BASUDEV GODABARI DEGREE COLLEGE, KESAIBAHAL

Basudev Godabari Degree College Sambalpur 768226 Kesibahal

BLENDED LEARNING

STUDY MATERIALS UNIT – II

DEPARTMENT OF HISTORY

1ST SEMESTER PAPER - I

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BASUDEV GODABARI DEEGREE COLLAGE, KESAIBAHAL

Self Study Modull details

Class- 1st Sem

Sub-History

Paper Name-History of India-I

Paper-I Plan Unit-II

Syllabus Plan Unit-2

Pre-historic Hunter-Gathers and food production

(a) Paleolithic cultures –Upper ,Middle and Lower ,Tool Making habit

(b) Neolithic culture New development in Technology and Economy

(c) Neolithic and chalcolithic Settlements

(d) Food Production, Beginning of Agriculture https/youtu.be/kavoDLHd HEQ

1- hAAp://WWWyouAu.bE/8EImF_xilAB

2. hAAp://youAu.bE/xpoixDSUFW

Learning objectives

You should be know about many Quention and Answer

1.From Which area were the Elephants related to India ?

2.How old is the Earth so far now ?

3.Even in the middle stone age on what did man depend ?

4.What Stone were found in the North Entrance Vishavali Excavation (1950)

5.How did the the Origin of oldest man in Indian ?

6.What was the religious life of Mesolithic culture?

7.Discuss about the time of pre-huntergather ?

8.brifly discuss about the social life of paleolitric culture ?

9.Briefly described the Mesolithic culture?

10.Briefly write the tools of Mesolithic culture?

11.What are Neolithic culture ?

12.What are the chanacteristics of Neolithic culture?

13.When did neolithi age start ?

14.Who Discovered Neolithi culture?

15.What was the major development of the Neolithiculture?

16.What is main features of chalcolithicage?

17.Where in india wourd you find chaco lithic settlement ?

18.Which is the major chalcolithi site in india?

19.When was agriculture?

20.What marked beginning of agriculture?

Date	Time	Topics Covered	
02.01.2021	9 am to10a	Intruducetion of self study and discuss about Subject matter of Paleolithic culture.	
09.01.2021	9 am to10a	Mesolithic culture new development in Technology.	
18.01.2021	9 am to10a	Desuss about the subject matter Neolithic period.	
25.01.2021	9 am to10a	Introduction of food production and beginning of agricultu	
01.02.2021	9 am to10a	Doubt clearing class and question discussion.	

You can also used the Following book suggested text books

(1)Kalyani Publishees

(2) Kitab mahal

(3)R.S Sharma material culture and social Formation in Ancient india 1983

(4)Upinder sing ,A History of Ancient and Early Medievel india

UNIT – II

PRE-HISTORIC HUNTER-GATYHERERS AND FOOD PRODUCTION

Chapter – 1

Palaeolithic Culture: Upper, Middle and Lower; Tool making habit

The story of human life in India began thousands of years prior to the emergence of the first cities in the plains of Indus and its tributaries. The earliest traces that man left in the region date back millions of years ago, a period referred to as the Pleistocene period or the Great Ice Age, by the geologists. Like an overwhelming majority of prehistoric human societies around the world, these men lived as hunters/ gatherers. As man had not yet discovered the art of farming or animal rearing, they survived by gathering various edible items like roots, fruits, honey and so on that nature had to offer or by killing animals, birds and fish available in the surroundings in which they lived. Much of our understanding about these ancient societies comes from the tools that these people made and used for their existence, the faunal remains of the animals they hunted and ate and the rock paintings that they have left behind. Unfortunately, in India, unlike in Europe, Africa and several parts of Asia, very few human remains have been found in association with these primitive tools. Hence our knowledge about these pre-historic men in severely curtailed.

Early man for long lived in agreement with environment he found around. He used material; he could easily secure and handle conveniently to prepare his tools and weapons. The course of progress he followed as revealed by various civilizations, has been more or less similar. He began with the use of stone and moved on to use of metals in preparing his tools and weapons. The course of development that man followed has come to be marked and differentiated on the basis of the material he used and the techniques he developed and followed.

Civilization did not develop everywhere simultaneously. The periods of its development differ from civilization to civilization. In our country, it commenced long,

long ago. It is held that in our country, the early man passed through the Paleolithic—the old stone age, the Mesolithic—the transitional Stone Age, the Neolithic—the new Stone Age; the Bronze, the Chalcolithic and the Iron ages followed. Early stage of development with its sub stages which are often undistinguishable from one another, covered long periods of time. The beginnings and the endings of the epochs have not been determined with accuracy, as that is not possible. The time assigned to each stage is more or less approximate. Yet in imagining the early beginnings it is as helpful, as is a bird's eye-view of this long course of man's early progress.

The universally accepted primary division of archaeological periods ^ is ^prehistoric' and 'historical'. The period earlier than history has been designated as pre-history, because man at that time being illiterate, had no media of communication. In context of India, where historical period begins around sixth century B.C., this definition of pre-history was far from justified as it meant that Harappan Civilization, whose authors knew writing and entire Vedic literature from Rigveda right upto Yaska, as pointed out by Sankalia as works of a people, "who were illiterate, and the state of life depicted in it as semi-barbarous, if not that of a savage "(Sankalia). So an intervening period between 'pre-historic' and 'historical' called 'proto historic' has been postulated. Prehistory, in India, now deals with Early Stone Age when man was savage, a hunter and a nomad. Proto history covers a period from beginning of food-production till 6th century B.C. which marks beginning of historical period in Gangetic Valley.

Main Characteristic of Stone Age Civilization

	Early (lower) 500K-50K	Middle- 50K-40K	Late (upper) 40K-10K	Mesolithic 9K – 4K	Neolithic
Technology Stone Used	Quartzite	Flakes Quartzite	Flints Chert, Jasper	Microliths Agate	Polished Tools Dyke, Basalt, Dolomite
Occupation	Hunting, food gathering and fishing	Hunting, food gathering and fishing	Hunting, food gathering and fishing Homo-sapiens come in	Hunting, food gathering and fishing. In the later phase they start domesticating animals Villages food	Hunting, food gathering and fishing came to an end. Regular agriculture begings. Settled insmaller Producing age- Mehrgarg- wheat, cotton Mirzapur- cultivation of rice.

Sites	Soan or Sohan Valley, Punjab Belan Valley, Mirzapur District, UP (near Allahabad) Didwana, Rajasthan Bhimbetka, MP	Geography coincides roughly with the Lower Paleolithic sites.	Upper levels of Gujarat Dunes. Andhra, Karnataka, Maharashtra, Central MP, South UP. Bhimbetka caves used as shelters.	Adamgarh MP & Bagor, Rajasthan- Earliest evidence of domestication of animals. Salt Lake, Sambbhar deposits suggest cultivation of plants.	**North** Kashmiri- dwelling pits, range of ceramics, variety of stone and bone tools and absence of microlith Burzahom, Gufkrul Bihar- Chirand **South** South of Godavari **East** Assam, Garo Hills
Burial	No burial found				Burzahom- Domestic dogs buried with their masters.
Pottery	No Pottery found				First reference of pottery. Burzahom- coarse grey pottery.Hand-made pottery found in this age. Later period- foot wheel is also used. Included black-burnished ware, greyware and mat-pressed ware.
Painting	Bimbetka in Madhya Pradesh, Belan Balley in Uttar Pradesh and Narmade Valley have prehistoric art belonging to all the 3 phases.				

The first or the oldest prehistoric culture is known as Palaeolithic or the Old Stone Age. The term comes from the Greek word 'palaios' means old and 'lithos' means

stone. Therefore, palaios + lithos = Palaeolithic. Although our knowledge regarding Palaeolithic is very meager and imperfect, still Palaeolithic or Old Stone Age is very important as it provides a clear cut sequence of cultural development throughout the entire Pleistocene period, all over the world. It is considered as a crucial period for all round human evolution; development of cultures can be traced out distinctively in this period.

Robert Bruce Foote, a British geologist discovered and indentified the first Palaeolithic tool in the Indian Subcontinent in 1863, at the village of Pallavaram, near Madras (now Chennai) and laid the foundations of the Prehistory in India. Since then, prehistoric archaeologists have located hundreds of prehistoric sites in different parts of India and were attempting to understand the life ways of prehistoric people. The Palaeolithic sites are found throughout the Indian subcontinent in a variety of ecological contexts, including mountain regions, hill slopes, alluvial settings, coastal plains and in rock shelters.

Stone age in Europe (where pioneer work in the field of pre-historic archaeology settled the nomenclature and definitions, etc.) has been divided in Palaeolithic, Mesolithic and Neolithic ages. These divisions signify chronological, technological and cultural stages of evolution of the Stone-age man and his culture. Geologically the Palaeolithic has been assigned to Pleistocene period of earth which witnessed momentous changes in the climate, ranging from extremely cold glacial periods to relatively dry epochs of the inter-glacial. In the tropical regions the successions of pluvial and inter-pluvial periods ^attends the Pleistocene age.

As many as four glacial periods separated by three inter-glacial epochs have been distinguished in the European context and formations belonging to these various ages have been conclusively identified. Stone tools and artifacts as well as fossil remains of the flora and fauna and even of human ancestors recovered from these formations have been worked out to form a succession of lower, middle and upper Palaeolithic cultural assemblages of the Pleistocene, after which follow the Holocene of the Recent geological epoch which continues till today. The Holocene is supposed to have begun some 10,000 years B.P.

Lower Palaeolithic in Europe was an age of ape-man who used crudely-shaped Abbevialtan and Acheulian types of hand axes. The Middle Palaeolithic there constituted the age of the Neanderthal man using mousterian tool assemblages and fire. The Neanderthal men buried their dead and employed intelligent strategies to catch their games. With the onset of the Upper Palaeolithic towards the end of the Pleistocene the Homo Sapiens arrive on the scene. A succession of locally distinguished

cultures with finely shaped tools of stone and bone, sometimes decorated with beautiful carvings, and richly painted rock Shelters, characterize the Upper Paleolithic. The distinctive features of the Upper Palaeolithic Cultures are arrivals of the Homo Sapiens, the display of artistic tendencies and finely-shaped blade and burin industry.

In India the search for the Paleolithic remains of man started nearly a hundred years ago but, in the absence of the efforts to study stone-tool finds in the context of the rock formations they were recovered from, the early studies remained largely a typological analysis of the surface finds. A scientific beginning of Indian pre-history was, however, made in 1930-35 when De Terra and Paterson studied the Potwar Plateau and the Sohan Valley with a view to determine the sequence of glacial and interglacial formations along with those of stone tools and fossilized remains of flora and fauna found in them. Their subsequent analysis of the Narmada Valley and the attempted correlation of the Narmada sequence with that of Sohan and Potwar was no doubt a welcome addition.

Subsequent work by the Archaeological Survey of India, Deccan College, Allahabad University and various other agencies has revealed the widespread incidence of Paleolithic antiquities throughout the Indian subcontinent, barring only a few regions like the extreme south east of Madras and Kerala. At a number of places like the Belan Valley, the Valleys of Pravara and Renigunta in the basin of the Swartimukhi, formation of terraces and rocks of the river bed have been correlated to the climatic fluctuations of the Pleistocene. Some of these rocks and terraces are implement ferrous and full of fossil remains. These newly-collected data have enabled scholars to conceive of the Indian Paleolithic into three successive phases of the Lower, Middle and the Upper Paleolithic, well within the Pleistocene. Although this division looks parallel to that of European Paleolithic, the Indian counterparts are not exactly coterminous with their European name-sakes. Their chronological horizon and cultural and tool assemblages are in some respects different. That is why to distinguish them from the general or European concepts Sankalia prefers to call them Indian Lower Paleolithic, Indian Middle Paleolithic and Indian Upper Paleolithic.

As observed in the Valleys of Sohan, Liddar, Narmada, Belan, Son, Chirki, Pravara, Krishna, etc., the earliest stone tools (with the exception of large flakes recovered from the Boulder Conglomerate of Terrace I in the Sohan Valley) are available from the deposits ascribable to the middle Pleistocene. In the Sohan Valley, Potwar plateau and the Kashmir this earliest tool-bearing deposit was created during the second interglacial when the Boulder Conglomerate was redeposited after being eroded from its original position. Elsewhere the deposit of the implement ferrous gravel is attributed

to the aggrandational activities of the rivers which witnessed pluvial rains. These climatic events took place in the Middle Pleistocene i.e. some 5,00,000 years ago. Thus, the Lower Paleolithic Cultures of India go back to c. 5,00,000 years B.P., and continue till the incidence of the late Pleistocene, i.e. c, 50,000 years B.P.

Lower Palaeolithic Tools:

Based on tool technology, the Palaeolithic Age in India is divided into the following three phases.

1. Lower Palaeolithic Hand-axe and cleaver industries
2. Middle Palaeolithic Tools made on flakes; and
3. Upper Palaeolithic Tools made on flakes and blades.

Chopper:

Using a bow shaped piece of stone, a heavy and bold tool was created. Only one side was worked on (unifascial).

Chopping tool:

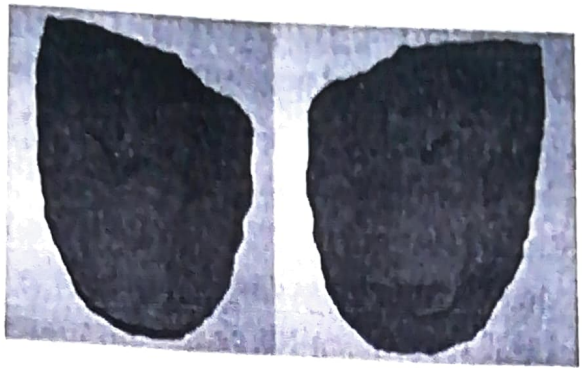
Same as the chopper but with 2 edges worked on (bifacial). Chopper and chopping are characteristics of lower Paleolithic.

Chopping tool

Hand axe: A tool with vertical working edge.

Hand axe

Early Cleaver: Cleaver are different from hand-axes in having transverse or horizontal working edge.



Early Cleaver

The time period of Lower Palaeolithic culture was marked between 600,000 and 60,000 B.C. The raw materials used for making the stone tools were largely of different kinds of stones, including quartzite, chert, and sometimes even quartz and basalt, etc.

Important sites of Lower Palaeolithic culture:

The Lower Palaeolithic tools have been abundantly found throughout the Indian subcontinent, except the plains of the Indus, Saraswati, Brahmaputra and Ganga Where raw material in the form of stone is not available. Following are the important sites of Lower Palaeolithic culture:

- Pahalgam in Kashmir
- Belan valley in Allahabad district (Uttar Pradesh)
- Bhimbetka and Adamgarh in Hoshangabad district (Madhya Pradesh)
- Nevesa in Ahmadnagar district (Maharashtra)
- Hunsgi in Gulburga district (in Kanlataka)
- Attirampakkam (TamilNadu)
- Shivalik range of Kashmir, Himachal Pradesh and Punjab
- Berach basin and the hilly area of Rajasthan
- Narmada and sone valleys in Madhya Pradesh
- Malprabha and Ghatprabha basins in Karnataka
- ChhotaNagpur Plateau
- Some area near Chennai in Tamil Nadu and
- Some areas of Orissa, West Bengal and Madhya Pradesh

Traditionally, the lower Palaeolithic evidence in India has been divided into two groups, i.e., the Sohanian or Soanian (Mode 1) and the Acheulian (Mode 2), based on

distinct typological and technological ground of both the industries. The Sohanian culture, termed after the river Sohan (or Soan), a tributary of the Indus, came into limelight through the Yale-Cambridge Expedition led by H. de Terra and T.T. Paterson in 1939. The evidence of this culture is found at a number of sites in the Siwalik hills in northwest India and Pakistan.

Evidence of Madras culture have been found extensively in India from the Siwalik hills in the north to the areas near Chennai in the south.

Apart from the imperishable stone tools we do not get any other remains of the cultures of the Lower Palaeolithic man. Even his skeletal remains are not available to us in India, although in other parts of the world fossilized skulls of the Lower Palaeolithic man have been found. On the basis of the distribution pattern, type and technological evolutions of these tools, however, a tentative picture of the life and culture of the Lower Palaeolithic man in India can be presented.

As a large number of tools were collected from the south-east coast, Karnataka, Sisunia hill in West Bengal, Lalitpur and Belan basin in U.P., Nagari and Chittorgarh in Rajasthan, Pedhamli in Gujarat and Nasik and Nevasa in Maharashtra, these areas may be supposed to have been densely populated by the Lower Palaeolithic man. A study of the tools collected throughout the length and breadth of the Indian sub-continent shows that there were two distinct traditions of tool-making : one from the pebbles carried by rivers and the other from stone blocks of quartzite, sand-stone, etc., available in the hill-side.

The first tradition is known as pebble-tool tradition and is preponderantly distributed over the sites of Northern India. Sohan Valley and the Potwar appear to be the centre of this tradition although a few tools of the other tradition are also represented at these sites. The second tradition is known as hand axe tradition which is predominant in the south. At most of the sites we get tools of both the traditions mixed together though their proportions vary with regard to the more northern or southern locations of the site.

On the world map of the distribution of the Lower Palaeolithic cultures too, the two traditions have, a distinctive distribution. In the eastern regions of China and south Asian countries the pebble-tool tradition has an exclusive distribution whereas in Europe and the areas round about the Mediterranean the hand axe tradition is purely represented. The two traditions meet in Africa and India. The precise significance of this observation is very difficult to make out. If the incidence of -what is described as proto-hand axe at four places in the Sohan Valley, viz., 1. at a site near Rawalpindi in the gravels of the Second Interglacial (T.I), 2. at Chautra in the deposits of the Third

Glacial (T.2), 3. at Adial on the surface, 4. at Balwal, near Chakri in the Gravel of the Third Glacial (T.2), and at Gasiala, near Attock in the Indus valley and one from Liddar valley in Kashmir are to be taken into account, one might argue for derivation of the handaxe industry from the pebble-tool tradition. But the paucity of material for so big a conclusion makes the validity of such an argument rather doubtful.

The Soan and Madras Culture

No skeletal remains of Paleolithic man have been discovered from India though Asia has produced many important evidences of man's early evolution. For example, the Upper Miocene deposits of the Siwalik Hills yielded some remains of fossil apes which seem to have occupied an important place in the evolution of man.

Possibly they represent a common stock from which man and he contemporary anthropoid apes have evolved. Robert Bruce Foote collected the first Indian palaeohth (i.e. the implement which helped the early man to adjust with the environment for survival) from the South India in 1863.

There is no doubt that man emerged during the Pleistocene which was an epoch of great climatic change characterized by phases of repeated cooling and warming. Pleistocene glaciation was a universal phenomenon affecting 30% of the earth's surface. Geological deposits of the lower slopes of the Himalayas, especially the Kashmir and Punjab region show a succession of glacial periods, each indicated by the typical products of glacial action.

This can be traced in the structure of the river valleys in the Rawalpindi area where terraces have-been formed by the flow of the river cutting into the detritus. The sequence is more or less parallel to that of the Northern Europe. In both the places, man-made tools are found lying on the river terraces being associated with the phenomenon of climatic change.

However, the geological evidence in the Indian Himalayas exhibits four main glacial phases and three inter-glacial phases corresponding to the four main phases of sedimentation and three phases of erosion. The relative duration of these climatic phases was not uniform. The second glacial phase was longer than the first, which is again longer than the third and the last glacial phase was the shortest.

Compared with the glacial phases, the inter-glacial phases were longer. Correspondingly, in the adjacent periglacial region (like Punjab plain) formation o river terraces were noted following the phases of aggradation and degradation. Sinc no artifacts are found in the Kashmir Valley, it is understood that the early men avoide the cold Alpine heights and preferred the open river plains of the Punjab for thei habitat.

During the subsequent inter-glacial phase, when the climate became relatively warm, animals from Siwalik Hills migrated to the Kashmir Valley. Fossiferous clays near Gulmarg in Kashmir yield the remains of Pine, Oak, and Birch with shells of fresh-water molluscs corresponding to this period. Man perhaps had not entered into this scene as neither his tools nor his bones (as fossil remain) have so far been found.

The favourable ecological factors of the area drew the man in the last phase of second glaciations or at the beginning of second inter-glacial as testified by his tools. However, well- defined human industries can be traced in the river terraces and other deposits of Northwest India, particularly in the valley of the river Soan and the Indus, in Poonch, near Jhelum and in the Salt range.

When there were intense glaciations in Kashmir, pluviations occurred in Plains forming wide flood plains and abundant grazing ground for animal life. The environment of early man in the plains of India is intimately connected with the detrital laterites, which is typically a tropical deposit formed through the succession of wet and dry phases. The laterite itself suggests a humid tropical and sub-tropical climate, and the lateritic crust indicates a comparatively dry climate. Still there lie great problems in exact determination of geological age or climatic dating.

In Peninsular India, the earliest tools of man come from the Boulder Conglomerate deposits underlying the laterite near Madras. In Central India, in the Upper Narmada Valley (District of Hoshangabad and Jubbulpore) the earliest tools are found to be hidden in the basal boulder conglomerate. Geological age seems to be middle Pleistocene in both areas.

The earliest fabricated stone tools in India are chipped pebbles like that of the Africa. In Africa, the Kafuan pebble tools constitute the oldest lithic industry of early man. One directional flaking or two directional alternate flaking (added later) on river-worn pebble produced zigzag or rugged working edge; the tools were suitable for chopping, cutting and scraping.

Archaeologists designated them as chopper or chopping tools. Such tools have come out both from northern and peninsular regions. In peninsular India, these tools are found in association with the hand-axes, the multi-purpose tool meant for cutting, digging, thrusting and many other purposes. Hand-axe suggests tropical forest and woodland environment; it is widespread in the tropical peninsular area.

Technologically, these tools are more evolved than the chopping tools as they show multi-directional flaking and symmetry of form. Cleaver is often found associated with hand- axe in peninsular region and denotes Abbevellio-Acheulean tradition of Africa.

Early man in India, as elsewhere, also made lighter and smaller tools on flake. At first the flakes were detached and worked by a simple technique (Clactonian) and later on by a more refined technique of core preparation (Levalloisian). As hand- axe became a characteristic tool of peninsular India, flake tools employing Levalloisian technique became an important element of northern Indian tool tradition.

The characteristic tools are knife, point, scraper, awl, etc. This technique in peninsular India gave rise to Acheulean tradition, which lasted much longer than any other technique that man could devise during Paleolithic Age. The final phase of the Paleolithic in India is still obscure.

Prehistorians have divided Indian Paleolithic culture into two major traditions with distinct geographical features. (A) The Soan culture or the chopper chopping tool tradition in the Punjab and (B) The Madras culture or Hand-axe tool tradition in peninsular region. Pre-historians have found a constant interaction between Soan and the Madras industries although there is a marked difference between these two industries.

The core-tool elements dominate in the south and southeast, while the flake or chopper type is very strong in the North. Moreover, in Central India, a fusion of technology (between two main traditions) has been observed. Certain stone industries from Kumool in the Deccan and near Mumbai represent a new type of tool tradition, based not on the massive flake but on the slender blade detached from a core.

Middle Palaeolithic

What happened in India after the end of the Lower Palaeolithic was not definitely known till as late as 1954. The tool-bearing deposits were often sealed by supposedly barren layers signifying discontinuation of the Early Stone age cultures. Only at a few places such as the Punjab, Khandivli and Kurnool such sort of stratigraphic continuation was observed. Finds of stone tools showing a marked typological evolution were almost all from the surface without any stratigraphic horizon whatsoever. A gap was, therefore, postulated between the Early Stone age and the sub-recent cultures of the microlithic and the neolithic periods.

In 1954 while exploring the Pravara valley in the Ahmadnagar district of Maharashtra it was noticed at the site called Nevasa that the tools of handaxe and cleaver complex were embedded in the basal gravel which was superimposed by a fine and less cemented gravel yielding tools of altogether different type and material. These tools from gravel II were smaller in size and fashioned out of fine grained stones like chert, agate, and jasper. They consisted of scrapers, points and blade-like tools instead of handaxes and cleavers. A clear break in the tool tradition and material led Sankalia to call these new tools as tools of the series II in order to distinguish them from the earlier handaxes-cleaver complex which was described as series I.

Blades

Scraper

A thorough search for the stratigraphical and bther horizons of the tools of series II was rewarded by the significant discoveries at the site of Bel Pandhari, Suregaon and Kalegaon in the same area. At Kalegaon the tools of series II were found embedded in the fossilized skull of an extinct variety of ox (Bos Namadicul Falc) which flourished in the Middle Pleistocene and survived till the earlier part of the late Pleistocene. At Mulanagar in the valley of Mula, a tributary of Pravara-Godavari, a dam cutting revealed at the depth of about 30.50" Mis. from the surface a typical flake of the series II assemblage and a huge carbonized trunk of a tree (Terminalia Arjuna). The Radio Carbon determination of this significant find gave the date of 39,000 B.P. C14 dating for the samples from other sites such as Paithan, Inamgaon and Dhon-Dam shows that the date for stratigraphical horizon yielding tools of the series II ranged between 17,000 and 39,000 B.P.

This puts the tools of this series into the late phase of the Pleistocene and hence the nomenclature of the Middle Palaeolithic for this new material is more appropriate than that of the Middle Stone age suggested earlier by some scholars. Indian Middle

Palaeolithic has again to be distinguished from the European Middle Palaeolithic which had an earlier beginning and is definitely known to have been an age of the Neanderthal man. In India, on account of the absence of any skeletal remains of man belonging to this period, the Middle Palaeolithic phase, cannot be associated with the Neanderthal or any other type of primitive man.

Further work after the outstanding discovery at Nevasa had considerably extended the geographical horizons of the Indian Middle Palaeolithic. The tools of this complex have been reported from Tamil Nadu, Andhra, Orissa, West Bengal, Bihar, U.P., Meghalaya, Madhya Pradesh, Gujarat, East and West Rajasthan, Sindh, East and West Punjab, North Western Frontiers and Kashmir. Well studied stratigraphical sequence has come to light at the sites of Kalegaon, - Bel Pandhari, Nandur, Madhmeshwar on the Pravara-Godavari in Maharashtra, Taminhal on the Malaprabha in Karnataka, Ramatirthampaye, Raigirvagu, etc., in Andhra Pradesh, Bijatala and Kandhi on the Khandkai in Orissa, Mandsor, Nabargarh on the Sivna, Barchand on the Johilla and Sidhi on the Son in Madhya Pradesh and a number of sites on the Belan in U.P. Everywhere the Middle Palaeolithic tools are yielded by a more Fine and less cemented gravel superimposed on the well cemented gravel having tools of series I. The earlier gravel has generally been described as grave! I and latter as gravel II.

Technologically the Middle Palaeolithic tool assemblage shows the evidence of controlled flaking of the Levalloisian and Mousterian type. But culturally we have still to come across the evidence suggesting use of fire, burial practice and employment of intelligent strategy for catching games characteristic of Mousterian and Neanderthal cultures of Europe. In the absence of these more important links similarity of tool typology alone is not sufficient to postulate a Neanderthal association for the Indian Middle Palaeolithic industry.

Middle Palaeolithic industries show the basic technological features common to the Mousterian of West and Central Asia. The tools are generally smaller, lighter and are based upon flakes struck from cores, which in some cases are carefully, shaped and prepared in advance. The flakes so obtained vary in shape. They might be oval, round, rectangular and pointed in shape. All these flakes were transformed into finished tools by means of various forms of secondary working. In the case of scrapers the edg^s were either retouched or chipped. Points were also obtained by means of edge-chipping and retouch. The chief finished tool types occurring in this culture are scrapers, borers, points, parallel-sided blade flakes, choppers and small cordiform hand axe. Burins are rare. This culture is some time described as scraper- borer-point culture as scrapers, borers and points occur at almost all the known sites.

There was also a marked change in the choice of raw material. Silica minerals, chiefly chert, agate, jasper and chalcedony, now became the most common media of working in most parts of the country. These enabled Middle Palaeolithic men to prepare beautiful tools with better edge. In some regions, particularly, Madras, Lower Deccan and Kutch, material (quartzite) employed by the Lower Palaeolithic groups continued to be used during the Middle Palaeolithic. In such cases, the material seems to have been finer grained and carefully selected.

The collection of the Middle Palaeolithic tools from different regions does not show a uniform pattern of tool-types. There is marked regional differences in the size of artefacts, determined by the nature of raw material as in the composition of types and their percentages. There is marked distinction between Middle Palaeolithic industries of the Deccan and Central India, on the one hand, and the desert region of the north-west. It has been pointed out that the geographical frontier formed by the Aravali range divided Middle Palaeolithic industries of Central and Peninsular India. These were preceded by and developed from a well-represented Lower Palaeolithic tradition, while the industry of the desert region of the north west appeared to have no such direct local antecedent. Further in the Nevasan South-Eastern Rajasthan, "the percentage of reworked flakes, including all those made into scrapers and other artefacts is no more than 5% to 7% of the total artefact assemblage, while at sites in Luni basin west of the Aravallis it ranges from 21% to 45%" (Allchin and Allchin) "Whether this variation in the representation of tool-types" remarks Thapar, "results from regional factors or indicate a chronological division within the assemblage remains to be ascertained."

Parth Chauhan suggestes four features that distinguish Middle Palaeolithic assemblages from the Lower Palaeolithic types: i) a decrease in size of the artefacts, ii) a noticeable shift from large Acheulian bifaces to more smaller, specialized tools, iii) an increase in the prepared-core technique, and iv) a preference of fine-grained raw material (such as chert, jasper,chalcedony, flint, crypto-crystalline silica, and so forth). Some of the new types within Middle Palaeolithic tool-kits are cores, discoids, flakes, flake-scrapers, borers, awls, blades and pints. These features are similar to the Middle Palaeolithic assemblages in the Old World, but the Indian evidence is typo-morphologically and technologically distinct. The available chronometric data shows that the Middle Plaeolithic assemblages persisted over a long period of time from the terminal middle Pleistocene to the greater part of the Upper Pleistocene.

Middle Palaeolithic men lived along the banks of the rivers and foothills where raw material was easily available. The economy of the Middle Palaeolithic was also based on hunting and gathering. The evidence of animal fossils indicates an open forested country. The Middle Palaeolithic culture, on basic of the C-14 dates obtained from various sites have been placed within a range of Ca 37,000 – 11000 B.P., in Upper Pleistocene period.

The Upper Palaeolithic

Upper Palaeolithic industries characterized by parallel-sided blades and burins, has been discovered in various parts of the country such as Belan river valley, in Uttar Pradesh; Renigunta in Chittoor District, Andhra Pradesh; the Shorapur doab in Kamataka; Visadi in Gujarat, and Patne in Maharashtra. This assemblage represents a well defined industry which lies between those belonging to the Middle Palaeolithic and the Mesolithic. Excavations at Patne revealed a sequence of Stone Age industries extending from Middle Palaeolithic through Upper Palaeolithic to-Mesolithic.

Technology

Upper Palaeolithic industries represent a marked and fairly consistent change in methods of making stone tools. The Patne assemblage shows a clear transition from the Middle Palaeolithic to the Upper Palaeolithic. In Upper Palaeolithic industry, unlike the thick Middle Palaeolithic backed blades made from jasper, one gets finer blades and burins made from chalcedony. The Upper Palaeolithic man had developed the techniques of steep secondary flaking, trimming, blunting of the back and other advanced methods of shaping his tools or tips of tools according to his needs. The basic technological innovation of the Upper Palaeolithic is the method of producing parallel-sided blades from a carefully prepared core, which can yield many parallel-sided blades with little or no further preparation. In this respect it is an advance on Middle Palaeolithic method - a process or core preparation aimed at obtaining one flake of predetermined shape.

Elements of Pre-History and Proto-History

Tool-Types

The industry shows concentration on blade production, the principal tool-types being the blunted-back knife, scraper, burin, lunate, point, awl, etc. The chief raw material used is fine to medium grained quartzite. The burins with chisel edges and other varieties were the implements which might have been used as instruments for wood working, bone or for preparing other accessories needed for day today life.

Burins

Bone Tools

Way of Life

This cultural phase was marked by the first expression of man's imaginative power and artistic skill. The earliest recorded find of an ornamental object of Upper Palaeolithic people in India is a disc bead made from a fragment of ostrich eggshell discovered among the finds of Upper Palaeolithic deposits of Patne. A few pieces of an ostrich eggshell having an engraving in criss-cross pattern have also been found at Patne. Upper Palaeolithic man's life still depended on hunting and gathering food. Tools of this period suggest that there was an increasing degree of specialization in the hunting pursuit.

The Upper Palaeolithic coincided with the last phase of the Ice Age. It has been pointed out that the pattern of occurrence of assemblages within the fossil dunes formed around Visadi and Pavagarh hill (near Baroda) suggests that during the period in which Upper Palaeolithic people inhabited the area, arid conditions were prevailing, but during subsequent period the environment became more humid with conditions approximating to those of the present. Whatever the climate type, the fossil fauna associated with the Upper Palaeolithic horizon in the Kurnool cave areas (Rhinoceros), the Ghod Valley zones (Hippopotamus), and the Belen Valley (Rhinoceros, Hippopotamus, Antelope, Elephant, Sambar, Black buck, Chital) suggest that the forest formation must have been extensive with open expanses of grasses and a continuous source of water in the streams and streamlets, with plentiful of game for the Late or Terminal Pleistocene hunter-gather.

Subsistence Pattern

There is a rich assemblage of animals both of indigenous and foreign origin. Primates, many giraffe-like forms, musk-deer, goats, buffaloes, bovids and pigs seem to be of indigenous origin. The camel and the horse had North-American connection

Hippopotamus and elephants migrated to India from Central Africa. The migratory routes lay east and west of the Himalayas. However, the wave of migration of most of the immigrant animals was along the north-west borders. There was great deal of interaction between India and Africa.

As regards the relationship between Palaeolithic human beings and their resources, the faunal remains give us some idea about their subsistence pattern. These remains suggest that the people were primarily in a hunting and gathering stage. It is likely that the balance between number of human population and the animal population of the area in which they lived and moved to ensure food supply would have been maintained. The people would have made extensive use of faunal and floral resources in their immediate vicinity. Hunting practices were concentrated on large and middle sized mammals especially ungulates (a type of animal). At the same time deer, rhino and elephant seem to have been hunted. There is no evidence of selective hunting in this period.

In some assemblages few species dominate; it is so because of their abundance in the area and also because they were easy to hunt. It seems that the subsistence patterns of hunter –gatherers were geared to a dry – season / wet-season cycle of exploitation of plant and animal foods. It is likely that the palaeolithic people subsisted on such animals as ox, bison, nilgai, chinkara, gazelle, black buck antelope, sambar, spotted deer wild boar, a variety of birds, and tortoises and fishes and on honey and plant foods like fruits roots, seeds and leaves.

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

Rock paintings and carvings also give us an insight into the subsistence pattern and social life of the Palaeolithic people. The earliest paintings belongs to Upper Palaeolithic age. Bhimbetka located on the Vindhyan range, is well known for continuous succession of paintings of different periods. First period belongs to Upper Palaeolithic stage and paintings are done in green and dark red colours. The paintings are predominantly of bisons, elephants, tigers, rhinos and boars. They are usually large, some measuring two-three metres in length. There is need to work out the frequency

of the different types of animals to have more precise idea about the hunting life of Palaeolithic people. But hunting is reflected as the main subsistence pursuit in the carvings and paintings. It is sometimes possible to distinguish between men and women on the basis of anatomical features. These paintings also reflected that palaeolithic people lived in small band (small groups) societies whose subsistence economy was based on exploitation of resources in the form of both animal and plant products.

When we consider their residence, it seems that, even from the earliest times they were thinking about some place to take shelter. An oval shaped rammed floor, encircled by granite-boulders, has been discovered from Lower Paleolithic Hunasgi. Besides, a stone-partition wall was found in one of the rock-shelters of Bhimbetka. The people, though still nomad, selected rock-shelters and raise thatched hut for their den. The people of Luni culture constructed thatched hut for their protection from fast-flowing winds. We can presume something about their belief-system. A carved piece of bone has been discovered from Lohanda Nala (Belan valley, U.P), identified as mother-goddess.

Besides, a bored tooth of animal was discovered from Kamul caves. This tooth probably used as a pendent. In the same period, a bead of ostrich shell was discovered from patane. All these things indicate to the belief-system of Paleolithic people. A Triagular stone, placed in the centre of round stone, discovered from Bagor (M.P.). According to the scholars, this was the part of Paleolithic ritual. Today also, tribes like Kol and Baiga (found bearby Bagor) follow similar kind of ritual.

Chapter – 2

Mesolithic Culture : New developments in Technology and Economy

The term Mesolithic (Transitional Stone Age) is conventionally applied in India, to denote the cultural stage represented by microlithic industries not associated with pottery and generally antedating the earliest farming based village cultures. This period in India is labelled variously as Late Stone Age, Mesolithic or Microlithic. The Mesolithic Age is different from the earlier ones in climate, technology and other spheres. The Mesolithic, was generally the period when glaciers were withdrawing to higher altitude in the north. In the rest of the country the period probably coincided with rise in temperature. With climatic changes, the flora and fauna altered as also the implements.

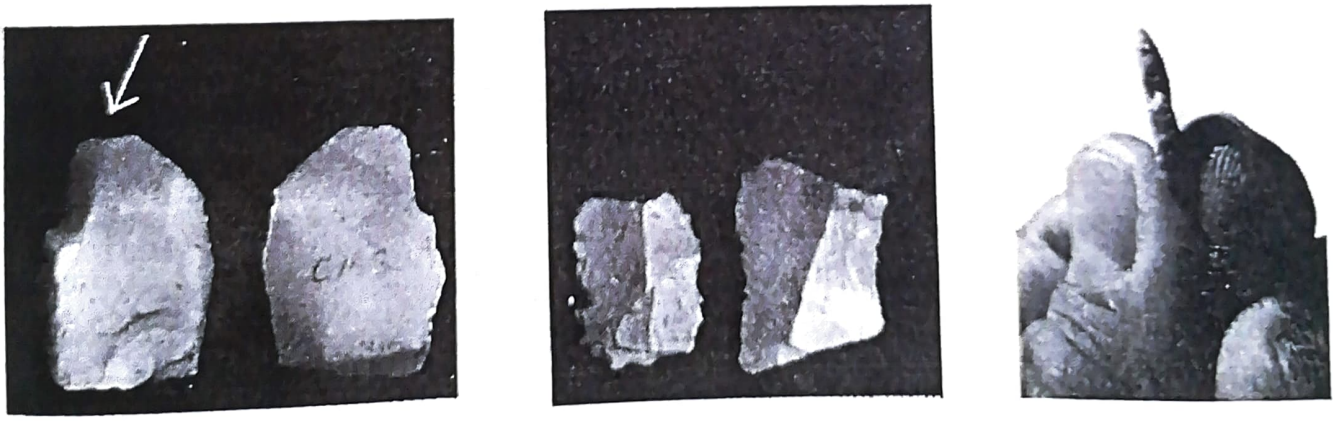
Technologically, tiny tools known as 'microliths'- highly improved upon the earlier ones, were devised. The industries of the Mesolithic Age generally indicate adoption to the early post-glacial environment. They suggest a hunting- gathering economy with emphasis on small game and fishing. By this time man had learned to protect his body from weather with animal skin, bark and leaves. He now kindled fire, and tamed wild dogs. It was his friend in the camp and his guard as it remained lurking around his camp fire. The variety of finds indicate, the differing levels of culture, the groups of these people attained at various places.

Tools of Mesolithic Culture

- The characterstics tools of the Mesolithic age are microlith. They are smaller in size and better in finishing. (more geomtetic) than the Palaeolithic age and are called Microliths. These microliths are tiny tools of one of five centimeters length, made by blunting one or more sides with steep retouch.

A microlith is usually made of flint or chert. (Microlithism is totally absent in north India)

- The main tool types are backed blades, obliquely truncated blades, points, crescents, triangles and trapezes.
- Some of the microliths were used as components of spreaheads, arrowheads, knives, sickles, harpoons and daggers.
- They were fitted into grooves in bone, wood and reed shafts and joined together by natural adhesives like gum and resin.
- One characteristic feature is that the sudden disappearance pebble tools which were conspicuous in the preceding cultures.
- Hunting-gathering way of life was slowly replaced by food production from about 6000 BC. Thus we see that the use of the bow and arrow for hunting had become common in this period, which is evident from many rock paintings.
- Bored stones, which had already appeared during the upper Palaeolithic, became common during this, and the Neolithic and chalcolithic periods. These are believed to have been used as weights in digging sticks and as net sinkers. Similarly, shallow querns and grinding stones also occur at several sites.
- These new technological elements led to enhanced efficiency in hunting collection and processing of wild plant foods.



Mesolithic Tools

Mesolithic sites in India are widely scattered and cover almost entire country. There was phenomenal expansion in human population during this period. Mesolithic people took advantage of the new landscape created during the terminal Pleistocene and filled in spaces previously left unoccupied such as Ganga Valley. Certain areas like plains of Gujarat and Central India which is full of rocky shelter, were more

intensively inhabited during the Mesolithic than at any time before. Most of our information comes from Bagor and Budha Pushkar in Rajasthan; Langhnaj in Gujarat; rock shelter at Bhimbetka and Adamgarh in Madhya Pradesh; Sarai Nahar Rai, Chopani Mandao and Morhana Pahar in Uttar Pradesh; Birbhanpur in West Bengal; Sanganakallu in Karriataka; and teris in Tamil Nadu. The Mesolithic site of Bagor in District Bhilwara, Rajasthan has been described as the, "best documented site in the subcontinent." Here, three phases of occupation has been discovered.

The earliest, phase I, dated by C-14 to c.5000 to 2800 B.C., shows a distinct microlithic industry, at its height. There is evidence of huts with paved floors. Here, also have been found stone guerns, rubbers, and one burial. Numerous bones of both wild and domestic animals such as sheep, goat, wild boar and jakal indicates that hunting economy was supplemented by pastoralism. The microlithic industry of Bagor is based predominately on blades. The material used are chert, chalcedony, and quartz. Many of the artefacts are geometric represented by, "triangles and trapezes and petit tranchets". From Sarai Nahar Rai, situated in District Pratapgarh, Uttar Pradesh, were discovered a number of small hearth, one large communal hearth or hut floor, several burials, and animal bones. Evidence of bow and arrow provided by the microlithic point embedded in a human rib bone at Sarai Nahar Rai.

From a rock Shelter at Adamgarh in District Hoshongabad, Madhya Pradesh evidence of Mesolithic age has been found. The microlithic industry of Adamgarh is based exclusively on parallel-sided blades with points, triangles, awls, scrapers burins etc. Here, bones of domestic dogs, Indian humped cattle, water buffalo, goat, domestic sheep and pig have also been found. The animal bones of wild and domestic animals occur in approximately equal proportion. Birbhanpur in District Burdwan, West Bengal reveal an essentially non-geometric microlithic industry unassociated with any kind of pottery. On the east coast, south of Madras, a rich microlithic industry was found associated with sand dunes. The dunes are locally known as ten and hence the industry associated with them has come to be known as ten industries. The distinguishing features of the industry are the use of quartz and chert as raw materials and the presence of geometric forms made on flakes and blades, together with discoids, small chopping tools and points.

The environmental area preferred by Mesolithic people

Sand dune

- In Gujarat and Marwar hundreds of dunes of verying sizes are found on the alluvial plain. Some of them enclose a shallow lake or pond, which were the great sources of getting aquatic creatures.

- Again, the dunes themselves were covered with thorny scrub bushes; many animals used to live there. Naturally the Mesolithic inhabitants in sandy dune faced no difficulty in collection their food.

Rock Shelter

- The Vindya, Satapura and Kaimu hills of Central India are very rich in caves and rock-shelters. The place was therefore favorite to the Mesolithic people.
- Not only that, as Central India received ample rainfall, the hills had grown a thick deciduous forest, which provided a variety of plants and animals. Some of the rock-shelters have been found to be occupied as early as the Arheulean times.

Alluvial Plain

- From early Palaeolithic period man has preferred to live in riverbanks because of the availability of water and games. Numerious Mesolithic sites therefore have been recovered from the alluvial plains. The Birbhanpur site, for example, is located at Damodar's alluvial plain in West Bengal.

Rocky Plain

- On Deccan Plateau, many microlithic sites are found. Some are on the hilltops and others are on flat rocky soil. Such occupations must be the seasonal or of short duration, except where there is no river nearby.
- A few Mesolithic settlements are centered round the shore of the lakes as found in the Gangetic Valley of District Allahabad and pratapgarh. The settlers perhaps used to get the food supply from the respective lake and the dense primeval forest of the fertile alluvial land.

Coastal environment

- A large number of microlithic sites have been recovered from coasts, for example, from the Saisetle Island and from the teri dune in District Tirunevelli. The inhabitants used to feed upon the marine resources.
- Since Mesolithic produced the micro-blades by pressure technique, beautifully fluted cylindrical or conical cores as well as thin parallel-sided blades are common in sites.

Excavations at sites such as Sarai Nahar Rai, Bagor, Adampur, Langhanaj etc., have brought to light many important facets of life in the Mesolithic age. The evidence of Sari Nahar Rai, which appears to be the earliest, shows that man was still primarily a hunter who killed various kinds of wild bull, sheep, goat, elephant, tortoise, fish, etc.

There was still no evidence for agriculture or plant cultivation. Man at Sarai Nahar Rai knew the use of fire and appears to have led a socially organized life, though there was no trace of any architectural activity.

In the habitation area were discovered a large number of hearths strewn with charred animal bories, ash without charcoal and burnt earth. Some of them were so big as to suggest that they were used as a community hearths on special or ritual occasions. Still there was no evidence for the domestication of animals. Seasonal settlers of Sarai Nahar Rai were men of uniformly well-built and tall race, nobody being less than six feet. Even the females were equally tall. These people buried their dead and from their adjacent burial ground fourteen skeletons were exposed. Except only one, who appears to have been more than 30, all of them died between 18 and 30 years of age. Five of them were females which suggests the possible prevalence of monogamy. In one of the graves as many as four skeletons were found. These graves were furnished with grave goods consisting mainly of microliths and animal bones. The knowledge and use of bows and arrows is attested by the lodgement of a microlith in ribs of a skeleton. Burial of young people with evidence of injuries and mass-burial shows that there was probably a war and the skeleton exposed were mostly victims of this war. All the bodies were kept in extended position with the head towards the west which shows a fairly prolonged and established burial practice.

Excavations at Langhanaj have brought to light a habitation-cum-burial site of Mesolithic seasonal settlers. As many as 14 skeletons have been dug out of their graves. They were all buried in a highly crouched position with east-west orientation and a large number of cut and smashed animal bones and microliths. Though all the skulls suffered a breakage, cannibalism is ruled out on the basis of irregular breaking. The Langhanaj men were not racially uniform. They betray mixed racial features. They were conversant with the use of fire and hunted a wide variety of wild animals. Still there was no evidence of domestication of animals and structural activity at the site, although a few pieces of crude pottery mark an advance. At Adamgarh there were strong indications of the domestication of animals and at Bagor those of incipient agriculture and ornaments. At Bagor transition to Chalcolithic age was also in evidence. The intermediary link of the Neolithic was found missing there.

The picture of Mesolithic in India attained a greater evidence with excavations at Chopni Mando, Mahadaha and Damdama carried out by the University of Allahabad. The sites of Chopni Mando and Damdama are situated on a dried-up bed of river Belan in Meja Tehsil of Allahabad and Pratapgarh respectively. Mahadaha is situated in the Ganga valley in the Patti Tehsil of Pratapgarh. It was on the bank of a horse-shoe lake which is now dried up and filled.

Of these Chopni Mando reveals an unbroken sequence of culture from epi-Palaeolithic (c. 17000 B.C.) to proto-neolithic (c. 7000 B.C.). Mahagara in Belan valley carries the story further into neolithic and links up with evidence of Koldihwa noted below. Mahadaha further confirms and extends the results of excavations of Sarai Nahar Rai and so does Wari Kalan on Damdama again in Pratapgarh.

At Chopni Mando the lithic industry shows a regular trend of diminution in the site of the tools till it reaches the microlithic stages of tiny tools. There is also noticeable a tendency of using fine-grained stones as we travel towards the microlithic. Phase I at Chopni Mando is a epi-Palaeolithic. Phase II has two sub-phase A and B which represent the early Mesolithic stage. Phase III shows an evolved Mesolithic culture. Mesolithic at Chopni Mando were still dependent on hunting and gathering, but now some evidence of their constructional activities is visible. They erected "circular/oval huts of wattle and daub with stone paved floors." There is yet no evidence of the domestication of either plants or animals.

A third phase yields, besides tools, ground plans of huts, and hearths of several types. Grinding stones, ring stones, anvils, hammer stones, nippers, sling balls, large quantity of animal bones of cattlev sheep and goat constitute the repertory of their other material remains. This phase is also noted for the carbonized wild rice and pottery it yielded. In the opinion of the excavator, "the carbonized rice/rice-husk embedded in clay lumps, looked in the context of grinding stones, both querns and millers suggests collection of wild edible grains, if not cultivation, during the period".

Apart from hearths and graves there is no trace of constructional activities of the Mesolithic people at Sarai Nahar Rai who were seasonal settlers there. According to the excavator, relatively with Sarai Nahar Rai, Mahadaha represents a later phase of seasonal settlers in the Ganga valley. Mahadaha shows both triangle ahd trapezes among its tools while Sarai Nahar Rai has triangle alone. Triangles precede trapezes at the continuous sequence at Chopni Mando. Though at Lekhahia triangles and trapezes were recovered along with pottery there is no trace of pottery yet at Mahadaha. Mahadaha is, therefore, earlier than Lekhahia and is equitable with Chopni Mando II B. The people at Mahadaha were primarily hunters as is shown by the recovery of large number of bones of the animals consumed by them. Animals usually eaten by them included cattle, sheep, goat, swine, antelope and hippopotamus. But the discovery of the fragments of querns and millers with ground surface gives some indication of their being gatherers of wild grains and roots as well.

In all, thirteen skeletons were dug out from the cemetery at Mahadaha. Five of these were male and eight female persons. Two graves at Mahadaha show cases of

double burial consisting of one male and one female. The dead buried there appear to have died between 17 and 25 years of age as against 16 and 30 at Sarai Nahar Rai.

Wari Kalan or Damdama shows a greater emphasis in gathering than on hunting and a larger duration of settlement. Damdama material is also significant in respect of certain innovation in burial practices. The double burial practice of Mahadaha continues here but unlike Mahadaha the two partners of the grave are placed in opposite direction. One grave appears to further reveal the burial of two males which is unusual. Burial of three in another example indicates the continuance of the usage of multiple burial noticed at Sarai Nahar Rai. 1.5 metre thick habitation deposits consisting of as many as 10 layers and the ground up working sites of querns and millers betoken the larger occupation of the site. One may wonder if the seasonal settlers had given up their nomadic habits. The possibility of their more or less permanent settlement is also indicated by the recovery of horns of hock-deer belonging to different age-groups from a single layer. It is said that the hock-deer have only one breeding season during a year.

Changes in Life-style:

(a) **From Nomadism to Sedentary settlements**

- There were some more interesting changes in life style of the Mesolithic era humans. The favourable climate, better rainfalls, warm atmosphere and increased food security led to reduction in nomadism to seasonally sedentary settlement.

(b) **Disposal of dead and making of Graves**

- The sedentary settlements lead to beginning of the tradition of various ways of intentional disposal of the dead.
- Mesolithic human burials have been found at Bagor in Rajasthan, Langhnaj in Gujarat, Bhimbetka in Madhya Pradesh etc.
- The dead were occasionally provided with grave offerings which include meat, microliths, animal bone and antler ornaments, and pieces of haematite.
- The evidence from different sites indicates that four type of burials were prevent.
- Extended burial
- Flexed (folded) burial
- Fractional (secondary) burial
- Double Burials (two individuals were buried in a single grave): probably the double burials indicate the development of family units, consisting of male and female.

(c) **Emergence of arts**

- The Mesolithic man was a lover of art, evident from the paintings in several thousand rock shelters in a Vindhyan sandstone hills in central India. The paintings have been found in both inhabited and uninhabited shelters. The rock painting of Mesolithic period is found in Adamgarh, Bhimbetka of Madhya Pradesh and Pratapgarh, Mirzapur of Rajastha.
- The paintings are made mostly in red and white pigment, made form the nodules found in rocks and earth. (Red made by minerals of iron oxide and white by limestone)
- We can have an idea about the social life and economic activities of the Mesolithic people from the art and paintings. It also tells us about division of labor on the basic of sex.
- The subject matter of the paintings are mostly wild animals and hunting scenes, though there are some related to human social and religious life such as sexual activity, child birth, rearing of children, burial ceremony, gathering plant resources, trapping animals, eating together, dancing and playing instruments.
- Animals are the most frequent subjects. Other subjects include animal headed human figures; squares and oblongs partly filled in with hatched designs which may represent huts or enclosures and what appears to be pictures of unusual events, such as the chariots waylaid by men armed with spears and bows and arrows at Morhana Pahar group of rock shelters near Mirzapur.
- **Clothing and ornaments:** The human figures are elaborately decorated with ornaments, headgear, feathers and waistbands, shell, ivory and bone beads also are evident from sites.
- **Recreation:** Mesolithic man in rejoicing moods is to be seen in the paintings at bhimbetka. Some of the dances may be of ritual significance. The musical instruments depicted are the blowpipes and horns.
- **Hunting Methods:** The use of composite tools revolutionized hunting, fishing and food gathering. The Mesolithic paintings at Bhimbetka throw interesting light on the contemporary hunting practices and the kinds of weapons used in hunting. The bow and arrow, barbed spears and sticks were used in hunting. Ring stones were used as stone clubs. Masks in the form of animal heads such as of rhinoceros, bull, deer and monkey were

used as disguises to deceive the game. In one of the scenes animals are shown falling down a cliff. Probably animals were driven down a cliff and done to death. The paintings show men carrying dead animals suspended on a wooden bar.

- A fantastic animal called Bhimbetka Boar has the body of a boar, but a snout like a rhinoceros, the underlip of an elephant and horn of buffalo.
- No painting or engraving of snake is found in any Mesolithic site.
- A very interesting and abstract painting has been found in a rock shelter at Jaora (MP) perhaps meaning that world consisting of air, earth ad fire.
- Interesting feature of the rock art of Orissa is the co-existence of painting and engraving in the same shelter.

(d) **Food Production**

- The population increased in this period, hence, it forced people to explore and make relationships with more new environmental regions and cultures of India. They were still nomad and were subsisting on the hunting-gathering mode of life.
- So far, their food is concerned; they still used to hunt big games, like, wild buffalo, camel, rhino etc. However, due to microlithis they could more easily hunt small and faster animals, like that of deer-family, wolves, turtles, rabbits, mongoose etc. Their diet also comprised of wild roots, fruits, seeds, honey and edible grass. From many Mesolithic sites, ring stones, rubble, Muller, querns, big hearths have been discovered; it shows that the Mesolithic people were aware of the importance of vegetables and grains.
- The hunting –gathering way of life was slowly replaced by food production from about 6000 B.C. A study has suggested cultivation of plants around 7000-6000 years back Near Sambhar lake in Ajmer, Rajasthan.
- Agriculture had not fully developed.
- The core economic activities were now included hunting, fowling, fishing and wild plant food gathering. The first animals to be domesticated were dog, cattle, sheep and goat and the first plants to be cultivated were wheat and barley. The cultivation of yams and taro also took place in this region.
- This new subsistence economy based on food production had a lasting impact on the evolution of human societ and the environment.
- In the humid lands, extending from the middle Ganga valley to China and southeast Asia, rice cultivation and domestication of pig was accomplished

probably around the same time because rice and pig existed in wild form in this region. Domesticated animals proved to be useful not only for meat but also for milk, hide, agricultural operations, and transport.

- Pottery has been reported from a number of excavated sites like Langhnaj, Bagor, Nagarjunakonda, Chopani Mando etc. Pottery came to be associated with the Mesolithic culture after the introduction of geometric tools. At most of the sites the sherds were very small and it was very difficult to make out shapes. Shallow and deep bowls with featureless rim are the most popular types.
- Pottery was wholly hand-made and usually coarse grained with incised and impressed designs rarely.

(e) Structural Activity

- Evidence of structural activity in the form of hutments, paved floor or wind screens come from a number of Mesolithic sites.
- The houses were roughly circular or oval on plan with postholes around them. Some hutments had stone paved floors. Paved floors and wattle have been noticed at Bagor. The Mesolithic folk at Bhimbetka too made floors with flat stone slabs.

In sum, it seems that man was relatively more socially organized and systematic than his predecessors. During this phase, he also made use of various modes of subsistence and adjusted to any sort of environment to which he was exposed.

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In all, thirteen skeletons ...
... and eight female perso...

Chapter – 3

Neolithic and Chalcolithic Settlements

In the developmental sequence of human culture the phase called Neolithic is usually recognized as that stage when man became food producer from a mere food gatherer. Polished stone tools, domestication of animals, agriculture, pottery and hut or house building activities are supposed to mark the Neolithic character of a culture. Though, as shown above, the constructional activity in India appears to go back to Mesolithic. The technology of smelting metals is taken to be essentially unknown in the neolithic age. Chronologically the neolithic phase goes back to 7000—8000 B.C., at the sites like Jarico, Tell Mureybat and others.

Domestication of plants and animals has been considered as one of the main characteristics features of the Neolithic culture. The team Neolithic was coined by Sir John Lubbock in his book Prehistoric Times (first published in 1865). He used this term to denote an Age in which the stone implements were more skillfully made, more varied in form and often polished. Later on V. Gordon Childe defined the Neolithic –Chalcolithic culture as a self-sufficient food producing economy; and Miles Burkitt stressed that the following characteristic traits should be considered to represent the **Neolithic Culture:**

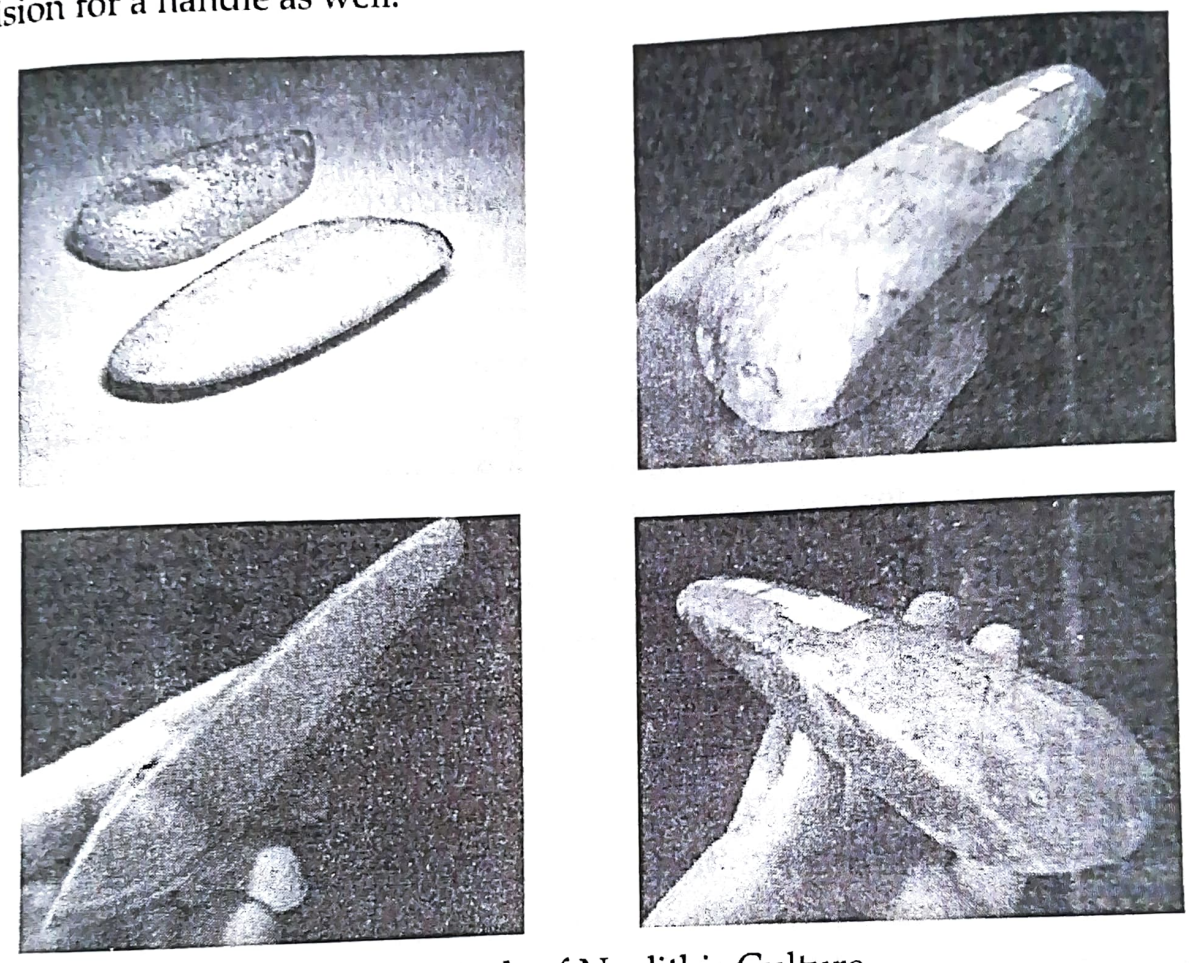
- Practice of agriculture
- Domestication of animals
- Grinding and polishing of stone tools, and also
- The manufacture of pottery.

The concept Neolithic has been undergoing some change in recent years. A recent study mentions that the term Neolithic should represent a culture of the pre-metal stage where the inhabitants had assured supply of food by cultivation of cereals and

domestication of animals and led a sedentary life. However, the Ground stone tools remain the most essential characteristics of a Neolithic culture.

Tools of Neolithic Culture:

Polished Tools: We see remarkable Polished tools. Rounded heavy tools discovered , which could have been possibly used to level the ground. May have the provision for a handle as well.



Tools of Neolithic Culture

Domestication of plants and animals led to:

- the emergence of village communities based on sedentary life,
- the beginnings of agriculture technology, and
- greater control over nature by exploitation of natural resources.

The history of domestication of plants and animals in the sub-continent practically began with the emergence of Neolithic cultures. All the Neolithic cultures of the sub-continent can be classified into the following geographical regions.

Regional Distribution of Neolithic Culture

(i) North-Western region- (including Afghanistan and Western Pakistan particularly the Kachi plains in Baluchistan)

(ii) Northern region- (Covering the Kashmir Valley)

(iii) South-eastern U.P.- (covering the Vindhyan outcrops in the districts of Allahabad, Mirzapur, Reva and Sidhi- particularly the Belan Valley)
(iv) Mid-eastern region- (northern Bihar)
(v) North-eastern region- (covering Assam and adjacent sub- Himalayan region)
(vi) Central-eastern-region – (covering ChhotaNagpur plateau with extensions in Orissa and West-Bengal)
(vii) Southern region- (covering the Peninsular India)

North-Western Region

It was in this region (present day Afghanistan and West Pakistan) that we find the earliest evidence of the origin of wheat and barley cultivation. In northern Afghanistan, caves occupied by hunters and gatherers have been discovered by archaeologists. These caves contained the bone remains of wild sheep, cattle and goat. By about 7000 B.C. sheep and goat were domesticated in Afghanistan. It is believed that the Central Asian region and its peripheries comprising the present day Punjab, Kashmir, West-Pakistan, Afghanistan and Soviet Republics of Tajikistan and Uzbekistan and West Tian Shan were the original places of wheat cultivation.

Beginning of agriculture and domestication of animals in Baluchistan (in Pakistan) are attested by archaeological to excavations. The Kachi plains in Baluchistan have several advantages which contributed to the appearance of early farming economy in the region. Located between the barren ranges of inner Baluchistan, the small valleys consisting of fertile alluvium brought by the streams from the hills and perennial river systems made irrigation easy on stretches of land which had vegetation.

It is in this ecological setting that the ancient site of Mehrgarh is located at about 150 Km from Quetta. Excavations at the site have revealed a long cultural history for the region ranging from the pre-pottery Neolithic to the mature Harappan Period. The Neolithic levels at Mehrgarh have been classified into two phases, (i) the early ceramic without pottery and (ii) the later phase.

The cereals cultivated here included two varieties of barley and three varieties of wheat. Charred seeds of plum and also of date were found from the very beginning of the settlement.

During the excavations, the earliest, layers of the Neolithic period (Period-I) yielded bones of wild animals like gazelles, swamp deer, antelopes, sheep, goat and cattle. But the top layers (later phase of the Neolithic deposits) yielded bones of domesticated cattle, sheep and goat besides bones of wild gazelles, pig and onager. Here, the beginning of the pre-pottery settlement phase has been fixed to about 6000 B.C.

The subsistence pattern of the Neolithic period is characterized by a mixed economy based on early farming and domestication of animals supplemented by hunting. The inhabitants lived in rectangular houses of mud-bricks. Some of the structures were divided into small square compartments and used for storage. The tool kit included one stone axe, five stone adzas, twenty five grinding stones and sixteen mulers supplemented by abundant microliths of typical blade industry. Some of the blades show sheen which is characteristic of flint used to cut grains.

On the basis of evidence from Mehrgarh it appears that Kachi plains may have been an independent epi-centre (centre of origin) for cattle and sheep domestication and for cultivation of wheat and barley. Period-II at Mehrgarh represents the Chalcolithic phase (5000 B.C.), from which cultivation of cotton and grape is attested in addition to the cultivation of wheat and barley. Probably the Harappans inherited the knowledge of wheat, barley, and cotton cultivation from their ancestors at Mehgarh.

Northen Region: Kashmir Valley

Village settlements appeared in the Kashmir valley by about 2500 B.C. Excavations at Burzahom and Gufkral throw significant light on the Neolithic culture of this region. The Neolithic stage of this region has been classified into two phases at Burzahom and three at Gufkral. At the later site the earliest phases is aceramic (pre-pottery,) discovered for the first time in India. The Neolithic culture of Kashmir valley is characterized by pit-dwellings with floors smeared with red-ochre as well as dwellings in the open. The presence of a large number of unique bone tools suggests that the economy was predominantly a hunting economy.

At Gufkral, in Phase-I charred wild grains of lentil, masur, pea, wheat and barley were found besides bones of wild animals such as cattle, sheep, goat, ibex, red deer and wolf. Phases II and III are characterized by the presence of domesticated plants and animals. Other notable objects found from the later phases are long celts, stone points, sophisticated bone tools (jharpoons, arrowheads, etc.) and perforated harvesters. Dog burials placed along some of the human burials have also been reported. These findings indicate that hunting –gathering economy of Phase I gradually developed into a well settled agricultural economy in Phase II.

It is worth mentioning here that the Neolithic culture of Burzahom displays affinities with Sarai Khola and Ghakligai of Swat valley in pottery, bone and stone objects. Pit-dwellings, harvesters and dog burials are characteristics of the North Chinese Neolithic culture. Contact with the pre-Harappans is also indicated by the pottery found at Burzahom. The available C-14 dates from the two sites indicate a time range off 2500-1500 B.C. for the Neilithic culture of the Kashmir Valley.

Belan Valley

The river Belan flows down from east to west along the edge of the Vindhyan plateau. This region is part of the monsoon belt. The entire area is covered with thick forest of teak and bamboo. The forests are the natural habitat for wild animals like Tiger, Nilgai, Chital etc. The vegetal cover is provided by thickly grown grasses including wild rice. The area was a favourite hunting ground of early stone age people down to the epi-palaeolithic period. The relevant excavated sites of the Belan Valley which indicate transition from the food-gathering stage to the food producing stage are Chopani-Mando, Koldihawa and Mahagara.

At Chopani Mando a three-phase sequence from epi-palaeolithic to late Mesolithic or proto-Neolithic period has been established by archaeologists. Phase III (advanced Mesolithic) is characterized by semi-sedentary community life and specialized hunting-gathering economy. Beehive type of hutments, common hearths, unportable anvils, geometric microliths, large number of ring-stones and hand-made impressed pottery were found here. Querns and mullers of wide range in forms and sizes indicate emphasis on food gathering. The phase also yields significant evidence of the presence of wild rice and bones of wild cattle, sheep and goat.

The excavations at Koldihwa revealed a three-fold cultural sequence (Neolithic, Chalcolithic and Iron Age). Mahagara is a single culture (Neolithic) site. The combined evidence from the two sites indicates sedentary life, domestication of rice (oriza sativa) and of animals like cattle, sheep, goat etc. Other objects throwing light on the life of people living in this area are:

- Cord-impressed pottery,
- Round celts and adzes, with rectangular or oval cross-section, and chalcedony blades,
- Circular / oval floors littered with artifacts
- A large cattle-pen with hoof-marks of cattle

The Neolithic culture of the Belan Valley shows a developed and advanced edentary life with:

- defined family units
- standardization of pottery forms
- portable size of food-processing units like querns and mullers
- specialized tools like chisels, celts and adzes,
- cultivation of domesticated rice,
- domestication of cattle, sheep, goat and horse.

It has been suggested that Neolithic farmers of the Belan Valley emerged as the earliest rice farming community in India (6th Millennium B.C.), although the suggestion is not accepted by all. The transition from gathering to farming economy is also clearly documented in this region. However, pottery makes its appearance in the late Mesolithic / proto-neolithic phase at Chopni Mando (circa ninth-eight millennium B.C.). This is indicative of primacy of manufacture of pottery over domestication of plants (rice) and animals (cattle, sheep/ goat and horse) Chopni- Mando provides the earliest evidence of the use of pottery in the world.

Neolithic Culture of Bihar / Mid Ganga Valley

The lower central Gangetic valley with all its flora and faunal resources was occupied by sedentary village settlements much later (2000-1600 B.C.). Excavations at Chirand, Chechar, Senuwar and Taradib, etc. throw significant light on the life pattern of the Neilithic people of this region. At Senuwar (Distt. Rohtas) the neolithic farmers cultivated rice, barley, field pea, lentil and some millets. From this site a variety of wheat and grass pea have also been found. Left bank of the Ganga revealed the structural remains of mud floors, pottery, microliths, ground celts, bone tools and beads of semi-precious stones, besides terracotta human figurines. Both Chirand and Senuwar are known for their remarkable bone tools. The grains cultivated at Chirand were wheat, barley, rice and lentil. The later Neolithic-Chalcolithic people at Senuwar also stated cultivating gram and moong in addition to the crops raised by the earlier people.

Neolithical Culture of Eastern India

The area comprises the hills of Assam including north Cachar, the Garo and the Naga hills. Ecologically the area falls in the monsoon zone with heavy rainfall.

The Neolithic culture of this region is characterized by shouldered celts, small ground axes of rounded form and cord-impressed pottery, heavily tempered with quartz particles. Excavations at Deojali Hading in north Cachar hills have yielded all the objects noted above. These objects are the types which have extensive distribution in China and South –East Asia with a long ancestry there. Yet the affinity of Assam Neolithic traits with China or South East Asia has not been finally settled as there is a wide chronological gap. The Assam Neolithic culture phase has been tentatively dated around 2000 B.C.

Regional Distribution of Chalcolithic Cultures

Western India

Ganeshwar-Jodhpura culture

Located in northeast Rajasthan, the Ganeshwar-Jodhpura complex was an early centre of agriculture and copper metallurgy in the subcontinent. More than eighty sites of this culture have been identified in the Sikar, Jaipur and Jhunjhunu districts, with the largest concentration being in Sikar.

Jodhpura

The mound of Jodhpura, riven by gullies, is situated on the banks of river Sabi and was the first site where the identity of the Ganeshwar-Jodhpura culture was established. The typical pottery is an orange to red wheel-thrown ware with incised designs. The associated material culture remains comprise terracotta and stone beads and some copper objects of indeterminate shape. Calibrated dates for this site range between 3309-2709 BC and 2879-2348 BC.

Ganeshwar

The other archetypal site of the culture, Ganeshwar in the Baleshwar valley, has disclosed three cultural phases. From a hunting-gathering phase (dated c. 3800 BC onwards), we move to Period II (from c. 2800 BC), marked by circular huts with floors paved with pebbles and rock fragments and the beginning of metallurgy. A few copper objects – five arrowheads, three fishhooks, one awl and one spearhead — were recovered. Both wheel-made and handmade coarse red-slipped pottery with incised designs was retrieved, typical shapes being bowls and jars. Period III (from c. 2000 BC) is the richest in terms of pottery types and the yield of copper implements – arrowheads, spearheads, bangles, balls, celts and chisels etc.

Surprisingly, 'the site itself is not more than 3-4 hectare and bears no evidence of copper smelting. However, this site, excavated for a number of years between 1979 and 1987-8, has yielded the largest number of copper objects ever found from a single site in the subcontinent. It is in a sense amazing that this comparatively small site has yielded roughly about 2000 copper objects in all in different seasons of excavations' (Chakrabarti 2006, 227). On the basis of the evidence of Harappan pottery and double spiral-headed pins, contact between Ganeshwar and sites of the Harappan culture is postulated.

Ahar culture

Among the earliest chalcolithic cultures in India, the Ahar or Banas culture was discovered in the Mewar region of southeast Rajasthan. Nearly one hundred sites of

the culture have been located along its principal axis, i.e., the valleys of river Banas and its tributaries and subtributaries in Banswara, Udaipur, Chittaurgarh, Bhilwara, Bundi and Ajmer districts. Remnants of this culture are also found in the Malwa area of Madhya Pradesh. Excavations have been carried out at four sites – the type-site Ahar and Balathal in Udaipur district, Gilund in Rajsamand district and Ojiyana in Bhilwara district. On the basis of nearly thirty five radiocarbon dates, the duration of the Ahar culture has been established from 2600 to 1500 BC.

Ahar

The mound at Ahar, 305X 270X13 m, revealed a fairly large settlement that had several building phases, covering a two-fold sequence of cultures of which Period I is protohistoric and period II belongs to the early historical phase, with a hiatus of over one thousand years between them. Protohistoric Ahar has further been subdivided into three phases, Phase IA – c. 2600-2150 BC, Phase IB, c. 2150-1950 BC and Phase IC, c. 1950-1500 BC.

People lived in single, double and multi-roomed rectangular, squarish and circular houses with plinth of roughly dressed slabs of schist and walls made of stone, mud brick or mud. Timber was used for pillars and long, horizontal beams, which probably supported sloping roofs, thatched with bamboos, and additionally covered with grass and leaves. Overground and underground grain storage bins, kitchens with u-shaped chullahs or ovens, stone saddle querns and rubbers for grinding cereals and pulses were an invariable feature of every household.

The economy was based on cultivation, animal husbandry and hunting. People subsisted on millets, rice, lentil and vast quantities of animal bones, charred and broken, indicate that meat of domesticated and hunted animals formed part of their diet. Bones of turtle, fish, goat, sheep, deer, pig and cattle have been found, with bovines dominating the animal remains.

The Ahar culture has yielded seven main wares, with the white painted black-and-red ware being the distinctive type. The common shapes in this wheel-made pottery are bowls, jars and dishes. Large quantities of red and grey wares were also found and bowls, lotas and ribbed vessels constitute the main shapes in the red-slipped ware.

The technology at Ahar was based mainly on copper and very few microblades and microliths have been discovered. Copper objects include flat axes, choppers, knives, razors, chisels and tanged arrowheads. Other relics include bone points, beads of semi-precious stones, steatite and terracotta, rings and petalled ornaments of copper and bone and terracotta objects such as ear studs, dice, bangles etc.

Houses and Habitations:

Rectangular and circular houses with mud walls and thatched roofs are the most common types, though there are variations in house 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 floors 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 (hearths) 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 wee 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 chullahs in the kitchen. The grain was stored in deep pit silos (1m in diameter and 1m deep). Circular mud platforms (1.5 m in diameter) inside the houses suggest that they probably served as bases to keep bins of wicker work 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 Daimabad was the largest, covering an area from more than 30 hectares. Prakash and Inamgan 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 principla habitation area, where as 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 Eran and Nagda (Madhya Pradesh) of the Malwa Culture, and Inamgaon (during Jorwe period) have a fortified mud wall with stone rubble bastions and ditch around 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 Jowre 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 serve 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 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 pastroralism.

Other Characteristic

All these cultures are characterized by a stone blade / flake industry based on siliceous stones 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 cultures of Karnataka- Andhra, have also been found at some of these sites, though they are not plentiful.

Copper objects consists 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.

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 that some of them could have been toys cannot be ruled out.

Religion / Belief Systems:

The finds in the excavations 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 the finding of female figures of clay (both baked or 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 pendant breasts and also a bull figurine. These female figurines, including the one from Inamgaon point to the worship of the goddess of fertility. These figurines (especially the headless ones), according to one suggestion, may represent the goddess Sakambhari (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 may possibly be identified as gods.

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 loin, and is surrounding by stylized animals such as stag, deer, peacocks etc. The lower panel shows springing tigers or panthers, which are also stylized. This vessel, richly decorated with elaborate paintings, was probably meant for some ritualistic use. Like wise, 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 a majority of cases, buried in an extended position, whereas children were buried in urn-burials- either in single pots or, more often, in two pots- placed horizontally mouth-to-mouth in a 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 the ankle 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 the dead were restrained from turning into ghosts, who could become malevolent.

The adult burials in several cases contain offering (grave goods) which are usually two pots, or sometimes more in number. 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 ornament 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 Jowre 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 and 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 offereings were a spouted pot with the painting of a boat design having

long oars. What this boat design reminds one is the present day Hindu belief that the departed soul has to cross waters in a ferry 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

Social Organisation

In the chalocolithic 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 type 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 influence 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 culture contacts between each other.

Chalcolithic: Trade and Commerce

- The Chalcolithic communities traded and exchanged materials with other contemporary communities.
- A large settlement serves as the major centers of trade and exchange. Some of them were Ahar, Gilund, Nagada, Navdatoli, Eran, Prabhas, Rangpur, Prakash, Daimabad, and Inamgaon.
- The Ahar people settled close to the copper source and were used to supply copper tools and objects to other contemporary communities in Malwa and Gujarat.
- Identical marks embedded on most of the copper axes found in Malwa, Jorwe, and Prabhas cultures that might indicate that it may be the trademarks of the smiths who made them.
- It is found that Conch shell for bangles was traded from the Saurashtra coast to various other parts of the Chalcolithic regions.

- Gold and ivory come to Jorwe people from Tekkalkotta in Karnataka and semiprecious stones may have been traded to various parts from Rajpipla in Gujarat.
- Inamgaon pottery has been found at several sites located far away. This shows that the Jorwe people used to trade even the pottery to distant places.
- Wheeled bullock carts were used for long distance trade, besides the river transport. The drawings of wheeled bullock carts have been found on pots.

Technology

- The Chalcolithic people were farmers. They had made considerable progress in ceramic as well as metal technology. They used painted pottery, which was well made and well fired in a kiln. It was fired at a temperature between 500 and 700° C.
- Metal tools were mostly made up of copper obtained from the Khetri mines of Rajasthan. Some of the commonly used articles were axes, chisels, bangles, beads, hooks, etc.
- A gold ornament was found only in the Jorwe culture, which was extremely rare. An ear ornament has been found from Prabhas culture.
- Crucibles and pairs of tongs of copper found at Inamgaon illustrate the working of goldsmiths. Chalcedony drills were used for perforating beads of semiprecious stones.
- Lime was prepared out of Kankar that was used for painting houses and lining the storage bins and various other purposes.

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 climatic conditions. Many of these settlements in the Godavari, Tapti and other valleys were deserted, and were reoccupied after a gap of six or five centuries in fifth-fourth centuries B.C., heralded by urbanization.

Food Production: Beginning of Agriculture

Gordon Childe termed the transition from hunting and gathering to food-production as "neolithic revolution." It was held till some time back that art of domestication of animals and food production developed at one place and then it spread to other parts of the world. Now it has been proved on basis of archaeological finds that transition from food-gathering to the food-producing economy came about independently at different periods in different parts of the world. But, how and why this transition came about, we are not yet sure. It was believed that sign of handmade pottery was an essential evidence of early food-producing settlements. Now we have archaeological evidence of food-producing settlements where we do not get any evidence of handmade pottery. Such levels in archaeology are known as aceramic neolithic levels or pre-pottery neolithic. It is now being realized that demographic stresses, showing a tendency to settle more or less permanently at one place in a locality; a proper environment; and a distinctive level and type of exploitative technology perhaps have played a causative role in transition from hunting and gathering to food production. However, our understanding of the origins and early spread of (arming in India is very fragmentary. It must be admitted that in none of the neolithic regions discussed above, except Vindhyan region have the details of transition from the stage of food-gathering to that of food-producing and primary or settled village farming been worked out.

Beginning of of agriculture and food production

To begin with in the new stone age wooden hoes and ploughs were used. He now began to settle down on agricultural land. With the passage of time he also began

to build houses near the land which he cultivated. It appears that he took to agriculture only by chance. It was also by chance that he could come to know that by sowing at a fertile land he could get his food for the whole year. Thus he began to settle himself at places where soil was fertile, rainfall plentiful and climate warm with agriculture as a means and a house to dwell, life of the people became some-what settled, society became orderly and this became starting point of human civilization and culture. By now he also started inventing new tools for his agriculture. Burnt clay was used for pottery and also for collection of water.

Domestication of Animals

In order to run his agricultural work smoothly the people of this age began to domesticate their animals. The animals domesticated by them were dog, ass, goat, sheep and horse. The people also began to keep herds. In order to find food for their animals some of the people began to lead a nomadic life. The dog was very useful for them as that helped them in hunting and protecting their cattle.

The earliest evidence of food-production in Indian subcontinent, we get from aceramic Neolithic at Meghrgarh in Kachi Plain on the Sind Baluchistan border. Here, has been traced a continuous process of development of agriculture and settled life, which around 3000 B.C., blossomed into early stage of Indus Civilization. "From the beginning of the sixth millennium B.C. and perhaps considerably earlier, wheat and barley were cultivated and domestic sheep and goats and little liter cattle were kept By around 5000 BC, the foundations were laid of a stable agricultural community living in mud brick houses, knowing the smelting of copper, making fine painted pottery and having trading contacts over great distances." (Allchin and Allchin)

In the Vindhyan Region (Chopani Mando, Koldihwa and Mahagara the findings indicate, according to B.K. Thapar, a continuous sequence of transition from the stage of intensified food gathering and selective hunting through incipient food producing (Proto Neolithic) to settled farming (Neolithic). This, according to Thapar is the first evidence of its kind in India which seeks to dispel notions of diffusion of the Neolithic way of life either from West Asia or South East Asia. The excavation at these sites have furnished evidence of a transition from wild animals to domesticated ones such as cattle sheep and goat. Similar evidence is also available for rice. This is, therefore, the only Neolithic region in India that shows, according to Thapar, transformation from foraging to farming economy.

In other regions of India, the appearance of early farming communities is shown to have come about later than in West Asia and South East Asia. "This is rather difficult to explain," remarks B.K. Thapar, "but may have been result of several factors including

the level of exploitative technology, environment, and late continuance or survival of the mesolithic economy. It is also partly due to the fact that we have not yet investigated the antecedent stages of food- producing economy especially with reference to the domestication of plant and animals, climate, ecology etc in each region."

Early Settlements in Baluchistan and the Greater Indus Valley

From the early settlements in Baluchistan, Gomal Valley, Sind, plains of Punjab, Ghaggar Valley, Rajasthan and Haryana, we get traces of socio-economic and cultural traits which later blossomed during Indus Civilization. All this helps us to understand the background of Indus Civilization.

A. Baluchistan

Baluchistan lies between the higher inland plateau of Central Asia and low flat plains of Sind. Among the significant settlements in Baluchistan are Mehrgarh in the Kacchi Plain (discussed above), Kili Ghul Muhammad and Damb Sadaat in Quetta Valley, Rana Ghundai in the Loralai Valley, Periano Ghundai in Zhob Valley and Kulli, Nal and Bala kot in Southern Baluchistan. At Killi Ghul Muhammad, four cultural phases have been revealed. During the earliest phase, dating back to about the middle of the 4th millennium B.C., the people lived in mud brick houses, used chert and bone tools and domesticated sheep and goat. No pottery was discovered at the stage. In the second phase handmade basket-impressed pottery came into use. In the next phase, copper was found along with both wheel-turned and handmade painted pottery. At Damb Sadaat, distinctive figurines of terracotta, both human female and animal forms, (especially the humped bull form) have been found. Two button seals of clay, copper dagger plate, grinding slabs and stone balls and variety of painted pottery were also found here. At Rana Ghundai in Loralai Valley have been found, "finely made painted pottery with friezes of humped bulls in black, upon a buff- to-red surface." At Periano Ghundai, in Zhob Valley have been found female figurines, commonly known as 'Zhob Goddesses' and also the large terracotta figurines of humped bulls. From Kulli and Balakot we get evidence of trade with Persian Gulf region.

B. Gomal Valley

Main excavated sites in Gomal Valley are Gumla and Rehman Dheri. The first phase at Gumla is aceramic and the second one has wheel- made painted pottery, copper-bronze tools, terracotta human and animal figurines, stone pestles, grinders, and pounders. Rehman Dehri reveals a settlement 550 by 400 m surrounded by a massive wall and divided into two by a street running north-west to south east. At right angles to the road, are houses, divided by regularly laidout straight narrow lanes.

Grains of wheat and barley are reported, as well as bones of cattle, sheep and goat. Besides stone-black industry, tools made of copper and bronze have also been found.

C. Sindh

Two important sites in Sindh are Amri and Kot Diji. The early Indus occupation Q| Amri is divided into four phases. In the earliest phase I A, most of the pottery was handmade. But few wheel made bowls and rimless pots have thin walls and a pale cream coloured fabric. In phase IB appeared mud-brick houses. In phase IC appear houses with partitions or compartments which seem to have served as grain stores. The final phase of the first period reveals beautiful painted shred with humped bull. Kot Diji revealed traces of defensive wall and well-aligned streets and houses with large communal fire-places and highly sophisticated wheel made pottery. The design include such motifs as fish-scales, pipal leaves etc. The tool-types in stone consist of blades, scrapers, micro-blades, leaf-shaped arrowheads etc. Stone querns, pestles, balls and at least one fine terracotta bull were found. Copper does not seem to have been reported from Kot Diji but a fragment of bronze bangle is reported.

D. Punjab Plains (Western Punjab)

The two important sites here are Sarai Khola near Rawalpindi and Jalilpur. The first period at Sarai Khola revealed polished stone axes and handmade pottery. In the second period Kot Diji style pottery became predominant. There seems to be evidence of similar development at Jalilpur. In addition, the Jalilpur I assemblage shows, gold coral, and semi precious stone beads. "This discovery of varieties of stone, copper, shell, gold and coral objects clearly underlines a pattern of internal trade network" (D.K. Chakrabarti)

E. Ghaggar-Hakra Valley

1. Kalibangan

On the bank of now dry Ghaggar river (known as Hakra in Bhawalpur-Pakistan) which in those days flowed through Bhawalpur, Rajasthan and Haryana, the most significant site in Kalibangan in Rajasthan. Kalibangan reveals well-aligned lane between a row of houses. There is also evidence of mud brick fortification exposed on the southern, western and northern sides of Kalibangan. Both dried bricks and stone were used for construction of houses and town walls. In some houses we have evidences of ovens. Shell bangles, steatite disc beads and beads of various material were also found here. The predominant pottery is red or pink with black, bichrome black and white painting. One of the most interesting discoveries is that of an agricultural field with some mutually intersecting east and north-south furrow-marks still intact.

2. Banawali

Banawali on a dried-up course of the Ghaggar/Sarasvati in Hissar district of Haryana, "bears an overall likeness to that from Kalibangan I." Both mud and burnt bricks were used. Beads were made of gold, semi precious stones etc. Terracotta animal figurines, stone pebbles etc were among the miscellaneous finds. The pottery comprises all Kalibangan early Harappan types.

From the available information it can thus be concluded that much before the beginning of Harappan Civilization, agriculture had already developed in Baluchistan and Greater Indus Valley. This process possibly may have started in 7000 B.C. in Baluchistan. Around 3000 B.C., throughout the whole Indus plain regular agricultural settlements based on wheat and barley., and domestic cattle, sheep and goats, began to appear. It has now been established that there is a close connection between agricultural development in this region and development of Harappan Civilization. From the excavations of large number of sites in this region it has also been established that the early urbanism of the Harappan Civilization had indigenous roots in this region. Still it is not clear, how and why this flourishing urban civilization grew of this old base.

UNIT – II

QUESTIONS

Objective-type questions:

1. **Explain the meaning of following terms in few sentences.**
   (a) Pre-history
   (b) Stone Age
   (c) Palaeolithic
   (d) Mesolithic Tools
2. Write short note on Palaeolithic tools.
3. Write a short note on Mesolithic tools.
4. What are the different phases of Palaeolithic Age in India?
5. What do you mean by Neolithic?
6. What are the important characteristics of Neolithic culture?
7. What were changes observed in Neolithic culture in comparison with that of preceding Palaeolithic and Mesolithic culture?
8. Write few lines on domestic animals of Neolithic people.
9. Write a short note on food and occupation of Neolithic people.
10. Explain the term Chalcolithic.
11. Write a short note on religion and belief system of people during Chalcolithic age.
12. Write a note on social organization of chalcolithic people.
13. Write few lines on Chalocolichic trade and commerce.
14. Discuss in brief about the burial practices of Chalcolithic people.

Long-type questions:

1. Describe in brief about the Paleolithic culture in India.
2. Give an account of regional and chronological distribution, social and economic life of Mesolithic people.
3. Write a descriptive note on rock art of Mesolithic culture in India.
4. Write a descriptive note on regional and chronological distribution of Neolithic people in India.
5. What is meant by "Neolithic"? Give an account of the material life of Neolithic people) in India.
6. How did the Neolithic Culture differ from the Palaeolithic culture?
7. Give a detailed account of Neolithic culture in India.
8. Give an account of Indian culture in copper phase.
9. Write a descriptive note on regional distribution of Chalcolithic culture in India.

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