made in regular moulds and merely finished with hammer.

The bolt is a heavy one through its weight has not been taken. From the perfect shape of the copper bolt it seems that it was also made by first casting

copper and then finishing the product with the hammer. It is supposed to have constructed as early as early as 3rd century B.C. and this exhibits the high metallurgical skill of the ancient Indians.

Another specimen i.e, copper statue of Buddha was found at Sultanganj in the Bhagalpur District now preserved in the Birmingham Museum, belongs to 5th century A.D. It is about 7 feet 6 inches high and nearly 1 ton in weight. The colossal copper statue of Buddha was first obtained by Mr. Harris of the erstwhile East Indian Railway. R.L.Mitra regarding the process of construction says that “the material is a very pure copper cast in two layers, the inner one in segments on an earthen mould and held together by iron bands which were originally $\frac{3}{4}$ of an inch thick, but are now very much worn down by rust. The casting of the face down to the breast was effected in one piece, the lower parts down to the knee in another and then the legs, feet, hands and back in several pieces. The external layer of copper seems to have been cast over the inner one presumably by the cireperdue process. Lumps of copper ore were also found indicating that the smelting and casting operations were done on the spot; of metallurgical significance, the virtual transparency of the outer copper garments reflects the greatest credit on the Hindu copper workers of 5th century and secondly the date of iron pillar of Delhi coincides with the above. Further the same evidence is known through another gigantic copper statue of Buddha ‘no less than 80 feet in height’ is mentioned by the Chinese traveler Hiuen Tsang who really saw it standing upright towards the east of the great Nalanda convent.

Copper in ancient India was used in coinage system and we note from Kautilya’s Arthasastra that copper was not only used in coinage but also as alloy in the coins of the noble metals. The earliest copper coins from southern India pertain to the Andhra and Kshatrapa dynasties of early Christian times. Throughout India minting industry was well known during the period of the Mughals.

Regarding the methods of manufacture of copper coins, the punch-marked coins which were the earliest to be found were obviously small flat ingots marked haphazardly by small punches of various pattern applied at different times and the rest were struck with a die.

James Princep opines: “the great analogy which is observed between the earliest Indian coins and those of the Macedonian colonists is a very strong argument in favour of the supposition that die-cutting was introduced in India”. In late ancient times copper coins were manufactured by first casting molten copper in suitable moulds in order to make them uniform in shape and then struck between dies. At some places the silver coins were coined along with copper ones and those in which both gold and silver coins were coined apart from copper. It is also interesting to note Henry Cousen’s discovery of the ruins of the old town of Mansura, the first Arab capital in Sindh, wherein he found several copper coins with heaps of honey-combed baked clay slabs. He mentions: “these clay slabs or cakes are about half to three-fourth’s of an inch thick upon one side which are impressed rows of little cup-like hollows, forming a regular honey comb pattern, while the lower sides have been subjected to great heat and are verified. The honey combing I have found in three sizes, the hollows in the largest being about seven-sixteenths of an inch in diameter. These puzzled me when I found them first at Bhambor, a ruined site near one of the mouths of the Indus upon a small heap at one corner; but upon finding here them both at that place and Brahmanabad (afterwards Mansura) not only copper coins but little pellets of copper which fitted them, the real use of these clearly marked tablets became apparent, I also found many fragments with small lumps of verdigris (Sub-acetate of copper) adhering to the edges of the little cells. They were no doubt connected with the coining apparatus of the Arabs. I take it that these slabs of clay were first heated upon a furnace to prevent the sudden chilling of the copper poured into them, and when filled and all surplus copper run off, each hollow contained a pellet of uniform size and weight. These were placed between the dies and struck by a heavy hammer.

In ancient India the practice of recording some important events on copper plates is well-known among the rulers. They were also prepared for making land-grants to Brahmans and others. One of the earliest copper plate is the Sohgaura plate found in the village of Sohgaura, of Gorakhpur district, in the united provinces, the epigraph being in Maurya Brahmi characters of 320-230 B.C. Some of the inscriptions are engraved on several plates or sheets of copper. V.A.Smith writes: “the length of individual inscriptions is illustrated by the fact that an

important record recently brought to light (in southern India) is engraved on thirty one sheets of copper fastened together on a massive ring.

Apart from the copper plates, utensils were in abundance as Manu speaks about the use and purification of copper vessels. Megasthenes also mentions that “Vessels of Indian copper set with precious stones contributed to the brilliancy of the public ceremonies during Chandragupta’s reign”. Vessels such as Jainas and Pujhas were evidently made of copper and were used in religious ceremonies. The copper lota encrusted with silver from Tanjore is also an ancient Hindu specimen of the 3rd century A.D. Besides the utensils, copper also found its way in the shape of caskets for the preservation of relics inside the foundations of stupas and monasteries. The earliest casket belongs to king Kanishka found near Peshawar; through it is not pure copper. Also as wires, copper and brass have been used in the manufacture of stringed musical instruments.

16.6 LET US SUM UP

During the Chalcolithic period, Maharashtra had significant contact with central India from the late Harappan through the Malwa phase and acted as a corridor along with mineral resources from Gujarat and cultural elements percolated through to that region. With Gujarat also, Maharashtra shared an intimate relationship as manifested in the presence of late Harappan at a number of sites by the presence of Lustrous Red Ware in the sub-region stretching from Kaothe (District Dhule) near western coast to Tuljapur Garhi in the Amrawati district. By the Jorwe period (1400-700 B.C) However, Maharashtra became more southward oriented with the Jorwe ceramics found in Andhra Pradesh and Southern Mysore in Karnataka.

In Andhra Pradesh a number of copper old working are found in the Kurnool, Guntur, Mahbubnagar and Prakasam districts. In the Kurnool region, these include working at irregular intervals in an area stretching over 16 km. in the Gani-Kalava valley, shallow pits near Kalava, Gani, Chennakkapalle and Brahmanpalle. In the Guntur district, the ancient copper working around

Agnigundala has been referred to since the beginning of the nineteenth century. Huge slag heaps around the villages of Agnigundala, Ipuru, Vadujerala, Malapadu, and Yamagiripaya and some places broken earthen tubes, believed to be broken crucibles for smelting the ore, were also noted. Ancient working for copper are found at few places in the Makthal Taluk in Mahbubnagar district of Andhra Pradesh. Therefore, the chalcolithic phase of Andhra Pradesh have been basically a regional phenomenon, used locally available copper ore resources.

In Karnataka ancient working for copper ore have been noticed at western flanks of Belligudda hill near Ingladahalle in Chitradurga district, Tinthin in Gulbarga district, Kaiga area in North Kanara district, Kappatgudda hill in Dharwar district Mandargi, Chikhesuru and Hirehesura in Raichur district and Khajjidoni in Bijapur district. On the basis of material culture of the chalcolithic phase, one important conclusion can be made that although contact of some significance is evident between Maharashtra and north Karnataka, there is not enough ground to claim that contact was sufficiently intensive to suggest an actual large-scale migration from Karnataka through the Krishna Valley into Maharashtra. An assessment of the resources utilized and available in this sub-region of northern Karnataka. However, clearly shows that no raw material need to have been produced from Maharashtra. Like northern Karnataka, the southern uplands of the state also seem to have been sharing in the general interaction with its northern counterpart, but the copper ore is present in very small quantities. By this fact, the north Karnataka has large number of chalcolithic sites in contrast to south Karnataka.

16.7 KEY WORDS

1. James Prince – Archaeologist
2. Epigraph – refer to an inscription

16.8 CHECK YOUR PROGRESS

1. Explain the origin if Copper Metallurgy in India.

2. Explain the importance of Copper Industry in India.

16.9 ANSWERS TO CHECK YOUR PROGRESS

1. See section 16.2
2. See section 16.3

16.10 SUGGESTED READINGS

1. G.Kuppuram: Ancient Indian Mining Metallurgy and Metal Industries.
2. C.K. Kurunakaran: Geology and Mineral Resources of the State of India.
3. K.Abhishankar: Mysore State Gazetteer.

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BLOCK – 6 MEGALITHIC CULTURE

UNIT -17 IRON USING MEGALITHIC CULTURES - BURIALS AND TYPOLOGY- DISTRIBUTION PATTERN

Structure

17.0 Objectives

17.1 Introduction

17.2 Origin

17.3 Previous Work

17.4 Provenance and Distribution

17.5 Topography and Environment

17.6 Typology

17.6.1 Rock-cut cave

17.6.2 Hood stones and Hat Stone

17.6.3 Pit-burial

17.6.4 Menhirs, Alignment, Avenues

17.6.5 Dolmenoid Cists

17.6.6 Cairn Circles

17.6.7 Stone circles

17.6.8 Barrows

17.7 Let us sum up

17.8 Keywords

17.9 Check your progress

17.10 Answer to check your progress

17.11 Suggested Readings

17.0 OBJECTIVES

This unit deals with Megalithic Culture in the region of south Indian. After reading this unit you will be able to know about Megalithics, Origin and types.

17.1 INTRODUCTION

After the down fall of the Harappan culture ,in south Indian Megalithic and Iron age culture was flourished during this period changes were took place .you have also leant about the existence of the Harappa civilization and the various aspects releated to it.

17.2 ORIGIN

In spite of a vast number of megalithic remains in the South, and in spite of the fact that several of these have been tapped so far, the problem of the origin of these yet cludes solution. Different opinions have been expressed in this connection. It may also be ponted out here that the skeletal data has been so far inconclusive.

Regarding the origin of these, two main schools of thought may be taken note of here. These pertain to those who advocate a non-Indian origin or contact and those who assign the megaliths to the indigenous people themselves.

For instance Ghurye advocates the view that even though the megaliths are intimately connected with the Egyptian funerary monuments, the dolmen originated in India proper. These, according to him could be dated to about 1000 B.C. He further adds that the Buddhist Stupa was derived from the Indian megaliths. Heimendorf looks to the western source for the origin of the megalithic folk. On the analogy between the port hole cist in India and the Mediterranean region, he visualizes the first point of contact on the west coast. Lal emphasizes the typological similarities and the identity of some of the graffiti marks as available on the Black-and Red megalithic ware of India and the Black-topped ware of the

Nubian graves in Egypt. However, he emphasizes the chronological gap between the two. Moreover, he has also pointed out that the Nubian graves are completely devoid of iron. The western links, though not in terms of origin, were also emphasized by Hunt. He has suggested that nickel impurities in copper as traced in Indian megaliths possibly suggest a link with Mesopotamia. It will be agreed that such points need not be stressed further.

Childe, on the other hand, is more cautious. He has pointed out that whereas in Europe the distribution of megaliths has been along the shores of the Mediterranean and the North Sea, in India the culture penetrated far into the interior and probably travelled from the west. He further states that this process of expansion is not yet clear.

Heimendorf, however, states that the megalith-builders of the south, were speakers of Dravidian languages. This iron-using culture, according to him superimposed itself on the indigenous cultures. He advocates that the megalithic culture possibly immigrated into India by sea or possibly these people moved southward along the west coast of India.

In spite of all this, there seems to be an overwhelming consensus among scholars that the origin of Indian megaliths especially the South Indian, is essentially western, which includes the West Asiatic regions.

17.3 PREVIOUS WORK

It will surprise hundred and fifty years ago megaliths in India attracted the attention of persons interested in the field of archaeological investigations. It was in 1823 that Babington published his "Descriptions of the Pandoo Coolies of Malabar" in the Transactions of the Literary Society of Bombay. The name 'Pandoo Coolies' was current locally in Malabar designating the megalithic tombs. To understanding the mystery of the megaliths was sporadic. Megaliths no doubt attracted the attention of the foreigners, especially the British, who had come to India as part of the British administration.

In spite of their interest in the antiquarian remains of India resulting in the publication of research papers and accounts, this survey of the work done pertaining to the South Indian megaliths is proposed to be brief indicating only the major landmarks. About forty years after Babington's description of megaliths in Malabar, Meadows Taylor published his observations pertaining to the 'Distribution of cairns, cromlechs, kistavens and other Celtic, Druidical and Scythian monuments in the Dekhan' in the Transactions of the Royal Irish Academy. However, the first comprehensive account came out only in 1872, when James Fergusson brought out "Rude Stone Monuments in all countries' Their Age and Uses." This remarkable account is noteworthy for its sweep and also for the details regarding South Indian megaliths.

However, a new consciousness in the correlation of the megaliths with some of the customs and practices of indigenous tribes can be first detected in "An Account of the Primitive Tribes and Monuments of the Nilgiris" published by J. W. Brecks who was the commissioner of that region. As against the earlier attempts to trace the megaliths to the Celtic, the Druidic and Scythian ancestry, Brecks was the first to suggest the megalithic bias in the customs and the equipment of the tribes residing in the Nilgiris.

The history of the excavations of these megalithic monuments also is about a century old. Different officers and scholars undertook excavations of the megalithic remains separated by long distances, For instance, Dr. Jagor of Berlin excavated the classic site of Adichanallur in the Tinnevely district, and in 1879 Rivett Carnac tapped the site of Janapani near Nagpur in Maharashtra, During all these years, the work of exploration also gained momentum which resulted in the publication of "List of Antiquarian Remains in the Presidency of Madras" by Sewell in 1882. The Madras Museum which had become the store-house of the explored and excavated antiquities in the 19th century was opened to world of scholars by the publication of a catalogue of antiquities by Robert Bruce Foot. Foot not only catalogued the prehistoric antiquities, but also took stock of the antiquities pertaining to megaliths in South India so many articles were published by different scholars on Indian megaliths that Das Gupta thought it fit to publish the "Bibliography of Prehistoric Indian Antiquities."

In the post-Independence era, immense work has been done pertaining to the South Indian megaliths, numbers of sites have been excavated, the excavations at Brahmagiri and Chandravalli tried to give a chronological bracket for the megaliths in South India. Some of the notable sites like Ranjala, Takalghat – Khapa, Junapani and Mahurjhari in Maharashtra; Maski, Yelesvaram, Negarjunkonda in Andhra; Sanur and Amirthmangalam in Tamilnadu; The Karnataka sites have a significant bearing on the problem of megaliths in as much as they have brought out unique data so far unknown.

The amount of work carried out in respect of the megaliths can be assessed on the basis of “A Bibliography on Indian Megaliths” by K. S. Ramachandran. It is not the volume of work done or the mass of data collected that characterize the studies of South Indian megaliths in the post-Independence era, but the conscious attempts to visualize through this data the environment, the economy, and the technology of the megalithic folk, the study of animal remains, pollen remains, metallurgical analysis and the ethnic traits of the human skeletal remains. Attempts are being made to recreate and understand the environment and the man themselves.

17.4 PROVENANCE AND DISTRIBUTION

It is well known that megaliths in India are mostly concentrated in South India, though they have also been reported in other parts of India. It is also well known that among some of the tribal peoples of India megalithism in some form or the other is in vogue. However, taking into consideration the concentration of these in the South, the marked regional variations in the north of Narmada, and the supposed Southeast Asian origin of traits of megaliths practiced by the east Indian tribes it is obvious that South India, especially Andhra, Tamilnadu, Kerala, Karnataka and parts of eastern Maharashtra, remain the traditional land of megaliths.

Speaking in a larger context, megaliths have been reported in Rajputana, Uttar Pradesh, Gujrat, Kashimar, Sindh, Punjab and Baluchistan. They have also been traced as far north as the Tibetan border, typology and habitational remains

has been discovered in Bijapur, Gulbarga, Dharwad and Belgaum districts of Karnataka by Dr. A. Sundara of the Karnataka University.

17.5 TOPOGRAPHY AND ENVIRONMENT

As noted elsewhere, the megaliths have a larger concentration in the south. Inspire of this, the topography associated with these monuments is varied. For instance, in some regions, megaliths are found to have concentrated themselves near irrigation tanks whereas, in some cases, they are found to have been erected in dry areas where the rock bench is high and the soil cover, feeble. It has been pointed out by Banerju that megaliths sprang up in regions where the climate was conducive to the thriving of population. He has thus argued that in South India, megalithic monuments are found near large tanks which accommodated the rain water from the slopes of the hillocks nearby. On the basis of this observation he argues, though not justifiably, that the megalithic people possibly introduced tank irrigation in the South. However, even in the South, the cists have been found to cluster on the high rocky plains. Similar is the case with the stone circles at Mahurjhari.

The climatic environment must have been varying from region to region. For instance, the climatic conditions in Kerala must have been different from that available at Maski. This has been corroborated by the pollen – analysis, which suggests a temperate climate. Unfortunately the results of pollen-analysis, if any, from other sites are not yet available.

The natures of agricultural tools imply their use in hard soil. The animals domesticated as evidenced by the faunal remains from Maski show that these people had domesticated cattle of the short horned humpless variety which are useful for such tough agricultural operations, and the sheep which generally thrive in regions with moderate rainfall.

The total evidence thus tends to show that the megalithic folk of South India eked out their livelihood in an environment which was devoid of extremes.

17.6 TYPOLOGY

As mentioned elsewhere, the stray attempts at unearthing the mystery of the megaliths initially failed to give classified categories of these monuments. Initial attempts, therefore, were interested more in unearthing the mystery of these, rather than attempting typological grouping according to regions.

The first scientific attempt at classifying these monuments was done by Krishnaswami. However, earlier than that, as early as 1837, Brecks mentions the find of cairns, barrows, stone circles, cromlechs, and kistvaens, as available in the Nilgiri areas. In 1851, Taylor mentions the find of pit-circles, cists and cairns. In later period, Codrington proposed six types of ancient burials in South India. However, all these attempts at classifying by Codrington and Krishnaswami have not proved to be comprehensive. Entirely new types are coming to light. For instance, within the group of stone circles, double-and tripleringed circles have been reported in regions separated from each other by long distances. As long back as 1880, Branfill refers to a triple ring of circle stones of dressed slabs with semi-circular and rectangular heads arranged alternatively at a site in North Arcot district. Passage graves in Belguam and Kaladgi districts have been reported as early as 1874 by Burgess. Two unique types have recently been reported from Bijapur district, one of them having a port hole in the circle stone connected with the chamber through a passage. Cairn-circles with a passage in from have also been reported from Dharwar district. Even in respect of the menhirs, there is a variety. The vast field of manhirs oriented in the form of avenues from Maski is too well known. Yazdani has also mentioned the famous Hanamsagar avenues where, about two hundred boulders are found to have been arranged in parallel rows with the southern end having some sort of a rectangular alignment.

All these attempts have, however, failed to incorporate the types so far known, or are not liberal enough to accommodate new types. In matter of classification it may be noted that surface indication is not always the correct basis for categorizing these monuments. A case in instance is that of Adichanallur where urn burials have been found without any association of a stone circle. So, on the

basis of the meaning of the term megalith in vogue, these cannot be technically called megaliths, but the material equipment of these is all megalithic. Thus, it is futile to refer to earlier attempts of classification as they are not comprehensive and are based mostly on surface indications. Recently, however, Allchin has classified the megaliths into six main types. They are as follows:

1. Large urns, often pyriform, containing collected bones previously excarnated and buried in a small pit, marked in some cases by a stone circle or small capstone or both.
2. Legged urns and legged pottery sarcophagi
3. Pit-circle grave
4. Cist Grave
5. Rockut chamber, and
6. Alignment of rows of standing stones.

It will be apparent, however, that this classification also does not take into account the new types reported from the Karnataka region by Sundara.

A plea for classifying the Indian megaliths on the parallels of European typology has been made by Dikshit who tries to group them into six categories as follow:

- a) Domen
- b) Underground rockut passage caves
- c) Menhir
- d) Topikallu
- e) Kudakallu and
- f) Cist

He further pleads the sub-division of these into three main categories:

- a) Imported types
- b) Indigenous, and
- c) Origin not known

In the first category he puts dolmens, rock-cut caves, menhir and cist. In the second category he makes two further divisions, the first being of urns and extended burials which were possibly adopted from indigenous cultures and the second comprising Topikallu and kudakallu. The cairns, cairn-circles, etc., are assigned to the third category.

It will be agreed that this classification also does not hold good and many will wonder whether the types supposed to be imported are really imported or otherwise.

It is significant to note that typology of the megaliths has been influenced by the geology of that particular region. This is apparent in the material used for the cists as well as in the boulders which outline the circle.

So far as the general distributional pattern of the major types of megaliths is concerned, it may be stated that the stone circles with cairn filling is the type available in the Vidarbha region of Maharashtra; passage graves, in Karnataka; rockcut chambers and the Topikallu; in Kerala; and the menhirs, in Andhra as well as Kerala; whereas the other types have no specific regional distribution.

The significant aspect to be noted, however, is that in spite of architectural differentiation, the material, equipment associated with these types is surprisingly uniform. And this really forms the core of the problem. In spite of varied typology, the basic ancestry is homogeneous. This therefore, leads us to the description of the ancestry and the material equipment of the megalithic people.

17.6.1 Rock-Cut Cave

These are scooped out of soft laterite, as in the southern part of the west coast. These rock-cut cave tombs are peculiar to this region, occurring in the Cochin and Malabar regions of the Kerala State. Rock cut caves occur in other parts of India; namely at Mamallapuram, Elephanta, Ajanta, Ellora, Karle, Bhaja etc. But they belong to a later date and are used for an entirely different purpose. While those in Kerala are purely megalithic and funerary ones, the other are of a

different tradition. The Kerala funerary caves consist of an open well, roughly rectangular or square, cut vertically down the rock and provided with a flight of steps for descending on to the floor. On one of the vertical faces of the well is carved an entrance, usually a little above the floor, leading on to a chamber—semicircular, circular or roughly rectangular in shape. Sometimes, these entrances have recessed facades. The chambers are normally provided with a bed or a bench on two or three sides or a stool and, sometimes, also a fire place. The above features are formed by leaving the solid rock un-scooped. Some caves have central pillar, while others have, in its place, a circular opening in the roof. The ceiling is generally domed, converging towards the top at the centre, on to either the pillar or the top opening, as the case may be. Such caves are found in many sites, a few among them being found at Chovvanur, Kakkad, Porkalam etc.

17.6.2 Hood Stones and Hat Stones

The Hood stones or Kudaikallu, consisting of a dome shaped dressed laterite block, covering an underground circular pit cut into the natural rock and provided with a stairway . In some cases, the hood stone gives place to a hat stone or topical, a plano-convex slab resting on three or four quadrilateral clinostatic boulders, forming a square base and a truncated top on which rests the topical or the hatstone , This also covers an underground burial pit containing the funerary urn and other grave furnishings. Unlike as in the rock cut caves, there is no chamber apart from this open pit in which itself the burial is made; usually, it contains a burial urn covered with a convex or dome-shaped pottery lid or stone slab and contains skeletal remains, small pots and, sometimes, ashes. Outside the urn, at the level of its mouth all round the pit is cut a ledge in the rock on which are placed funerary pottery, iron objects, beads etc. Similar monuments are commonly met with in Cochin and Malabar extending along the Western ghats into the Coimbatore region up to the Noyal river valley. A variant of this type occurs in Travancore, where the burial urns are placed in square pits cut into the laterite.

17.6.3 Pit Burials

The next sub-type consists of deep wells or pits, cut in rows into subterranean rocky grounds, ranging in depth from 10 to 12 ft. and in diameter,

from 4 to 9 ft. The bottom of the pit is concave, having a hole at the centre to receive the pointed base of the pyriform urn. Occasionally, two such urns are placed side by side in a single pit. These pits were filled with earth or gravel and the top was covered with a slab. These tombs are frequently met with at the famous site of Adichanallur in the Tirunelveli district and in some sites of Coimbatore district.

Another variety of this sub – type consists of oblong pits or chambers cut into the natural rock. These chambers are normally 5 ft. x 2 ft. and 2 ft. deep and face east, They do not have any lids. They are filled with red earth and, on the surface, are marked with circles, ranging from 6 to 24 ft. in diameter, of rough boulders bounding a heap of cairns rising to a height of some 3 ft. This variety is wide spread in the Coimbatore region, though it occurs less frequently in other regions. It is interesting to note that below the cairns in Rajasthan, at Khera, Satmas and other places, occur shallow pits cut into solid rocks, big enough to contain the body of short statured men with the knee in a bent position.

17.6.4 Menhirs, Alignments and Avenues

a) Menhirs: are monolithic pillars planted vertically into the ground. They may be small or gigantic in height, ranging from 14 to 16ft. down to a mere 3 ft., with the common heights ranging between 3 to 6ft. They are often rudely dressed or not dressed at all. They are essentially commemorative stone pillars set up at or near a burial spot. These menhirs are mentioned in ancient Tamil literature as ‘nadukal’ and are not planted in ground. But rest on the original ground, being propped up with a mass of rubble as a Maski. They occur in a number of sites in close vicinity of other types of megalithic burials, mostly in Kerala, Bellary, Raichur and Gulbarga regions in large numbers, but less frequently in some other places. In some of the regions, these menhirs are erected over the funerary remains buried underground in urns, as at Devikulam and some other sites in Kerala and Piklihal; but at Maski, the excavation below and around them yielded no funerary or any other remains and hence they are only commemorative in these and many other regions.

Some aberrant types of these monoliths or menhirs occurred in the vicinity of Janampet in Warangal district of Andhra Pradesh. Wakefield, while excavating the megalithic burials at Janampet, found, at some distance from the site, two very interesting monoliths. They were wedge-shaped, pointed or truncated at the bottom, with shoulders and a circular or oval 'head' on the shoulders. The larger one was 7 ft. 1 in. high 2ft. 11 in. wide at the shoulders and 1 ft. 3 in. at the head. The smaller one was 4 1/2 ft. high, 1ft. 11 in. wide at the shoulders, 1 ft. wide at the head with two concentric circles, with 6 1/2 in. distance from nipple to nipple, representing the breasts of a female.

In the vicinity of the site near Mungapet, King observed another peculiar type, the cruciform monoliths, found nowhere else in the world. They were found in the midst of the most thickly located burial cists. There were four monoliths in the form of crosses. One of them was 13 ft. high; height upto the arm 9 ft. 4 in ; width of the lower limb 3 ft. 2 in., of the upper limb, 2 ft. 1 in ; length from the centre of the unbroken arm, 3 ft. 8 in. These monoliths were neatly dressed but were probably only commemorative monoliths without any Christian association, serving the same purpose as the Maski menhirs, whatever it might be.

b) Alignments: Closely allied to the menhirs are the alignments, consisting of a series of menhirs are the alignments, consisting of a series of menhirs placed in rows These alignments occur at Komalaparathala near Tiruppunitura etc., in Kerala and at a number of sites in the taluk of Shorapur in Gulbarga district, Raichur, Nalgonda and Mahbubnagar districts, where Allchin has noticed some 43 sites with stone alignments. They consist of parallel lines of standing stones, oriented to the cardinal directions. Some of these stones are 14 to 16 ft. high and one fallen monolith was 25 ft. long. But the normal heights range between 3 and 6 ft. These stones are sometimes dressed. They are, like the menhirs, closely related to other types of megalithic monuments, with which they are generally found.

c) Avenues: They consist of two or more parallel rows of the alignments and hence many of the sites in the Deccan, mentioned above under (b) alignments, may be considered as examples of this category of monuments when they are in parallel lines.

17.6.5 Dolmenoid Cists

They consists square or rectangular box – like graves built of several orthostats, one or more for each side, supporting the superincumbent capstone consisting of one or more stones, often with the floor also paved with the stone slabs. The orthostats and the capstones might be formed either of undressed rough blocks of stone or partly dressed flattish stones.

a) In the case of undressed stones for the capstone, massive flattish rocks are selected and for the orthostats large stone boulders are arranged, so as to enclose a roughly rectangular space which forms the burial chamber. The skeletal remains and the graves goods are placed either on the floor of the chamber or, more frequently, in the earthen sarcophagi or urns. Such dolmenoid cists, constructed of unhewn boulders containing sarcophagi, occur in large numbers, at Sanur near Chingleput and many other sites in that region. Invariably, these cists contained an entrance gap on the eastern side, created by deliberate arrangement of the orthostatic boulders, corresponding to the portholes in the slab cists. As Krishnaswami has pointed out, the absence of dressed stones for orthostats and the capstones in the southern part of the Chingleput district is due to the nature of the rock available in the region, which is not easily dressed and may not have any other significance.

b) The Slab Cists: The cists built of dressed slabs are the normal type of cists, occurring all over the south of India, as also in some parts of the north. In this variety of slab cists, as they can be conveniently designated, the sides of the cists are built of orthostatic slabs, in a majority of cases, one large slab for each side, but, less frequently, a single side being made up of two or three, at times, even four slabs. The slabs are placed vertically either in a pit dug specially for that purpose or above the ground, arranged in such a way that each of the orthostats would prevent the other from falling in, i.e., the orthostats are arranged in a swastika plan, generally in a clockwise direction but rarely in an anti-clockwise direction. Considerable number of these slab cists are buried deep in the soil, their location being marked on the surface by a circle of stones, frequently enclosing a heap of cairn or otherwise. A number of other cists again occur either half – buried or

completely above ground all over South India. Irrespective of the fact as to whether they are buried underground or stand on the surface, they may be further sub-divided into (i) those having no prtholes or entrance passage, as at a number of sites in the Deccan – Nagarjunakonda and sites around the Hyderabad region.

17.6.6 Cairn Circles

They consist of a heap of stone rubble enclosed within a circle of boulders. But here, cairn circles enclosing cists are excluded from this category as they have been considered under the category, the dolmenoid cists. The cairn circles are one of the most popular types of megalithic monuments, occurring all over South India in association with other types. On the basis of the form of the underground burial, they may be divided into three sub-types, (i) the pit burials, (ii) the oblong sarcophagi burials and (iii) the pyriform or other types of urn burials.

i) The pit burials under cairn circles consist of deep pits dug into the natural soil and not solid rock as at Sirumugai, roughly circular, square or oblong on plan, on the floors of which the skeletal remains and the grave furniture are placed. The pits are filled up with earth, either the earth dug up in the pits themselves or that which was brought from elsewhere, upto the original ground level. Above this earthfilling is placed the cairn heap which might be just a thin layer, or may rise up to 3 to 4 ft. above the ground level and bounded by a circle of stones. Such pit burials under the carin circles have been observed so far at Kunnattur in Chingleput district, at Sanur also in Chingleput district, at Brahmagiri in Chitradurg district, at Jiwari in Shorapur taluk of Gulbarga district and many other sites in South India. Wheeler's suggestion that these pit burials at Brahmagiri "were macerating pits in which human bodies were exposed on a bier" and they were "inverted towers of silence," are not quite convincing and the evidence from similar burials elsewhere, as at Sanur and Maski, confirm that they are actual graves.

ii) The cairn circles containing sarcophagi entombments are comparatively more widespread than the pit burials. They are similar to the pit burials described above, but skeletal remains and the primary deposits of the grave furniture are

placed in an oblong terracotta sarcophagus, generally provided with a convex terracotta lid, rows of legs at the bottom and often with a capstone at a higher level. Rarely, these sarcophagi are not provided with legs, but are supported on pottery stands and vessels or placed on the floor directly. The aberrant types of the sarcophagi are the zoomorphic types, like the ram – shaped sarcophagus from Sankavaram, or the cow – shaped sarcophagus, mentioned by Anujan Achan from Kerala, or the elephantoid urns from Perumbair and from a site on the left bank of the Tungabhadra, opposite the town of Hampasagara in the Raichur district. The sarcophagi under cairn circles are found from South Arcot, Chingleput and North Arcot districts of Tamilnadu and at Jadigenahalli in Kolar district of Mysore State. They are found in the southern districts of Andhra Pradesh, though they are comparatively rare in these regions. Thus, these terracotta sarcophagi are mostly confined to the central portions of the southern megalithic region, being rare or absent in the southern districts of Madras and Kerala, as also the Deccan Plateau.

iii) The urn burials under the cairn circles are a variant form of the sarcophagi burials described above and occur in large numbers in most parts of South India . The urns, in which the burials are made, are deposited in pits dug into the soil. The pits are filled up with the soil upto the ground level and are frequently provided with the capstone. Then, the heap of cairns, on the surface, marking the burial is surrounded by a circle of stones. They have been known to occur in Kerala, Madurai, Tiruchirapalli, Coimbatore, Nilgiris, Salem, Chingleput and South Arcot districts of Tamilnadu ; Kolar, Bangalore, Hassan, Chitradurg, Bellary, Raichur and Gulbarga districts of Mysore ; various districts of Andhra Pradesh and the region around Nagpur, Maharashtra.

17.6.7 Stone Circles

They are the most ubiquitous of the megalithic monuments in India and are observed to enclose various forms of megalithic monuments – like the Kudakallu, Topikallu, different types of pit burials, menhirs, dolmenoid cists of different descriptions, cairns etc., occurring from the southern tip of the peninsula upto Nagpur region and in different parts of North India, where the megalithic monuments are known to occur. But, in the category under consideration, only

stone circles without any considerable cairn filling within the circle, containing burial pits with or without pyriform urns or sarcophagi, are included. The monuments under this category are distinguished from the cairn circles only in that the cairn heaps occur or do not occur in these circles. Otherwise, all the three sub – types enumerated under the cairn circles, viz.,

- (i) Burials in underground pits,
- (ii) Sarcophagi in similar pits and
- (iii) Urn burials in similar pits are found to occur in this category also.

The presence or otherwise of a cairn heap depends upon various factors – the availability of loose cairns in suitable quantities in the locality, the non – disturbance of the cairn filling by human and natural agencies at later times etc. Hence, it may appear that there is not much justification in making this distinction between cairn circles and stone circles. But in some sites like Sanur near Chingleput, both the varieties exist side by side, but in separate groups; the cairn circles, often with a height of 3 to 4 ft. above the ground level, occur in considerable numbers to the west of the Madras – Tiruchi – rapalli road which bisects the site, but a few circles without the cairn filling are observed to the east of the road. In a group of four sites situated on the Madras – Tiruchirapalli road, some 35 miles northeast of Tiruchirapalli, at the foot of a chain of hillocks, there are monuments with very impressive cairn heaps, 3 to 4 ft. or more in height, with the circle upto about 50 ft. in diameter. The area is strewn all over with stone rubble. In the neighbouring sites, the cairn filling does not exist and only a bare circle of stone, comparatively of smaller dimensions, is found. These instances would, to some extent, suggest that, after all some distinction was intended between these two types of stone circles and hence, they need be distinguished here.

17.6.9 Barrows

Lastly, the barrows or earthen mounds mark off the underground burials. They may be a circular or a round barrow, oblong or oval on plan, a long barrow. They may or may not have the surrounding stone circles or ditches. Monuments of this kind have not been found in large numbers in India. In the district of Hassan in Mysore State, such monuments have been observed.

Now, turning to a consideration of the constructional details of these megalithic monuments, we have some evidence observed from the various monuments themselves. This has to be supplemented, to some extent, by our inferences based on the connected methods of working stone, mode of transportation etc. Some of the burial monuments of this culture are characterized by complicated and laborious methods of construction and stone working; for instance, the transected or even comparatively simpler cists involved not only the elaborate working of stone to procure the massive stone slabs needed in their construction, but transportation of the same, in some cases, over considerable distances, which required manpower in considerable measure. For, as estimated by Hunt, one of the large central stones in a group of cairns at Maoula Ali near Hyderabad weighed as much as 25 tones. Of course, Hunt points out that there is situated conveniently near that group of cairns, a granitic outcrop and in an adjacent group, some distance away from any granite mass, the large central stones are missing. But, all the same, for lifting up of such heavy blocks of stone and positioning them in their appointed places immense manual labour was essential. This presupposes the existence of considerable amount of communal organization and the massive effort that went into their construction. An entirely different kind of problem is confronted in the coastal regions of Cochin and Malabar in Kerala where a fertile imagination and immense patient labour was expended in scooping out the elaborate rock-cut cave toms, typical of these regions. The hoodstones and the hatstones of Kerala also required considerable amount of work before the monuments presuppose considerable amount of fore-knowledge about the details of their erection, large scale organization of the requisite manual labour and considerable time for their building.

The simplest of these megalithic monuments are, no doubt, the menhirs. The menhir consisted of a half-dressed or undressed large monolithic pillar or boulder, erected by planting it vertically into the ground, or often erecting it on the surface, propped up and held in position by a heap of boulders placed around it. Often, these are as much as 14 to 16 ft. high, 3 to 5 ft. wide and 2 to 3 ft. thick, where they are more or less dressed or when they are unworked boulders, irregular in shape, they may be shorter but still massive.

The bounded circles were ordinarily made of undressed, irregularly spherical or oval boulders, 5 to 6 ft. long, 2 to 3 ft. wide and 2 to 3 ft. high, but often of lesser dimension. They were probably rolled in from the place of their occurrence to the place where they were needed, or if they had to be carried, it was done on levers or on some kind of wheeled vehicles, drawn by draught animals – horses or oxen or even buffaloes – even in the present day, much of the transportation of heavy stones is done on two – wheeled carts drawn by buffaloes in most regions of the Deccan and South India.

The dolmenoid cists, constructed of slabs, required a better knowledge of working, as slabs of enormous size had to be removed from the rocky outcrops in the immediate vicinity of the graves themselves in somecases, or at some distance in many cases. There can be no doubt that the stone workers were acquainted with the use of the iron chisels as, otherwise, it would not have been possible to dress the slabs to a uniform edge or to knock out holes in them according to the needs. In fact, the clinostatic stones of the topikals in Kerala are so well dressed that they fit in finely with one another to rise as a truncated cone. Then the capstone – the umbrella stone proper – has chamfered edges thickening towards the inside and is a circular low cone in shape. Such regular shapes presuppose the use of efficient tools and some of the iron wedges and chisels found in the megaliths at Brahmagiri, Perumbair and Jala are similar to those employed in the present day for working stone. But, for removing the large slabs – particularly the granite slabs, the method of lighting a fire on the rock surface for causing exfoliation is known to have been extensively used both in ancient and modern times in India. Newbold has pointed out that the laminar structure of the Indian granite, resembling the skin of the onion, could be easily exfoliated by lighting fire. Then, by the insertion of the iron wedges into the lines of cleavage, thin slabs of considerable sizes could be removed and then hammer – dressed to the required sizes and shapes before they were transported to the actual site of construction. The other method of obtaining slabs was, according to him, by making a series of holes in a row with iron chisels having highly tempered steel points. During the work, the holes were filled with water so that the heat generated in work would not spoil the point and, by this, they could extract the slabs of required size. He mentions “one instance where the native workers poured water into the hole affected by the Wedges after the stone

had begun to give way. When the ear was put to it, the noise of the stone opening was audible. A few knocks effected the separation of the slabs. The tools used for the above process consisted of chisels, hammers, wedges and levers.

In the case of the rock-cut cave tombs, they were invariably scooped out in lateritic masses, which would be soft when freshly exposed, but then gradually became hardened. The megalithic folk entering this region characterized by the presence of this soft laterite, soon realized the advantage it afforded them to provide the most durable abode for their dead. It is worth noting that, in this lateritic region of Kerala, the slab cists are rather rare, though they occur in considerable numbers in the granitic regions higher above. But granite slabs were continued to be used shutters or lids for their openings. This scooping out of the rock-mass as shutters or lids for their openings. This scooping out of the rock-mass was probably by the use of the iron implements with which they were already familiar. First, a rectangular pit provided with steps was cut into the solid rock. Into one of the vertical faces of this open well was cut. Either at the floor level of the pit or slightly higher up, a small rectangular entrance through which a man could crawl in to enter a chamber nearly rectangular but frequently irregularly circular or semi-circular on plan. The floors of caves were generally one to two ft. above the level of the floor of the open well. Normally, on one, two or three sides of the caves served as the pedestal for the grave furniture. Occasionally, there would be a central squarish or circular pillar supporting the domed ceiling. In certain instances, a circular opening was present in the ceiling, in place of the pillar. But at least in one instance near Calicut, both a central pillar and a top opening were present. In some cases, the entrances to the chambers from the open well have recessed facades. All these features show that the people responsible for these cave tombs were expert stone workers, who had not only the means to chisel away such large quantities of hard stone, but were able to decorate them with such features as the recessing of the entrance facades. In some cases, it appears that some kind of facing was provided to the wall surfaces as suggested by the occurrence of 2 in. deep groove resembling a dado-line.⁶⁰ sometimes the benches have rims all round their edges.

In the case of urn or sarcophagi burials in deep pits, the process of digging the pit seems to have the same as above, but for the building of the cist. As at Brahmagiri and sites in the Gulbaraga district of Mysore state 63 deep pits, upto 8 ft. and Brahmagiri, 12 to 14 ft. in Gulbarga, and up to 16 ft. in Hyderabad region or sometimes very shallow, being just below the surface, were dug into the natural soil, often cutting the hard rock and the pit was usually provided with a ramp. Occasionally, the floor of the pit was paved with stone slabs as at Brahmagiri or provided with a bed of ashes or lime as at Maski,⁶⁵ in which were placed the skeletal remains and the grave furnitures, in stages, often separated by thin layers of earth. In the case of urn or sarcophagi interments, these receptacles, containing, in most cases, the skeletal remains and the personal effects of the dead person, were deposited on the pit floor. In some urn burials, as in Coimbatore and Malabar, the urns were buried in pits cut into the hard rock to fit the urns. The round bottomed pit would have a hole at the bottom, in which the pointed bottom of the urn would rest. At the level of the pointed bottom of the urn would rest. At the level of the urn mouth below the capstone, would be a ledge all-round the pit, on which would be placed the pots other objects. The mouth of the urn would have some kind of pottery lid and a capstone would be placed sealing the entire thing. In this region, the above-ground circle of stones and the cairn-filling do not enclose this class of tombs. But in other regions, when the pits were filled to their brim, a heap of cairn and or earth, circumscribed by a single or double circle of stones, was raised over the grave, marking the last stage of the funeral ceremony.

In the case of the topikals and Kudaikals of Kerala, they generally contained urn burials below them. In these cases, the pits were dug into the natural soil, often composed of hard rock into which the urns were deposited, as already described and the pits filled up. Then the site was marked off by the erection of the hood stone or kudaikal, a dome shaped stone dressed for the purpose. The erection of the topical consisted of three or four clinostatic stone pillars, dressed so that the outer face is rounded and the inner faces are at right angles so that they fit to make a well-knit stem. At the bottom, the clinostats joined up to make a square base and, tapering towards their truncated top they supported a circular chamfered-edged domical capstone.

17.7 LET US SUM UP

Megaliths in India are mostly concentrated in South India though they have also been reported in other parts of India. Indian Megaliths have been made into six categories, domes, underground rockcut, passage caves, menhir, topikal, kudakallu and cist. According to scholars the origin of Indian Megaliths especially in South India is Western.

17.8 KEYWORDS

1. Urn – is a vase, ordinarily covered that usually has a narrowed neck above a footed pedestal.
2. Barrow – a flat rectangular frame used for carrying a load.

17.9 CHECK YOUR PROGRESS

1. Explain the origin of Megalithic culture.
2. Discuss in detail the Typology of Iron using Megalithic culture.

17.10 ANSWER TO CHECK YOUR PROGRESS

1. See section 17.2
2. See section 17.6

17.11 SUGGESTED READINGS

1. Gururaja Rao B.K. – The Megalithic Culture of South India.

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UNIT -18 MEGALITHIC MATERIAL CULTURE AND AUTHORS

Structure

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18.0 OBJECTIVES

This unit deals with Megalithic Cultural Material in the region of south Indian, After reading this unit you will be able to know about Megalithic culture and there Material

18.1 INTRODUCTION

After the down fall of the Harappan culture ,in south Indian Megalithic and Iron age culture was flourished ,many authors gave different views about megalithic culture

18.2 GRAVE GOODS

The occurrences of a variety of objects in the megaliths are significant. Right from the later Paleolithic times, it is observed, that an international burial was accorded to the dead, the motives, underlying this practice, appear to be manifold. The trouble taken in carefully burying the mortal remains of the dead was probably due to the fear that they, or rather their ghosts, may not return to the earth and haunt the living. Hence, in the upper Paleolithic times, the bodies were buried in pits and heavy stones were placed on the heart region of the corpse. At the same time, offerings were placed in the graves, so that the needs of the spirit of the dead may be fulfilled. During the Neolithic times,, the burials were below the house-floor probably with the idea that the dead continued to retain their interest in the affairs of the living and hence they might be provided with an opportunity to participate in the happenings of the household by being near them. The foregoing underlines that, over a long period, the ancient folk had come to believe that the dead had an after-life and they must be suitably provided for with a place to live in and other essential needs.

The megalithic folk apparently were on exception to the age-old custom and, therefore, took pains to construct elaborate and much labour-consuming tombs. They furnished them with as many essential objects as they could afford and

deemed to be necessary. In the Indian megaliths, the grave furniture consisted of a large variety of pottery; weapons and implements, mostly of iron but often of stone or copper; ornaments like beads of terracotta, semi-precious stones, gold or copper; shell etc., strung into necklaces; or rarely the ear or nose ornaments, armlets or bracelets and diadems; often food as indicated by the presence of paddy husk and chaff and some other cereals; skeletal remains of animals, sometimes complete in these graves.

18.3 POTTERY

Of course, the most important among these furnishings is the pottery. None of the megalithic burials in South India has failed to yield pottery and invariably the pottery consisted of the black-and-red ware, though other wares-the black polished, the red slipped and sometimes the russet-coated painted wares-are also found along with the former. The pottery from the megalithic graves can be broadly divided into two groups-the coarse, under fired and unpolished large receptacles of the funerary deposits-like the burials urns, the sarcophagi and their lids and the well fired finely polished smaller vessels. To the former category belongs pottery generally made of coarse grained gritty clay, often mixed with hay or chaff as an adhesive and shaped into comparatively thick-sectioned large vessels-the pyriform or fusiform urns, with an elongated body, pointed or truncated bottom, as at Adichanullur in Tirunelveli district, Madurai district, Amritamangalam in Chingleput district, Amaravati in Guntur district etc., or large globular bodied round bottomed urns found rarely, as in Tirunelveli district, Vasudevanullur in the same district, in Coimbatore district, at Nandanmedu in Tanjore district, at Chikkanahalli in Gulbarga district etc., sometimes metallic-shaped vessels with sloping sides, concave neck, flaring rims and wide-mouth with rounded or carinated bottoms, as at the last-mentioned site. The sarcophagi were generally oblong cists with rounded ends, thickly grooved rims and often slightly inward bent sides, resulting in a bulging body and having two or three rows of legs ranging from four to twenty-one or more in number, often, hollow and pierced with holes, as at Kannattur and Sanur, or solid short legs as in Pudukkottaim Pallavaram, Sanur and a number of other sites in Chingleput; or legless sarcophagi

resting on ring stands and smaller vessels as at Gajjalakonda in Kurnool district, zoomorphic sarcophagus like the one from Sankhavaram in Cuddapah; or the elephant-footed urns from perumbair and on the left bank of the Tungabhadra, opposite Hampasagara.

These funerary receptacles were generally provided with lids. The lids of the burial urns of two types—a dome-shaped, wide-mouthed vessel resembling the lower half of a round-bottomed globular pot and a flower-pot-like vase. Often a flattish variant of the domical lid was also encountered. It has been noted in some cases that the broken bottom pieces of large storage jars were also used as urn covers. The lids of the urns were of similar texture and fabric as the urns themselves, coarse and gritty, half-baked and unpolished. The lids of the sarcophagi were also of a similar texture and fabric and were shallow and convex shaped, fitting the sarcophagus properly. Frequently, both the sarcophagus and the lid were decorated with applied chain decorations, horse-shoe designs, incised grooves, etc. they had also a variable number of holes pierced, at the bottom of the sarcophagus and on the top of the lids.

The unique ram-shaped sarcophagus from Sankhavaram had its lid in two pieces and the head the head was a separate piece fitted into circular opening in the neck at one end of the sarcophagus lid. The fabric of this sarcophagus and its lid was moderately fine and they were well fired. The elephant-legged vases from Perumbair and the one from a site on the left bank of the Tungabhadra, opposite the town of Hampasagara, were midway between the burial urns and the sarcophagi and were interesting only because of their peculiar shape. To the same sarcophagus from Cochin¹².

The other category of the pottery consist of the typical black-and-red ware, considered to be one of the hall-mark of the megalithic culture of South India till recently. In fact, it was often referred to as the megalithic black-and-red ware. But, in recent years, this pottery came to be discovered in association with the chalcolithic culture of central and western India and the Painted Grey ware was often painted in white color. This white painted black-and-red ware was found to be the characteristic and dominant ceramic industry of the 'Ahar' or 'Banas'

culture¹³ at Ahar near Udaipur, both in southeastern Rajasthan. Again, the black-and-red ware is found to occur from the earliest Harappan levels at Lothal in Saurashtra. In central and western India, this ware can be dated from 1700 B.C. , if not earlier and at Lothal to about 2400 B.C. Thus, the black-and-red ware has assumed a new importance in Indian Protohistory. Associated with this typical pottery in the megalithic milieu, are found a black-polished ware, similar in fabric to the black-and-red ware, a red ware often slipped and, rarely, the russet-coated ware.

Invariably this ware, the black-and-red ware, is found in all the megalithic sites in South India and is characterized by a uniformly fine fabric, burnished and often with a crackled surfaces, either due to salt glazing or “due to the difference in the coefficient of expansion between the body and slip”. The finely prepared paste exhibited a sparing use of sand or gravel as “degraisant”. It is plain without much decoration and, where decoration exists, it consists of incised grooves on the neck and shoulder. It is generally well-burnt and is wheel-turned. The grey core shows air-holes occasionally. The pottery appears to have been wet-smoothed before firing and then, the slip was applied. The polish or glaze on the pottery, though soft and thin, exhibits a capacity to withstand a fairly high temperature. A black coloring clay has been applied as an alkaline slip which would act as a flux at high temperature. The burnishing seems to have done post-firing as concentric line which seem to have been caused by an abrasive would indicate. As this pottery is fired in low temperature, it will wither away if kept under wet conditions for long. Since the black-and-red ware is fired by the inverted firing technique, the interior and the top portion under reducing conditions are burnt black and the lower portion are burnt under oxidizing conditions under completely reducing conditions. There also occurs a red ware with a drab colored slip, often finished to a bright red color. While the former two are characterized by smaller vessels of different shapes, the red ware exhibits a few smaller vessels like ring stands, but majority of the shapes are legged jars, water jars or globular pots, besides of course, the urns, the sarcophagi and their lids and the latter two types are normally hand-modelled. But the upper parts of the legged jars are wheel-turned, while the legs and the bottom portions are hand-made. In some of the region like Coimbatore-Tiruchi-Madurai in the Deep South, another variety of ceramics is found from these burials-the well-

known russet coated painted ware. This is a red ware coated in red ochre-russet coating-on which the paintings are executed in white kaolin and when fired again after the painting, this white color turns yellowish. The painted design consists mostly of wavy lines, often parallel. Horizontal or vertical bands, crisscross patterns, large triangles or diamonds or intersecting parallel bands etc. in technique and form, this megalithic russet coated painted ware has a number of apparent similarities with the so called 'Andran ware' of Brahmagiri and Chandravalli. But the latter succeeded the true megalithic culture and coexisted with the imported rouletted and Arretine ware, and it is dated to mid-first century A.D. But the former occurs in sufficient quantities context. It is interesting to note that this russet coated painted ware as also a painted black-and-red ware without the russet coating were found in considerable quantities from the earliest levels of the habitation debris at Tirukkampuliyur, gradually diminishing in proportion towards the upper levels of the earliest period of the occupation, when the unpainted black-and-red ware became the dominant pottery. This stratigraphic evidence may indicate the earlier origin and the growth of this ware in the lower Kaveri basin, from whence it spread into lower Deccan, if the stratigraphic evidence observed by Wheeler at Chandravalli has to be taken at its face value. But greater probability lies with the suggestion that the white painted black-and-red ware moved southwards into Deccan and South India from the Central Indian chalcolithic horizon and the russet-coated ware was a local development, probably, inspired by the painted black-and red ware. This is only a tentative suggestion which requires more elaborate investigation in the whole region before arriving at a final conclusion. The red painted ware from Tiruvilwamala in Kerala may be a variant of this painted ware.

Then, as already noted, the white painted black-and-red ware does occur from the burials themselves as at Perumbair, Adichanallur and Madurai and from the habitation site at Tirukkampuliyur.

The black and red ware: they are not confined to the pottery from the burials, but occur on similar pottery from the habitational debris also, it is interesting to note that similar post-firing scratches are found on the megalithic pottery from central India, Malwa and southern Gujarat, some times

occurring on pottery other than the black and red and associated red and black polished wares. Foote thought that they represented the ownership marks. But as identical symbols occur from sites far removed from one another, by hundreds of miles, this suggestion may not be acceptable. Hunt would not accept the suggestion that they are either the owner's marks or the potters' marks. Tribal owner's marks they might have been, according to him, but not the owner's marks of the individuals. But Yazdani, after collecting a large number of these marks, as many as 131, many of which are only repetitions of the same symbols with minor changes, proceeded to derive the Brahmi script from them and further so.

18.4 IRON

Iron is one of the distinctive traits of the megaliths in south India besides the characteristic pottery. Iron objects consisting of weapons, tools and implements for household and agricultural purposes are found in very large numbers. Besides, there are certain objects which can not be included under the broad categories mentioned above. Tridents might have been used as weapons of offence or in hunting; alternately, they might have been cult objects, as they are in later South Indian religion. The curious multi-armed hangers from Adichanallur are rather interesting. There are other objects like a bell, small ring-like objects, which were probably used as ornaments etc.

The typical weapons, found from the burials of this culture in South India, includes a variety of spearheads, lance and javelin heads, often with barbs on one or both side, arrowheads, axes. Some of which were apparently used for offensive purposes, single or double edged swords, daggers etc, in a wide range of sizes and shapes. Besides the above were found objects of household use and agricultural implements in abundance, which includes flat axes often with ring fasteners, hatchets, chisels, tripods used to support pointed bottomed vessels, hooks, knives, leaf-shaped sickles and billhooks, spades, hangers and hanging saucerlamps, rods with rounded ends, one of which is sharpened by hammering etc. Iron pendants of hangers were used for hanging cup-shaped iron saucer lamps. Other iron objects included bangles, a bell, nails, a small cylindrical box etc.,.

The horse-bits, found in a number of sites like Adichanallur, sanur and kunnattur in Tamilnadu, Janampet and Guntakal in Andhra, Junapani near Nagpur, besides the remains of the house itself at junapani, are clear pointers to the fact that the megalith builders of south india were familiar with that equine beast which facilitated their fast movement, besides helping them in their agricultural operations. Further, it would also show the cultural indebtedness to, if not racial relationship with, the horse-based bluchi cairn builders and, further afield, Iranian cultures of the 2nd -1st millennia B.C.

The occurrence of the trident, the three pronged 'trisulam', besides single pronged spike or 'sulam' is rather interesting. They might have been used as weapons by horse-riding folk in their war and hunt, but these objects have acquired a religious significance among the later Dravidian speaking Hindus of South India. The trident is a weapon invariably associated with Siva and javelin is very similar to. If not identical with the 'vel', the favourite weapon of "murugan" or "velan", another popular Dravidian deity. Moreover, the wild fowl, occurring in large numbers in bronze, in association with iron banner-bases at Adichanallur, is carried on the banner of this God. The use of mouth pieces by the devotees of Muruga, in the present day, is recalled to mind when the diadems of Adichanallur burials are seen".

The occurring in these monuments, of large numbers of agricultural implements is quite appropriate, as these people were responsible for the introduction of large scale agriculture based on irrigation into south India. Spades, flat-axes often with detachable ring-fasteners, sickles and bilhooks, thick round bars with one pointed end, probably used as crowbars, are among the important agricultural equipment of these people. The weapons like spearheads, javelins, spikes, plain and barbed arrowheads, daggers and single and double-edged sword, all indicate that these people were warlike and this, coupled with the fact that they were fine horse-riders, would explain their sudden emergence, succeeding and probably also assimilating the earlier neolithic-chalcolithic incipient agricultural communities in south india. This nature of the megalith-builders and the need for such a trait in them can be readily appreciated, if it is remembered that in the north of the subcontinent, about this time, fully developed urban civilization had come

into existence and well established kingdoms had either come into existence or were in the process of formation. Not only the megalith builders were their contemporaries, but according to our understanding, were active participants in that process till they picked up megalithism and migrated to south-wards in search of new homes, more suitable for their newly acquired religion.

The innumerable iron objects from the megaliths of south India fall under some thirty three types. The rich variety of objects, already noted, include knives with or without tanged handles, tanged daggers, wedges, arrowheads-plain, tanged or barbed-spears or lances having long blades, rounded shafts, sometimes with leaf-shaped end and socket bases, swords with double edges and midrib, often with a hilt. Axes with a detachable ring to facilitate hafting, featureless bars, adzes, sickles, hoes, hooks, billhooks, chisels, hatches with single or double diagonal strips, horse bits, long-handle, tripods to hold in position round or pointed based pots, spades, crowbars, ferrules, frying pans, rings, bangles, nails, pins, coiled bracelets, spikes and tridents. This richness of the iron objects in south Indian megaliths has provoked Wheeler to remark⁵¹ that “its impressive quantity and quality owe much to the accident of preservation in protective tombs”. He further points that “had megalithic tombs been built beside the Gangestic cities of the Iron Age, there can be no doubt that their display would have been correspondingly striking”. It may be so, but, it underlines the fact of the sudden emergence of a vigorous iron-based agricultural economy in south India, revolutionizing the life of the people in contrast to their bucolic Neolithic predecessors.

If our general premise that the megalithism reached south India from south Russia and northeastern Iran, through Baluch region and North India, probably, bringing in its train the knowledge of iron, technology or alternately the Iranian megalith-builders were ultimately responsible for south Indian megaliths and were well acquainted with the iron-working, with similarities in types of weapons and tools contribute to establish this genetic link? Of course, the ceramic traditions of these peoples were different, through a few common shapes, however, in different fabrics, occur among them; the channel spouted bowl is common to the Iranian and Indian chalcolithic wares and the painted black- and red ware in Rajasthan, From there onwards, it continues down to South Indian historical times. But iron objects

from south India and north India are almost similar but for a few local differences. Most of the tools are common to the regions but for the shaft hole adze found only from Taxila, while the axe with a ring fastener is peculiar to the south Indian megaliths. But this axe with a ring fastener occurs as far north as Janapani and Thakutghat near Nagpur in megalithic context.

18.5 COPPER AND BRONZE OBJECTS

They occur in very small quantities from the South Indian megaliths. But two groups of sites, both falling outside true megalithic horizon, in its strictest sense, have yielded a rich crop of the bronze ware – utensils and ornaments. Adichanallur is an urnfield without the lithic appendage, but falling under the general megalithic complex on account of the similarity in the mode of disposal of the dead and the grave goods. The groups of burial monuments in the Nilgiris are megalithic in the sense that fractional burials are made in rude stone monuments, but their general horizon is so different from regular peninsular megalithic culture that they may, in the least, be considered only as an aberrant group or as a distant cousin of the South Indian megalithic culture. But these two areas have produced a variety of bronzes of very superior workmanship, in fact, having no parallels among any of the bronze objects in the sub – continent. Further, it is also to be noted, that there are basic differences between the bronze remains of these two regions themselves.

At Adichanallur, though considerable number of bronze articles have been found, proportionately bronze is scarce and its use is confined to ornaments and decorative lids. This fact shows its high value; probably, its use was confined to the richer strata of the society. The artistic work, only a little as it was, was confined mainly to casting animal figurines or decoration of the bronze objects – the decoration consisting of embossed dots and incised grooves in geometric forms. The workmanship in bronze is of unusually high standard, indicating skill in the manipulation of the metal which was malleable, due to the presence of a high percentage of tin, upto 23 percent. The bronze objects were generally deposited inside the urns, but rarely outside them also.

The bronzes from Adichanallur collected from digging literally hundreds of graves included vessels of different shapes and sizes, personal ornaments, lids of vessels decorated with animal figures on their tops – particularly those of the buffaloes – and a few diadems, but no weapons or implements have been found in bronze. The vessels included small cups, bowls of various sizes upto 9 inches in diameter, jars, frying pans and vases. Some of the bowls were ornamented with incised patterns consisting of La series of parallel wavy lines, a single thick wavy line or a band of two parallel lines between which occurred triangular designs. These lids normally consisted of a flat pedestal, at the centre of which occurred, a rounded drum – like projection on which was a stem, from which issued forth six or more branches. These branches forked at the end into two or three – fold stalks terminating in the buds. Others had central column supporting a winged insect. Some had one or two animals standing on the flat base, carrying on their backs, some other motifs like a flat dish or winged insect some other supported animals like a deer, a dog or schematic cock. There were also found bell – shaped lids provided with pointed top or rarely a knob. Sieve cups were fixed into the middle of the bowls while, in some cases, they were made of one piece. The perforation of the small vessels were made in concentric circles at the bottom and on the lower sides.

The figurines of several animals like rams with twisted horns, antelopes, cocks, dogs and buffaloes were found. In one case, two tigers were standing on the flat base, supporting a flat bowl or dish. A large number of bracelets, bangles, anklets, with bells, rings and necklace of thin wire rings were found. Finally, there were some eleven diadems in bronze in different shapes and sizes – two of them were pear – shaped drops covered with gold leaf. These diadems were normally in gold, but these bronze ones were either imitations for the sake of economy with regard to the dead, or used by the comparatively poorer classes who could not afford the gold ones.

In the Nilgiris, a rich crop of bronze objects were found from the megaliths and some of the bronzes were elegant in workmanship. Some of the bowls were very finely worked, decorated with lattice designs, scroll work or lotus design. Some have luted surfaces. The bronze vessels, particularly bowls, were cold –

worked and forged to shape but not cast. Speaking of these bowls, Richards points out that one bowl from the Nilgiri megaliths exhibited certain close resemblances in specialized features with a gold bowl from Ur, which is assigned to a high antiquity – 3500 B. C. and remarks that these similarities could not be fortuitous; though the two specimens are widely separated in time, their mutual relationship is worth investigating. Another object of high workmanship was a censer. It consisted of a central rod having cups for incense riveted to both ends. A decorated ring with imitation stones in place of gems and other rings each with a snake pattern, are worthy of notice.

The bronze objects, particularly the lids with animal and plant motifs have no parallels anywhere else in India and therefore must be considered as a local phenomenon. There is a considerable body of evidence thought not archaeological to think that South India did have contacts – cultural and commercial, with the Mediterranean world, particularly with Palestine, about 1000 B.C. as also Syria and Cyprus. The early Iron Age tombs in Palestine, of the times of Solomon, yielded, a remarkable three – pronged iron trident similar to the tridents from Adichanallur, Hence, the bronzes and a few other cultural traits found at Adichanallur might be ascribed to West Asiian inspirations.

Copper objects are frequently found, though not in very large numbers, from the South Indian megaliths. They mainly consist of house – hold utensils like bowls from Kunnattur and a few other places in Tamilnadu, Gulbarga district, some sites around Hyderabad etc., containing decomposed bones or paddy husks. Copper dishes are recorded from Hyderabad region by Hunt. Copper bells are frequently found as at Kannattur, a number of sites in Gulbarga region recorded by Meadows Taylor, around Hyderabad mentioned by Hunt etc. Other objects include rattles, collyrium rods, bangles, rings, rarely bands to be tied around the neck of a calf (as at Raigir). But, copper objects are not frequently found from the megaliths and are mainly used for ornaments, toilet objects or, rarely, for utensils.

18.6 GOLD

Gold objects are rarely found from these monuments. Gold diadems (Fig. 22, B) were found from the urn burials at Adichanallur. They consisted of thin oval shaped leaves, some of them having projecting strips at each end pierced with holes. Through these holes, a wire or thread would be passed for trying around the forehead. Other do not have these end – projections but holes are found at the oval edges. Some of them have incised ornamentation with dots. Triangles and simple oblique strokes on both sides of a central rib, giving the appearance of the ribs of a leaf. Some nineteen of them along with a stone pendant covered with a gold leaf are illustrated by Rea.

18.7 BEADS

Beads of various materials are frequently found from different types of megalithic burials in South India. Materials from which these beads are manufactured are gold, silver and copper besides different types of semi – precious stones, such as carnelian, jasper, agate, onyx, serpentine, steatite, megnesite, lapis lazuli, milky or clear quartz, granulite, amethyst and tremolite – a form of horn blends, glass, wax, lacquer, terracotta, stalagmite and shale, shell and bone, glass, wax, lacquer, terracotta, stalagmite and shale, shell and bone. The shapes and modes of decoration of these beads also vary considerably, thus emphasizing not only that these megalithic folk possessed fairly advanced culture wherein elaborate steps were taken to decorate their mortal bodies but also underline that they had mastered the technique of delicately cutting different types of stones of varied hardness into small and required shapes, boring holes through them, polish them to different degrees of fineness and further decorate them with etching of the carnelian specimens or carving grooves over them to produce some designs or collared edges.

They have been found from almost all regions in South India from kerala and Madurai districts in the South t groups of burial around Hyderabad and a rapid and necessarily brief survey of these beads is attempted here.

From the Nilgiris are found a few beads, a ribbed ring, a stud, few ear rings and chains. Maski yielded a convex hexagonal bead and a shapeless small piece. Casal found a considerable number of gold jewellery from the megalithic graves from Suttukkeni near Pondicheery. Gold objects, usually beads, are found very rarely from other sites in the megalithic zone.

The urn burial from Porkalam, in Kerala, yielded some forty-eight beads of which fortyone were of carnelian, all of them etched in white over the natural red surface. The designs consisted of double or single zigzag lines flanked by double parallel lines on each side, or oblique strokes within double parallel lines, longitudinal zig - zag lines in four quadrants, oblique strokes enclosed within four longitudinal lines three circles enclosing ovals in imitation of the eye, horizontal strokes enclosed within marginal bands, cross designs and irregular circles enclosing a horizontal stroke. The shapes of the beads were long barrel circular, elliptical circular, spherical, and circular tabular. The other beads consisted of six examples of an indeterminate metal of standard barrel circular shape or plumb-bob type pendants and a terracotta circular annular oblate type. The etched carnelian beads have parallels from many burial and habitation sites from different parts of India, dated from circa 4th century B. C. at Taxila to the early centuries of the Christian era. Babington found etched carnelian beads, biconical convex shaped or barrel shaped disc beads or beads made of transparent greenish stone from the megalithic monuments in Malabar.

At Kodidhasinur near Karaimadai R. S. in Coimbatore district, one cist – grave yielded several iron beads worn as a necklace. The beads were formed of small strips of iron, coiled up like a volute spring. At Nattukalpayam and Perundurai in the same district, square crystal barrel – shaped etched carnelian beads and a necklace of sea – shell beads from Nallampatti graves were found. Three small four – sided barrel shaped white crystal beads with neatly drilled holes were found from the cairn circles at Sirumagaj near Mettupalaiyam. A large variety of beads including long barrel shapes in agate, serpentine, carnelian, some of the latter being etched in white, chevrons within horizontal lines, whort barred glass beads, become hexagonal agate beads, square and roughly circular glass beads and three round gold beads were found from the megaliths on the Nilgiris.

One grave at Vellalur nearby, yielded seventeen carnelian beads out of which were etched. A blue glass banded bead with a white band crossing it diagonally was found from one grave. Another bead was crossing it diagonally was found from one grave. Another bead was of cuprous oxide glass, originally red in colour, with a porous surface, due to the bursting of bubbles and the surface was much corroded resulting in a dull brown colour. This is the first specimen of its sort in India.

Anglade found some beads in two urns from palani hills. Etched carnelian beads were found in a disturbed urn at Sanganappadai in Madurai district. Etched carnelian, feldspar, quartz and dark green stone beads, round or oval in shape, were recorded from the megaliths in Salem district, as also etched carnelian beads from Mondamgadi on the Shevroy hills in the same district.

Puduottai megaliths yielded carnelian and glass beads. A large number of etched carnelian beads, a few of white crystal and some of greenish stone were found from the urn burial site at Paravai in Madurai district by Turner⁸³. From the megalithic burials at sanur⁸⁴ in chingleput district were found an interesting group of shell objects consisting of six long barrel shaped beads. Shaped out of the columella, one gadroned bead and five discs with central holes encircled by and incised double circle from which emerged a star with six prongs which end with double circles filled with dots. One of them, instead of the usual star design, had a six petalled lotus without the double circle at the end of the lotus petals. These latter objects might have been used as ear ornaments, further, there was an young elongated conchshell decorated and flattened at the back, probably a pendant. Two carnelian beads, barrel shaped, one of them etched with double zig-zag lines flanked on both sides with parallel double lines and ten terracotta simple whorl beads were also found.

18.8 STONE OBJECTS

The megalithic culture in south india is a fullfiedged iron age culture when the great benfits conferred by the use of metals were fully realized by these people

and further, the added advantages of the most utile metal, the iron, was established, hence, naturally, the stone dropped out of these use as a material for the weapons and tools of man to a very large extent. Still, because of certain unique qualities. It continued to be used, the megalithic folk of south India or for that matter, the Iron Age folk of the sub-continent in general. Found out new uses for stone in their daily life.

Stone continued to be the cheapest raw material and in many parts of the world, is readily available in suitable forms for specific purposes. It could be readily used to produce the required artefacts without first 'preparing' the raw material like the mineral ores from which the material like iron, steel or copper and bronze are to be extracted by elaborate processes. Then, under certain climatic conditions while the metals rapidly disintegrated or became unusable, stone was capable of withstanding these vagaries of Nature and hence it continued to be used.

Till the modern sophisticated mechanical devices have prepared the metals to be used for such simple but essential processes like grinding or crushing corn into flour, man was forced to, and did produce, even during the iron age, querns, mullers, rubbers and grinders for such purposes. While finished of stone could retain the degree of their fineness and general format, even the glittering polished surface and decorative features, such durability and 'indestructibility' could not be expected of metal artefacts. After the lapse of a few years, the 'finish' of surface treatment would disappear in metal objects-particularly the utile varieties like iron, copper etc., by weather action like corrosion, rusting and such other processes. Hence beads continued to be made of a variety of semi-precious and crystalline rocks. Apart from the above objects. Stone was worked by different techniques for use in the construction of various types of megalithic monuments. Besides the above uses to which stone was put during the megalithic times, stone artefacts of the earlier times continued to be found, however, very rarely, in association with the megalithic burials; polished stone implements or microliths are some times found from these burials.

18.9 AUTHORS

It will surprise hundred and fifty years ago megaliths in India attracted the attention of persons interested in the field of archaeological investigations. It was in 1823 that Babington published his “Descriptions of the Pandoo Coolies of Malabar” in the Transactions of the Literary Society of Bombay. The name ‘Pandoo Coolies’ was current locally in Malabar designating the megalithic tombs. To understanding the mystery of the megaliths was sporadic. Megaliths no doubt attracted the attention of the foreigners, especially the British, who had come to India as part of the British administration.

In spite of their interest in the antiquarian remains of India resulting in the publication of research papers and accounts, this survey of the work done pertaining to the South Indian megaliths is proposed to be brief indicating only the major landmarks. About forty years after Babington’s description of megaliths in Malabar, Meadows Taylor published his observations pertaining to the ‘Distribution of cairns, cromlechs, kistavens and other Celtic, Druidical and Scythian monuments in the Dekhan’ in the Transactions of the Royal Irish Academy. However, the first comprehensive account came out only in 1872, when James Fergusson brought out “Rude Stone Monuments in all countries’ Their Age and Uses.” This remarkable account is noteworthy for its sweep and also for the details regarding South Indian megaliths.

However, a new consciousness in the correlation of the megaliths with some of the customs and practices of indigenous tribes can be first detected in “An Account of the Primitive Tribes and Monuments of the Nilgiris” published by J. W. Brecks who was the commissioner of that region. As against the earlier attempts to trace the megaliths to the Celtic, the Druidic and Scythian ancestry, Brecks was the first to suggest the megalithic bias in the customs and the equipment of the tribes residing in the Nilgiris.

The history of the excavations of these megalithic monuments also is about a century old. Different officers and scholars undertook excavations of the

megalithic remains separated by long distances, For instance, Dr. Jagor of Berlin excavated the classic site of Adichanallur in the Tinnevely district, and in 1879 Rivett Carnac tapped the site of Janapani near Nagpur in Maharashtra, During all these years, the work of exploration also gained momentum which resulted in the publication of “List of Antiquarian Remains in the Presidency of Madras” by Sewell in 1882. The Madras Museum which had become the store-house of the explored and excavated antiquities in the 19th century was opened to world of scholars by the publication of a catalogue of antiquities by Robert Bruce Foot. Foot not only catalogued the prehistoric antiquities, but also took stock of the antiquities pertaining to megaliths in South India so many articles were published by different scholars on Indian megaliths that Das Gupta thought it fit to publish the “Bibliography of Prehistoric Indian Antiquities.”

In the post-Independence era, immense work has been done pertaining to the South Indian megaliths, numbers of sites have been excavated, the excavations at Brahmagiri and Chandravalli tried to give a chronological bracket for the megaliths in South India. some of the notable sites like Ranjala, Takalghat – Khapa, Junapani and Mahurjhari in Maharashtra; Maski, Yelesvaram, Negarjunkonda in Andhra; Sanur and Amirthmangalam in Tamilnadu; The Karnataka sites have a significant bearing on the problem of megaliths in as much as they have brought out unique data so far unknown.

18.10 LET US SUM UP

The megaliths constructed tombs and furnished them with large variety of pottery, weapons and implements mostly of iron. Pottery is one of the most important furnishings, the typical being black and redware. Iron is one of the distinctive traits of the megalithic culture beside pottery. Copper and bronze objects occur in very small quantities from the South Indian megaliths. Besides these gold, beads and stone objects have also been found.

18.11 KEY WORDS

1. Iron – is a chemical element with symbol Fe and atomic number 26.
2. Gold – is a chemical element with symbol Au and atomic number 79

18.12 CHECK YOUR PROGRESS

1. Discuss in detail the Megalithic Material culture.

18.13 ANSWER TO CHECK YOUR PROGRESS

2. See section 18.2, 18.3, 18.4, 18.5, 18.6, 18.7 and 18.8

18.14 SUGGESTED READINGS

1. Deo S.B. Recent Researches on the Chalcolithic and Megalithic Cultures of the Deccan.
2. Gururaja Rao B.K. – The Megalithic Culture of South India.

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UNIT - 19 MEGALITHIC IRON AGE AND TECHNOLOGY

Structure

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19.0 OBJECTIVES

In Block 2, you have learnt about the antecedent stages and various aspects of Harappan culture and society. You have also read about its geographical spread and the reasons for its decline and diffusion. In this Unit we shall learn about the post-Harappan, Chalcolithic, and early Iron Age cultures of northern, western, central and eastern India. After reading this unit you will be able to know about:

- The geographical location and the adaptation of the people to local conditions,
- The kind of houses they lived in, the varieties of food they grew and the kinds of tools and implements they used,
- The varieties of potteries used by them,
- The kinds of religious beliefs they had, and
- The changes occurring during the early Iron Age.

19.1 INTRODUCTION

By the second millennium B.C. several regional cultures sprang up in different parts of the Indian subcontinent. These were non-Harappan and were characterized by the use of stone and copper tools. Hence, these cultures are termed as chalcolithic cultures.

The chalcolithic cultures are identified on the basis of their geographical location. Thus, we have:

- The Banas culture (located in Banas basin) in Rajasthan,
- Kayatha culture {type site kayatha on the bank of river kalisindh ,an affluent of the Chambal) and represented by other sites in central India (in the Narmada, Tapi and Mahi valleys),
- Malwa culture (Malwa, and extending into other parts of Madhya Pradesh and Maharashtra), and
- The Jorwe culture (Maharashtra).

As type sites of these cultures have been excavated we have been able to form a detailed idea about such dimensions of them as:

- Pattern of settlement,
- Pattern of economy,
- Mortuary practices, and
- Religious beliefs.

In addition to cultural material of this phase, found at excavation sites, in parts of Uttar Pradesh, Haryana, Rajasthan, Bihar, West Bengal, Orissa and Karnataka are found catch of copper/bronze objects. As these have been found in hoards (about a thousand objects altogether from 85 sites in the above mentioned states) these sites were thought to represent a distinct Copper Hoard culture. At spipai (Etawah Dist.) a site in Uttar Pradesh, a copper harpoon has been found in association with a pottery known as Ochre Coloured Pottery (OCP). Though some of the other copper hoard sites have yielded OCP, the copper objects are not found in direct association with OCP. As more than hundred sites have yielded this characteristic pottery in the Ganga-Yamuna doab, these sites are described as belonging to the OCP culture. The OCP culture is succeeded by Black and Red ware (BRW) and painted Grey ware (PGW) cultures, which are distinguished by diagnostic pottery types. In North India, there is a district concentration of Painted Grey Ware sites in Haryana and Upper Ganga valley, of which 30 have been excavated, iron makes its appearance in the painted Grey ware culture, and in the ensuing phase, known as the Northern Black polished ware (NBP) culture, its use becomes more widespread. Starting from the sixth century B.C. we also see the beginnings of urbanization.

Terms like BRW culture, PGW culture and NBP culture need to be clarified here. These cultures are described by the pottery types only because that particular pottery happens to be a distinctive feature of that culture though there may be many other aspects of that culture. The pottery type is used only to give an identity or name to a specified culture. For example in a particular region where painted grey ware is found the culture of that site is described as PGW culture.

To understand the cultural development after the decline of Harappan Civilization we should begin with Northern India, especially the Ganga-Yamuna doab.

19.1.1 Orche Coloured Pottery Culture

A new pottery type was discovered in trial excavations conducted in 1950 at Bisauli (Badaun district) and Rajpur parsu (Bijnor district) in Uttar Pradesh, both of them being copper hoard sites. This pottery is made of medium grained clay, underfired and has a wash of ochre (which has a tendency to rub off) ranging from orange to red. Hence, those sites associated with this ware are ascribed to Ochre Coloured pottery culture (OCP culture). So far more than 100 sites which extend from Myapur in Saharanpur district to saipai in Etawah district (U.P) have been discovered.

Ochre coloured pottery sites are generally located on river banks. These sites are small in size and the mounds have a low height at many of the sites (e.g. Bahadarabad, Bisauli, Rajpur, Saipai). This indicates a relatively short duration of these settlements. The distance between settlements varies from 5km to 8km. At some of the OCP sites (e.g. Ambkheri, Baheria, Bahadarabad, Jhinhana, Lal qila, Atranjakhera, Saipai) excavation have revealed no signs of regular habitation. At Hastinapura and Ahichchhatra there is a break in occupation between the OCP culture and the succeeding PGW culture, while at Atranjikhera the OCP settlements are succeeded by Black and Red ware pottery.

The material remains of OCP culture are mostly in the form of pottery. These consist of jars (including storage jars), ring-footed bowls, flasks, handled pots, miniature pots, basins spouts, etc.

The other objects comprise terracotta bangles; beads of terracotta and carnelian; terracotta animal figurines and cart wheels with a central knob; stone querns and pestles; and bone points. A copper harpoon has been found in the OCP stratum at Saipai.

Not much evidence is available regarding structures. From the evidence recorded at Lal Qila, which is scanty, it is known that floors were made of rammed earth. The structures consist of wattle and daub houses. This is suggested on the basis of burnt mud plaster and mud clods with reed and bamboo impressions being found at Lal Qila.

Archaeobotanical remains recovered at Atranjikhera and related to this culture indicate that rice, barley, gram and kesari were grown. On the basis of similarity in pottery types some scholars believe that the OCP represented a degenerated form of the late Harappan pottery.

On the basis of Thermoluminescence dates obtained from OCP pottery, the culture has been ascribed to 2000 B.C to 1500 B.C.

19.1.2 The Problems of Copper Hoards

The first discovery of a copper object (a copper harpoon) that belonged to the copper Hoard culture was made as early as 1822 at a place called Bithur in Kanpur district. Since then nearly one thousand copper objects have been found in hoards, from 85 sites.

State-wise copper Hoards Sites

STATE	NUMBER OF SITES
Haryana	5
Rajasthan	6
Uttar Pradesh	33
bihar	19
West Bengal	6
Orissa	7
Madhya Pradesh	8
Karnataka	1

It is possible that copper hoard objects have been found in other states like Gujarat and Andhra Pradesh, but have not yet been properly reported.

The copper objects found in a hoard range from 1 to 47 excepting at Gungeria in Madhya Pradesh where where a single hoard containing 424 objects. These copper hoards came to light while ploughing a field, digging canal or making a road, i.e. all of them were accidental discoveries. It is only at Saipai, that a copper harpoon was found in excavation in a stratum associated with OCP.

These copper objects are classified into several types. The main types are (a) celts, (b) rings, (c) harpoons, antennae swords, (d) hooked swords, (f) anthropomorphs and (g) double axes.

Considering the occurrence of a copper harpoon in association with the OCP at Saipai, and the fact that Copper Hoards have found at other OCP sites (though not in a direct archaeological association) they can be related to the OCP culture. In this way the period of the copper Hoards can also be ascribed to 2000 B. C. to 1500 B.C.

19.2 BLACK AND RED WARE CULTURE

Excavation at Atranjikhera in the early 1940s revealed a distinct horizon, sandwiched between OCP and PGW levels. This horizon has a characteristic pottery called Black and Red ware (BRW). A similar stratigraphic sequence has been discovered in the 1970s at Jodhapura and Noh in Rajasthan. But at Ahichchhatra, Hastinapura and Alamhirpur BRW is found associated with PGW. Pottery: the characteristic features of this pottery are the black colour inside and neat the rim on outside and red colour, over the rest of the body. This colour combination, it is believed, has been produced by inverted firing, the pottery is mostly wheel turned, though some pots are also handmade, it is made of fine clay and has a fine fabric with thin walls. Black and red ware pottery with paintings has also been found at sites in Rajasthan, MP, Bihar and West Bengal. But in the BRW of the doab area is absence of paintings.

Other Objects: in the excavations at Atranjikhhera have been found fragments of stones, waste flakes, chips; core of quartz, chalcedony, agate and carnelian; one bead each of carnelian, shell and copper ring; and a fragment of comb made of bone. No stone or metal tools have been found. Jodhapura has yielded a bone spike. From Noh shapeless piece of iron, a terracotta bead and a bone spike have been discovered.

BRW in the Doab and Other Regions: some scholars see affinities between the BRW of Atranjikhhera and Gilund and Ahar of southern Rajasthan on the basis of a comparison of fabric, texture and burnishing. But there are differences as well as in the shape and designs of the potteries found in these areas.

- The important feature of doab BRW (also of that at Noh) is its plain surface, devoid of any paintings. The BRW found at Gilund and Ahar, on the other hand is painted in white on black surface.
- There are also typological differences. The painted BRW from Ahar has pronounced carinated concave sides, and the fabric is coarse. The plain BRW of the doab has no carination, and the fabric is fine.
- The dish with featureless rim and concave sides present in large numbers in the BRW of the doab is absent at Ahar and Gilund.
- Bowls with spouts and dish-on-stand present at Ahar and Gilund have not been found in the doab sites.

It is important to note that Black and Red ware with some variation from region to region has a wide distribution. It occurs from Rupar in the north to Adichnallur in the south, and from amra and Lakhavhawal in the west to Pandu-Rajar-Dhibi in the east. It also covers a vast time span : from 2400 B.C. to the early centuries of the Christian era.

19.3 PAINTED GREY WARE CULTURE

Since the first discovery of painted Grey Ware (PGW) at Ahichchhatra in 1946, a huge number of sites have been brought to light in different parts of north

India. Out of these 30 sites have been excavated. Some of the well known excavated sites are Rupar (Punjab), Bhagwanpura(Haryana), Noh (Rajasthan) Alamgirpur, Ahichchhatra, Hastinapura, Atranjikhhera, Jakhera and Mathura (all in UP).

The concentration of PGW sites is in the Indo-Gangetic divide (Haryana), Sutlej basin and the upper Ganga plains. Settlements are located along river banks. The average distance from one site to the other is about 10 km. to 12 km. though in some cases it is also 5 km. The settlements at these are mostly small villages (1 to 4 hectares) with the exception of Bhukari (Ambala district, Haryana) which is an extensive settlement covering 96,193 sq.m. Let us examine the various objects that are found associated with the PGW culture:

I) Pottery: pottery is wheel made, out of well lavigated clay and has a thin core:

- It has a smooth surface, grey to ash-grey in colour.
- It is painted in black and sometimes in a deep chocolate colour on the outer as well as inner surface.
- It has nearly 42 designs and the most common types are bowls and dishes.

II) Structures: the houses and other structures were of wattle and daub. This is indicated by the occurrence of patches of burnt earth, mud bricks, burnt bricks, mud platforms and mud plaster piece with reed and bamboo impressions in the excavations at Bhagwanpura (Haryana) site revealed different structural phases. Post holes in the first phase indicate circular and rectangular huts. In the second phase, one house has 13 rooms with a corridor between the two sets of rooms. This house also has a courtyard.

III) Other objects: A variety of objects made out of cooper, iron, glass and bone were found in excavations. These consist of axes, chisels, fish hooks and arrowheads. Spearheads are made only of iron. Among the agricultural implements, only a sickle and a hoe, made of iron have been found at Jakhera. Iron objects are found at all the sites except Hastinapura. Atranjikhhera alone has yielded 135 objects, a furnace, iron slag close to the surface, and a pair of tongs. At Jodhpura there is evidence of two furnaces. It has been suggested that iron ore was procured from other regions.

The people were fond of ornaments. Beads of terracotta, agate, jasper, carnelian, chalcedony, lapis lazuli, glass and bone have been found. Two glass bangles were found at Hastinapura and copper bangles have been found at Jakhera. The terracotta objects comprise human (male and female) and animal (bull and horse) figurines, discs, balls, potter's stamps, etc.

IV) Crops and Animal Remains: Evidence of cultivated crops is available only at Hastinapura and Atranjikhhera. At the former site, remains of only rice were found and the latter has yielded the remains of wheat and barley. Bones of horse, cattle, pig, goat and deer have been found at Hastinapura, Allahpura and Atranjikhhera. These include both wild as well as domesticated animals.

V) Trade Practices and Linkages: Beads made of a variety of semi-precious stones (like agate, jasper, carnelian, chalcedony, lapis lazuli) are found at different PGW sites in the doab. None of these stones, as raw material, are available in the doab. They are found in Kashmir, Gujarat and Madhya Pradesh whereas lapis lazuli is to be found in Badakshan province in Afghanistan. Thus, the people inhabiting the PGW sites must have obtained these stones through trade or exchange with these regions.

Certain parallels in shape and size have been found between the PGW and potteries found in north-western India. Specially the Grey ware found in association with iron seems to indicate some links with the PGW cultures

19.4 NORTHERN BLACK POLISHED WARE CULTURE

Like the preceding cultures the Northern Black Polished Ware culture is identified by its distinctive pottery. This ware was first discovered at Taxila in 1930 and because of its black luster its discoverer then took it as 'Greek Black Ware'. Since then nearly 1500 NBP sites have come to light. They expand from Taxila and Udgram in the north-west to Talmuk in east Bengal and Amravati (Andhra Pradesh) in the south. Out of these about 74 have been excavated.

Important Excavated NBP Sites

Name of Site	Name of State in which the site is located
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Ropar	Punjab
Raja-Karna-ka-Qila	Haryana
Jodhpura	Northern
Noh	Rajasthan

Ahichchhatra	} Uttar Pradesh
Hastinapura	
Atranjikhera	
Kausambi	
Sravasti	

Vaisali	} Bihar
Pataliputra	
Sonepur	

Chandraketugarh	West Bengal
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The excavations have revealed that:

- at several sites NBP Ware culture succeeded PGW levels, and
- at some sites NBP succeeded BRW, and NBP is succeeded by Red Slipped Ware.

On the basis of the kind of pottery frequency and associated objects it has been suggested that two phases can be distinguished in the NBP Ware Culture.

Phase I: This phase is also referred to as the predefence phase. This is characterized by a predominance of NBP Ware and presence of shreds of BRW

and PGW, though in meager quantities. In this phase there is an absence of punch marked coins and burnt brick structures, which signify a higher level of development. This phase is represented in Atranjikherea, Sravasti and Prahladpur.

Phase II: Pottery specimens belonging to BRW and PGW are not found in this phase. NBP Ware is of poor quality (thicker in fabric) and is found in smaller numbers. A coarse grey ware comes into greater use. Punch marked coins and burnt bricks make their first appearance. This phase is represented in Hastinapura, Atranjikhera, Sravasti II and Prahladpur.

Taking into account the similarities between NBP and PGW some scholars have suggested that the former is a refined form of the latter, and that the difference between the two appears to be confined only to the surface treatment.

This has been proved through chemical analysis carried out on PGW and NBPW. As the concentration of NBPW is in eastern Uttar Pradesh and Bihar, it is held that its origin lies somewhere in this region, it spread beyond the Ganga plains in later times, and such a spread is attributed to the activities of Buddhist monks and traders.

19.4.1 Structures

From the excavations at Hastinapura, Atranjikhera and Kausambi it became evident that during this period building activities began on a scale and that cities began to emerge.

Excellent evidence of the settlement layout was unearthed at Kausambi. Here were found lanes and bylanes with brick floorings. One road, which was first laid around 600 B.C. was relaid several times (varying in width between 5.5m and 2.5m) and continued to function upto 300 A.D. Houses were made of burnt bricks, and use of timber in house construction is evidenced by the post-holes and sockets for door jambs. The roofs of houses were covered with tiles. The rooms were square as well as rectangular. All this indicates a fairly planned building activity.

This is further demonstrated from excavations at Hastinapura which have revealed an elaborate drainage system.

Some of the settlements were fortified with a mud of brick wall and moats were constructed encircling the fortification. The fortification wall at Kausambi had guard rooms, towers and gates at regular intervals.

An important question to be asked here is do these structures tell us anything about the social or political life in that period? They do. For example:

- the fortification signify defensive measures against invasion and speak of political tensions,
- the drainages system, not only indicates the concern of the people towards hygiene but also the advance they had made in this regard, and
- Large buildings like the fortifications require that a large number of people participate in construction activities. This might need an authority to mobilise the workers.

19.4.2 Pottery

The most characteristic feature of NBP ware is its glossy surface. It is turned on a fast wheel and is made of well levigated clay. The core of the pottery in some cases is as thin as 1.5mm in addition to the glossy black surface, the NBP ware is also found in golden, silver, white, pinkish, steel blue, chocolate and brown colours. The recovery of riveted post (i.e. made by joining broken pieces) from some sites (e.g. Ropar, Sonapur) indicates how valuable the NBP ware was. This along with the presence of other pottery types leads us to assume that NBP was a luxury ware not accessible to everybody and suggests to us that in the society in which NBP ware was used society was divided into unequal groups.

Though NBP is generally unpainted, some painted shreds do occur. Painting is done using yellow and light vermilion colours. The common designs are simple bands, wavy lines, dots, concentric and interesting circles, semi-circles, arches and loops. The most common pottery shapes are bowls and different kinds of dishes.

19.4.3 Other Objects

Several kinds of tools, weapons, ornaments and other objects made of copper, iron, gold, silver, stone, glass and bone have been recovered from NBP ware sites. They reveal the technological progress achieved during this period which is further corroborated by early Buddhist texts, which mention a number of arts and crafts. The Jatakas refer to about 18 guilds for instance, those of workers in wood, metal, stone, precious and semi-precious stones, ivory textiles etc.

The copper objects found at many sites consists of chisels, knives, borers, pins, needles, antimony rods, nail parers, ferrules, reels and bangles.

Iron objects not only preponderate but also exhibit a great variety in form when compared to the PGW period. The site of Kauambi alone has yielded 1,115 iron objects from deposits dating between ca.800 B.C to 550 A.D. These consist of:

- a) agricultural implements like hoes and sickles, and tools of craftman such as axes, adzes, chisels and screw rods.
- b) Weapons like arrowheads, javelinheads and spearheads.
- c) Miscellaneous objects which include knives, handles of different kinds, hooks, nails, rivets, fishplates, rings and miniature bells.

Silver punch-marked coins have been found from the middle-phase of NBP culture. These indicate a possible shift from barter system of exchange of goods through metallic currency.

19.4.4 Ornaments

Beads made of semi-precious stones, glass, clay, copper shell and bone are most commonly found. The usual shapes are circular, spherical, biconical, cylindrical, barrel and square. Some beads are also etched. A single bead of gold is known from kausambi IB(ca. 300 B.C)

Among the other ornaments are bangles made of terracotta, faience, glass, shell, stone and copper ; finger rings of copper, iron and clay ; and pendants of terracotta, agate and carnelian. All these finds tell us about the:

- Use of ornaments in that society
- Existence of specialized craftsmen to make them
- Level of technology for making them, and
- Trade or exchange activities with other regions to procure various semi-precious stones.

19.4.5 Terracotta Figurines

These comprise human and animal figurines and miscellaneous objects. Human figures, in most cases, are cast in moulds, Male figurines are usually plain excepting a few with a head dress. Female figurines have elaborate head dress, ear ornaments necklaces and girdles. Animal figurines are hand modeled but well executed. These consist of horse, bull, ram and elephant.

The miscellaneous terracotta objects are toy carts, simple and animal headed gamesman; discs, balls, fleshrubbers and potter's stamps. At a later stage of this culture are found seals and sealings bearing inscriptions in Brahmi script. All these finds tell us a lot about the people who inhabited these sites. For example, toy carts tell us that carts were used as mean of transportation.

19.4.6 Subsistence Economy and Trade

Archaeobotanical remains indicate that rice, wheat, barley, millet, pea and black gram were cultivated. And the animal remains found from some of the suggest dependence on cattle, sheep, goat, pig and fish.

In the occurrence of a diverse variety of beads, found to be common at several sites, is seen evidence of trade. On this basis it has been suggested that trade links existed between Taxila, Hastinapura, Ahichchhara, sravasti and kausambi during Ca. 600 B.C. to 200 B.C. such a view is strengthened by the

reference made in Buddhist texts to trade guilds, and the caravans of camels, horses, mules, oxen and buffalos. Between the 6th and 3rd centuries B.C. there was trade between India and countries to the west. The main items of export were textiles, spices, and probably finished goods of iron and steel. From the Arthashastra (Book-I) it would appear that the state not only exercised control over trade but also had a monopoly over industries like gold, copper, iron, lead, tin, silver, diamond, gems and precious stones.

19.5 CHALCOLITHIC CULTURES OF WESTERN, CENTRAL AND EASTERN INDIA

There were several local chalcolithic early farming cultures in western, central and eastern India which flourished during the second and first millennia B.C. these cultures were basically village settlements and they shared certain common elements, the distinctive features of these cultures are:

- Painted pottery, which is mostly black-on-red, and
- A highly specialized stone blade/flake industry of siliceous stones.

Copper was known but its use was on a limited scale as the metal was scarce. The settlements consisted of circular and rectangular huts and in some cases pit dwellings are also known. The economy was based on farming and animal husbandry. These cultures are named after their type sites in the Tapi valley of Maharashtra, Late Harappan non-urban habitations (about 50) are known (1800 – 1600 B.C.). the excavations at Daimabad have shown that the Late Harappan moved further south into the Pravara valley (Maharashtra).

Chalcolithic cultures

Name of culture	Period
Kayatha	2000-1800 B.C.
Ahar or Banas	2000-1400 B.C.
Savalda	2000-1800 B.C.
Malva	1700-1200 B.C. in central India and

	1700-1400 B.C. in Maharashtra
Prabhas	1800-1500 B.C.
Rangapur	1400-700 B.C.
Chirand	1500-750 B.C.

The Kayatha culture is named after the site of Kayatha (25 km. east of Ujjain) located on the bank of the Kalisindh, and affluent of the river Chambal. The ahar or Banas culture is named after the river banas and type site is Ahar (Udaipur in Rajasthan). More than 50 sites of this culture are known in the valleys of Banas and Bearech in south-east Rajasthan. The type site of savalda culture is savalda (Dhulia district, Maharashtra). It is mostly confined to the Tapi valley but the evidence from Daimabad suggests that it reached up to the pravara valley. The Malwa culture was discovered in the excavations at Maheshwar and Navadatoli (Nimar district, MP) on the banks of Narmada. This culture is so named as a large number of sites were brought to light in the Malwa region. The Malwa people began to migrate to Maharashtra around Ca. 1600 B.C. and several settlements have been discovered in the Tapi, Godavari and Bhima valleys. Prakash (Dhulia district), Daimabad (Ahmednagar district) and Inamgaon (Pune dist) were the most extensive settlements of the Malwa culture in Maharashtra. The Prabhas and Rangpur cultures, respectively, are known after the type sites Prabhas Patan and Rangapur in Gujarat. The type site of Jorwa culture is Jorwe (Ahmednagar dist) in Maharashtra. Extensive occupations of the Jorwe culture succeed the Malwa culture at Prakash, Daimabad and Inamgaon.

Stone and copper using agricultural communities have been reported from eastern India too. In northern Bihar at a place called chirand remains of an ancient village settlement have been found. People lived in small houses made of bamboo and mud plaster. They ate rice and fish and hunted many wild animals. They too used black and red ware pottery. Similar kinds of settlements have been reported from Sahagaura in Gorakpur (U.P.) and Sonpur in Gaya (Bihar) where people seen to have grown wheat and barley also. In west Bengal the sites of Pandu-Rajar-dhilu in Burdwan district and Mahisdal in the Birbhum district have similar evidences. All these settlements have been dated between 1500 to 750 B.C.

Let us examine the various characteristics of these cultures.

19.5.1 Pottery: Diagnostic Features

We will briefly review the pottery of these chalcolithic cultures.

The Kayatha ware is characterized by three fabrics:

- A thick and sturdy red slipped ware painted with designs in dark brown;
- A red painted buff ware (this ware is thin with a fine fabric) ; and
- A combed ware having incised patterns, and generally without a slip.

The majority of the pots of the sturdy red slipped ware have a ring base. The ring base recalls the pre-Harappan Sothi types.

Sothi culture (in Rajasthan) is known from several sites in the valley of Ghaggar (Sarasvati) which have yielded a pottery that is akin to the pre-Harappan pottery of Kalibangan.

There are seven kinds of wares in Ahar Pottery but its most characteristic type is the black and red ware painted in white. The Savalda culture is characterized by a black-on-red painted pottery which is decorated with naturalistic designs such as birds, animals and fishes.

The Malwa ware is to some extent coarse in fabric and has a thick buff slip over which patterns are executed in black or dark brown colour.

The Prabhas and Rangapur wares are both derived from the Harappan black-on-red painted ware, but since the latter has a gloss it is referred to as the lustrous Red ware.

The Jorwe Ware is painted black-on-red, and a matt surface treated with a red wash.

In addition to these characteristic forms, all these have other associated wares which are mostly red or grey. The pottery is wheel but there are also hand made forms. The pottery shapes which are usual to these cultures are bowls, basins, globular jars with concave necks, dishes, lotas (a small pot with carinated body, a bulbous bottom and a flaring rim), etc. A distinctive feature of the Malwa pottery is seen in the series of small goblets on solid pedestals; and the distinctive forms of the Jorwe culture are carinated bowls, spouted jars with flaring mouths, and high necked globular vases.

19.5.2 Economy

A greater part of the region which this chalcolithic culture flourished is the zone of black cotton soil. The climate is semi-arid and the rainfall varies between 400 to 1000 mm. the mainstay of the economy of these chalcolithic culture was subsistence agriculture and stock-raising. Dependence on wild game and other food sources such as fish is also attested to at several sites.

I) Cultivated crops: Carbonized remains of seeds recovered in the excavations at some of the sites indicate that a variety of crops were raised by these farming communities. The main crops were barley, wheat, rice, bajra, jowar, lentil, horsegram, hyacinth bean, grass pea, black gram and green gram.

Other plants utilized were Jamun, Behada, wild date, ber, Myrobalan etc.

Barley was the principal cereal during this period. Evidence from Inamgaon suggests the practice of crop rotation, harvesting of summer and winter crops, and artificial irrigation. A massive embankment (240 m long and 2.40 m wide) was built at Inamgaon during Early Jorwe period (Ca. 1400 – 1000 B.C.) to divert the flood water through a channel (200 m long, 4 m wide and 3.5 m deep).

That the black cotton soil was for farming operations is suggested by the find of an ard (Prototype of the ploughshare) made from shoulder bone of cattle at walki (not very far from Inamgaon).

II) Animals: the excavations have revealed evidences of both domestic as well as wild animals.

i. The domesticated animals during the chalcolithic period were cattle, sheep, goat, dog, pig, horse. The bones of cattle and sheep/goat predominate at most of the sites. The cut and chop marks on the bones of these animal indicate that they were slaughtered for food. Age determination of these bones has indicated that most of the animals were slaughtered when they were young (ranging from three months to three years in age).

ii. The wild species found are black buck, four horned antelope, Nilgai, barasingha, sambar, chital, wild buffalo, and one horned rhinoceros.

Bones of fish, waterfowl, turtle and rodents have also been found at some of the sites, Bones of marine fish species have been found at Inamgaon and the source of these fish could be either Kalyan or Mahad, the nearest creek ports, 200 km. west of Inamgaon.

The charred bones of both the domestic and wild species indicate that they were cooked in open fire.

3.3 HOUSES AND HABITATIONS

Let us briefly examine the housing patterns of these cultures. Rectangular and circular houses with mud walls and thatched roofs are the most common types, though there are variations in houses sizes from site to site.

i. Most of the houses of the Savalda culture were single roomed rectangular houses but there are some with two or three rooms. Ahar people built houses on plinths made of schist. Walls were built on these plinths with mud or mud brick and the walls were decorated with quartz cobbles; and were made of burnt clay or clay mixed with river gravels.

ii. The sizes of the Ahar houses ranged between 7m X 5m and 3m X 3m, and the longest house measured more than 10m in length. Bigger houses had partition walls, and chulahs (hearts) and quartzite saddle querns in the kitchen.

iii. The Malwa settlements such as those found at Navadatoli, Parkash, Daimabad and Inamgaon were quite large. Evidence at Inamgaon suggests that some kind of planning was adopted in the laying out of the settlement. Of the 20 and odd houses exposed at Inamgaon, the majority were aligned in a roughly east-west orientation. Though these houses were built close to each other, they had an intervening space of about 1-2m in between which might have served as a lane, these houses at Inamgaon were large (7m X 5m) rectangular structures with a partition wall. The houses had a low mud wall and gabled roof. Inside the house was a large oval fire pit with raised sides for keeping the fire under control. The houses at Navadatoli were provided with one or two mouthed challahs in the kitchen. The grain was stored in deep pit silos (1m in diameter and 1m deep). Circular mud platforms (1.5m in diameter) inside the houses suggest that they probably served as bases to keep bins of wicker for grain storage.

iv. A significant feature of the Jorwe culture (of which more than 200 sites are known so far, though the majority of them can be classified as villages ranging from 1 to 4 ha.) is the presence of a large centre in each region. These centres are prakash, Daimabad and Inamgaon, respectively in the valleys of Tapi, Godavari and Bhima. The Jorwe settlement at Daimabaad was the largest, covering an area from more than 30 hectares. Prakash and Inamgaon cover about 5 ha. Each.

v. A noteworthy feature of the Jorwe (both early and late) settlement at Inamgaon is that the houses of the artisans such as the potter, the goldsmith, the lapidary, the ivory-carver etc. were located on the western periphery of the principal habitation area, whereas those of well-to-do farmers were in the central part. The size of the artisans houses is smaller than those of the well-to-do. Both these aspects I.e. the position and size of houses demonstrate social differentiation in terms of a lower position for artisans in the society.

Interestingly enough, some of these chalcolithic sites have fortification walls around the settlement. For example Earn and Nagda (MP) of the Malwa culture and Inamgaon (during Jorwe period) have a fortified mud wall with stone rubble bastions and ditch the habitation.

At Inamgaon has been noticed a change in house types from Early Jorwe (1400 – 1000 B.C.) to late Jorwe period (1000 – 700 B.C.):

The early Jorwe houses were large rectangular structures with low mud walls (about 30cm. high) surrounded by wattle-and-daub constructions. These houses were laid out in rows with their longer axis in a roughly east-west orientation. These houses have an open space in between (approximately 1.5m wide) which might have served as a road or lane. The late Jorwe houses on the other hand depict a picture of poverty. Large rectangular huts were no more built, and instead there were small round huts (with a low mud wall) in clusters of three or four. The pit silos were replaced by a fourlegged storage jar supported on four flat stones.

The overall evidence indicates that this shift from early jorwe to late jorwe was due to decline in agriculture as a result of drop in rainfall. Investigations in western and central India have disclosed that at the close of the second millennium B.C. there was a drastic climatic change in this region that led to increasing aridity forcing the people to resort to a semi-nomadic existence. This conclusion is based on calculations of percentages of animal bones found from different phases. It seems that increasing aridity during the late Jorwe period led to the decline of agriculture, and economy based on farming changed over to sheep/ goat pastoralism.

19.5.4 Other Characteristics

All the cultures are characterized by a stone blade/flake industry based on siliceous stone such as chalcedony, chert, jasper and agate. The tools include long parallel sided blades, blunted back blades, serrated blades, pen knives, lunates, triangles and trapezes. Some of these blade tools have a shine on the sharp edge suggesting that they were used for harvesting.

Polished stone axes, which are typical of the Neolithic-chalcolithic culture of Karnataka-Andhara, have also been found at some of these sites, though they are not plentiful. Copper objects consist of flat axes or celts with convex cutting edges, arrowheads, spearheads, chisels, fish hooks, mid-ribbed swords, blades, bangles, rings and beads. Among the finds at Kayatha, one pot contained 28 copper bangles.

Some of these objects like the axe were cast in mould, while others were hammered to shape.

The most prolific item among the ornaments are beads made of carnelian, jasper, chalcedony, agate, shell, etc.

A necklace made of 40,000 microbeads of steatite has found in a pot belonging to the Kayatha culture. At Inamgaon were found beads of gold and ivory, a spiral ear ring of gold and anklets of copper.

Terracotta objects are found frequently at majority of these sites. These are in the form of human and animal figurines. The stylized terracotta bulls (which are mostly miniature sized) found in the chalcolithic levels at Kayatha, some with a prominent hump, some with horns twisted backward, and some with the horns projecting forward horizontally, are of special interest. Considering the occurrence of numerous terracotta bull figurines at several of these chalcolithic sites it can be suggested that bull was a sacred animal, though the possibility some of them could have been toys cannot be ruled out.

The Daimabad Hoard: By a chance discovery, four objects on the top of the mound (below which is a deposit, 1.2m thick belonging to the Jorwe period) came to light at Daimabad. These are massive, all solid cast, and weight over 60 kg:

i. Elephant: this is the heaviest (25 cm in height X 27 cm in length), and stands on a cast copper platform with four brackets beneath, pierced, to take axles.

ii. Rhinoceros: this is a slightly smaller, and also stands on a cast platform. The brackets contain two solid copper axels with cast wheels attached. This rhinoceros recalls the one inscribed on the Indus seals.

iii. Two wheeled Chariot with a Rider: the chariot is attached by a long pole to the yoked oxen which stand on two cast copper strips, but there are no brackets for wheels. The chariot has two uprights supporting a cross-bar behind which the rider stands. This piece has no parallels.

iv. Buffalo: this also has wheels and axle in position. This has some parallels in the figures of buffalo in both terracotta and cast copper or bronze found from

Mohenjodaro. The copper of the Daimabad hoard compares with that of other copper objects found in excavation, and spectrometric analysis of this metal has revealed that it is unalloyed by tin or other metal according to one view the Daimabad hoard is datable to the Late Harappan period (Ca.1600 – 1300 B.C.) Another suggestion is that they could probably belong to the same technological group as the Kallur hoard.

19.5.5 Religion/Belief Systems

The finds in the excavation also shed light on the religious practices and beliefs of the people.

I. Mother Goddesses: That these Chalcolithic communities had a belief in the mother goddess, and worshipped her, is attested by finding of female figures of clay (both baked and unbaked). These female figures are both with heads and without heads. From the lower levels of occupation (dated to the middle of second millennium B.C.) at Nevasa, comes a large headless female figure, which is made without clearly showing physical features. Inamgaon has also yielded similar terracotta female figurines, which show no physical features except breasts.

Evidence for the worship of the mother goddess has been recorded in the excavations of an early Jorwe house (1300 B.C) at Inamgaon. Here buried under the floor in a corner, was found an oval shaped clay receptacle with a clay lid. Inside this receptacle was found a headless female figurine having large pendent breasts and also a bull figurine. These female figurines, including the one from Inamgaon point to the worship of the goddess of fertility. These figurine (especially the headless ones), according to one suggestion, may represent the goddess Sakamghari (of the early historic period), the goddess of vegetative fertility, who was worshipped for warding off draughts.

II. Gods: Male figurines are rare in the Chalcolithic settlements. It has been suggested that the male figurines of clay (two of them being unbaked, and one baked) found in the Late Jorwe levels (1000-700 B.C) at Inamgaon for warding off draughts

In this context a painted jar of Malwa period (1600 B.C) is considered to be of some religious significance. This pot has two panels. In the upper panel is

painted a scene depicting a human figure wearing a garment of twigs covering the lion, and is surrounded by stylized animals such as stah, deer, peacocks etc. the lower panel shows springing tigers or panthers, which are also stylized. The vessel, richly decorated with elaborate paintings, was probably meant for some ritualistic use. Likewise, finds of solid cast copper elephant, buffalo etc. at Daimabad could have religious functions.

III. Burial Practices: Disposal of the dead by burial was a common custom. Adults as well as children were usually buried in a north-south orientation; the head towards the north and the legs towards the south. Adults were, in majority of cases, buried in an extended position, whereas children were buried in urn-either in single pots or, more often, in two pots- placed horizontally mouth-to-mouth in pit. Adults, and also children, were buried in a pit which was dug into the house floor, and rarely in the courtyard of the house. It is interesting to note that during the jorwe period, in the case of adults, the portion below was purposely chopped off. These practices like burying the dead within the precincts of the house, and chopping off the feet could possibly suggest a belief in which dead were restrained from turning into ghosts, who could become malevolent.

The adult burials in several in several cases contain offerings (grave goods) which are usually two pots, or something more in numbers. One adult burial of the Late Jorwe period contained fifteen pots. It was also common to bury the dead with personal ornaments. In an adult burial of the Late jorwe period, a large copper ornaments was found near the neck of the skeleton. A child in a twin urn-burial of the same period had a necklace consisting of twelve beads of copper and red jasper alternately.

The jorwe period has also disclosed some unusual burials at Inamgaon. Here has been found a four legged urn-burial made of unbaked clay, and its southern face resembles a human body. This urn (80 cm. in height 50cm in width), which has a wide mouth with a featureless rim, contained the skeleton of a male, of about 30 to 40 years old, in a sitting posture. In this case, the portion below the ankle is not chopped off. The burial offerings were a spouted pot with the painting of a boat design having long oars. What this boat design reminds in to reach the heavenly abode. This person who was given such an elaborate burial could be :

- Of high status, or
- The ruling chief of the settlement, or
- Belonging to a social group that practiced a different kind of burial.

19.5.6 Social Organisation

In the chalcolithic culture regions, a study of the distribution pattern of the sites seems to suggest that these sites were of two types, one type representing regional centres and the other types representing village settlements. This difference, or hierarchy, has been taken to suggest that some form of administrative organization was present in the chalcolithic cultures. This also suggests that the chalcolithic social organization was characterized by ranking. The presence of an administrative authority is further supported by existence of public structures such as fortifications. Rampart and moat, granaries, the embankment and canals (well documented at Inamgaon) etc. found at different sites.

Seen in the larger context of the post-Harappan developments, these chalcolithic cultures betray discernible influences of the Harappan culture. Though in a residual form. All the same, they are marked by strong regional elements, and also display trade links and cultural contacts between each other.

These metal-using farming communities which flourished in the second millennium B.C. disappeared around the first millennium B.C. (excepting Late Jorwe which continued till 700 B.C.). one possible reason attributed for such a decay (on the basis of analyses of soil sample overlying these chalcolithic horizons) was increasing aridity and unfavourable climate conditions. Many of these settlements in the Godavari, Tapi and other valley were deserted, and were reoccupied after a gap of six or five centuries in fifth-fourth centuries B.C., heralded by urbanization.

19.6 LET US SUM UP

By about 2000 B.C. agriculture communities came into existence in different parts on India. These agriculturists used tools and impliments made of stone and copper. In North India these communities used various kinds of potteries like the OCP and BRW. A variety of copper tools have been also discovered. In central India and Maharastra Black soil zone excavation haves shown the existence of the Kayatha, Malwa and jorwe culture, By about 750 B.C. many of these agricultural communities adopted iron technology. The chalcolithic communities showed distinct variations in their pottery tradition. The Iron Age potteries called the PGW and the NBPW were used over a larger area. During this period there was greater interaction among various communities and transition towards urbanization was taking place.

The finds at the sites belonging to different cultures give detailed information about settlement patterns, trade links, types of tools and ornaments and religious beliefs etc.

19.7 KEYWORDS

1. Copper Hoards – describe find – complexes which occur in the northern part of India
2. Jorwe – is a village and an archaeological site located on the Pravara, a tributary of the Godavari River in Sangamner taluk of Ahmedhagar

19.8 CHECK YOUR PROGRESS

1. Describe the Northern black polished ware culture.
2. Discuss in details the Chalcolithic culture of Western, Central and Eastern India.

19.9 ANSWER TO CHECK YOUR PROGRESS

1. See section 19.4
2. See section 19.5

19.10 SUGGESTED READINGS

1. N.R. Banerjee – The Iron Age in India.

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UNIT-20 PRE AND PROTO HISTORIC ROCK CUT ART IN INDIA

Structure

- 20.0 Objective**
- 20.1 Introduction**
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- 20.6 The Rock Pictures in the Mahadeo hills**
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20.0 OBJECTIVES

Rock art is a new and emerging field in Indian archaeology. After reading this unit you will be able to understand

- the rock art of pre and proto-historic people
- About the techniques and styles.

20.1 INTRODUCTION

In this unit you study the meaning of pre and proto historic art of India, Important Sites, their technology and Socio-Economic Condition of people.

20.2 CHRONOLOGY

The rock cut art existed in India before 2500 years ago. According to Microlithic Technology this culture was as old as 25000-5000 BP.

20.3 MEANING OF THE PRE AND PROTO HISTORY

The history of man is divided into pre and proto –history. In pre-historic people used rude implements, According to the nature of the implements one has to reconstruct the history, during this period man was nomadic.

20.4 THE ENVIRONMENT ROCK ART SITES

The rock arts have been found in the different parts of geographical and geological regions of India. A large number of rock pictures have been seen in the quartzite regions of the Vindya mountain range of central India. The first Rock art, Cavellye and Cockburn hills, are covered by sand stones and soft silica sands, which are the raw materials for the glass industries.

20.5 THE CENTRAL INDIAN ROCK ART

The central Indian part consists of Rajasthan, MP, UP these states formed the Chambal valley. These regions consist of sand stones the famous site known as Bhimabetka, which means seat of Bhima.

20.6 THE ROCK PICTURES IN MAHADEO HILLS

The southern part of Narmada River which is parallel to Vindya mountain and satpur hills. In this region Mahadeo hill is situated. It was the center of rock art In 1930 this site was explored by D.H.Gorden. He discovered large number of Rock paintings on the hill.

20.7 THE SOUTHERN INDIAN ROCK ART

In south India most of the rock art found in the granite region most of the paintings found on the surface of the granite. These paintings shows the picture of hunting and gathering society in south india granite and quartzite hills are the centers of rock art. Rock bruising in the southern India virtually lack the narrative quality seen in the central Indian countries. Which provides material ideological culture of the people

20.8 THE ROCK ART OF THE HIMALAYAS

In Himalayan mountain region A.H.Dani and K.Jetmar and other historians and archaeologists discovered large number of rock painting sides in the region

20.9 MATERIALS

Most of the rock paintings found in India are situated on the sand stone and granite region.

20.10 ROCK ART RESEARCH IN INDIA

In the year 1867, Archibald Carlyle noticed rock pictures under ‘some overhanging rocks’ at Sohagi Ghat, at the northern escarpment of the Vindhya Hills, some 80 km south of Allahabad.

Archibald Carlyle was a first assistant in the Archaeological Office under Alexander Cunningham. He was known to be an observant and indefatigable explorer at a time when the political face of northern and central India was rearranged after the tumultuous period of the first war of India’s Independence of 1857-8. In the aftermath of this rebellion, large chunks of land came under direct British administration, and the princely states and zamindaris (landholdings with certain tax obligation) were reshaped according to their former affiliations towards the insurgent armies. India was mapped and measured anew. One of the instruments to do so was the Archaeological Survey of India (ASI), which was founded by the colonial administration to define and describe ancient remains. Ancient inscriptions were collected and deciphered and their information brought into the gird of history.

Carlyle was one of these field – workers of the Archeological Office involved in the survey, who traversed much of the hilly country of Baghelkhand and Bundelkhand, describing and investigating many antiquarian remains, while at the same time he also was observant of many ‘prehistoric phenomenon, which at that time were not even heard of.

Prehistoric remains at that time did not constitute the foremost subject of archaeological investigation. It was the time when the factual records of Indian history were probed in relation to the conquest of Alexander the Great, the historicity of the Buddhist period, and the great Indian Epics. Indeed, Alexander Cunningham, the first director – general of the ASI had himself been working for years on the identification of Indian cities on the basis of the .

The only authentic remark by Carlyle on the rock art in India came down to us through a letter that he had sent to Reginald Gatty, a Scottish clergyman and

prehistorian, in which he exchanged his views on ‘pigmy flints’ as microliths were then called. This letter was cited in a scientific paper on microliths by Vincent Smith in 1906, and it contains the following part wherein Carlyle describes the discovery of rock pictures:

‘In the cold season of 1867 – 8’ he (Carlyle) had found microliths of chert and jaspers close to Sohagi Ghat... and he ‘had even then also, and in the same locality near Sohagi bhat, already noticed some faded paintings in red colour in a recess of a low cliff under some overhanging rocks.’

He makes the first attempt to unveil the chronology of the paintings using clear words and reasoning when he says:

‘Laying along with the undisturbed soil of the cave floor, pieces of heavy red mineral colouring matter called geru were frequently found, rubbed down on one or more faces as if for making paint – this geru being evidently a partially decomposed hematite (iron peroxide).

‘On the uneven sides or walls and roofs of many of these caves or rock shelters there were rock paintings, apparently of various ages, though all of great age, done in red colour called geru. Some of these rude paintings appeared to illustrate in a very stiff and archaic manner scenes in the life of ancient stone chippers, others represent animals or hunts of animals by men with bows and arrows, spears and hatchets. With regard to the probable age of these stone implements I may mention that I never found even a single ground or polished implement, not a single ground ring – stone or hammer – stone in the soil of the floors of any of the many caves or rock shelters I examined.’

A few years later, in 1881, John Cockburn, an officer in the Opium Department, took time off from his official engagements and quite systematically visited rock art sites in the Kaimur Range, south of Banaras, now in the district of Mirzapur.

Cockburn seems to have been the first antiquarian to have contributed to scientific periodicals on the subject of rock art in India. After all, it was Carlyle himself who mentioned that ‘since then, other persons have made known their finds... I have, it seems, simply been myself too tardy in bringing my prior discoveries into public notice.’ or as Cockburn expressed it, ‘Mr Carlyle imparted no information on either the nature or the location of his discoveries, and his knowledge has died with him’. And though a paper by Carlyle on cave paintings and stone implements was announced in 1883 in the Proceedings of the Asiatic Society, unfortunately it never made it into print. Even the papers which were kept along with collections of minor antiquities assembled by Carlyle to be sold to European museum, and which also carried information and sketches on rock pictures, were lost.

John Cockburn not only furnished us with descriptions of his find, but he also produced tracings of several of the rock pictures he had found, which he prepared with paper that had been made transparent with the use of petroleum. Many of these copies, particularly those from the Baldharia rock shelter, served for many years as case samples of prehistoric rock art from India.

Cockburn’s better – known work carries the rather long title, ‘On the recent existence of *Rhinoceros indicus* in the North Western Provinces, and a description of a tracing of an archaic rock painting from Mirzapore representing the hunting of this animal’. In this paper, Cockburn tries to prove that rock painting showing an animal extinct in this particular area – the rhinoceros – must not be considered as prehistoric, since historic documents account for the hunting of these animals within the last 400 years or so. What he hinted at were rhino encounters during hunts described in the sixteenth – century *Memories of Babur*.

Cockburn thought the antiquity of the paintings was no more than 600 to 700 years, though he did not explain how he had arrived at these numbers. In 1884, there was a lot of skepticism against the notion of Stone Age antiquity of cave art among the learned circles of antiquarians. This is also substantiated by the following extract from the proceedings of the Journal of the Asiatic Society of Bengal in Calcutta: ... ‘Great doubt was expressed as to whether drawings made

merely by hematite on the surface of sandstone could last in such a perfect state of preservation for so long a time as was supposed by Cockburn, who then was of opinion that the oldest drawings might be six or seven centuries old but no older. Mr. Cockburn accepted the challenge thus offered, and showed good reason for believing that hematite might produce stains on sandstone capable of lasting for an indefinite time. He also modified his views concerning the antiquity of the cave drawings and was disposed to claim for them a very much older date than which he assigned at first'.

The 'good reason' which Mr. Cockburn had for believing what he did were example of hematite mason marks at the dressed blocks inside Egyptian pyramids, which had already lasted much longer than the suggested seven centuries, and were visible in perfect freshness. On the other hand, Cockburn disclaimed the Stone Age antiquity of the paintings, a strong indication of which was given by the microlith – barbed weapons shown in the rock pictures. Cockburn countered this opinion with the argument that even nowadays many tribal people in Australia and Polynesia, and inhabitants of the Andaman Islands fashioned barbed weapons from wood only. Further, he argued that though the rock paintings did not show any metallic weapons, that observation was no argument to support the Stone Age antiquity of the paintings, since many Indian tribes were, in his opinion, stepping out of the Stone Age only recently. The entire line of argument seems to contradict the opinion that the paintings illustrate' ... scenes in the life of the ancient stone chippers' as Carlyle thought. Already thus, the very first workers on rock art in India were locked in a debate stemming from their opposing ideas about the origins of the paintings, which, in many cases, were beyond logic and had hampered a concerted investigation of the real issues pertaining to this rich potential source material of antiquity.

It seems that in south India, rock pictures were noticed even before the once in the Vindhya region. But since no explicit record of the former is available, we are left with only circumstantial evidence. In a notice published in 1843, the engineer T.J. Newbolt mentions an ash – mound near the city of Bellary in Karnataka. It is almost impossible that he did not notice pictures brushed onto the rocks adjacent to the mound.

Hubert Knox seems to have noticed the bruising at the Bellary Hill as well as the Kopagallu Hill in the 1880s, or at least that is what a paper by Robert Bruce Foote suggests, who saw the engravings himself in 1903. At that time he was already 'furnished through the kindness of Mr. Knox with a set of good photographs, which were taken by Mr. Fred Fawcett, Deputy Inspector General of the Madras Police, retired.' In an off – hand remark, Foote declared these bruising as 'Neolithic', without enlarging further why he thought so, Gordon, D.H., . There was an explicit mention of South Indian rock pictures after Fred Fawcett's visit to the site of Kapugallu in 1892. Fawcett perceived these pictures right from the beginning as 'prehistoric'. Better known is another discovery of Fawcett, the engravings in the Edakkal Cave in Wayanand, in north Kerala, which also he explored in the 1890s. The article which he published on his exploration is also the earliest to use photography as a method of documentation, for which he must have taken considerable pains, as he writes: ... 'Artificial light was out of the question, the shutter speed varied from 30 to 45 minutes'.

The Edakkal cave near the town of Sultan's Battery in the Waynaad district of Kerala is one of the best – known rock art sites in India though this popularity also brought about the disfigurement and despoliation of much of the rock engraving by visitors there.

Although rock art was discovered in India quite early, the knowledge of its existence had little influence on prehistoric research in general. It was mentioned en passant in some books on early Indian art, the speculation about the chronology was generally not well informed, and in most cases, rock art served as just one more argument to strengthen the preconceived ideas of different authors.

It has to be remembered that Carlyle had already employed some very sound guidelines to determine the chronology of the pictures. After an analysis of the content of the paintings, he came to the conclusion that the paintings were ' ... apparently of various ages'. Carlyle understood the importance of correlation between the applied pigment and the colour nodules which were '.. found, already rubbed down into facets, in the earth on the floors of the caves and rock shelters along with stone implements, thus proving that the geru colour must have been

rubbed down and used by the same prehistoric aborigines who made the stone implements. This is probably a most important and significant discovery!’ This is what Carlyle wrote to the keeper of the Christy Collection, August W. Franks, referring to items in a collection, which he sold in 1887 to this institution.

material used by archaeologists and pre-historians, though none of them achieved much in terms of facilitating an understanding or analysis of this art, in general, or trying to explore more rock art material, to discover answers to numerous questions that had arisen on the subject.

The first aesthetic appreciation of rock pictures came from Percy Brown, Principal of the College of Art in Calcutta, who included a mention of rock paintings in his authoritative work on Indian Painting in 1917. In 1921, Manoranjan Ghosh visited the more commonly known rock art sites in Mirzapur that had already been discovered by Cockburn more than 40 years earlier, as well as the sites near Singhanpur in Raigarh district and in Adamgrh close to Hoshangabad near the Narmada River in Madhya Pradesh. He published the findings of these expeditions in a well – illustrated monograph.

It was around this time that another British officer, Colonel D.H. Gordon, tried to tackle the chronological problems of rock art by analyzing the succession of overlapping paintings, their style and the technological contents shown. In this way, he tried to derive at a reliable scientific base for the rock pictures’ chronology. Gordon’s work was mainly based on the rock pictures from the Mahadeo Hills in the surrounding of the cantonment of Panchmarhi, where he spent several years as commander of the Small Arms School.

Panchmarhi had been developed by the British administration for its officers and their families as a hill station for the Central Provinces over the forested hill plateau in the Satpura Mountains in the nineteenth century. The painted shelters situated in the hills and gorges of the surroundings were widely known by all the colonial officials who came to holiday there, and several of the locations of rock paintings became tourist spots, which people usually visited at least once during a stay there.

Other shelters in the region are situated in deep meandering gorges, which dissect the high rising and deeply and deeply scarred sandstone massif. These gorges contain dense and almost impenetrable forests.

Gordon developed his five series system on the rock pictures near Panchmarhi, arranging the paintings according to stylistic criteria. Gordon tried to bind all the rock pictures then known in India into these five series, not realizing at the time that the historic rock pictures in the Mahadeo Hills represent a local group with stylistic peculiarities that can be observed only here.

Gordon's preconceived ideas about the overwhelming influence of West Asian cultures in the making of the protohistoric and historic cultures of India barred his vision from a wider understanding of the development of rock art in India. He could not therefore imagine a long autochthonous development of Indian rock art in its original setting.

Although Gordon's suggestions and chronological conclusion on the different stylistic and thematic expressions in Indian rock art are now obsolete in view of the fact that a large number of well – preserved rock pictures from the Vindhya Mountains and elsewhere have been found and analyzed, this cannot diminish the value of his work in which he tried so painstakingly to use information from the rock pictures themselves to resolve the problem of arriving at a probable chronology for the pictures. He was the first antiquarian to analyze and write extensively on features shown in the rock pictures. Gordon analyzed weapons and warfare and many other details, so vividly shown in the rock pictures at Panchamarhi.

In the 1930s and 1940s, when most of Gordon's writings on rock art appeared, he had to counter the popular notion that all rock art was prehistoric, which ran counter to his own preconceived idea that rock art in India was not old and in most cases of quiet recent origin. During a visit to see the Raigarh paintings at Singhanpur and Kabra in 1935, Gordon did reflect on many of the beliefs and perceptions that he had to battle to retain his own conservative estimate about the

age of the pictures, while, at the same time, trying to counter the more fanciful interpretations of antiquarians who had seen these rock pictures earlier.

It should, however, be remembered that Gordon believed that the Indian rock pictures belonged to the first millennium AD. He arrived at this age for the paintings of horse riders armed with swords and shields on the basis of his thorough knowledge of rock pictures in the Mahadeo Hills, although he later realized that there were older pictures, he gave the development of all the Indian rock art only a tentative age of 1000 years, that is 1000 years before 700 AD, if at all.

He defied his own logic in considering that the well – identified earliest pictures from the Mahadeo Hills could never belong to the ‘Palaeolithic’ period as he called it, as he argued that even if they belonged to the people who fashioned microliths, they could not belong to the Palaeolithic period as microliths were used till the first/second century AD. In order to strengthen his own beliefs, he even cited an exchange of ideas between him and Mr. M.C.Burkitt ‘... of Cambridge, one of the greatest living authorities on cave art. I suggested 1500 years as a safe margin to cover the advance in technique and the altered style of living implied by the subject matter of the paintings. He did not however agree that the development needed so long a period, and considered that 1000 years should be an ample allowance’. Basically he thought all rock art in India to be ‘historic’.

Gordon’s work on rock art was painstaking. He walked or rode an elephant to all the remote and even inaccessible places to investigate these pictures. Several of his initials can still be found in some of the Jambu Dweep shelters near Panchamarhi. It is quite surprising that a person, who had devoted so much time in the study of rock art and who had made exact sketches, should come to such a conclusion whereby he completely denied the possibility of the pictures being older than he though they constituted a subject of his life – long interest. In most cases, the situation would be just the opposite as people devoted to a certain prehistoric subject would usually attribute a high antiquity.

Gordon was severe and caustic in discarding some of the more fanciful interpretations of earlier visitors to the rock pictures near Raigarh. He discarded the water colour copies of Percy Brown, which were used as illustrations in Manoranjan Ghosh's widely read book, *Rock Paintings and other Antiquities of Prehistoric and Later Times* as he claimed that they enhanced the clarity of the original pictures and also dismissed Brown's use of the background colour as superfluous since it imparted an undue 'foggy atmosphere' to the pictures. The interpretations of some blotches as 'man hugged by a bear' and 'mammoth with raised trunk' obviously pained him, but worse still were the sightings of 'glyptodonts', 'mermaids' and 'pigmyes' as the 'the makers of the pigmy flints', as one of the discoverers of Kobra Pahar, Mr. Amar Nath Datta suggested. Other paintings were interpreted as part of the 'Proto Indus Script', which is not so much surprising, given the great popularity of enigmatic archaeological finds. The Harappan culture with its enigmatic script was also widely discussed at the time, and quite a few rock pictures at that time were perceived by their discoverers to resemble symbols from the Harappan seals.

Gordon's expansive study, *The Prehistoric Background of Indian Culture*, which became a widely read introduction to Indian prehistory, contains a long chapter that for the first time dealt exclusively with Indian rock art.

Attempts to find chronological indicators for rock art from archaeological excavations were also made by G.R. Hunter, Professor of History at the Jabalpur University. In the early 1930s, he dug several trenches in the Dorothy Deep. Although his intentions were archaeologically sound, the manner in which he conducted the excavations was rather eccentric, as for the quantitative measurement of microliths, he at times used cigarette packers or liquor glasses, whose sizes he specified were equivalent to two tablespoonfuls. The records of these excavations indicate the joie de vivre among the archeologists in that pleasant little hill station of Panchmarhi, where even today one can find broken gold – rimmed porcelain in the most unlikely places, which are hard to reach because of the slippery paths and sheer rock walls in the area. However, Hunter's excavations, despite all their logical intentions, did not make much of a contribution or the unveiling of the chronological riddle that the rock paintings

posed. He found, as is expected in the Mahadeo Hills, quite a few cigarette packets full of microliths, and several burials, whose stratification and accompanying material cannot be disentangled any more. While the skeletons were eaten up by white ants, the pottery was distributed among different institutions and was ultimately lost.

The deposits in the shelters in central India are generally not very deep, and are vulnerable to many kinds of disturbances wrought by climatic conditions, human interference, wallowing pigs, white ants, and the growth and decay of vegetation. It is for this reason that more recent and better conducted archaeological excavations in several locations in central India have not contributed much to an understanding of the chronology of rock art.

The advent of well – documented explorations and excavations of Stone Age sites in India in the 1950s heralded a new awareness of prehistory in the subcontinent. Systematic work on Neolithic and chalcolithic sites in the southern Deccan region had begun during this period.

Many rock pictures were noticed near these sites and were also mentioned in the exploration and excavation reports.

The report of the excavation at Piklihal contains an entire chapter on the rock pictures existing there, as also does the excavation report on Tekkalkota.

In the 1960s and 1970s, Dr. A. Sundara, discovered many new rock art sites in the southern Deccan region during his field work on the megalithic cultures in the Krishna – Tungabhadra region. The discovery of central Indian rock art. The reason for this could be the low contrast and resolution on the granite surfaces of the pictures in the southern Deccan, which makes them visible only to discerning viewers. This situation has, however, changed recently, after the popular regional press started devoting attention to discoveries of rock art in the southern Deccan.

It was only after the discovery of the extensive rock painting galleries in Madhya Pradesh in the 1970s that rock pictures came to be recognized as

archaeological remains and captured the interest of scientist and laymen alike. These spectacular discoveries imparted a new momentum to prehistoric archaeology. The driving force behind these explorations and researches was V.S. Wakankar, who in 1957-8 noticed the rock structure on the Bhimbetka Hill during a rail journey.

He revealed that he had observed the towering rock structures at the top of the Bhimbetka Hill from the window of his railway coach during a train journey in 1957-58. Recalling the setting of similar rock structures with paintings that he had seen in the Chambal Valley, he thought that rock art would be found here as well. He disembarked from the train at the next station, Barkhera, a few miles south to the Bhimbetka Hill. From there, he walked back via the Bhonravali Hill, and soon came across the first rock pictures under one of the many rock shelters there. When he finally reached the top of the Bhimbetka Hill the next day or so, he had found one of the most fantastic rock – art region known in India. The name of the site, Bhimbetka, has become synonymous with Stone Age rock art in India.

20.11 LET US SUM UP

The rock cut art is as old as 25000-5000 BP. These arts show the picture of hunting and day to day life. Granite and quartzite hills are the centres of rock art. The rock pictures provide a glimpse of past and past is the reflection of future.

20.12 KEYWORDS

1. Rock Art- is human made marking placed on natural stone.
2. Stone Age – is a broad prehistoric period during which stone was widely used to make implements with a sharp edge a point, or a percussion surface.

20.13 CHECK YOUR PROGRESS

1. Evaluate the rock art in India.

20.14 ANSWER TO CHECK YOUR PROGRESS

1. See section 20.10

20.15 SUGGESTED READINGS

1. H.D. Sankalia – Prehistoric Art in India.

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