# MAN-002
# Archaeological Anthropology

Indira Gandhi
National Open University
School of Social Sciences

Block

# 1

## DEFINITION AND SCOPE

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# BLOCK 1 DEFINITION AND SCOPE

**Introduction**

The phrase archaeological anthropology may sound new and somewhat strange. But you will not require much time and mental effort to realise that it is both appropriate and meaningful. Let us use an analogy for this purpose. In his widely read book 'The discovery of India' Pandit Jawaharlal Nehru clearly states that he did not write it as an academic text but for his own purposes to serve as a guide for understanding the present condition of India. In other words, Nehru visualised the past as a window for looking at and understanding the country's present condition. In this effort Nehru succeeded to a remarkable extent.

Archaeological anthropology has an identical objective. The study of present day simple societies is the purview of anthropology. India is a living museum of simple societies and cultures – be they hunting-gathering societies, fishing communities, pastoral groups/or peasant societies. All these groups exist side by side in different parts of the country. Aspects like their origins and antiquity and their geographical distribution cannot be understood at all without reference to time or temporal dimension. Here anthropology has to turn necessarily to archaeology for guidance and help. Here prehistory branch of archaeology in particular comes to our help. Fortunately India has a rich record of prehistoric (hunting-gathering) and early agropastoral groups, covering a temporal range of two million years. It is the investigation of these ancient hunting–gathering and agropastoral communities which forms the backdrop against which alone the living simple groups can be understood in a meaningful way. Thus archaeological anthropology endeavours to link the ethnographic present with the archeological past.

The course archaeological anthropology deals with the investigation and interpretation of archaeological records pertaining to early hunting-gathering and agropastoral communities that occupied different parts of India. In this connection we need to remind ourselves that archaeology is no longer treated as a simplistic concern with collection and classification of antiquities. The new or Processual archaeology, spearheaded by Professor Lewis Binford of America who passed away in April 2011, developed the 'archaeology as anthropology' paradigm and emphasised the need to study the simple communities of the past from an anthropological perspective.

This course material is prepared to enable you to understood and appreciate the long time background provided by archaeology to the study of simple communities. Units 1 to 3 of Block 1 deal with the definition and scope of archaeological anthropology. **Unit 1** specifies the main branches of archaeology and also its major conceptual and methodological developments. **Unit 2** takes the story one step further and gives detailed information about the development of Stone Age as well as protohistoric studies. **Unit 3** alerts us to the fact archaeology (archaeological anthropology), in tune with its holistic goal of reconstructing ancient societies, takes the help of many natural and social sciences and even humanities.

The remaining units of the course will place before you the archaeological records pertaining to different stages of hunting-gathering and agropastoral ways of life and what these stages mean in terms of the anthropological goals of tracing the emergence and evolution of human culture till the beginning of recorded history.

# UNIT 1 DEFINITIONS AND SCOPE

**Contents**



**Learning Objectives**

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

- define each sub-unit of the subject matter thoroughly;
- understand the importance of each sub-unit in human cultural study;
- indicate the close relationship between archaeology and how this relationship is helpful for the study of human cultures across time and space; and
- recognise the fundamentals of archaeological anthropology.

## 1.1 INTRODUCTION

Anthropology and Archaeology are two interrelated disciplines that deal with the origin and development of human culture and hence occupy an important place in social sciences. Anthropology basically deals with the study of present-day-simple societies and it has two main divisions called physical anthropology and social anthropology. Several branches within it developed in course of time like cultural anthropology, etc. Archaeology endeavours to reconstruct ancient societies and is treated as part of anthropology in American universities. The mutual interdependence of anthropology and archaeology arises from the simple fact that both deal with the study of human cultures-one of the present and the other of the past.

Archaeology is an important discipline with a methodology of its own. It recovers antiquarian remains of various kinds from the field through laborious techniques

including excavation. Although archaeology remained for a long time as a descriptive and classificatory of ancient objects and features, Lewis Binford's New Archaeology Movement of the 1960s emphasised the larger anthropological goals of archaeology. With the help of methods and approaches adopted from both social and natural sciences, modern archaeology seeks to reconstruct past human societies and their cultural processes. As such it supplies the much needed temporal dimension to the anthropologist's endeavour to study cultures of present-day simple societies. This in fact is the principal objective of archaeological anthropology. This is particularly relevant in India, which has both a rich and diverse ethnographic record and an unequally rich archaeological heritage. Let us now consider the main divisions within archaeology and some of its basic concepts.

Archaeological anthropology is one of the sub branches of anthropology deals with the origin and development of human species and its material manifestations in the form of material culture. Archaeology not only helps us to understand diversity in the world around us but also to understand how people relate to the material world.

## 1.2 PREHISTORY

Prehistory is a period used to indicate the time before recorded history. Paul Tournal (1833) coined the term Pre-historique to explain the finds that he had made in the caves of southern France and the word 'Prehistoric' was introduced by Daniel Wilson in 1851. It is the period of human evolution before writing was invented and records kept. The term 'prehistory' refers to all cultural developments of man including his biological evolution till the beginning of historical period. In India the historical period is commonly said to commence from about the middle of the first millennium B.C. when Asoka issued the Brahmi edicts in different parts of India. Prehistorians make their reconstructions of the remote past on the basis of their study of material relics of various kinds.

Prehistory in India covers a time range of 0.6 to 0.7 million years. Recent dates for the Palaeolithic sites of Isampur in Karnataka and Attirampakkam in Tamil Nadu take it to 1.2 or 1.5 million years. The dates from Riwat and Uttarbaini in the Siwalik hills of Punjab and Jammu further push the antiquity of human culture to more than 2 million years. Throughout this period man led a nomadic way of life with hunting of wild animals and gathering of wild plant foods as the chief mode of subsistence. Technology was based on the preparation of tools on a variety of rocks like quartzite and even limestone and siliceous stones like chert and jasper. Depending upon improvements in tool making traditions and to some extent, changes in hunting-foraging methods, prehistoric period is divided into three major phases or stages called the Lower, Middle and Upper Palaeolithic. All these three stages are dated to the geological period called Pleistocene. In the early part of the Holocene tiny stone implements called microliths came into vogue. This stage is called the Mesolithic. In addition to stone, wood and bone also began to be used for making tools from the Middle and Upper palaeolithic phases.

Prehistoric stone tools are grouped into two broad categories: tools for heavy work (heavy duty tools) and tools for light work (light duty tools). These were

used for a variety of operations such as hunting, digging of roots and tubers, cutting, scraping, flensing and boring connected with the acquisition, processing and consumption of animal and plant foods.

The Lower Palaeolithic stage is characterised by large sized tools such as handaxes, cleavers, chopping tools, polyhedrons, etc. The Middle Palaeolithic tools are smaller in size and consist of flake - tools such as scrapers, points and borers etc. The Upper Palaeolithic culture belongs to Late Pleistocene and is characterised by blade technology leading to the production of long, slender-looking backed blades, points, penknives, saw edged blades, etc. In the succeeding Mesolithic tools become very small or tiny in size, generally measuring a few centimeters in length. The types include backed blades, lunates, triangles, points, etc., all used to prepare composite implements such as arrowheads, spearheads and harpoons. Rock art and intentional burial of the dead also come into vogue in the Mesolithic stage.

**Lower Palaeolithic tools**

**Middle Palaeolithic tools**

**Upper Palaeolithic tools**

**Mesolithic tools**

**Human skeleton from Langhnaj (a Mesoltihic habitation site), North Gujarath**

## 1.3 PROTOHISTORY

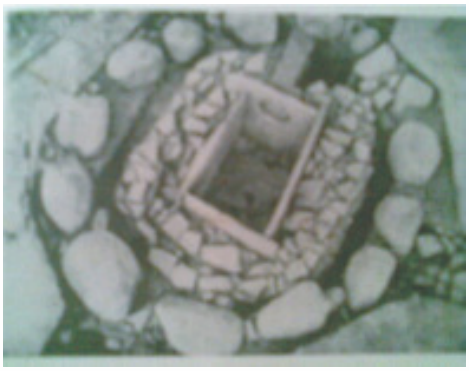
The term 'la Protohistorique,' was first coined by the French, to refer to a period transposed between prehistory and true historical Period. It suits India very well. First, before historical period there is evidence of writing in the Harappan or Indus valley scripts, though as yet undeciphered. Secondly, though the Vedic literature was in an oral state up to the 4th century AD or so, its antiquity goes back to the second millennium B.C. And it is an important source for reconstructing our early social, political, religious and literary history. This is a unique feature in world's history. Hence, this period should be legitimately included in as protohistory. Moreover, contemporary with much of the Vedic literature there is evidence from all over India about the early metal-using communities. However, this is certainly prehistory in one sense, because there is no trace of writing in any case but since this period also runs parallel with the Vedic literature, it has been included under protohistory. During the last 60 years or so it has been customary in India to introduce this period as a buffer between the ill-defined prehistoric period and the better defined historical periods covering archaeological record of post-Mesolithic and pre-Mauryan cultures, between 3500 or 3000 B.C and 300 BC (Sankalia, 1973).

The cultural panorama of Protohistory in India began with the Neolithic phase in seven geographical zones, i.e., North-western India including Kashmir and Swat valleys, the Vindhyan plateau of Belan valley, the Kaimur hills and the Chhotanagpur plateau, northern Bihar, north-eastern region covering all north-eastern states and adjacent sub-Himalayan regions, Central-eastern region of Bengal, Bihar and Orissa complexes and the Southern region covering peninsular India, except Kerala. It is the first settled way of life defined by permanent settlements according to geographical convenience, production of pottery, domestication of plants and animals, pecked and ground stone and blade tool industries, and some degree of reliance on hunting, gathering and fishing. The findings from Mehrgarh in Baluchistan and Lahuradeva in eastern U.P. suggest that the Neolithic phase began around 6000 B.C. Under protohistory are also included not only the Indus civilization but also the various Late Harappan cultures of Gujarat, Punjab and Haryana, Late Harappan, Black-and -Red and Ochre-painted pottery cultures of the Ganga-Yamuna Roap, and the various Chalcolithic cultures of Rajasthan, central India, middle and lower Ganga valley, and the Deccan. The Banas, Kayatha, Malwa, Savalda and Jorwe cultures are major examples of this Chalcolithic stage. To this protohistoric phase also may be assigned the iron-using painted Grey-ware culture of the Ganga Valley and the Megalithic culture of vidarbha and South India.

**Neolithic Habitation at Tekkalakota**

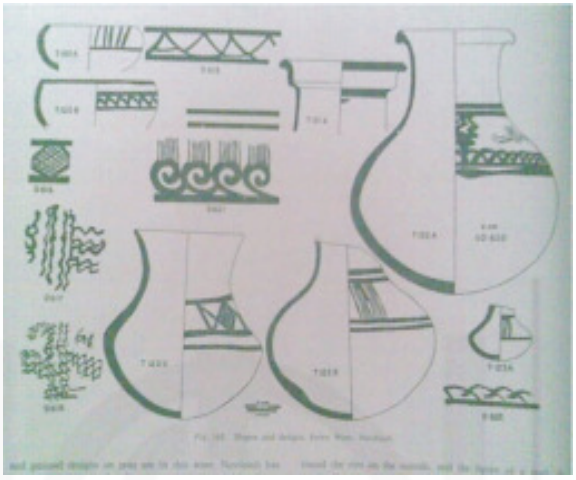
**Funerary vessels from Tekkalakota**

**Pit dwellings from Burjaham Neolithic habitation in Kashmir**



Megalithic cist circle with port-holes
Brahmagiri, Karnataka

Copper and Terracotta objects
(Chalcolithic : Jorwe culture)



Jorwe ware (Navadatoli)

White painted black and red ware
From a chalcolithic sites: Navadatoli

Reconstruction of Proto historic Ahar (Chalcolithic site)

## 1.4 CIVILIZATION

The word 'Civilisation' refers to an advanced state of human society with a high level of culture including city life and state level of government. We may recall here that, Gordon Childe proposed the followings as constituents of civilization: large urban centers; full-time specialist occupations; primary producers of food,

paying surplus to deity or rulers; monumental architectures, ruling class that is exempt from manual labor; system for recording information; development of exact, practical sciences; advanced metallurgy; internal and external trade; independence of classes comprising peasants, craftsmen and rulers; state religion/ ideology; and persistent state structures.

The Indus civilization fulfils all these criteria and ranks with the Egyptian and Mesopotamian civilizations. It covered an area equivalent to that both these civilizations and flourished from the beginning of third millennium to the middle of the second millennium B.C. Harappa, Mohenjodaro, Dholavira, Surkotada, Lothal, Kalibangan are some of the major sites of this civilization. The evidence from sites like Mehrgarh suggest that this civilization developed out of the local agropastoral way of life. Inspiration from the Mesopotamian civilization also played a role in its origin.

**Surkodata, Harappan habitation, Kutch**

**Cultural sequence of Surkodata**

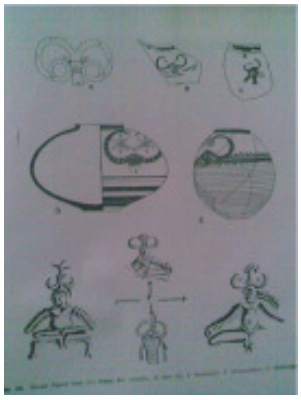
**Arterial thorough fare Harappa, Kalibangan**

**The Citadel, Period IC, Surkotada (Harappan)**

**Extended human skeleton in a grave pit, Kalibangan**

**Grave pit burial with pottery**

**Fire places in a row, Citadal, Kalibangan(Harappan)**



**Horned figures from Hissar Kalibangan (Harappan) and Burzahom.(Neolithic)**

The Indus civilization declined by about 1500 B.C. probably due to loss of external trade. Traditional interpretations attribute this decline to the invasion of Indo-Aryan speaking groups from central Asia. The Aryan culture, initially centered in the area of the Indo-Gangetic divide, was a rural way of life based essentially on cattle pastoralism and rudimentary agriculture. It soon began to spread towards east to the Ganga valley, leading to important developments in religion, economy and social organisation. By about the middle of the first millennium B.C. heterodox religions like Buddhism and Jainism came up and also a new phase of urbanisation (called second urbanisation) followed, leading to the growth of cities like Pataliputra, Kavsambi and Ujjain. These eventually paved the way for the rise of the Mauryan empire.

## 1.5 ARCHAEOLOGY: CONCEPTUAL DEVELOPMENTS

Archaeology deals with the study of antiquarian remains, which are brought together under the phrase archaeological record. It has three or four major components. First, there are individual objects ranging from stone tools to pots and pans to metal objects to beads, pendants and other ornaments to seals and coins. The second category consists of a variety of features, structures and monuments such as hearths, house floors, religions, military and commercial structures, and burials and burial monuments. Then there are some art creations such as painted or incised designs on pottery, terracotta or metal figurines and rock part. But the archaeological record also includes materials and remains which, although not made by man, are closely associated with archaeological sites, such as soils and sediments, plant and animal remains, ore and slag pieces, and rocks and siliceous stone pieces.

On the landscape we notice these various categories of antiquarian remains are generally found together as clusters. These clusters are called sites which may be small or large like the Mohenjodaro and Harappa mounds. Depending upon the type of human activity that took place on these spots, archaeological sites are again distinguished into various classes such as habitation sites, animal penning stations, factory sites, religious sites, commercial sites and military sites.

Over the last four to five centuries important changes took place from time to time in the aims and methods adopted for dealing with the archaeological record. The late David Clarke, in his famous article entitled 'Archaeology: The loss of Innocence' published in the journal Antiquity (1973), characterised these changes as successive stages of consciousness, self consciousness, critical self-consciousness, and self critical self-consciousness.

In the antiquarian stage which lasted till the early decades of the 19$^{th}$ century, in Europe and elsewhere in the world, amateurs from different walks of life took interest in the cultural heritage of their respective countries and went to the landscape and sought to obtain first hand information about palaces, forts, paintings, sculptures and other striking antiquarian remains dotting the landscape. They prepared short descriptions of the remains along with sketches and drawings. These studies were of a random type, motivated by general human urges like curiosity about surroundings, spirit of romanticism and adventure, instinct of pleasure, respect to ancestors, etc. The notion knowledge, if it existed all, was of

a simple nature. There was nothing like any commonly accepted methodology. Rather the amateurs felt free to adopt their own methods of commonsense for describing illustrating the ancient remains. It was only in the second quarter that the element of acquiring knowledge about the past societies through their discarded items not only emerges into the picture but witnessed three or four swift shifts in the perspectives. These knowledge seeking perspectives are called culture history, reconstruction of life ways, New or Processual archaeology and Ideational or Interpretive trends. We will briefly discuss these below.

### 1.5.1 Culture History

The credit for introducing the knowledge perspective by dividing the pre-literate (pre-Christian) past of Europe goes to C.J.Thomsen, the curator of the Royal Danish National Museum of Antiquities in Copenhagen. Thomsen was confronted with the task of cataloguing a huge collection of stone and metal objects, ceramics and other antiquities that had accumulated in the museum. Partly by way of using his common sense and also based upon ethnographic parallels, Thomsen finally arrived at a three-fold classification of the objects in the collection. This is the famous three-Age system which appeared in print in 1836. According to this scheme, three major periods or ages existed in the pre-Christian past of northern Europe, viz. Stone, Bronze and Iron Ages.

The second major contribution made by Thomsen lies in the fact that he was probably the first antiquarian worker to highlight the fact that antiquarian remains provide knowledge or information about the ancient human societies. He specifically pointed out that these remains could inform us about ancient cultures and burial practices, ancient environments and even about past human migrations.

This topic of partitioning prehistoric past into phases and seeking information about the respective phases emerged as a strong trend in the second half of the 19th century. Sir John Lubbock divided the Stone Age into Palaeolithic and Neolithic periods in 1865. Soon, thanks to discoveries in the French Caves, several stages (Lower, Middle and Upper) were recognised within the Palaeolithic. Likewise, several stages were noted within the Bronze and Iron Ages. The culture history perspective thus enabled archaeologists to recognise several stages in the development of human culture and also obtain some basic information about each cultural stage.

### 1.5.2 Reconstruction of Life Ways

Even a brief glance at the archaeological discoveries of the last quarter of the 19th and the first quarter of the 20th century makes it clear to us that this period witnessed many large-scale excavations in various parts of the Old World. These led to the recognition of all important Bronze Age civilizations that we know today. Heinrich Schliemann's excavations at Troy (Hiissarlik in Turkey) exposed the Mycenaen civilization. Arthur Evans's work at Knossos gave us the Cratan or Minoan civilization. Leonard Woolley exposed the remains of Mesopotamian civilization. Flinders Petrie and others gave us the Egyptian civilization. John Marshal and his colleagues exposed the remains of the Indus civilization.

One thing you will not fail to notice is that these civilizations could be identified because the excavations were conducted on a large scale and almost entire towns were exposed to view. Town lay-outs with imposing structures like palaces,

temples and elaborate burial tombs containing treasure were laid bare. It was thus possible to reconstruct the life ways of these city- dwellers.

### 1.5.3 New or Processual Archaeology

The first explicit efforts at developing the theoretical structure of archaeology were made by publications like Gordon Childe's piecing. Together the Past, Grahame Clark's Archaeology and Society and Stuart Piggott's Approach to Archaeology, all published in the second quarter of the last century. Against this background came up two major developments which dominate contemporary theoretical archaeology-New or Processual Archaeology and Post-Processual Archaeology and Post Processual or Interpretative archaeology. We will now note the main tenets of these two trends.

Lewis R. Binford from the U.S. and David Clarke from England were mainly responsible for the emergence of New Archaeology in the 1960s. Both emphasised the systemic nature of culture and held that archaeologists should identify not only its components but their interconnections as well, as these alone give clues about past culture processes. Processual archaeology also emphasised the role of environment in the functioning of human cultures. In fact, Binford adopted the definition of human cultures as extra somatic means of adaptation to respective environmental settings. Going beyond the traditional tasks of description and classification of antiquarian remains, he emphasised the anthropological goal of explaining culture change with reference to law-like formulations or generalisations cutting across time and space. Binford held the adoption of a regional approach to archaeological sites as a prerequisite for realising the anthropological goals of archaeology aimed at the identification of past human behavioural patterns.

### 1.5.4 Interpretative Archaeology

Since the 1980s some reactions started coming up, raising doubts and objections about functionalist and behaviour oriented approaches of New Archaeology. Ian Hodder of Cambridge University took the lead in staging this reaction, which over the last quarter-century developed as interpretative archaeology.

A Major proposition of this trend holds that it is the internal, innovative elements within human culture, rather than external environmental factors, which are agents of culture change. The second major aspect of this new trend highlights the importance of relating behaviour to human minds. So interpretative archaeology has also come to be known as archaeology of mind. It brought to fore human cognitive abilities, sentiments, feelings and emotions. This led to the growth of definite trends such as cognitive archaeology, symbolic archaeology, structuralist archaeology, hermeneutical archaeology, etc. As against the use of scientific method emphasised by New Archaeology, post processual archaeology treats archaeological record as a text and that its meanings in terms of human minds need to be retrieved by methods of interpretation.

We may now conclude our foregoing observations about conceptual developments in archaeology by emphasising that (1) these developments constitute yet another instance of the progress of all social sciences from description and classification to explanation to interpretation; and (2) these various trends are in the final analysis mutually complementary and not contradictory.

## 1.6 ARCHAEOLOGY: METHODOLOGICAL DEVELOPMENTS

In the preceding section we have sketched how the aims and goals have become progressively more and more elaborate and how the character of archaeology changed from the practical task, collecting and classifying antiquarian remains to a full-fledged discipline which seeks to retrieve information from these about the past human behaviour and its roots in the human minds.

We will now note how, commensurate with these developments in theory, important changes also came about in the realm of methodology. In field investigations random and selective recording and study of sites of the antiquarian stage are now replaced by systematic and intensive survey of all categories and sizes of sites in a given region. This work may involve the use of maps, aerial photos, satellite images, etc. This is followed by vertical or horisontal excavations, which involve detailed recording of evidence in the form of site and trench maps, three dimensional recording of finds in the trenches, and photography. While it is true that all excavation is destruction of original evidence, the site record is preserved in maps, plans, stratigraphical sections and photographs.

Over and above these field methods which are peculiar to archaeology, the discipline also employs certain broad methodological strategies for studying and interpreting archaeological evidence. These are environmental archaeology, settlement archaeology, ethnoarchaeology, experimental archaeology and ethology.

### 1.6.1 Environmental Archaeology

Environmental archaeology is the study of past human interactions with the nature. It finds its focus in the impact of the environment on past cultures and its influence on the social and economic aspects of past societies. The importance of these studies is such that Karl Butzer termed archaeology as past human ecology. Geo- and bioarchaeology are the two main branches of environmental archaeology. The common types of evidence used in environmental archeology are (a) animal remains, such as bones, eggshell pieces, insects, ostracods, foraminifera, molluscs, parasite eggs and cysts, (b) plant remains such as wood, charcoal, pollen and spores, phytoliths and diatoms; and (c) archaeological and geological stratigraphy, chemical and physical analyses of sediments and soils, soil micromorphology and mineralogy. The two main issues in environmental archeology are how the human societies in the past were shaping themselves in tune with their respective landscape settings and how in turn the human groups directly or indirectly were changing the physical and biological components of their landscapes. Environmental archaeology involves very detailed field studies as well as laboratory analyses.

### 1.6.2 Settlement Archaeology

Settlement Archaeology is the study of societal relationships of ancient societies as can be inferred from the study of spatial distribution of archaeological sites on the landscape. In the 1940s Gordon Willey of Harvard University initiated settlement pattern studies in the Viru valley of Peru in South America. In his own words Willey (1953) “Settlement pattern is the way in which man disposed

himself over the landscape on which he lived which reference to dwellings, to their arrangement, and to the nature and disposition of other buildings pertaining to community life. These settlements reflect the natural environment, the level of technology on which the builders operated, and various institutions of social interaction and control which the culture maintained".

Settlement archaeology seeks to understand the geographical, political and military, economic and religious/symbolic factors governing settlement locations. Likewise, it provides important clues for reconstructing socio-economic, demographic and other aspects of ancient life ways. Settlement pattern studies have been carried out with reference to prehistoric and protohistoric sites in different parts of India.

### 1.6.3 Ethnoarchaeology

Ethnoarchaeology deals with the use of analogies or parallels drawn from the study of contemporary simple hunter-gatherer and farmers/pastoral societies for reconstructing and interpreting the archaeological cultures. As such ethnography serves as an important tool for archaeological reconstruction.

In the initial stages archaeologists were content with the study of published reports and books of anthropologists on contemporary societies and use of objects shown in museums and archival records. In more recent years archaeologists have felt the need to undertake fieldwork themselves among present-day simple societies and study them from archaeological points of view. Lewis Binford's study of the Nunamiut Eskimos of Alaska and John Yellen's work on the Bushmen of Africa are excellent examples of ethnoarchaeology.

Ethnographic analogies are of two types. General comparative analogies deal with comparative studies of cultures irrespective of geographical limits. Direct historical analogies involve unbroken links between past and present in specific regions. India has tremendous potentialities for ethnoarchaeology. Many studies have already been undertaken with reference to hunter-gatherer groups like the Chenchues, Yanadis, Vanvaghris, etc. and agropastoral communities like the Dhangars, Bhils, etc.

### 1.6.4 Experimental Archaeology

Archaeologists also frequently make use of analogies drawn from experimental studies for reconstructing ancient societies. Experimental studies have a long history of more than 150 years and have been very helpful to archaeologists when other methodological strategies failed to give clues. Like ethnographic analogies, analogies from experimental studies give no final answers but only tentative or hypothetical solutions which need to be checked in the context of actual archaeological evidence.

While undertaking experimental studies, archaeologists observe certain precautions. First, materials similar to those used in the past should be employed in the experiments. Secondly, modern technology and gadgets of various kinds associated with it should not be allowed to influence the experiments. Experimental stone tool making has been in practice from the early part of the 19$^{th}$ century. Louis Leakey, Donald Crabtree and Francois Bordes have made experimental specimens of all important stone tool types of the Old and New

world prehistory, including leaf-shaped bifacial points such as Solutrean points of Europe and Clovis and Folsom points of North America. Experimental studies covered many other aspects of the archaeological record such as building of dwelling structures, construction of megalithic tombs, preparation and consumption of foodstuffs, animal butchering, and agricultural practices.

### 1.6.5 Ethological Studies

Ethological studies deal with the understanding of behavioural patterns of various animal species. Prehistorians have in particular found analogies drawn from primatological research very helpful in reconstructing the behaviour patterns of ancient hunter-gatherer societies. In earlier stages investigations of behaviour of monkey species and higher apes (chimpanzee, baboon, orangutan and gorilla) were restricted to animals kept in Zoos. Such studies gave only limited observations about primate behaviour.

In the last half a century full fledged field studies of these primate groups in their natural habitats were carried out; these in some cases extended for several years. In particular, the studies on chimpanzees, baboons and other higher primate groups have supplied many useful analogies for reconstructing the behavioural patterns of prehistoric hunter-gatherer communities.

One of these aspects concerns group living among higher apes, which facilitates learning of life skills by the young and affords security against other groups. Occupation of a certain favorable areas called core areas with a home base is common among higher apes; this analogy is helpful for reconstructing Stone Age hunter-gatherer land-use patterns. In certain situations chimpanzees make artificial objects like flakes by breaking stone blocks. This may give clues for understanding the origins of stone tool making and use.

## 1.7 SUMMARY

In this unit we have made efforts to understand how archaeology emerged as a distinct academic discipline from a prolonged stage of antiquarian studies done by amateurs for satisfying innate human urges like curiosity about surroundings, adventure and respect to ancestors.

Regular, knowledge seeking interest developed with the formulation of three-Age system by C.J.Thomsen. This knowledge-interest became more and more elaborate and comprehensive, encompassing both material and non-material aspects of human culture. Archaeology is now able to answer questions not only of what, when and about past cultures but also of why and how. The proposition made by the famous British archaeologist C.Hawkes that archaeology can help us reconstruct only economic and technological aspects of ancient societies is no longer valid. Archaeology also enables us to reconstruct sociological, religious and ideological components of past life ways.

It is in this respect archaeology serves as the bedrock for anthropological studies of present-day simple societies spread across the world. Apart from supplying the time dimension to human culture, archaeological studies also highlight that regional diversity in adaptations is an inherent attribute of human culture.

## Suggested Reading

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## Sample Questions

1) Discuss the scope of archaeology and its main divisions.
2) Show how the aims of archaeology changed from time to time.
3) What are the main methodological strategies employed in archaeological reconstruction.

## Write short notes on the following

i) Protohistory

ii) Early farming communities in India

# UNIT 2 HISTORY AND DEVELOPMENT

**Structure**



**Learning Objectives**

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

- understand the role of "Three Age System" in Archaeology;
- demonstrate the relationship between "time scale" and "periodisation";
- interpret the role of institutions and individuals in developing Prehistory and protohistoric studies in India; and
- analyse the problems in "Pre and Protohistory of India".

## 2.1 INTRODUCTION

The emergence of Archaeology as an academic discipline was preceded by a long antiquarian stage. This stage can be traced back to the works of early Chinese and Arab historians and to the historical treatises, written during the time of Italian Renaissance. Chinese historians like Ouyang Xiu (1007–1072) and Shen Kuo (1031–1095) made important contributions in this field. They wrote about ancient rubbings on stone and metal as well as about different manufacturing techniques of goods in ancient China. Muslim historians of the medieval period also showed keen interest in material remains of the Near East. A few scholars of Egyptology like Abdul Latif al-Baghdadi knew about ancient Egyptian monuments and developed certain techniques of excavating ancient remains (El Daly 2005).

Since the fourteenth century, historians of Europe were utilising inscriptions, coins and medals for extracting information about the unknown past. In the fifteenth century, new societies and museums emerged as nuclei of researches on the ancient Greco-Roman world. There was a direct shift of focus from the theological interpretation of human past of earlier church historians to a humanist approach during the Renaissance. Notables among these initiatives were the

collections of Nicolao Nicoli, Lorenzo de Medici of Florence and Capitoline museum, established by Pope Sixtus IV (Sreedharan 2004). Among these historians Flavio Biondo (1388-1463 AD) was one of the first antiquarians who extensively used material remains of Rome to write his book on Roman History (*ibid.*). This period is characterised by a tendency – to be known later as antiquarianism. Similar researches were carried out in the Age of Enlightenment which also generated important concepts of geology and anthropology. These antiquarian pursuits developed some of the basic components of the modern archaeological methods in Europe. European scholars from the Sixteenth to Eighteenth Century made significant contributions in structuring the discipline of modern Archaeology. William Camden was one among these early researchers who played a key role in founding the Society of Antiquaries in London in 1707 (Trigger 1989:47). Other notable antiquarians of this period were John Aubrey, Johan Winckelmann, William Stuckeley from Europe and Thomas Jefferson of North America.

Systematic research in Archaeology started a little later in the Scandinavian countries. Kings Christian IV of Denmark and Gustavus II Adolphus of Sweden encouraged the scholars to reconstruct the history of their respective countries from ancient records which included ancient relics and monuments (Trigger 1989:49). Johan Bure, a Swedish civil servant and Ole Worm, a Danish medical doctor, documented a large number of material remains from the past. New museums grew out of these collections and one such museum, based on Ole's collection, was opened to the public in the 1680s (Trigger 1989:49).

All these activities generated a strong belief in the power of human agency. The Scientific Revolution in Europe further strengthened these trends of anthropocentricity and proved to be beneficial to the growth of archaeology as a modern scientific discipline. Similarly, archaeology profited greatly from the works of early geologists who ensured a departure from the popular beliefs in the Biblical theories of recent human origin and their theories were supported by studies on stratigraphical succession. The role of geology was crucial in developing the concept of Relative Time i.e. the succession of historical events in respect of one another (Leet *et al.* 1982). The Three- Age system reflects this idea of Relative Time for understanding human history. Now we will consider how the Three-Age system was formulated.

## 2.2 THREE-AGE SYSTEM

The Three-Age system is a method of classification of material remains of human past into a chronological order and is based upon the idea of progress in technology. It is rooted in the writings of the Enlightenment period. In fact this notion of progress in human history can be traced in the writings of still earlier periods. An ancient scholar from China belonging to Eastern Zhou Period (c.770-221) had talked about such a scheme in his poem (Renfrew and Bahn 2005:265). He talked about four different stages of technological progression, namely, the age of stone, jade, bronze and iron. Similar ideas were put forward by the Roman poet Lucretius of the 1st century BC in his poem called *De Rerum Natura* (*ibid*.). Such concepts were presented by many scholars of the seventeenth century Europe, who were puzzled by the stone tools, then known as elf-shots or thunderbolts (*ibid.* 264). Michel Mercati, a sixteenth century scholar of Italy and

Antoine de Jussieu (1723) of France studied these so-called "thunderbolts" and declared that these objects were from a period when iron was not in use (*ibid.*). However, these early attempts towards the description and classification of the increasing collections of antiquarian remains were based more on intuitions than on logical arguments.

The Three-Age system was established on strong grounds by Christian Jurgensen Thomsen of Denmark. Thomsen was the son of a wealthy merchant of Copenhagen and was born in 1788. He studied in Paris and undertook the assignment of arranging Scandinavian and Roman coins after his return from France (Trigger 1989: 74). Probably this system of arrangement - on the basis of relative dating - influenced his methods for classifying prehistoric antiquities later. Another important influence on Thomsen was the evolutionary approach of his time. This was a politically turbulent time for Denmark which suffered great losses at the hands of the British in 1801 and again in 1807 (Trigger 1989:274). These calamities encouraged the Danes to devote their times to restore the past glories of their country. In 1807, a Danish Royal Commission for the Preservation and Collection of Antiquities was established and Thomsen was invited to arrange its collection in 1816 (Trigger 1989:275).

Thomsen took up the task of cataloguing and describing the typological attributes of all objects found in the collection. As we noted in Unit 1, Thomsen's work was influenced by evolutionary ideas of the Age of Enlightenment including the use of stone before metals. The evidence of classical and Biblical texts also suggested that bronze was in use before iron. He also took into account the use of similar tools and implements in the rural life of Denmark. However there was a problem in this scheme of classification. Thomsen was aware that a few of these stone tools were in use even during the metal ages. Therefore it was needed to segregate the stone tools of the Stone Age and the stone tools from the metal ages. Thomsen depended too on 'closed finds' or objects which were found in association with each other, in a single context or from a same grave (Trigger 1989: 276). He divided these antiquities into different categories on the basis of the material, shape as well as decorations found on them. Thomsen was not satisfied with his classification only but proceeded to examine the contexts from where these objects were reportedly found. He could differentiate the objects of Bronze Age from those of the Iron Age on the basis of such a typological analysis – a crude form of seriation (Trigger 1989:276).

**Box 1: Seriation**

Seriation is a method of arranging material objects, assemblages or sites into a linear sequence on the basis of the degree of similarities found in them. The earliest exponent of the method was Christian Jurgensen Thomsen, followed by a better effort of G.O. Montelius (1885). Sir Flinders Petrie was the first archaeologist to apply the method in analysing excavated materials from the pre-dynastic period of Egypt (1899) (Shaw and Jameson 1999:519-20). Petrie depended on the concept of 'occurrence' of 'incidence' (presence or absence of an object) whereas modern seriation technique depends more on the concepts of 'frequency' or 'abundance' (changing frequencies of a smaller number of artifacts). Various computer applications are now being used for seriation.

This approach allowed him to assign all associated objects, found with stone tools, like glass objects or pottery, to a particular age. The Museum of Northern Antiquities, where Thomsen worked, was opened to the public in 1819 and his researches were published in a book called Ledartraad *til Nordisk Oldkyndighed* (Guide Book to Scandinavian Antiquity) in 1836. The Three-Age system was stratigraphically verified by the excavations of J.J. Worsaae (Renfrew and Bahn 2005:266).

The Three-Age system is an important conceptual method for dating the antiquities without depending on written records. It formed the basis for prehistoric chronology. It was rapidly adopted in museums across Europe and became the source for further internal subdivisions and regional variations. Such internal subdivisions were important for concepts like periodisation in the field of History and Archaeology

## 2.3 DIVISIONS AND PERIODISATION

In this present section we will try to understand the meanings of 'division' and 'periodisation'. The word 'division' actually denotes temporal division whereas periodisation indicates further internal ordering. Temporal division of the human past and its further periodisation were an indirect outcome of the efforts towards classification of the objects and their arrangement in a sequential order. In this respect archaeologists derived inspiration from the writings of philosophers, geologists and biologists.

It is important to note that time itself has no provision to divide itself or to mark its progress. Systems of measuring time are actually dependent on human thoughts and are basically relative in nature. For example, there is no particular natural event or phenomenon to declare the end of a century or the starting of a new one. It is we, the human beings, who mark passage of time through different activities. Even our days and nights are dependant on rotations of celestial objects and these are not always uniform in duration. Actually, we are calculating certain activities of these objects in relation to each other and not time. We can only experience the continuous flow of time. In the next passage we will try to understand the concept of Relative Time with these pre-conditions in mind.

Relative time is a system of temporal division to establish the sequence of events in history. In other words, it is a system to establish the priority or posteriority of events in respect to one another. Concepts of *change, variability, continuity* and *direction* are important to determine relative time. We experience time through varied activities and changes in these activities. However, these activities do not define time but only indicate occurrence of events in relation to one another. All activities have specific temporal structures such as the shooting of an arrow is a unidirectional event in time as against death or birth which is cyclic (events Gamble 2001:133). However, these activities do not define time but only indicate occurrence of events in relation to one another. These notions underly the idea of relative chronology is connected with all of these concepts as mentioned above.

For analytical purposes the entire human past has been divided into different ages on the basis of these activities, ideas of change, concepts of progress and variability in objects. Material remains are considered as proofs of these actions which mark time. The biggest contribution of the geologists and archaeologists

to human knowledge is the realisation of the immense length of time. But human beings are not capable of imagining this immense length of time through our intellect and we require crystallisation of it into several smaller temporal divisions – guided by the ideas of 'contemporaneity' and 'time averaging' (Gamble 2001:137). In other words, we assign a block of time to different actions – happening over different spaces. Such temporal divisions of human past were influenced by works of philosophers such as Giambattista Vico (1725). Vico (1725) opined that certain periods of history share same general characters and similar periods recur in the same order (Sreedharan 2000:102). These ideas became useful in creating temporal divisions of human past.

The entire range of material remains constituting the archaeological record belongs to three broad temporal divisions, namely, Prehistory, Protohistory and Historical period. Historical Age is further divided into Ancient, Medieval and Modern. The Prehistoric Age deals with a period marked by the absence of written records whereas the Historical Age is noted by the emergence of writing techniques. The Protohistoric Age is falling between these two and is known for technological developments along with trade and commerce but conspicuous by the absence of writing. It is important to note here that these ages do not show uniformity either in terms of chronological duration or in terms of geographical boundaries. Periodisation is a process of subdividing these macro divisions of time into smaller units, depending on certain commonly accepted parameters which mainly refer to typo-technological developments in human society. We have already noticed how Thomsen divided the human past into three ages on the basis of typo-technology of material remains. His works were further refined by J.J. Worsaae (1851). Worsaae realised that the Stone Age could be divided further into Early and Late phases where the latter marks the advent of pottery and polished stone tools (Renfrew and Bahn 2005:267).The British archaeologist Sir John Lubbock (1865) divided the Stone Age into 'Palaeolithic' and 'Neolithic' stages.

It has already been mentioned that, as facilitated by a series of excavations done in French caves by Lartet and others and also recognition of changes in the technology and typology of stone implements, the Palaeolithic dated to the Pleistocene was divided into Lower, Middle and Upper stages. Gabriel de Mortillet (1821) recognised substages within these stages (e.g. Acheulian, Mousterian, Aurignacian etc.). Also an intermediate phase called the Mesolithic, characterised by microlithic technology and dated to the early part of the Holocene period, was recognised between the Palaeolithic and Mesolithic stages.

Slowly the use of technological criteria (changes in the technology and typology of implements) for dividing preliterate past came under stress and new meanings involving socio-economic and other factors began to be ascribed to terms like Palaeolithic and Neolithic. Gordon Childe introduced the terms savagery, barbarism and civilization to characterise the Palaeolithic, Neolithic and Bronze Age, respectively. Robert Braidwood introduced phrases like the eras of initial hunting and gathering, intensified hunting and intensified collecting to mark changes within the Palaeolithic and Megalithic phases.

## 2.4 ANTIQUARIAN INITIATIVES IN PREHISTORIC RESEARCHES

Prehistoric researches in India are mainly associated with the Europeans and their arrival in the subcontinent. The first antiquarians of the country were the

surveyors, who collected numerous artifacts during the courses of their field works in different regions of India (Singh 2004:2).

Different institutions and individuals played significant roles in prehistoric researches in India. One important institution in this field is the Asiatic Society of Bengal. The society was established in 1784 by Sir William Jones. Though the society devoted a significant amount of its time towards the advancement of historical studies, but its contribution towards the publication of important researches in the field of Prehistory can not be ignored.

## 2.5 DEVELOPMENT OF PREHISTORIC STUDIES

In a paper published in the Proceedings of the Asiatic Society of Bengal V. Ball draws attention to the fact that a few British antiquarians like Captain Abbot had reported the finding of agate splinters from Narmada valley as early as in 1845 (Chakrabarti 2006:1). Similar findings were also reported from Lingsugur in Karnataka 1847(*ibid.*). In 1861, H. P. Le Mesurier found polished stone implements and microliths from Bundelkhand, which was followed by similar findings by W. Theobold in 1862 (Chakrabarti 2006:2). Theobold also mentioned the discovery of chert cores and flakes from Port Blair by Major Houghton. No doubt, credit should be given to these antiquarians for recognising these objects as creations of human beings. However, Robert Bruce Foote is generally credited with the first discovery of Palaeolithic implements in India. On 30th May, 1863, Foote found a few Palaeolithic implements from a gravel pit at Pallavaram, near Madras (Chennai). He is rightly called the father of Indian Prehistory.

Prehistoric researches in India can be divided into three periods: Phase I (1863-1900), Phase II (1900-1950) (Chakrabarti 2006: 2) and Phase III (1950 - till date). The first period is marked by individual efforts, whereas the second period is known for the institutional involvements. The third phase is characterised by the application of absolute dating methods and other advanced techniques and methods for studying the prehistoric remains.

### 2.5.1 Phase I

During this period, a large number of individuals participated in discovering prehistoric remains. In September 1863, Foote reported his findings of stone tools from Attirampakkam and a few of them were *in situ* (Chakrabarti 2006:2). Next year, he reported another cache of Palaeoliths from Pallavaram where also T. Oldham found similar tools *in situ* (Chakrabarti 2006:2). Foote's collections were displayed in an exhibition at the Asiatic Society of Bengal in 1864. In the same year and the following, several discoveries of Stone Age tools were reported by J.D. Swiney, W. Theobold, W. King, Messieurs Cornish, Fraser, Robinson and V. Ball from Jabalpur, Madras, Bengal and Myanmar.

In 1865 W. Blanford and S.B. Wyne discovered a stone tool along with shells. A comprehensive report on these findings was published in the Proceedings of the Asiatic Society of Bengal in 1867. Blanfold discovered a large number of microliths in southern M.P and Nagpur region and was able to notice their similarities with their counterparts in Europe. He interpreted them as representing the tool-kit of hunting and fishing communities (Chakrabarti 2006:3). Blanford also commented that the makers of the stone tools found by Wyne, lived during

the period of extinct animals whose fossils were found in the sediments of the Narmada and the Godavari (*ibid*.).

W. King was among the pioneers in analysing the contexts of his findings from Andhra Pradesh (Chakrabarti 2006:3). The efforts of King should also be noted for his analysis of functionality of these tools. Ball wrote in this period that the Palaeolithic industry of India extended up to Bengal and this technology was not available in the North Eastern provinces. After 1867, Foote carried out extensive surveys in Andhra Pradesh, Karnataka and Tamil Nadu, and after his retirement, in Gujarat. Three of his major reports were published in 1866, 1873 and in 1880 (Chakrabarti 2006:2) where he discussed about the history of his discoveries and also gave detailed descriptions of tools, raw materials and their contexts. Foote also commented on the causes of widespread dispersal of Stone Age groups.

Foote's work in the Kurnool caves of Andhra Pradesh, constitutes an important chapter of this period. He found bone implements here which he compared with the Magdalenian tools of Upper Palaeolithic Europe. The later part of Foote's life was devoted to the Neolithic findings from Karnataka and geology of Gujarat. He reported on stone tools and associated fossiliferous deposits from the Sabarmati river. He published two catalogues on his collections in 1914 and 1916, which were later acquired by the Government Museum of Madras (Chakrabarti 2006:4).

In Northwestern Frontier and Sind, Blanford, Theobold and C. Swynnerton made important discoveries. In 1875 Blanford suggested that the cores from the Indus region were different from the ones found in the nearby hills. In eastern India, Neolithic celts were reported from Assam in 1867 and again in 1870. Ball continued his surveys in Bengal, Bihar and Orissa but his observations on these findings do not stand modern scrutiny (Chakrabarti 2006:4).

This period is also crucial for rock art researches in India. A.C.L. Carlleyle of Archaeological Survey of India worked extensively in the Vindhyan region. One of the most important discoveries by Carlleyle was cited by V. A. Smith in his 1906 paper. Smith quoted Carlleyle in this article on the latter's findings of Mesolithic artifacts as well as rock paintings in rock shelters of Sohagighat of Rewa district, Madhya Pradesh (Smith 1906). This discovery was made in the winter season of 1867-68 (Smith 1906). In 1883, J. Cockburn found similar paintings in Mirzapur district and published an account of his discoveries in 1899. However, Cockburn believed that not all of these paintings can be assigned to the Stone Age (See Box 2).

**Box 2: Rock Art**

The term 'rock art' covers all forms of artistic activity on rock. Its principal categories are pictograph (application of pigments), petroglyphs (motifs carved into rocks) and engravings besides other forms like petroforms and geoglyphs. The discovery of rock paintings in Sohagighat by A.C.L Carlleyle in 1867-8 and his assigning them to a remote past represent one of the earliest discoveries of rock art in the world. In 1879, Marcelo Sanz De Sautuola discovered bison figures on the ceilings of Altamira, in Spain and found that these are similar in style to the figurines in Upper Palaeolithic portable art. This brought about a significant change in our understanding of rock art in the world.

## 2.5.2 Phase II

This phase of prehistoric research in India is marked by synthesizing efforts, participation of several institutions as well as efforts towards palaeo-environmental reconstructions. A large number of Indian scholars participated in prehistoric researches in this period. One of the earliest synthesizing efforts can be found in the article of V.A. Smith (1906). In 1923, P. Mitra published his book called *Prehistoric India*. In 1931, H.C. Dasgupta published a bibliography of prehistoric antiquities (Chakrabarti 2006:6). In 1930, L.A. Cammiade and M.C. Burkitt published their studies on prehistoric antiquities from the Nallamalai Hills of Andhra Pradesh. Based upon their relative positions in river stratigraphy, Cammiade and Burkitt divided their collections of stone tools into four series corresponding to Lower, Middle and Upper Palaeolithic and Mesolithic, respectively. The first series is dominated by quartzite handaxes. In the next series, flake tools are predominant which were made on quartzite, chalcedony and sandstone. Tools from the next series mainly comprised blades and burins made on siliceous stones and the last series shows the dominance of microliths. Burkitt and Cammiade assigned the river sediments in which stone tools were found to different periods of aggradation and erosion, connected with wet and dry periods of climate.

K.R.U Todd's publication on the Palaeolithic industries of Bombay followed a scheme similar to that of Cammiade and Burkitt (Chakrabarti 2006:7). In 1935, Yale and Cambridge Universities sent a joint expedition to the Potwar Plateau and the Indus and Narmada Valleys to reconstruct the Pleistocene sequence and associated human remains in these regions. The expedition was led by H. de Terra and T.T. Paterson. They published their report in 1939. Based upon their fieldwork in the Soan valley of modern Pakistan, de Terra and Paterson recognised a sequence of five terraces which they correlated with glaciations from the Kashmir valley. Further they also proposed a multi-phase Stone Age sequence called the Soan culture sequence. However, many objections were raised to these stratigraphical and cultural reconstructions by the later work of British Archaeological Mission in the 1980s.

Among the Indian scholars who made significant contributions to prehistory during this period, mention should be made of V.D. Krishnaswami who carried out researches in Madras, N.K. Bose and D. Sen who worked in Orissa and H.D. Sankalia who carried out field work in Gujarat. Sankalia excavated the Mesolithic site of Langhnaj in Gujarat and Krishnaswami published his findings in *Ancient India* (Vol.3) (Chakrabarti 2006:7). Similarly, the publication of F.E. Zeunerss book entitled *Stone Age and Pleistocene Chronology in Gujarat* (1950) made important contributions to our understanding of alluvial stratigraphy of the rivers in the Deccan and Gujarat and its palaeoclimatic implications.

## 2.5.3 Phase III

This phase witnessed many important developments in Indian prehistoric studies. H.D.Sankalia's explorations at Nevasa on the Pravara in Maharashtra led to the reconstruction of an elaborate stratigraphical-cum-cultural sequence in 1956. In the next two decades this served as a model for a number of field investigations in Godavari, Narmada**,** Mahanadi and other river valleys of different parts of peninsular India. Universities also initiated Stone Age research in their respective areas. Indeed prehistory emerged as an important branch of Indian archaeology.

The role of earth science got firmly established, particularly geology for establishing the stratigraphical contexts of cultural horisons and their palaeoclimatic implications.

This phase also witnessed the use of absolute dating techniques such as radiocarbon, uranium, thorium, potassium-organ, electron spin resonances, palaeomagnetism etc. V.N.Misra's excavation at 16 R dune at Didwana in Rajasthan revealed a full sequence of Stone Age cultures with many absolute dates. The sites of Riwat (Pakistan) and Uttarbaini (Jammu) in Siwalik hills have an antiquity of more than two million years. Likewise the Acheulian sites of Isampur and Attirampakkam in South India have been dated to 1.2 and 1.5 million years. Likewise, absolute dates are available for Middle and Upper Palaeolithic and Mesolithic sites, the details of which will be provided in respective units later.

Human skeletal remains from Palaeolithic deposits are scarce in India. Only a small number of hominid remains of the Pleistocene period are known as yet. Kennedy (cited by Chakrabarti 2006:10) mentions the finding of a human skull from the Upper Palaeolithic deposit of Bhimbetka by V. S. Wakankar. A hominid skull cap dating to Middle or late Pleistocene has been reported from Hathnora, M.P (Chakrabarti 2006:10).

**Box 3: Hathnora Hominid Fossil**

On 5th December, 1982, Arun Sonakia of Geological Survey of India found a hominid skull cap from Hathnora, 22 km North West of Hoshangabad in Madhya Pradesh. This skull cap was found embedded in the basal conglomerate horison of Narmada. Only the right half of the skull long with the left parietal bone has survived. The first report was published in 1984 which was followed by further reports from 1985 onwards. The deposit containing the skull also yielded mammalian fossils and late Acheulian tools. Badam *et al.* (cited by Chakrabarti 2006:11) suggested that the fossil probably represents an a*rchaic form of Homo sapiens.*

A fourth development of this phase concerns the shift of focus from the secondary sites associated with river gravels and silts to primary sites where the Stone Age groups made stone tools and carried out their various other life-activities (Paddayya, 1978). For this purpose it was felt necessary to go away from major rivers to interior areas free from floods and other disturbances and hence likely to preserve sites in their original condition. Also it was felt necessary to organise field research in terms of a regional framework and not single, isolated sites. In other words, emphasis began to be laid on the use of settlement system perspective aimed at an anthropological or processual understanding of Stone Age cultures. Against this perspective fresh field studies were taken up in different parts of India. Excavations were conducted at Paleolithic sites like Chirki-Nevasa, Morgaon, Hunsgi and Isampur, Attirampakkam, Paisra, Bhimbetka and Didwana in Rajasthan. Also excavations were made at Mesolithic sites like Langhanaj, Bagor and Tilwara, and Damdama and other sites in the Ganga valley.

For promoting this processual understanding of Stone Age cultures, more systematic bioarchaeological and geoarchaeological surveys were undertaken in these areas. Ethnoarchaeology is another major research strategy that was adopted

for this purpose. Hunter-gatherer groups like the Chenchus, Yanadis, Pardhis and Musahars have been studied from this point of view by V.N.Misra and M.L.K.Murty and others.

## 2.6 DEVELOPMENT OF PROTOHISTORIC STUDIES

We have earlier noted that protohistory in India covers the time period between the end of the Mesolithic phase and the early historical period. As such it covers three major cultural stages viz. the Indus civilization and its later variants; the Neolithic-Chalcolithic cultures known from different parts of the sub continent; the Iron Age cultures preceding the Early Historical. The total time span covered by the protohistoric period is of the order of four to five thousand years.

The Discovery of the Harappan or Indus civilization stretched the story of Indian history backwards by 3000 years. In 1921, Daya Ram Sahni recovered two pictographic seals from Harappa similar to those unearthed by Cunningham in 1856. But their exact significance was realised in the next season when R.D. Baneree started excavating Mohenjodaro. In 1924, the antiquities from both these sites were examined by Sir John Marshall; he announced the discovery of this new Bronze Age civilization in *Illustrated London News* (Roy 1961). Soon further excavations were conducted at both these sites by Sahni, Marshall, M.S. Vats and others. The discovery of Harappan civilization brought to light a highly sophisticated Bronze Age culture, characterised by elaborate town planning and monumental architecture, civic amenities, trade and commerce, sophisticated system of weights and measurements systems as well as an unknown script.

During the entire decade of 1920s, new Harappan settlements were brought to light at Lahumjodaro, Limujunejo, Chanhudaro etc. by Hargreaves, K.N. Dikhshit, N.G. Majumdar and others (Roy 1961: 109-110). From 1925 onwards, officers of the Archaeological Survey of India began to discover Chalcolithic settlements as well as Harappan settlements from Sind and Baluchistan region almost every year. In 1926, Majumdar unearthed the traces of Jhukar culture. From 1926 to 1928, Sir Aurel Stein surveyed Baluchistan and discovered a large number of Chalcolithic and pre-Harappan settlements. Important sites among these were Rana Ghundai, Periano Ghundai, Kulli, Mehi, Nundara, Sukhtagendor and Shahi Tump (Roy 1961: 109). Between the years 1929-31 N.G.Majumdar discovered Ali Murad, Amri, Lohri, Pandi Wahi. Excavations at Harappa were continued by Vats till 1931 and these were restarted in 1940. Between 1929 and 1935, Vats discovered Rupar and Rangpur, two other Harappan sites from India (Ray 1961:118).

In 1944, R.E.M. Wheeler surveyed Harappa again and resumed excavation in 1946. Wheeler succeeded in establishing a proper stratigraphic sequence at Harappa and brought to light a post-Harappan culture called Cemetry H (Ray 1961:127). Despite these numerous discoveries of Harappan settlements, at the time of partition, there wasn't a single important Harappan site in India. So A. Ghosh of the Archaeological Survey of India undertook a systematic survey of the Ghaggar basin in Rajasthan from 1952 onwards. He discovered a large number of Harappan settlements in Rajasthan, Punjab and Haryana. During this survey Ghosh discovered the famous Harappan site of Kalibangan. Then onwards every

year new Harappan sites have been reported from Punjab, Haryana, Rajasthan, Western Uttar Pradesh, Gujarat and Maharastra. Now it is realised that this civilization was spread over an area measuring 1500 x 1200 sq.km. (Dhavalikar 1997: 8). Such in brief is the history of discovery of Harappan civilization.

The second major aspect of protohistoric past concerns the development of early agropastoral cultures covered by sites which are variously called Neolithic or Chalcolithic or Neolithic–Chalcolithic, depending on the use or lack of copper. It is true that even before Independence sporadic discoveries of polished stone tools were made in south India, Bihar and Jharkhand, and Northeast India. Due to lack of any excavated evidence these sites could not be placed in a proper cultural context. It was Wheeler's excavation at Brahmagiri in South India in 1946 which stratigraphically exposed Neolithic levels below Iron Age megalithic strata. Still much of the Indian landscape presented a blank appearance, so much so that in 1948 Mortimer Wheeler bemoaned that a Dark Age existed between the end of the Indus civilization and the beginning of the early historical period.

A major achievement of post independence archaeology in India lies in the fact that the so-called Dark Age has now been filled up with about a dozen major cultures representing the early agropastoral stage. These are spread across the whole country and are dated to the third and second millennia B.C. Their main characteristics include settled village life, crop cultivation, animal husbandry, burial practices and various crafts like ceramics and stone-tool making. The credit for discovering these cultures goes to the Archaeological survey of India, state departments and various universities.

The major Neolithic cultures are located in South India, Kashmir Valley, North central Vindhyas, Bihar and Orissa and North eastern India. The principal Chalcolithic Cultures are the Savalola, Malwa and Jorwe cultures of the Deccan, Kayatha and Malwa cultures of central India. Banas culture of Rajasthan, and the Black-and-Red and Ochre-Coloured Pottery cultures of the Ganga valley. In fact, the emergence of agropastoral way of life in the subcontinent stretches beyond third millennia B.C. The Mehrgarh excavations in Baluchistan take the antiquity of wheat and barley cultivation and cattle and sheep /goat domestication to the $6^{th}$–$7^{th}$ millennia B.C. Likewise the recent excavations at Lahuradewa in eastern U.P. reveal that paddy cultivation or intensive exploration goes back to $6^{th}$ – $7^{th}$ millennium B.C.

Now let us briefly note the investigations with reference to the Iron Age. For about two centuries various kinds of megalithic monuments (stone circles, dolmens, cists, umbrella stones etc.) have been reported from various parts of Peninsular India. These yielded, apart from other cultural materials, a variety of iron objects. In the middle of the $19^{th}$ century Meadows Taylor even excavated some of the stone circles in the Deccan. But it was Wheeler's excavation at Brahmagiri which exposed Iron Age megalithic levels below the remains of the Early Historical Period.

After Independence many more megalithic sites were excavated in Vidarbha region of Maharashtra and various parts of South India. These have given evidence of various burial practices with rich grave goads. Hallur excavation in Karnataka has given a date of about 1100 B.C. for commencement of iron technology. More recently excavations at Malhar in Ganga valley have pushed back the

antiquity of iron to 1500 B.C. Excavations by S.B.Deo at Naikund in Vidarbha have made it possible to reconstruct the whole process of iron smelting.

## 2.7 SUMMARY

Proceeding from our Unit 1 on account of the definition of archaeology as a science of the archaeological record; its three main divisions; and both conceptual and methodological developments, we have gone one step further in this unit and considered the criteria adopted for dividing prehistoric time into main periods and stages. We then noted the main stages in the development of both Prehistoric and Protohistoric studies in India. With this background we will consider in the next unit how archaeology is intimately related to various natural and social sciences.

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***Useful Links***

The Archaeological Survey of India: http://www.asi.nic.in

Harappa : http://www.harappa.com

**Sample Questions**

1) Critically evaluate the importance of Three-Age system in the development of archaeological studies in the Old World.
2) What are the main stages in the development of Prehistoric studies in India.
3) Describe how Protohistoric studies progressed in India.

# UNIT 3 INTERDISCIPLINARY RELATIONS AND APPROACHES

**Structure**



**Learning Objectives**

Once you have studied this unit, you should be able to understand the relationship of Archaeological Anthropology with:

- Biological Sciences (Flora, Fauna);
- Earth Sciences (Geomorphology, Sedimentology, Geology);
- Physical Sciences (Chronometry);
- Chemical Sciences; and
- Social Sciences (History, Sociology, Archaeology, Anthropology, Psychology).

## 3.1 INTRODUCTION

It is now clear to us that archaeology – the very basis of archaeological anthropology–is aimed at the total reconstruction of ancient human societies. It is a study of the chronological and geographical limits of ancient cultures. To put the matter in a more formal way, archaeology or archaeological anthropology has a three-fold goal: a) reconstruction of respective environmental settings of past cultures; b) to fix their temporal limits; and c) to reconstruct the material as well as ideational aspects of these cultures. Archaeology seeks to realise these goals by, in addition employing its own methods, drawing upon concepts and methods of various other sciences. In this unit therefore we will examine the relationship of archaeology with various, biological sciences, earth sciences, physical sciences and social sciences.

## 3.2 BIOLOGICAL SCIENCES

Biological sciences deal with organic components (plant and the animal worlds) of the environment. Ecology seeks to reveal the interrelationships between man and the biological world.

### 3.2.1 Flora

Archaeobotany is the study of all kinds of plant remains found in archaeological sites. These comprise actual materials like charcoal, wood remains and grains as well as indirect evidence in the form of impressions of leaves and husks on clay and pottery. These are microscopic remains too in the form of phytoliths and pollen. Flotation and other techniques are used to collect these plant remains from excavations and are then subjected to scientific examination in the laboratory.

Plant remains are particularly important for studying food economy of ancient societies. In the Paleolithic and Mesolithic stages man was essentially parasite on nature. In tropical regions like India, wild plant foods played a bigger role, and these included a variety of roots and tubers, fruits, seeds, berries, gums, and leafy greens and flowers. Wood was also used for preparing tools and weapons. In the Neolithic stage food production commenced and man eventually began to raise crops of many cereals and pulses. This brought about a drastic change in man-nature interaction, including vegetation clearance leading to environmental degradation. Plant remains are helpful in other ways too. These provide clues for reconstructing past climate. Dendrochronology or tree ring analysis is a useful relative dating method. Charcoal is commonly used for C-14 dating of archaeological sites.

### 3.2.2 Fauna

Animal kingdom is the second important component of man's biological environment and is again intimately connected with human adaptations. That this was so right from Stone Age times is revealed by the occurrence of animal bones and other animal-related features on archaeological sites of various time periods. Palaeontology is the study of fossilised remains of extinct wild animals which lived in the Pleistocene period. Archaeozoology is the study of animal remains found on Holocene archaeological sites (Mesolithic onwards).

Animal remains found in archeological sites are varied in character : bone and antler, shells, fish remains, bird and rodent bones, even insect remains. Animals were exploited for various purposes. Bones and antlers were sometimes used for tool-making and hides were employed for clothing and roofing of huts. Also ornaments like beads were prepared. More importantly, animals were used for food purposes. Hunting of large game and scavenging of kill sites of carnivorous animals were common in the Palaeolithic. Small animals and birds were also trapped for food purpose. In the succeeding Neolithic stage animals like, cattle, sheep/goat, pig, were domesticated. But hunting and collecting still continued. Animal remains could also give clues about past climate and vegetation.

## 3.3 EARTH SCIENCES

Earth sciences play a pivotal role in the analysis of archaeological sediments and in the reconstruction of physical features of ancient landscapes. Geomorphology, Sedimentlogy and Geology are very important from this point of view.

### 3.3.1 Geomorphology

Geomorphology is a branch of Physical geography which is primarily concerned with the study of the land forms and the evolution of landscape. Archaeological sites are generally found with reference to geomorphological situations like hills, foothills, plains, river banks, lakes, coasts etc. Stone Age groups generally preferred rocky terrain with open forest vegetations which facilitated easy movement as required for hunting purposes. Availability of raw materials like stone for tool making and perennial surface water sources, and good landscape visibility influenced location of Stone Age sites. From the Neolithic period onwards human groups also began to occupy plain lands like alluvial and coastal plains suitable for agricultural purposes. Geomorphology enables us to reconstruct these varied landscapes.

> Archaeological anthropology has interdisciplinary approach of studying in relation to various sciences viz., Biological sciences, Earth sciences, Physical and Chemical sciences, Social sciences etc.

### 3.3.2 Sedimentology

Archaeological sites are nothing but small or large deposits of soils and sediments associated with past human activities of various kinds. Sedimentology deals with a systematic study of these sediments both in the field and in the laboratory. Examination of physical and chemical properties of soils like nitrogen and phosphate contexts provides complementary evidence to recognise various activity areas on an archaeological sites, e.g. human-dwelling spots, animal penning spots, animal-butchering areas, pottery-making workshops, burial spots, etc. Studies of soils and sediments can also tell us about the formation of natural sediments on the landscape by non-human agencies like water, wind and volcano. This study is extremely useful for palaeolandscape reconstruction.

### 3.3.3 Geology

Geology is one of the oldest scientific disciplines and deals with study of various rock formations on the earth's surface. Its application for studying archaeological sites has led to the origin of what is called geoarchaeology. Geology served as the basis for the development of archaeological stratigraphy. Also the terms like Paleozoic, Mesozoic, etc. used for partitioning geological time inspired archaeologists to coin terms like Palaeolithic, Mesolithic, etc. to divide prehistoric time.

Geoarchaeology now helps archaeologists in understanding the properties of rocks, minerals and ores and their utilisation by ancient communities. It also helps us in understanding how archeological sites have been preserved or disturbed due to natural forces like wind, water, ice, earthquakes etc.

## 3.4 PHYSICAL AND CHEMICAL SCIENCES

Physical sciences (Physics and Chemistry) also play a very important role in the reconstruction of past human societies from the archaeological record.

### 3.4.1 Chronometry

Earlier archaeological sites and their deposits were dated in relative terms with the help of methods like stratigraphy, stylistics of artifacts and monuments, and

degree of patination. During the last half a century a number of absolute dating techniques developed in Physics and Chemistry have proved to be very useful for dating archaeological sites. Their time range has now been extended to nearly three million years. Radiocarbon, archaeomagnetism, potassium-argon, uranium-thorium, fission-track, electron spin resonance, and thermoluminescence are some of these methods.

The carbon 14 (radiocarbon-carbon of atomic weight 14) method gives absolute date up to ca. 50,000 B.P. on wood, wood charcoal from fire, peat, grass, cloth, shell, bones, dung, remains of plant and animal life. This dating technique was for the first time introduced in 1949 by Williard F. Libby. Similarly, potassium-argon method gives dates ranging up to a few million years on rocks, minerals, pottery, volcanic glasses and meteorites etc. and the thermoluminescence (TL) give dates on rocks, minerals and pottery.

In India too, these and other dating methods have now begun to be used commonly for dating archaeological materials and sediments. C-14 dates have pushed the antiquity of the Indus civilization to the beginning of the third millennium B.C. and the beginning of crop and animal husbandry to $6^{th}$-$7^{th}$ millennium B.C. Likewise, the Stone Age sites of Riwat and Uttarbaini in the Siwalik zone have been dated to beyond two million years by palaeomagnetism. The Acheulian sites of Isampur and Attirampakkam in South India are dated to 1.2 and 1.5 million years by electron spin resonance and cosmogenic nuclide methods, respectively. Indeed we realise that these dating methods taken from physical sciences have caused a revolution in archaeological chronology in India.

### 3.4.2 Chemical Analyses

Techniques borrowed from organic and inorganic chemistry have also contributed in a significant way towards the analysis and interpretation of archaeological materials. The application of these techniques has, for example, given fresh knowledge about ancient copper, iron and glass technology. Also, analyses of food and blood residues on ancient objects and pottery containers led to interesting information about preparation of food items and their consumption. For example, chemical analysis of starch grains on stone tools shows that already in Middle Palaeolithic times sun-dried bread of wild grass seeds was being prepared and consumed in Africa and Europe.

## 3.5 SOCIAL SCIENCES

Our foregoing observations about the role of natural sciences should not be construed to mean that archaeology has no interconnections with social sciences. In particular, it benefits from interpretations and analogies drawn from anthropology, history and human geography.

In unit 2 we have already considered how clues derived from cultural anthropology are used in archaeological reconstruction. These are ethnographic parallels or analogies derived from the study of contemporary simple (peasant, pastoral and hunting-gathering) communities. These analogies are of two types: general comparative and direct historical. Considering that India is home to a tremendously large number and variety of simple societies inhabiting hill tracts still clothed in good vegetation. It is reassuring to know that prehistorians have

already studied hunting-gathering communities like the Chenchus, Yanadis, Irulas, Hill Pandarams, Pardhis and Van Vagris, and Gonds and made use of the analogies for reconstructions of Palaeolithic and Mesolithic life ways. Likewise**,** studies of pastoral communities like the Todas, Badagas, Kurubas, Dhangars and Bharvads have provided to be very helpful for understanding various aspects of early agropastoral communities.

Biological or physical anthropology is concerned with the origin, evolution and variation of human beings. It seeks to study the physical characteristics like physique, age, sex, cranial capacity, DNA, blood group, gene, medical history, nutrition, food habits, dental formula, pathology and demography.

Human geography also helps archaeological reconstruction. It deals with the study of distribution of human settlements on a given landscape and how this distribution is governed by consideration of physical factors like terrain form, soils and availability of water and other resources and also by symbolic and religious factors. Such studies in human geography provide many useful clues for reconstructing settlement geography of ancient societies.

Archaeology and history are sister disciplines; both seek to reconstruct ancient societies and their lifeways in a comprehensive way. The differences lie in methodology. While archaeology is based upon the use of non-written or antiquarian materials, history makes use of written documents of all kinds. The notion of history as the story of kings and rulers and their political victories and defeats which prevailed for a long time has now given way to total history involving the study of economic, social, religious and other aspects of ancient societies. The Annales school of France has played a pivotal role in this transformation. The concepts and methods of this new history are helpful in archaeological reconstruction.

Other social sciences like sociology, psychology and economics as well as humanities like philosophy, literary theory and art history also contribute to archaeology in terms of concepts and methods.

## 3.6 SUMMARY

By now you will have realised that archaeology is an eclectic branch of knowledge. While it has an independent status from the point of view of both aims and methods, it takes the help of almost all natural and social sciences and humanities in the recovery of antiquarian remains, their analysis and dating, and their reconstruction and interpretation of past human societies**.**

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**Sample Questions**

1) Critically examine the role of Natural Sciences in archaeology.
2) How floral and faunal remains are helpful to study the archaeological anthropology? Discuss.
3) How physical and chemical sciences help to study archaeological anthropology? Discuss.

**Write short Notes on the following**

i) Relationship of geology with archaeological anthropology.

ii) Relationship of archaeological anthropology with geomorphology.