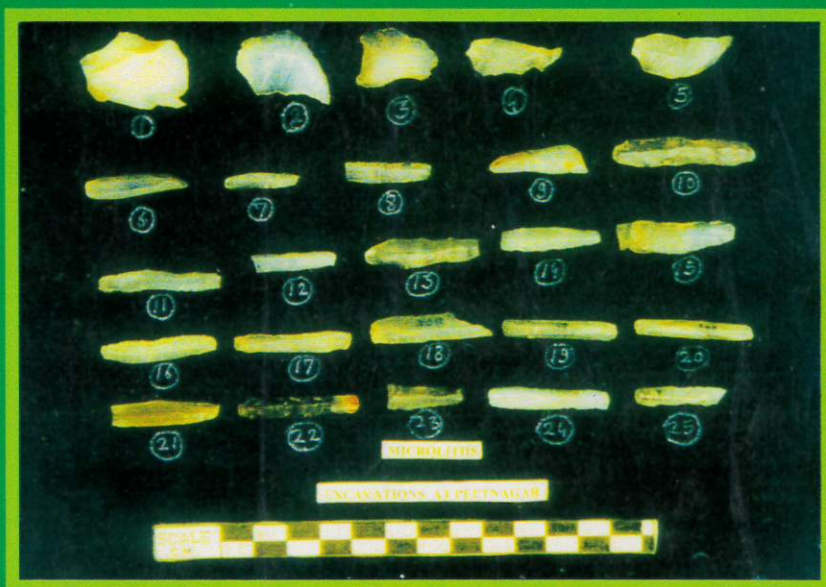


PRE AND PROTO HISTORY OF INDIA

(Ancient Indian History, Culture and Archaeology)



Department of History, Archaeology, Culture & Tourism

Madhya Pradesh Bhoj (Open) University

**PRE AND PROTO HISTORY
OF INDIA**

**Ancient Indian History, Culture
and Archaeology**

Course — V

**EDITED BY
DR. SUSMITA PANDE**

**Department of History, Culture, Archaeology & Tourism
Madhya Pradesh Bhoj (Open) University
I. T. I. Campus Goyindpura, Bhopal - 462023**

PRE AND PROTO HISTORY OF INDIA

Edited by : **Dr. Susmita Paude**

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Contributors

1. **Dr. D. R. Tiwari**
Asstt. Prof. Dept. of Geology, M V M College, Bhopal
2. **Dr. D. P. Sharma**
Head of the Harappan Gallery
National Museum, New Delhi
3. **Prof. V. D. Mishra**
Advanced Centre of Archaeology,
Dept. of Ancient History, Culture & Archaeology,
University of Allahabad, Allahabad - 211002
4. **Shri J. Manuel,**
Asstt. Archaeologist,
Archaeological Survey of India, Bhopal
5. **Prof. Purushottam Singh,**
Ex-prof. & Head, Dept. of Ancient History Culture & Archaeology
B.H.U., Varanasi.
6. **Dr Anup Ranjan Mishra**
Asstt. Archaeologist,
Dept of Ancient History, Culture And Archaeology
MJP Rohilkhand University Bareilly.
7. **Dr Manoj Kumar Sharma**
Post-doctoral Fellow (I. C. H. R. New Delhi)
M P Bhoj Open Universtiy, Bhopal.
8. **Dr A. K Sharma**
Director, Bodhisatava Nagarjun Smaraka Sansthana
Anusandhan Kendra, Nagpur.
9. **Dr Narayana Vyas**
Supeirntending Archaeologist, Pre-History branch, Nagpur

Production Assistance: Dr Manoj Kumar Sharma

Composing &: Bhupendra Singh Chauhan, 132 "C" Indrapuri, Bhopal (M.P.) Ph. No. 2758376

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VICE CHANCELLOR'S MESSAGE

The Madhya Pradesh Bhoj (Open) University was established in 1991 by an Act of the Legislative Assembly. His Excellency, the Governor is the Chancellor of the University.

The University offers degree, diploma, certificate and research programmes in humanities, Social Science, Basic Science, Computer Science, IT, Commerce Management, Education, Health Science and Nursing with an annual enrollment of about 1.5 lac students. The university has net work of 1049 study centres in different parts of the country.

The aim of the University is to provide education to a large segment of the population by the distance education. To realize this ideal self instructional study material is given to the students. I am proud to declare that MPBOU has taken the pioneer task in designing study material for innovative programme like Archaeology, Indological studies and Heritage Management.

The book would not only benefit the students who are interested in chalking out careers in the field of archeology and heritage management but would also be an asset to the general reader interested in Indian history and culture.

We would be able to disseminate our quality education and popularise the above prestigious programmes by connecting MPBOU headquarters with other study centres through the medium of EDUSAT facility now.

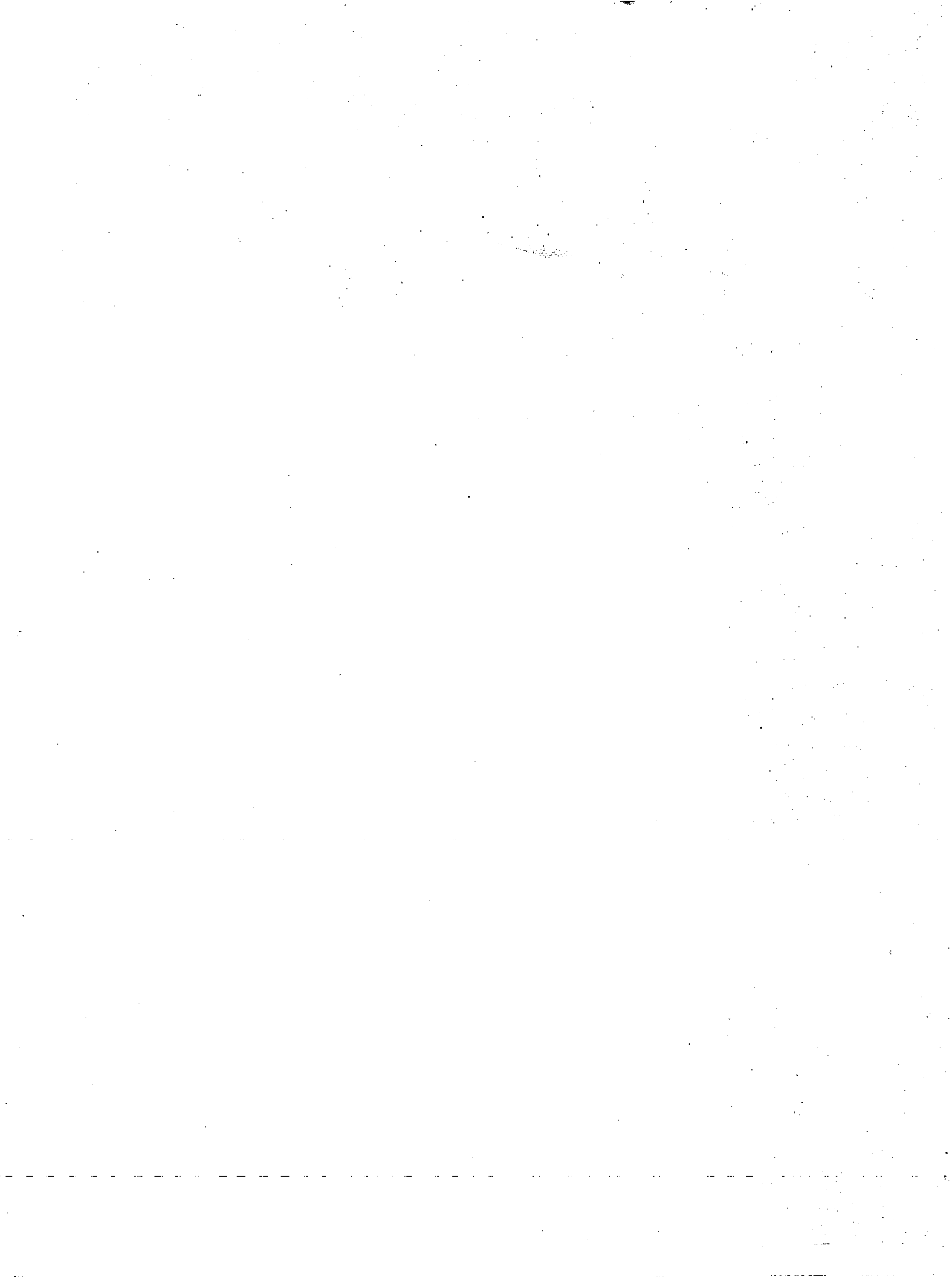
I am thankful to the Distance Education Council and its chairman for the financial grant provided for the printing of the study material.

I congratulate the department of History, Archaeology, Culture and Tourism especially Dr. Susmita Pande for designing this unique material which is being developed for the first time in the distance mode by MPBOU.

I am also thankful to the Registrar Prof. S. B. Goswami and the directors especially Dr. G.D. Singh, Director Printing for their various efforts in the publication of this book.

(Dr. Kamlakar Singh)

Vice Chancellor



EDITOR'S NOTE

It is a very happy augury that material in the distance mode for Ancient Indian History, Culture and Archaeology is being structured for the first time in the country by MPBOU. The scholars invited in this effort are eminent historians and archaeologists of national and international reputé.

Pre history of India is the period which is before the evolution of writing and is the age of stone tools Proto History of India is the period where there is evidence of writing which has not been deciphered. It is the age in which stone, copper and bronze were used for making tools and artifacts.

The student of his tory is to be given a thorough background of these ages so that he can trace the development of the historical period in proper perspective.

The publication of this volume would not have been possible without the support, encouragement and dynamism of our Hon'ble Vice Chancellor Kamalakar Singh.

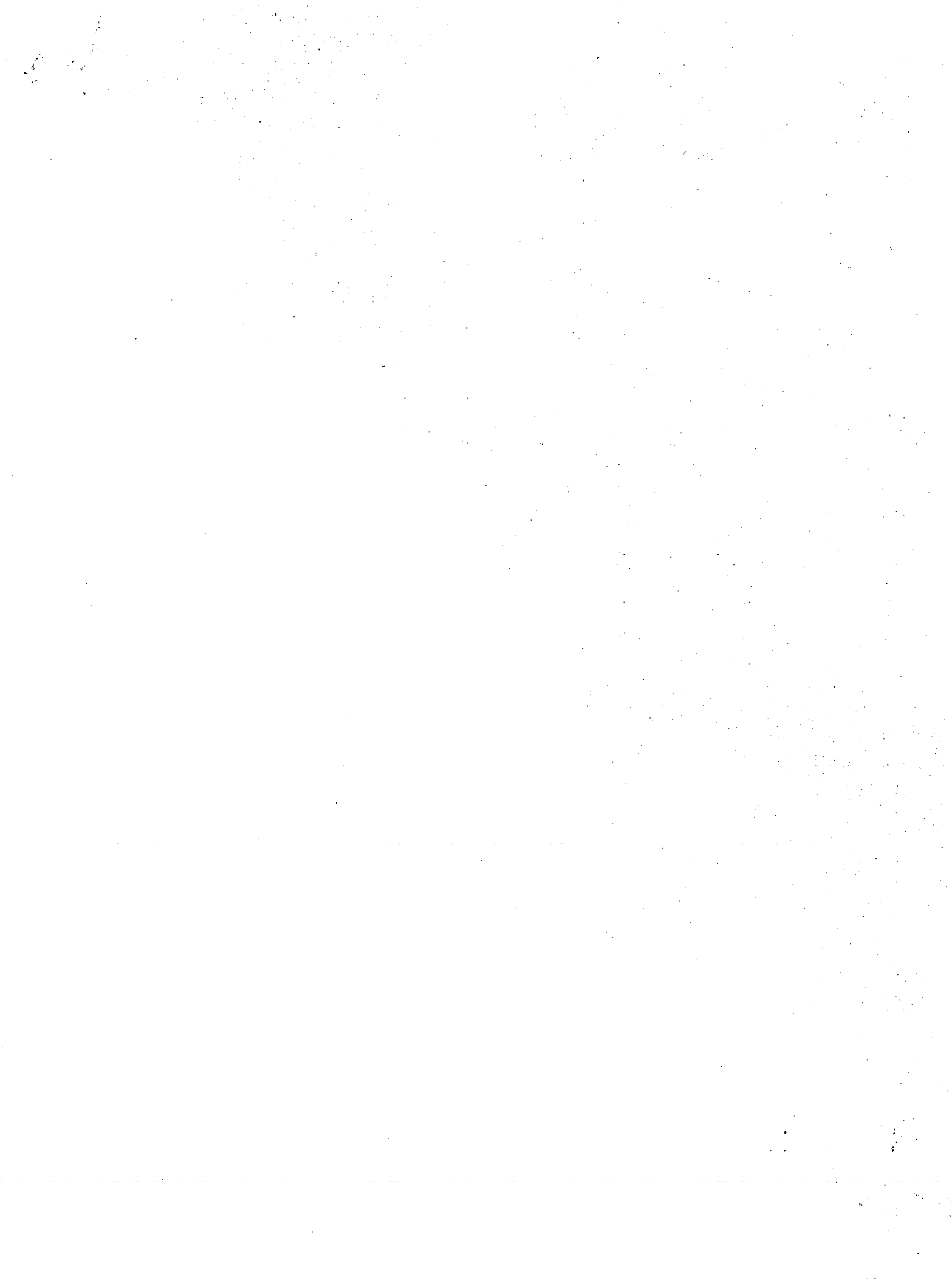
I must thank the writers of the units Dr. D.R. Tiwari, Prof. Vidyadhara Mishra, Dr. A.K. Sharma, Dr. D.P. Sharma, Shri J. Manuel, Dr. Anup Ranjan Mishra, Dr. Manoj Kumar Sharma and Dr. Narayan Vyas for their cooperation who inspite of their busy schedules were able to complete their units.

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I am thankful to our Post doctoral fellow Dr. Manoj Kumar Sharma who assisted me in various ways. Shri. Bhupendra Singh Chauhan deserves my heartfelt thanks for preparing a neat typescript.

The volume would be helpful not only to the students of Ancient Indian History and Archaeology but also to the people who are interested in the discovery of our rich heritage.

(Susmita Pande)



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BLOCK-1 : PALAEOENVIRONMENTAL STUDIES

UNIT-1

A BROUT LINE OF THE DIFFERENT GEOLOGICAL AGES AND CLIMATE CHANGES

1.1.1. Introduction

1.1.2. Objectives

1.1.3. Uranium - Lead Method

1.1.4. Thorium - Lead Method

1.1.5. Potassium - Argon Method

1.1.6. Carbon - 14 Method

1.1.7. Organic Evolution Trough Geologic Time

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1.1.9. Write notes on

1.1.1. Introduction

Geologists have attempted in various ways to estimate the age of the layers of rocks and geological history of the earth. The entire life span of the earth is called the geological time. Since the geological formations of Western Europe were studied first by the pioneers in the field of stratigraphy, the chronological sequence of geological formations, which they had established there is accepted universally as the standard. Thus the geological time scale has developed and this scale within its limits gives us a pretty idea of the sequence of events in the history of earth. The geological time scale has been broadly divided into six major divisions like Archaean or Azoic, Precambrian or Proterozoic, Palaeozoic, Mesozoic, Cenozoic or Tertiary, Quaternary. Each Division is also marked by definite geological, fossils and Environmental records.

1.1.2. objectives

- i. To know about the Events in the Earth history.
- ii. To know about the different Geological formation in history.
- iii. To know about the major mountain buildings.

PRE AND PROTO HISTORY OF INDIA (2)

- iv. To know about the evolution of organic life (Plants and Animals).
- v. To know about the palaeo-environments.
- vi. For to comparative studies at global level.
- vii. contents :

The modern topography of the earth has been formed after repeated distortions of the earlier's surfaces and rocks as is evidenced from the structures shown by the folded mountains and uplifted oceanic floors. Even today, the rivers are able to deposit their flood plains and new islands are either emerged or submerged in the sea as a new topography, depending upon the intensity of the geological processes. The other geological events like earthquakes, volcanoes, metamorphism etc., are also capable of modifying the pre existing rocks and the earth's surfaces.

Today, the age dating of rocks has shown that the earliest rocks were formed approximately four thousand six hundred million years ago and the earliest rocks (igneous rocks) that were solidified were from the molten magma. The sedimentary rocks, subsequently, developed from the pre existing rocks after their erosion, and the metamorphic rocks evolved from the modifications of the above two types of rocks under varying temperature and pressure conditions. The survey of huge escarpments of the hills, especially of the sedimentary rocks, reveals that the rocks appear to be almost horizontal and seem to overlie each other, if not overturned by deformation. The differences between their composition, colour, thickness etc., suggest that they must have been formed under changing geological conditions whose significance can be understood after studying their sequential characteristics. It was Dr. James Hutton who realised that the earth's geological processes that are operating today have been similarly operative in the geological past but with different intensities. This observations led to the *Principle of Uniformitarianism* which can simply be termed as 'the present is the key to the past'. Thus, as rivers are depositing fresh mud along their banks today, the mud stones have been developed in the past as sedimentary deposits.

In order to unfold the mystery of the geological past it is very essential to know the exact time of formation of the geological rocks and events. The time of geological events can be recorded in two different time measurement methods namely *absolute time and relative time*. The absolute time is recorded with the help of radiometric age dating involving radioactivity of some of the natural elements and their specific time required for decay. On the other hand, the relative geological time is recorded by identifying chronological order of the rocks and by placing them in their appropriate time slots.

ABOUT LINE OF THE DIFFERENT GEOLOGICAL AGES AND CLIMATE CHANGES(3)

The radiometric dating methods. Direct method of dating – The discoveries of radioactivity in uranium by H. Becquerel (1895), X-rays by W. Rontgen and radium by Marie. S. Curie were amongst pioneering discoveries towards dating of rocks. These discoveries opened new avenues for the 'atomic clocks', which were the direct methods for dating the geological events.

Today, modern geologists are able to measure the earth's absolute age due to more accurate 'radioactive clocks'. This 'clock' is based on the chemical property of some minerals, known as radioactivity. The nucleus of an atom contains protons and neutrons, while the electrons are circling the nucleus. In an element, the total number of protons (or electrons) constitutes the atomic number (z) of that element and all its atoms have the same atomic number. For example, the atomic number of carbon is 6. The mass number of an element is determined by the number of protons and neutrons together. The atoms of an element, with the same number of protons but with different number of neutrons (i.e. mass number), are called as isotopes. For example, the normal carbon (c 12), has two isotopes, namely - carbon - 13 and carbon - 14, as shown in Fig.1.

Each isotope is therefore, written with the name of its element, followed by its atomic number indicating the total number of protons + neutrons in the nucleus, eg. C-12, C-14 etc.

Out of these, carbon-13, along with carbon-12 are stable, while carbon-14 is radioactive. The radioactive isotope spontaneously disintegrates into the non radiogenic end product, nitrogen. This phenomenon of unstable isotope undergoing decay into a stable element is called as radioactivity. During this process, the unstable nucleus gives off large quantities of electromagnetic energy, as well as, charged particles. This radioactivity is significant as compared to other earth's processes, because

- i. The process of disintegration continues for a long time at a constant rate of decay.
- ii. Every element, which decays radioactively, has its own rate of disintegration.

These two characteristics make the radioactive substances accurate, geological clocks to measure the time of formation of any mineral, rock or geological event.

As the actual disintegration time for any radioactive element is very long, the half life of that element is measured for the dating. Let us suppose that a sample of rock contains one gram of a radioactive element. If it starts decaying and shows the presence of 0.50 gms of that element after some time span, then that period of time is considered as the half life of that substance.

PRE AND PROTO HISTORY OF INDIA (4)

The other radioactive elements, their half lives and the minerals where the radioactive elements are observed are shown in table-1.

As shown in the above table, isotopes, such as potassium-40, which are unstable and undergo disintegration are called as parent isotopes. While, the stable isotopes, that are formed at the end of radioactivity (such as argon-40, calcium-40), are called as daughter isotopes.

In order to date any particular rock, with radioactive element, it is assumed that a radioactive parent isotope; would disintegrate at a constant rate to form daughter isotopes. Depending on the disintegration rate of the elements, the decay process would produce a known amount of daughter isotopes in the rock, in a given amount of time, as shown in fig. 2. As these decay rates are unaffected by temperature, pressure, chemical environment, depth of burial, metamorphism or any other geological processes, the amount of daughter and parent isotopes detected in the rock are a direct measure of the time taken for the disintegration. If we imagine that at the beginning of the mineral formation, the rock contains only parent isotopes, then as the age of the rock increases, the daughter isotopes would increase in number and the parent isotopes would decrease at a constant proportions. Hence, the ratio between the daughter and parent isotopes gives the 'time' (in terms of exact years) when the rock containing that radioactive element was formed.

As the half-life of an element can now be easily measured in the geophysical laboratories like Physical Research Laboratory, Ahmedabad the age of any rock can be measured with an error of less than one percent. For the practical purpose of dating of rocks, it can be summarised as follows.

It is assumed that a radioactive element 'A' is a radioactive parent isotope and it constantly decays into a stable, daughter isotope 'B', at a constant rate of breakdown 'r' of the original mass every year. Then 'T' years would be required for the complete conversion of 'A' to 'B'. If, in a given rock, the percentage of A and B are known then, the time that has elapsed since the start of the disintegration process can be easily calculated from the relation.

(T) = Amount of disintegration product (B)

Rate of production of that product (r)

With the help of know half-life of any element (i.e. $T/2$), we can calculate the age of any element or mineral in the rock. If the minerals are formed during the formation of the rock (as in case of igneous rocks), the age of the mineral itself becomes the age of the rock.

ABROU TLINE OF THE DIFFERENT GEOLOGICAL AGES AND CLIMATE CHANGES(5)

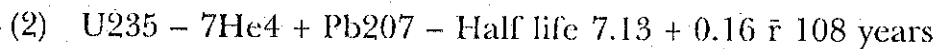
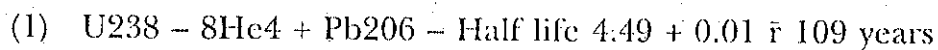
The factors which can cause error in the above assumptions are -

- (i) The daughter isotopes are removed from the rocks due to the geological processes.
- (ii) The daughter isotopes are added to the rocks through ground water and other geological processes.
- (iii) The geological events like metamorphism may melt the rocks and resets the 'radioactive clock' by allowing the parent and daughter isotopes to escape.
- (iv) The elements like Argon are gaseous and hence, can escape out of the rocks on their own.

Therefore, while selecting radioactive minerals for dating of rocks, precautionary measures are to be taken so that the sample is not adulterated by foreign particles. The radioactive minerals can then serve the purpose of 'geological clocks'. Following are some important methods which are commonly utilized for dating the geological events.

1.1.3. Uranium - Lead Method

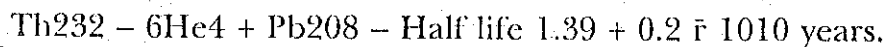
In this dating method, two isotopes of uranium are used to date the age of the rocks. U238 and U235 are both, radioactive. When uranium is trapped into the minerals, during the formation of the rock, its chemical decay commences immediately for the unstable isotopes of uranium. The end product of these two is lead (Pb206), which differs from the common lead. The disintegration of the uranium occurs according to following reaction -



Thus, by knowing the exact amount of uranium and lead isotopes by means of spectrometric analysis of the uranium containing specimens, the absolute age of the rock specimen can be detected.

1.1.4 Thorium - Lead Method :

As given in the above method the ratios of the parent and daughter isotopes are detected in the rock. Thorium (Th232) is radiogenic and disintegrates into daughter isotope lead (Pb208) by the following relation.



Based on the amounts of parent and daughter isotopes, the age of the rock can be easily detected.

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In the above mentioned rocks it is quite possible that lead in the rocks could be an end product of disintegration of Uranium, as well as, Thorium. In such cases, the following formula is used -

$$T = 7.37 \bar{r} 109 (\text{Pb}) / (\text{U}) + 0.35 (\text{Th})$$

Where, the symbols Pb, U, Th resemble masses of the isotopes in the rocks. T is the age in years.

1.1.5 Potassium - Argon Method : Potassium has three isotopes namely, K39, K40 and K41. Out of these, only K40 is radioactive. It being unstable, begins to disintegrate into Ar40 and Ca40 with a half life of $1.25 \bar{r} 109$ years.

It should be remembered that Ar is an inert gas and can be lost during metamorphic or weathering processes. Thus, the ratio K40/Ar40 simply gives the age of the last heating event, when some Argon gas must have been lost and the K-Ar ratios modified to new proportions.

1.1.6. Carbon - 14 Method

This method has been discovered by Libby in 1947 and is useful for dating geological events of short duration, such as age of river deposits, soil formation etc. Such geological processes have a time duration, which ranges from 50,000 to 75,000 years. This method utilizes the radiogenic Carbon-14, which is produced in the upper atmosphere due to the impact of the cosmic rays on the gases present. This attack of high energy particles shatters the nuclei of gases and as a result, some neutrons are released. These neutrons are absorbed by the nitrogen causing its nucleus to release one proton as an endproduct of the reaction. Hence, the atomic number of nitrogen reduces from 7 to 6 and a new element, C-14 is produced. It is an isotope of carbon which enters into carbon-dioxide of the atmosphere and then, into the organic material (plants and animals) by absorption. Thus, we all possess atleast a fraction of this carbon-14 and all throughout our life, it continuously gets replaced. Therefore, the ratio of carbon-14 to carbon-12 is constant. After the death of the animal or plant, the quantity of carbon-14 gets diminished and it decays to nitrogen-14 by beta emission. Thus, by comparing the percentages of carbon-14 and carbon-12 in a sample, the radiocarbon date of the animal or plant can be estimated. The Half-life of carbon-14 is 5,570 years. This method has been very useful for dating geological events like glaciation, sedimentary cycles etc. The relative geological time determination is based on the following assumptions.

A BROAD LINE OF THE DIFFERENT GEOLOGICAL AGES AND CLIMATE CHANGES (7)

1. It is assumed that in an underformed sedimentary sequence, the strata developed is either horizontal or nearly horizontal, and almost parallel to the earth's surface. This constitutes the law of Original Horizontality.
2. In an undisturbed sedimentary sequence, the order in which the layers are laid down is from the bottom to the top. In other words, the youngest bed would be at the top while the oldest would occur at the base of any undeformed sedimentary sequence. This is termed as the Principle of Stratigraphic Superposition.
3. In case of faults or igneous dykes and other intrusions which cut through the country rocks, it is observed that the intrusions are always younger than the rocks that have been penetrated by them. This concept has been called as the Principle of Cross-Cutting Relationships.
4. The fossils, that are found in any undisturbed sedimentary rock sequence, always maintain a chronological order in which they appeared on the earth, evolved and/or disappeared. Hence, according to the principle of faunal succession, if the rocks of the different locations possess similar fossils which are in situ, then the sedimentary rocks of the two geological sites are of the same age.

In case of sedimentary rocks, it can be stated that as deposition continues, successive layers are added one upon the other. On closer view, it is observed that every layer reveals vital information about the geological and biological environments that existed at the time of its formation. Thus, the study of such geological columns illustrates the nature of the geological environments of the past. These events would be more meaningful only if they are expressed in time perspective. Hence, the study of Historical Geology, which deals with the geological history of the strata, along with the changes that have taken place since the time of their formation, constitutes the branch of geology known as Stratigraphy.

The rock sequence can be called as conformable only when its layers have been formed without any time gap or interruption. But, in nature, there are longer gaps in the formation of rock layers due to either erosion (removal of strata by geological processes) or non-depositionary phases. Such a surface of non-deposition is termed as an 'unconformity'. These unconformities may envelope smaller or larger time spans depending on the geological processes involved and could be local or regional in extent. On regional scale, the unconformities are developed due to major tectonic events which can be taken as the 'natural time boundaries' for the division of geological time. It is due to such unconformities that there exists no geographical or geological location where the complete stratigraphic

PRE AND PROTO HISTORY OF INDIA (8)

column exists in a vertical succession and which can provide a continuous and exact information about the past environments throughout the geological history of the earth. Thus, if the earth's history is visualised as a bound book then it appears like a book with some of its pages missing. This intricacy results because of the unstable earth's processes that have modified its surfaces in due course of time. Therefore, the earliest topography at any place is either totally missing, or unconformities exist in between the stratigraphic layering. The other surfaces also may be either tattered, obliterated or torned. Hence, in order to gather geological information about these rocks and to construct a 'continuous historical record' of the geological events, one must compile geological information from nearby or remote localities where 'similar' rocks are observed. **These rocks** are then correlated with the help of geological data such as **lithology, age, fossils etc.**, and the equivalence in age is established. This is termed as **correlation where** incomplete geological records of two or more stratigraphic units from different places are matched with reference to their geological ages.

Based on the worldwide geological surveys, scientists have correlated and plotted the sequences of rocks that have been formed continuously throughout the duration of the geological history of the earth and have constructed an intact. Vertical Geological Column, which consists of a composite record of the time span of the earth's events. This correlation is based on the geometrical extension of rock units between similar outcrops or boreholes. The vertical geological column, in combination with the sequential arrangement of geologic time units, comprises the Geological Time Scale (Table 2). The Geological Time Scale can be considered as a reference scale for the earth history whose major units are Eons, Eras, Periods and Epochs. Each unit of the time scale is comprised of geological rocks with similar fossils and geological conditions developed during that time interval. The vertical geological column and the geological time scale were constructed long before the radioactive dating methods were invented. Thus, the existing tabular form of geological time scale is the outcome of the modifications made after the absolute dates of the rocks have been deduced. It was then possible to give the ages of the rocks in 'Million Years'. These ages are always given in figures either as 'm.y.' or as 'Ma'. The former denotes the time span or duration of the event in millions of years, and the latter expresses the age in millions of years.

The Geological Time Scale begins with the formation of the earth's independent existence as a planet which coincides with 4600 million years before present. Then onwards, the earth's history has been divided into units having different time intervals that are

ABROUT LINE OF THE DIFFERENT GEOLOGICAL AGES AND CLIMATE CHANGES(9)

mostly delineated on the basis of their fossil contents and other geological characteristics. The largest of these are called as Eons. There are two Eons identified namely, Cryptozoic or Precambrian and Phanerozoic. The Eons are further sub-divided into Eras (Table 3).

The Cryptozoic Eon, in the continents like India, can be divided into five subdivisions or Eras. The rocks of this period do not contain any recognizable fossil record because the conditions of the earth's surface were inhospitable to any kind of life. The earth's surface was still in an unconsolidated state and underwent drastic changes including volcanic eruptions. Thus, the rocks of this Eon are highly metamorphosed. In the absence of fossils, the age of rocks is mostly inferred with the help of radiometric age dating and observation of the extra terrestrial rock fragments from other planetary bodies. This time interval of the earth's history is the largest and is approximately nine times more than that of the younger Phanerozoic Eon. The rocks in Australia have shown an oldest age of 4200 million years. Recent studies in southern India have shown that the metamorphic terrain of Karnataka also belongs to similar crustal fragments which could be one of the oldest rocks of the earth. The Precambrian Eon is divided into five eras based on the cycles of earth's major destructive phases that almost obliterated the then existing rocks.

The Geological evidences in the northern hemisphere of the earth suggest that the Precambrian Eon can be sub-divided into three Eons - namely, the oldest Hadean Eon (meaning beneath the Earth in Greek), which does not have any diagnostic fossil record, a younger Archean Eon (meaning ancient in Greek), which contains earliest single celled organisms similar to bacteria and other types of fossils, and the youngest Proterozoic Eon (meaning earlier life in Greek), containing fossils of multicellular and more evolved organisms. The time boundary between Hadean and Archean corresponds to 3800 million years while, that between Archean and Proterozoic corresponds to 2500 million years.

The Phanerozoic Eon begins where the first marine shells of invertebrates have been preserved as fossils. This Eon has been divided into three Eras namely, Palaeozoic, Mesozoic and Cenozoic. The Palaeozoic (meaning old life in Greek) Era can be distinguished from the Precambrians on the basis of abundance of fossil record. These fossils are found in the sedimentary rocks deposited approximately 570 million years ago that have retained the fossils of marine animal and plant species in plenty. These Eras have been separated from one another on the basis of major tectonic events like glaciation, mountain building activity etc., along with the variations in their fossil assemblages. The Mesozoic (meaning middle life in Greek) Era is characterised by the fossils of Dinosaurs and other giant reptiles that dominated the earth once upon a time but vanished due to some drastic geological events.

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on the earth. The Cenozoic (meaning recent life in Greek) Era is characterised by the fossils of most recent plant and animal species like grasses, flowering plants, mammals, etc.

As shown in the Table 2 these Eras have been further divided into Periods, while Periods are sub-divided into Epochs. Each Epoch is comprised of a number of Ages; and a number of Phases together make up an Age. Accordingly, Palaeozoic Era is sub-divided into six Periods namely - Cambrian, Ordovician, Silurian, Devonian, Carboniferous and Permian. The Mesozoic Era is divided into three Periods such as Triassic, Jurassic and Cretaceous. The Cenozoic Era has been divided into two Periods namely, Tertiary and Quaternary. The Tertiary Period is further sub divided into Palaeogene - with epochs like palaeocene, Eocene, Oligocene; and Neogene - with epochs as Miocene and Pliocene. The Quaternary Period is subdivided into Pleistocene and Recent or Holocene Epochs. The time interval required for the Periods, Epochs and Eras along with their major earth events, fossils contents climate changes etc. have been shown in the Table 3 and 4.

This Geological Time Scale, if compared with our 'wrist watch', differs significantly because the wrist watches have equal divisions of seconds, minutes and hours but the units of the Geological Time are not equally divided and are most disproportionate with respect to number of years they represent. For example, the Precambrian Eon lasted for more than 4000 million years but the Phanerozoic Eon is only of 750 million years. Moreover, the Mesozoic Era has six Periods while the Cenozoic Era has only two and so on.

1.1.7. Organic Evolution Through Geologic Time

It is evident from the earlier discussions that the earth became an independent planet about 4600 million years ago. It was merely a molten ball of fire which began to solidify very slowly as time lapsed. Within one million year, the accretion of the earth's matter gave rise to a layered structure of the earth that further evolved into core, mantle and crust in due course of time. It is speculated that the accretion of molten material of the earth occurred about 4.5 billion years ago. Subsequently, within one billion year, the first rocks were formed from cooling of the molten magma. Hence, the age of the oldest rocks is estimated to about 3.5 billion years before present. The atmosphere of the earth was developed and probably, had gases like methane, ammonia, nitrogen, hydrogen, helium, along with water vapour. These gases must have been accumulated around the earth after being 'degassed' from the earth's interior. It has now been proved that the earliest atmosphere was not concentrated with oxygen as it is today but had a reducing environment due to presence of hydrogen and nitrogen gases. The oxygen appeared only after the chemical reaction, similar to photosyn-

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thesis, which combined CO_2 and water in the presence of sunlight to produce sugar and oxygen. The liberation of oxygen led to the formation of an ozone layer in the upper atmosphere which acts as a filter for the ultraviolet rays of the sun. Consequently, with the help of photochemical reactions, in the presence of CO_2 , the minerals like carbonates, silicates were formed. It was due to the cover of this atmosphere that the geochemical and physical weathering of the solidified rocks were initiated and the suitable environment existed for the organic life to be evolved on the earth.

The questions like 'How and when organic life originated on the earth?' remain conjectural. The laboratory studies have shown that organic compounds can be formed when an electric spark is introduced in the mixture of methane, ammonia, hydrogen and water vapour. Hence, we assume that the earliest unicellular organisms evolved in the oceans that existed then, and this phenomenon probably occurred approximately between 3.5 and 3.8 billion years ago from the present. The life forms that are found in the rocks of Precambrian period are very primitive in nature and represent merely spheroids. The fossils, which can be identified as organisms, belong to the rocks of Precambrian H and date back to 2.7 Ba. These are identified as algal or bacterial remnants. The first ever multicellular animal remains, that do not possess hard skeletons, have been preserved in the rocks of Precambrian (about 700-600 million years ago). Amongst these, the earliest plant remains, mostly the thallophytes, have been preserved as simple water plants. The other varieties, which must have been present during this period, are either destroyed by erosion or by metamorphic episodes that were abundant throughout the Proterozoic.

The Phanerozoic Eon has been named only after its rich fossil record in the sedimentary rocks. Of these, the Palaeozoic Era (old life in Greek) is characterized by the fossils belonging to invertebrates, fishes, amphibians, reptiles, ferns, cone bearing trees etc. The Mesozoic Era (Middle life in Greek) is known for its dinosaurs, flowering plants, first appearance of birds etc. The rocks of the Cenozoic Era (recent life in Greek) have an abundance of fossils belonging to grasses, mammals and other evolved animal and plant species.

It is during the Cambrian Period that the hard parts of the invertebrates were preserved in plenty within the sedimentary rocks. The trilobites, brachiopods, sea cucumbers, jelly-fishes, sponges, calcareous algae are some of the distinct fossils of this period. The Ordovician Period is also called the 'age of graptolites' and has remains of the earliest fishes, corals, bryozoans etc. The Silurian Period is characterised by the preservation of earliest representatives of the large land plants. During Silurian and Devonian Periods, these plants also developed a vascular structure that provided them rigidity in the air to support their

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own weight, a skin, to minimise the loss of moisture under atmospheric conditions and root system, for their food and foot hold. The fish fauna of ordovician shows wide evolution of species and hence, the Silurian Devonian Period collectively, is called as the 'age of Fishes'. The fishes, later on, gave rise to amphibians during the Late Devonian times. The Carboniferous Period is known as the 'age of amphibians'. During this period, there was a development of thick and dense forest cover all over the earth's surface. Hence, most of the coal seams belong to Permo Carboniferous age. Some typical plant fossils of this age are *Glassopteris*, *Gangamopteris*, *lepidodendron* etc. The first seed bearing plants evolved, abundant insects prevailed and first reptiles evolved during the Carboniferous Period. The Permian Period made all the trilobites and many other marine animals like crinoids, fusulinids to vanish from the earth and allowed reptiles to grow in number. These reptiles diversified as herbivores (plant eating) and carnivores (flesh eating). Some of them, which were mammal-like, became dominant but became extinct at the end of Permian Period.

The Mesozoic Era is known for the dominance of the gigantic reptiles and hence, called as the 'age of reptiles'. The reptilian fauna included phytosaurs (similar to alligator), ichthyosaurs and plesiosaurs (sea living reptiles) etc. The Triassic Period saw the abundance of ammonoids and huge trees of conifers. The first dinosaur appeared during Triassic and other animals like turtles, lizards, snakes underwent evolutionary phases. The Plants with naked seeds evolved from the seed ferns. The rocks of Jurassic Period have an abundant fossil record of dinosaurs. The dinosaurs like *Brachiosaurus*, *Brontosaurus* were 90 feet long and weighed approximately 50 tons. The first ever bird fossil '*Archaeopteryx*' and fossils of primitive mammals, moths, flies etc., have also been preserved in the sediments of Jurassic Period. In Cretaceous Period, there was a greatest evolutionary phase for the dinosaurs and included species like *Tyrannosaurus rex* (20 feet tall), *Triceratops* (large homed dinosaur) etc. All these gigantic animals became extinct at the end of the Cretaceous Period. Other distinguishing features of this period are the appearance and dominance of flowering plants with covered seeds (angiosperms) and extinction of ammonites, belemnites, gymnosperms, cycads etc.

The Cenozoic Era is known as the 'age of mammals' during which they evolved rapidly and adapted to changing climatic conditions. The early mammal appeared in water during Eocene while the land mammal evolved in Oligocene. The Miocene epoch favoured the existence of higher mammals like Giraffids and elephants. It was only in Pliocene that the modern day elephant evolved. In Pleistocene, there was a dominance of hominids and large mammals got extinct. The man, who rules the planet now appeared only in Holocene (1 million year ago) while other mammals (birds, whales etc), evolved from their ancestors.

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1.1.8. Question :

1. Give the tabular classification of the Geological Time and describe the major events of the Paleozoic Era.
2. Enumerate the major divisions of the Geological Time Scale and describe the important features of each Period.
3. Describe the following :-
 - a. Life during Paleozoic Era
 - b. Life during Mesozoic Era
 - c. Life during Cenozoic Era
4. Describe tabular classification and the Geological conditions during Precambrian Eon.
5. What is meant by radioactivity? Explain with the help of examples, the relation between parent and daughter elements.
6. Describe the Uranium Lead method of radioactive dating of rocks.
7. Describe the Thorium Lead method of radioactive dating of rocks.
8. Describe the Potassium Argon method of dating or rocks.
9. Describe the Carbon-14 method of radioactive dating of rocks.

1.1.9. Write notes on

- a. Radioactive disintegration.
- b. Isotopes of Uranium and Thorium.
- c. Half life of radioactive elements.
- d. Parent and Daughter elements.

Isotopes of Carbon

Element

Parent	Daughter	Half life	Time span measured
Carbon- 14	Nitrogen-14	5730+30	100-70,000 yrs
Potassium-40	Argon-40	1.3 billion	50,000 - 4.6 billion
Calcium-40			

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Uranium-238	Lead-206	4.5 billion	10 million - 4.6 billion
Uranium-235	Lead-207	710 million	
Thorium-232	Lead-208	14 billion	
Rubidium-87	Strontium-87	47 billion	10 million - 4.6 billion

Effects of Radioactive disintegration of elements in a rock.

Table No. 4

Climate changes during different Geological Ages

Era	Period	Climate
Quaternary	Recent	
	Pleistocene	Periodic Glaciation
	Pliocene	Continued cooling
Tertiary	Miocene	Climate greatly changed cool and semi arid.
	Oligocene	Climate warm, Humid
	Eocene	Climate cool, semi arid there warm humid.
	Cretaceous	Climate fluctuating
Mesozoic	Jurassic	Warm
	Triassic	Warm to Semi arid
	Permian	Dry with periodic glaciation
	Carboniferous	
Paleozoic	Devonian	
	Silurian	
	Ordovician	
	Cambrian	Warm
	Proterozoic	Cold / glaciation
Pre-cambrian	Archean	Warm

Table - 2 Geological time Scale

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Eon, Era, Millions of years ago Phanerozoic, Cenozoic, Mesozoic, Palaeozoic, 66, 245, 570, late, Middle, Proterozoic, Early, 900, 1600, Pre-Cambrian, late 3000, Middle, 3400, Archezn, Early, 4600

Era, Period, Millions of years ago, Cenozoic, Quaternary, Holocene, Pleistocene Tertiary, Miocene, Oligocene, Eocene, Paleocene, 0.01, 1.6, 5.3, 23.7, 36.6, 57.8, 66.4, Cretaceous, Mesozoic, Jurassic, 144, Triassic, 208, Permian, 245, 286, Carboniferous, 360, Devonian, 408, Silurian, 438, Palaeozoic, Ordovician, 505; Cambrian, 570, Pre Cambrian

Table 3. Geological Column and Time Scale

Time Units of the Geologic Time Scale

Eon, Era, Period, Epoch, Recent Holocene, Quaternary, Pleistocene, Cenozoic Era, Neogene, Pliocene, Miocene, Eocene, Palaeogene, Palaeocene, 2, 5, 24, 37, 58, Mesozoic Era, Cretaceous, Jurassic, Triassic, Permian, 66, 144, 208, 245, 286, Carboniferous, Devonian, Silurian, Ordovician, Cambrian, 360, 408, 438, 505, 570, Proterozoic, Phanerozoic Eon, Archean, Hadean, 2500, 3800, 4600+, Important Events, Age of Man Placentals, Birds, Fishes, Predominate, Dicotyledons and Monocotyledons. Prominent, Age of Mammals, Mammals Like Horses, Elephants develop and become dominant, Extinction of Dinosaurs, Age of Reptiles, Early Flowering Plants, Greatest development of Dinosaurs, First Birds and Mammals, Abundant Dinosaurs, First Dinosaurs, Extinction of Trilobites and many Marine Animals, Age of Amphibians, Large Coal Forests Abundant Insects First Reptiles, Large Primitive Trees, First Amphibians, Age of Fishes, First Land Plant Fossils, First Fish, Age of Marine Invertebrates, First Organisms with shells Trilobites Abundant first unicellular organisms, Approximate Age of the Oldest Rocks.

UNIT -2

EVOLUTION OF MAN AND EARLY HUMAN TYPES

- 1.2.1. Introduction
- 1.2.2. Problem regarding the Antiquity of the evolution of man
- 1.2.3. Evolve of man in the tertiary period
 - 1.2.3.a. Pliopithecus, Dryopithecus, and Ramapithecus
 - 1.2.3.b. Australopithecus
 - 1.2.3.c. Characteristic features and antiquity
- 1.2.4 Evolution of man in the Quaternary period
 - 1.2.4.a Homo erectus
 - i. Characteristic features
 - ii. antiquity
 - 1.2.4.b Neanderthal
 - i. Characteristic features and homeland
 - ii. Characteristic features and antiquity of progressive neanderthal
 - 1.2.4.c Homo Sapiens
 - i. Characteristic features antiquity and geographical distribution
- 1.2.5 Summary
- 1.2.6 Check your progress
- 1.2.7 Assignment / activity
- 1.2.8 Reference
- 1.2.1. Introduction**

Evolution of man has been a debated and controversial point before Darwin. As per religious texts man was created by God himself. In fact according to that tradition it was not only man but all the creatures were the creation of God. If this view is accepted where is the basis for the evolution of man or of any creature? This religious myth continued till the mid of the 19th Century. The legend of creation of the first man by God is almost similar both in the Bible and the Kurān.

The dissenting voices about human evolution were heard from time to time even before the advent of Charles Darwin who is credited with the theory of evolution. In this connection mention may be made of Lucretius (95-51 B.C.), Epicurus (324 or 341 to 270 B.C.), Anaxagoras (500-428 B.C.), Socrates (469-399 B.C.), Anaximander (6th Cen. B.C.), Empedocles (490-430 B.C.), Aristotle (384-322 B.C.), Hippocrates (460-377 B.C.) Clandius Galen (200 B.C.), William Harvey (1578-1657 A.D.), etc. According to these scholars man was not created by God but was produced through the process of evolution. Even during the medieval period some scholars did not believe in the divine origin of man even though they faced severe consequences for their beliefs.

It goes to the credit of Darwin that he placed the issue of evolution on the basis of scientific data. Which he had collected from different areas. In course of his voyage he was able to collect enormous data pertaining to zoology, botany, paleontology and geology. He propounded the theory of natural selection that transforms species of animals and plants in nature and is closely bound up with mutation and heredity. Two books of Darwin. The Origin of Species and Descent of Man shattered the myth associated with creation. Darwin not only propounded the theory of evolution but also pointed out that unsuitable organs or species were thrown away in the dustbin of times by nature. In this way he propagated the theory of the survival the fittest.

Darwin's theory of evolution was a serious blow to the conception of the immutability of species. This theory, needless to say, revolutionized all biology and the idea of evolution was placed on scientific pedestal. The new concept was likened to a bomb thrown in to the camp of the clericals.

1.2.2. Problem regarding Antiquity of the evolution of man -

Man as such belongs to the family of mammals. There is a long line of evolution even in the mammals. At one end of the spectrum there are tree shrews while on the other are apes like gibbon, gorilla and chimpanzee. The theory of evolution is supported by geological records as well. Primitive creations are found from the early geological formations while the evolved ones from the later formations. But in this connection it may be pointed out that fossil records at our disposal are not complete. There are missing links. However, the variable evidence gives a coherent picture of evolution.

1.2.3. Evolution of man in the tertiary period Pliopithecus, Dryopithecus, Ramapithecus

Geological investigation across the globe have thrown welcom light not only on the history of earth but also on the evolution of life. It is divided into four groups a Protozoic,

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Palaeozoic, Mesozoic and Cenozoic. The last division i.e. Cenozoic is further subdivided into Tertiary and Quaternary. The Cenozoic epoch is very significant for the study of evolution pertaining to man. It was during this epoch that mammals emerged. Tertiary is further subdivided into five units Palaeocene, Eocene, Oligocene, Miocene and Pliocene. The antiquity of man like creature can be traced back to Pliocene if not earlier. In terms of years it could be around five million years back.

Fossils of monkeys and apes have been found from different places in the old and new worlds. In the evolution of man these creatures represent various stations. It is incorrect to say that man evolved directly from monkey or ape. What Darwin implied was only this that these animals represent different stages in evolution. In the Tertiary phase we find fossils of large number of animals including the apes. In this connection particular mention may be made of 1. Pliopithecus, 2. Dryopithecus, 3. Ramapithecus (It also includes Kenyopithecus.) Fossils of Pliopithecus have been found from different places from Europe in Miocene deposits. It is supposed that these were nearer to catarrhine monkey.

Dryopithecus fossils have been found from Miocene to Pliocene deposits. They were nearer to gorillas. Fossils of Dryopithecus have been obtained from Europe, Africa and Asia (India). These are divided into four subspecies Dryopithecus africanus, Dryopithecus nyanzae, Dryopithecus major, and Dryopithecus sivalensis. Some of the species were nearer to Gorillas or Gibbons while others like Sivapithecus probably resembled Chimpanzee.

Ramapithecus, found from the Sivalik in India is the earliest hominid. Subsequently fossils of this were also found from eastern Africa where these have been designated as Kenyopithecus by Leaky.

Australopithecus -

From the above it would be evident that in the Tertiary numerous apes were emerging. In the process of time a hominid which is supposed to represent the earliest phase of human like creature emerged. This is known as Australopithecus meaning the southern apes. This species encompasses all early hominids with small brain and large molars. Australopithecus also includes Paranthropus, Plesianthropus, Telanthropus, Zinjanthropus etc. Till now the fossils of Australopithecus have been found from nine sites in Africa (Taung, Kromdraai, Sterkfontein, Swartkrans, Makapan, Olduvai Gorge, Koro Toro (Chad), Omo (Ethiopia) and Lake Rudolf (Kenya)). Java and China are also credited with the discovery of such fossils known as Meganthropus and Hemanthropus respectively, but these claims have not received general acceptance. Thus it would be evident that the fossils of

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Australopithecus are found from Africa alone that too mostly from southern and eastern Africa. Put together the Australopithecus exhibits the following characteristic features.

1. Head was doliochocephalic
2. they had circular orbits. It compares well with that of orangutan and Luners.
3. Pre maxilla was fully developed like those of apes.
4. Nasal aperture was small and it was equal in length and width.
5. It had no chin.
6. Position of foramen magnum indicated that its head was more balanced on the trunk than that of apes.
7. The cranial capacity of child measured 404 and those of adults 426-530.
8. It was bipedal i.e. while waking it had erect posture like man. On this point it differed from apes.
9. Their teeth resembled those of man.

Australopithecus Africans, needless to under say, exhibited some mixed traits, both of ape and man as such, it is supposed that they represent a transitional stage from ape to man.

Chronologically speaking the antiquity of Australopithecus can be traced back to around 4.5 million years back and he continued to live upto 2.5 million. Whether they were manufacturing tools or not is not yet resolved.

1.2.4. Evolution of man in the Quaternary period

1.2.4.a. Homoerectus -

The fossils of Homoerectus are widely distributed. These are found not only from Africa but from Asia and Europe as well. The earliest fossil of the series was discovered at Trinil in central Jawa by Eugene Dubois, a Dutch anatomist, in 1891. The species was initially designated as Pithacanthropus erectus. At that time it was though that it exhibited traits of both ape and man though it was walking in erect posture. Subsequently it was designated 'homoerectus'. Besides Trinil, fossils of homoerects are also found from Sangiran and Modjokerto as well. The Choukoutien cave near Peking in China yielded numerous fossils of homo group. Initially it was designated as Sinanthropus (Chinaman). Subsequently the experts came to the conclusion that both Jawa man and Peking man belonged to one and the same family though they exhibited minor variations as well. Besides the sites cited above,

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the fossils of homo erectus have also been found from Lantain (china), Heidelberg (Germany), Vertesszollos (Hungary), Ternifine (Algeria), Rabat (Morocco), Olduvai Gorge (Tanzania) etc. In India also the remains of homo erectus have recently been obtained from Narmada, near Hosangabad in M.P. and Pandichari.

1.2.4.a.i. Characteristic feature :

The characteristic features of the Homo erectus are as follows :

1. they were dolichocephalic
2. They had strong supra orbital ridges running from one end to other.
3. The position of foramen Magnum was like that of man.
4. They had receding forehead.
5. They had bigger teeth in comparison to man.
6. The crown of teeth resembles that of man.
7. Femur resembles that of a man.
8. The height of Java man ranged from 167 cm. to 170 cm.
9. The cranial capacity of Java man measured 940 while that of Peking man ranges from 900 to 1100.
10. Homo erectus had no chin.
11. According to weidenreich, the peking hominids shared many features with modern Mongoloid peoples including the present day chinese.
12. The Peking man was using fire.
13. The Homo erectus was also a tool manufacturer and tool user. In java, china, central asia and parts of africa he was using pebble tools while in africa and europe he was using hand axes etc.
14. At choukoutien cannibalism is indicated.

1.2.4.a.ii. Antiquity -

The antiquity of Homo erectus can be traced to around two million year back. The Homo erectus fulfils all the anatomical and cultural criteria of being called human. In the process of evolution it represents a transitional stage between Australopithecus and Neanderthal man.

1.2.4.b. Neanderthals -

The earliest fossil of this Homo was found in the Neanderthal valley near Dusseldorf in Germany. Subsequently remains of this groups have been found from various places in Europe, Africa and Asia. the prominent sites being Neanderthal, Spay, la-Chapell-aux-saints, La Ferrassie, Le Mausteir, La quina, Cariguella, Gibraltar, Kvapina, Saccopastore and Monte Circeo, Skhul, Tabun and Amud, Shanidar, Teshik Tash, Mapa, Solo, Huastea, Broken hill, Sald anha etc.

In Europe, the Neanderthal fossils date from the wurm glaciations (the last glaciation) when the peninsula of Europe was icy and inhospitable place. As a result, the remains of this man are generally found from caves or rock shelters along with cold fauna like rhinoceros, mammoth, reindeer, arctic marmot, wolf and bison. They used fire for warmth, light and probably cooking.

All the finds of Neanderthal man are divided into two group Conservative or classic Neanderthal and Progressive Neanderthal

Features of classical Neanderthals :

- i. It was characterized with supra orbital ridge running from one end to other.
- ii. It had receding forehead.
- iii. Upper jaw was protuding
- iv. It had a strong mandible
- v. It had no marked chin.
- vi. On the basis of long bones, particularly the femur it appears it was a comparatively short statured. It had a height to 5ft. 1 inch to 5ft. 5 inch.
- vii. Its cranial capacity ranged from 1300 to 1600 cubic centimeter.
- viii. He was using fire.
- ix. He had started burying his dead indicating thereby that by that some idea pertaining to the after life ahd crept in his mind. He was not simply burying the dead, but had also started offering burial goods as well.
- x. He was an excellent tool. marker and is associated with mousterian culture. With his tools and strategem he was hunting even big animals.

The skeletal remains of progressive Neanderthal have been found from some places

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of Germany and of the Mount Carmel region of Palestine, now part of Israel. In the latter area these skeletons were found from places like - Skhul and Tabun. Fossils from Skhul are assigned to the progressive group while those from Tabun to conservative group.

b. Characteristic features of progressive Neanderthal :

- i. There was variability in height, male being higher than the female.
- ii. It had a high forehead, which was, not receding as in the case of the classical Neanderthal.
- iii. Zygomatic process was like that of modern man.
- iv. Position of Chin was different from that of the classical Neanderthal. In some cases it was well marked.
- v. His teeth were shorter in comparison to the those of classical Neanderthal.
- vi. The cranial capacity of female ranged from 1300 to 1350 cc while that of male from 1418 to 1587 c.c.

We get some glimpse about the social structure of the Neanderthal man. The availability of the bones of physically disabled person from France as well as from Palestine would suggest that such persons were taken care of by the other members of the society.

The origin and disappearance of Neanderthal man has long been a debatable point. According to one point of view, they represent a transitional stage between *Homo erectus* and *Homo sapiens sapiens*. According to other view *Homo Neanderthal* and *Homo sapiens sapiens* represent two parallel lines but around 35000 B.C. the former became extinct. According to the third view, which is based on the Paestinean evidence, there was interbreeding between Neanderthal and *Homo sapiens* in which the fast breeding *Homo sapiens* absorbed the Neanderthal. Needless to say the final verdict on the issue is yet to be passed.

1.2.4.c. *Homo Sapiens Sapiens*

Around 30000 B.C. a new human group designated as *Homo sapiens sapiens* emerged. They are widely distributed in Europe, particularly in western Europe, Africa and Asia. Even the distant places like America and Australia were also occupied by the group during the upper Palaeolithic period. It was the period of last glaciation in Europe. Of the important sites associated with this new group mention may be made of Cro-Magnon, Chatelperron, Combe Capelle and Chancelade in France; Grimaldi cave in Italy; Bredmost, Mindec, Dolni Vestonice and Pavlov in former Czechoslovakia; Oberkassel in Hungary; Kostenki in Russia;

Mugharet-es Skhul, and Gebel Qafzeh in Israel; Malta in Siberia; Wadjak in Java, Choukoutien upper cave in China, Olduvai-gorge in Tanzania, Kubua and gamble's cave in Kenya. Besides, there many more sites are reported from Africa.

The characteristic features of the Homo sapien sapien are as follows :

- i. They were doliocephalic.
- ii. Their cranial capacity is measured to about 1600 c.c.
- iii. Chin was well developed.
- iv. Femur was well developed. It was indicative of straight posture.
- v. Supra orbital ridge was broad but less pronounced in comparison to that of Neanderthal man.
- vi. Height measured 168.4 cm to 182 cm.
- vii. Grinaaldi man exhibits some Negroid features.
- viii. Homo sapiens used to bury their dead.
- ix. He is credited with the cave art of western Europe.
- x. Bone tools and engraving on antler are also associated with this man.
- xi. Blade industry is associated with Homo sapiens sapiens.

The upper Palaeolithic culture of Homo sapiens sapiens has been dated from 30,000 to 10,000 B.C. But there are certain fossils, which give earlier dating indicating the emergence of Homo sapiens much earlier. It is generally supposed that modern man evolved out of Homo sapiens sapiens but some feel that modern man represents altogether a different species.

All the people of the world today resemble each other in the primary and secondary features of their external aspect and internal structures. From biological standpoint all the mankind are placed in one species, Homo sapiens. However, the mankind is not homogenous but consists of group that have long since been given the name of races. On this point the following observations of Mikhail Nesturkh (The Origin of Man; pp. 314-17) are north questing.

A race of mankind is a biological group of people analogous but not homologous to a subspecies group in zoological classification. Each of the races has a common origin and emerged on a definite territory, its original habitat. Each race is characterized by a certain

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set of physical peculiarities, mostly the outward appearance, morphology and anatomy of its members.

The chief racial distinguishing features are the nature of the hair of the head the nature and development of facial hair (beard, moustache) and body hair, the colour of the hair and skin and the iris of the eye, the shape of the eyelids, nose and lips, the shape of the head and face and the length of the body, or height of the individual.

The races of mankind are the subjects of special anthropological study. In the opinion of many Soviet anthropologists mankind today consists of three great races each of which is divided into a number of smaller races. These latter are again subdivided into groups of similar anthropological types which constitute the basic unit in anthropological systematic.

Within any of the races of mankind individuals are to be found that are more typical and those that are less typical. There are also races that are more characteristic, more strongly expressed as well as those that differ little from other races. Some of the races are of an intermediate character.

The Negroid-Australoid (black) great race as a whole is characterized by a definite complex of features that is most strongly expressed in the Negroes of the Sudan and which distinguished it from the other two great races, the Negroid race are black hair, in tightly coiled spirals or wavy chocolate brown or even almost black (but at times yellow brown) skin; brown eyes, a somewhat flattened nose that does not protrude, has a low bridge and wide nostrils (some types have straight, narrower noses); the majority have thick lips; very much have long heads; the chin is moderately developed; the parts of the maxillary and mandible holding the teeth to protrude (mandibular prognathism).

On account of the geographical distribution of the Negroid Australoid race it is sometimes called Equatorial or Afro Australasian. This race is divided naturally into two small races;

1. The western, or African, also called the Negroid race, and
2. The eastern Oceanic, or Australoid race.

Another complex of features is typical of representatives of the big European Asian, or Europeoid (white) race. They are pinkish skin due to the blood vessel showing through it; some have fair skin, others have a darker tone of skin; many have blond hair and light eyes; the hair is wavy or straight and has medium or strong development on the face and body; the lips are of medium thickness; the nose is thin and projects sharply from the facial region;

the bridge of the nose is high; the folds of eyelids are poorly developed; the jaws and upper part of the face do not project greatly and there is a medium or strongly projecting chin; as a rule the face is not very broad.

Within the Europeoid great race (white) three smaller races are defined by the colouring of the hair and eyes; the clearly expressed northern (blond) and southern (brunette) and the less clearly expressed middle European with intermediate colouring. A considerable part of the Russians belongs to the White Sea Baltic type group of the northern minor race. Typical for the Russians are light brown or blond hair, blue or gray eyes and very fair skin. Furthermore, the nose is frequently retrouse and the bridge is not so high and is of a different shape from that of the north western Europeoid type, the Atlanto Baltic group, representative of which are found mostly in the North European countries. The White Sea Baltic group has many features in common with the latter group and together they form the North European little race.

The trunette group of the southern Europeoids is made up of most of the inhabitants of Spain, France, Italy, Switzerland, South Germany and the Balkan countries.

The Monogloid, or Asio-American great race (yellow) has a complex of features that distinguishes it from the Negroid Australoid and Europeoid races; the majority of the representatives of this race have dark or yellowish skin; the eyes are dark brow; the hair on the head is black, straight and stiff; as a rule the beard and moustache do not grow; there is very little hair on the body; typical of Mongoloid is the peculiar arrangement of the epicanthus, or fold in the eyelid, which covers the inner angle, or canthus, of the eye, giving it an appearance of slant; the face is rather flat; the cheek bones are placed widely apart; the chin and the jaw do not greatly protrude; the nose is generally straight the lips have medium thickness, the majority are of less than average height."

1.2.5 Summery :

Evolution of man is a vexing problem and many theories are given in this context. A revolutionary step was taken in this direction by Darwen who presented the theory of evolution on the basic of scientific data and propogated the theory of survival of the fittest.

The theory of evolutions is supported by geological records as well. The antiquity of man is traced back to the pliocene age in the tirtiary period i.e. around five million years back. In the tertiary period numerous apes emerged like Pliopithecus, Dryppitiecus, Ramapithecus. These creatures represented various stations in the evolution of man It is incorrect to say that man evolued directly from monkey or ape.

The earliest human like creature was Australopithecus. It exhibits features of both ape

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and man can be called the transitional stage from ape to man. The antiquity of Australopithecus can be traced to 4.5 million years back. Australopithecus continued to the upto 2.5 million years.

Homo erectus was next in the chain of evolutions. This antiquity it traced to two million years back. He fulfills all the criteria of being called human and represents the transitional stage between Australopithecus and Neanderthal man. He was a tool manufacturer as well. The fossils of Neanderthal man have been found in Germany, various places in Europe, Africa and Asia. He used fire for warmth, light and probably cooking. He became extinct around 35,000 B.C.

Homo Sapiens were widely distributed in Europe. Although the upper palaeolithic culture of Homo sapiens has been dated from 30,000 to 10,000 B.C. there are some fossils which give an earlier dating. It is generally supposed that modern man evolved out of Homo sapiens but some feel that modern man represents altogether a different species.

1.2.6. Check your progress

1. Discuss the evolutions of man in the tertiary period
2. Discuss the characteristic features of Australopithecus.
3. Discuss the fossils of homo erectus.
4. What do you know about the Neanderthal man?
5. Discuss the Homo Sapiens Sapiens.

1.2.7. Assignment / Activity

1. Make a comparative chart of the showing the different stages in the evolution of man.

1.2.8. Points for discussion and Classification

1.2.9. References :

1. Atlas of Fossil man - C. Horing Brace
2. Fossil Man - Macheel H. Hay Noel Korn.
3. The Origin of Man - Mikhail Nesturkh
4. Physical Anthropology G.W. Lasker & Robert N. Tyzzer
5. शारीरिक मानव विज्ञान - डा. ए.एन. शर्मा
6. मानव उद्विकास - डा. बी.आर.के. शुक्ल एवं डा. सुधा रस्तोगी

BLOCK-2 : PRE-HISTORIC CULTURES

UNIT-1

PALAEOLITHIC CULTURES OF INDIA

- 2.1.1 Introduction
- 2.1.2 Objective -
- 2.1.3 Historiography of prehistoric studies in India -
- 2.1.4 Lower Palaeolithic Culture
 - 1.4.a. Sohanian Culture
 - 1.4.b. The Acheulian Culture
- 2.1.5 Middle Palaeolithic Culture
- 2.1.6 Upper Palaeolithic Culture
 - 1.6.a. Technology
 - 1.6.b. Religious beliefs and art
 - 1.6.c. Palaeoenvironment
 - 1.6.d. Chronology
- 2.1.7 Summary
- 2.1.8 Assignment
- 2.1.9 Activity
- 2.1.10 Glossary of Technical Terms
- 2.1.11 References for further reading

2.1.1 Introduction

The cultural periods palaeolithic, mesolithic and neolithic are classified under the term prehistory. The term pre history covers the story of man's development before the appearance of writing.

But as this development has a different history in different parts of the world this term also varies from region to region.

In the Indian context the term proto history is also used. This denotes the period following pre history and preceding the appearance of coherent history derived from written records.

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Hence the periods of Harappan Culture, chaeolithic culture and megalithic cultures fall under the term protohistory.

A brief account of palaeolithic cultures of India are discussed in this chapter.

Human colonization in India incompasses a span of half a million years and is divided into two broad periods, namely the pre-historic (before the emergence of writing) and the historic (after writing). The pre-historic period is divided into stone, bronze and iron age. The stone age is further divided into Palaeolithic, Mesolithic and Neolithic periods. Here is given a brief account of the Palaeolithic culture of India.

2.1.2. Objective -

The study of palaeolithic cultures of India would help the student to understand the roots of his civilization and culture. The story of man's adopt himself to effort to his environment the development of his technical skill owould help the student to understand the later developmental process in the history of civilization.

2.1.3 Historiography of prehistoric studies in India -

Pre-historic studies in India began with the discovery of the first palaeolithic tool at Pallavaram near Madras (Chennai) way back in 1863 by Robert Bruce Foote who explored the various river valleys in Madras, Andhra Pradesh, Karnataka and Gujarat states for about 40 years and collected a large number of tools. He prepared a catalogue of his finds which was published by the Madras Museum in 1916. Unfortunately, the pre-historic studies initiated by Bruce Foote were not followed till 1935 when Indian Pre-history was put on proper foundation by the Yale-Cambridge Expedition led by De Terra and T.T. Paterson who made prolonged geological climatic, botanical and palaeontological study of the Kashmir valley, the Punjab the Narmada valley at Hoshangabad and the Kortalayar valley near Madras. This expedition studied archaeological materials and correlated them with geological deposits in the glaciated zones of North and North-Western India on the one hand and the pluvial zones of the Narmadā basin in central India and in the peninsular India near Madras respectively. Thus the tool bearing horizons were provided with geological and chronological framework for the first time. This was the first systematic and scientific attempt to put pre-historic studies on a proper foundation. This study was followed by that of the Archaeological Survey of India and several universities like the Universities of Calcutta, Guwahati, Allahabad, Baroda, and others. But the foremost among them in pre-historic studies is the Deccan Collage Post-Graduate and Research Institute, Pune. Their cumulative efforts resulted in to the building of the following chronological table

CHRONOLOGICAL TABLE

Early Palaeolithic

GEOLOGICAL PERIOD	INDUSTRY/CULTURE	SITES/REGIONS
I. Late Early Pleistocene	Flakes	Kashmir and the Punjab
II. Middle Pleistocene c.5,00,000 B.P. years B.P.	Chopper/chopping or Sohan Culture and Handaxe Culture	Punjab Whole India, including Kashmir, except Sind and Kerala
Middle Palaeolithic		
III. Late Pleistocene c. Kerala 50,000 B.P. to 20,000 B.P.	Scraper/Borer Culture	Whole India, except and Nepal
Upper Palaeolithic		
IV. Late Pleistocene c. Chittoor 20,000 B.P. to 10,000 B.P.	Blade and Burin Culture	i. Kurnool and (Andhra) ii. Sholapur Doab (Karnatak) iii. Singhbhura (Bihar) iv. Allahabad (U.P.) v. Pavagadh (Gujarat) vi. Ahmednagar and Jalgaon (Maharashtra) vii. Bhopal (M.P.)
Mesolithic		
V. Holocene c. 8,000 B.C. to 2,000 B.C.	Microliths	i. Sarai Nahar Rai (U.P.) ii. Adamgarh (M.P.) iii. Birbhanpur (W.B.) iv. Allahabad (U.P.) v. Teris (Tamilnadu) vi. Langhnaj (Gujarat) vii. Bagor (Rajasthan) viii. Patne (Maharashtra)
Neolithic		
VI. c. 4,000 B.C. to c. 2,000 B.C.		i. Baluchistan ii. Kashmir iii. Assam (Meghalaya)

(After Sankalia 1974)

2.1.4. Lower Palaeolithic Culture

A large number of palaeolithic sites have been discovered all over India except in the northern alluvial plains and in Kerala. Most of these tools are surface collections from secondary deposits and very few habitation sites have been excavated. (Fig. 1,2,3)

In India the lower palaeolithic culture has been broadly divided into two zones-primarily a pebble-based culture in the north and north-eastern India and the Acheulian in the rest of the country.

2.1.4.a. Sohanian Culture

The Sohanian Culture is named after the river Sohan (or Soan), a tributary of the Indus and was found at a number of sites in Siwalik hills in north-western India and Pakistan. The main tools of this culture, known as chopper-chopping tools are fashioned on river pebbles. They have obtained in the Potwar region of Pakistan, in the Kashmir valley and the Kangra district in Himachal Pradesh. De Terra's skilful correlation of the geological and climatic events in the Kashmir valley with the geological deposits in the Siwalik hills and the Porwar Plateau showed that in the Kashmir valley, which had undergone glaciation, five terraces could be seen due to the filling up (aggradation) of the valley by ice and their erosion during the time when the ice retreated and great streams of water were released. (Fig. 4)

The first relics of pre-historic man in Punjab are represented by two groups of tools:

1. The Handaxes
2. Large pebble tools and a few flakes

In the Sohanian Industry the following five major tool-assemblages or industries have been identified:

- (i) Pre-Sohan
- (ii) Early Sohan
- (iii) Late Sohan
- (iv) Chauntra Industry
- (v) Evolved Sohan (Fig. 5,6,7,8)

In eastern Punjab, Palaeolithic pebble and flake tools, made of quartzite were found by Olaf Prufer from Nalagarh, situated on the Sirsa River, a tributary of the Satluj river. Early Sohan type tools were recovered from the Beās and the Banganga valley in the Kangra district

of Himachal Pradesh by B.B. Lal in 1955. Pebble choppers of advanced-type than those of the Kangra valley, were found at as many as fourteen sites near Chandigarh by G.C. Mahapatra in 1960.

Although De Terra and Paterson were unable to locate a palaeolithic site in the Kashmir valley proper, a stone tools were found in 1969-70 at Pahalgam on the right bank of the Liddar river by H.D. Sankalia and scholars of the Archaeological Survey of India. These tools comprise the handaxe, massive flakes and borers. This shows that pre-historic man lived on the banks of the Liddar at a height of 7000 feet either during the first interglacial period or during the second glacial (Sankalia 1977: 37). The discovery of handaxes at Pahalgam helps to remove the impression that there were two different kinds of people having different cultures known as the Chopper-Chopping culture the Madrasian or the Handaxe culture.

In this context mention may be made of the oldest known tools of the Indian sub-continent comprising simple cores and flakes, discovered at Riwat near Rawalpindi in Pakistan. They have been dated to two million years on the basis of magnetic polarity stratigraphy. This exciting discovery made in 1985 is yet to be corroborated by more findings from other sites.

2.1.4.b. The Acheulian Culture

The Acheulian culture, named after the French site of St. Acheul, has been termed Madrasian by early scholars. In the Indian sub-continent Acheulian culture has been found in Tamil Nadu, Andhra Pradesh, Karnataka, Maharashtra, Orissa, Bihar, Madhya Pradesh, Uttar Pradesh, Gujarat, Rajasthan, West Bengal and the Garo Hills in Meghalaya. Acheulian tools have not been reported from the Ganga plains and the Western Ghats.

The characteristic tool-type of this culture are the handaxes which are pear-shaped or oval and worked on both the faces to give a continuous cutting edge. These are generally associated with cleavers with a broad chisel edge and ovates, flakes, spheroids and occasionally pebble tools. The raw material used for making tools was primarily quartzite but in its absence the choice of raw material was conditioned by the geology of the area and the availability of rocks. In western Maharashtra tools have been fashioned on basalt or dolerite. In the Hunsgi valley of Karnataka tool were made on limestone while in Bundelkhand, coarse-grained granite was used.

These tools have been found in different contexts in different parts of the country. They have been found embedded in Terrace 1 in the northwestern region while in the Eastern Ghats these are found in detrital beds. At several places they are found at factory sites where men had been manufacturing tools. Such sites have yielded not only finished tools but also

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debitage, cores, flake fragments and unfinished tools. At a number of sites in Madhya Pradesh, Uttar Pradesh and Bihar, Acheulian tools have been obtained from basal gravel of rivers, indicating thereby that their stratigraphy represents the earliest tools tradition of Stone Age man in India. In Madhya Pradesh, on sites like Bhimbetkā and Adamgarh, Acheulian tools are found in the rock shelters.

In Uttar Pradesh palaeolithic tools have been reported from the Singrauli and the Belan basins. In the former river valley Cockburn had reported palaeolithic tools as early as 1883 and his sites were examined by Zeuner and Krishnaswami in 1949. Subsequently, the Belan and its smaller tributaries were extensively studied by G.R. Sharma and his colleagues R.K. Varma and V.D. Misra. In this region stone industries from the Middle Pleistocene up to the recent (early Holocene) have been documented. Until recently eastern India (Assam) was largely devoid of any palaeolithic tool but T.C. Sharma has reported some chipped stones from the Garo Hills. Abbevillian and Acheulian handaxes and cleavers of quartzite, basalt and sandstone have been reported from Chaibasa near Chakradharpur in Singhbhum district of Chotanagpur plateau by Dharani Sen. This makes Jharkhand a part of the handaxe culture complex. Similarly, a few tools (handaxes, flakes, cores, and scrapers) were reported from Bhimbandh and Chormara in the Monghyr district. Handaxes, flakes and cleavers have been reported from Kuliana by Dharani Sen, K.C. Tripathy and G.C. Mohapatra.

South India has been termed the classic land of the Stone Age man. Numerous stone implements of several stone ages have been reported from almost all districts of Andhra Pradesh and Tamil Nadu. Of these, a fairly good sequence of stone tools and climatic fluctuation has been noticed at Giddalur in district Kurnool of Andhra Pradesh which holds good for the whole of south east India. The data for the early palaeolithic comes from river gravels and as in Orissa and Tamil Nadu, from detrital laterite. The stratigraphic and climatic correlation of this region has been worked out by Sankalia as follows:

Upper Pleistocene	Finer gravels; not lateritized	Tools of Series II (Middle Palaeolithic)	Wet Phase V
	Fine Gravels and clays	Advanced Hand-axes and Levallois Flakes	Dry Phase IV
Middle Pleistocene	Coarse River Gravels	End of handaxes of Period I	Strong Wet Phase III
	Open Plain	Handaxes of Period I	Dry Phase II
Early Pleistocene	Laterite formation on East Coast	No tools, Man absent	Long wet Phase I

Acheulian tools have been found associated with animal fossils in the gravel formations in the valleys of the Narmadā, Godavari, Belan and the Son. These animal fossils comprise bos, bubalus, elephus, equus, hippopotamus, chelonia, etc. The nature of the deposits and the occurrence of some animal bones indicate the prevalence of tropical humid condition during the time.

Commenting upon the chronology of the Acheulian culture, V.N. Misra (2001) observes:

Our knowledge of the antiquity and duration of the lower Paleolithic culture is far from satisfactory. Members of the British Archaeological Mission to Pakistan have reported three handaxes from two localities in the Rawalpindi area of the Siwaliks which are dated to between 700,000 and 400,000 years on the basis of magnetic polarity stratigraphy. Volcanic ash associated with Acheulian tools at Bori in Maharashtra has been dated by potassium/argon method but the dates ranging from 1.4 myr to 75,000 years present a confusing picture. Application of Th230/U234 and thermoluminescence techniques to Acheulian sites of Umrethi in Saurashtra and 16R locality at Didwana in Rajasthan has given dates ranging from 390,000 years to 150,000 years Th230/U234 dates obtained on travertine from Kaldevanhalli and on Elephas molar from Sadab and Elephas and Bos molars from Tegehalli in the Hunsgi-Baichbal valleys in Karnataka range from 350,000 to 166,000 B.P. Dates obtained on calcrete from the Acheulian site of Nevasa in Maharashtra and Yedurwadi in Karnataka are more than 350,000 B.P. It is likely that with the refinement of dating techniques and their application to more sites, the antiquity of the lower Palaeolithic will go back to the lower Pleistocene i.e. between 2.0 and 0.7 million years. The upper limit of the Acheulian culture is equally uncertain. However, since at many sites the Acheulian grades into the middle Palaeolithic and since the absolute dates of the middle Palaeolithic sites range from ca. 150,000 to ca. 20,000 B.P., it is quite likely that the Acheulian tradition persisted, at least in some areas, well into the upper Pleistocene.

Who were the authors of the Acheulian culture? Until recently pre-historians were at a loss to say any thing on this topic. But the discovery of a cranium (around 200,000 years old) of *Homo erectus* at Hathnora near Hoshangabad in Madhya Pradesh in the basal gravels of the Narmada by A. Sonakia in 1985 indicates that the Acheulian culture of India, as elsewhere, was the handiwork of *Homo erectus*.

2.1.5. Middle Palaeolithic Culture

The Acheulian culture slowly evolved into the Middle Palaeolithic culture by shedding some of the types and incorporating new forms and new techniques for making them. In India the existence of the Middle Palaeolithic culture was identified by H.D. Sankalia in a

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separate and distinct stratigraphic horizon in the Pravara valley, a tributary of the Godavari in Maharashtra. This discovery established that, in the rivers where there are two gravels, the Middle Palaeolithic tools are obtained from the second gravel whereas the first or the basal gravel yielded Acheulian tools. Sankalia designated this assemblage as Series II, Series I being the industries of the lower Palaeolithic. Subsequent researches brought out the occurrence of this type of tools from Tamil Nadu, Andhra Pradesh, Karnataka, Maharashtra, Gujarat, Rajasthan, Madhya Pradesh, Uttar Pradesh, Bihar and Orissa. In western Rajasthan middle Palaeolithic stone tool assemblages have been found around Didwana in the Luni valley and at Budha Pushkar.

The Middle Palaeolithic assemblage consists of different types of scrapers, points, blades, denticulates borers, scraper-cum-borers and occasionally, micro handaxes, cleavers and pebble tools. A noteworthy feature about these artifacts is that they now become smaller, thinner and lighter as compared to the tools of the Lower Palaeolithic culture.. Again, tools are now fashioned mainly on flakes and blades and Levallois and discoid techniques were used for the first time during this period. The Middle Palaeolithic man now selected fine-grained siliceous rocks such as chert, agate, jasper etc. Thus the tools display technological advancement in comparison to the tools of the Lower Palaeolithic culture.

The faunal remains associated with this culture comprise *Equus nomadicus*, *Bos nomadicus*, *Hexaprotodon*, *palaeindicus*, *Elephas hysudricus*, *stegodon-insignis-ganesa*, and *Cerus* species. These fossils suggest a savanna land environment interspersed with swamps and forests (V.D. Misra, 1999).

The chronology of the Middle Palaeolithic in India is a topic of debate among scholars. Summing up the current state of research V.N. Misra (2001), writes:

Several thermoluminescence and Th²³⁰/U²³⁴ dates from 16 R dune profile at Didwana range from 150,000 to 100,000 B.P. Over twenty radiocarbon dates obtained mostly on shell and bone from sites in the northern Deccan and central India range from 40,000 to 10,000 B.P. This shows that middle Palaeolithic assemblages persisted over a long period of time from the terminal middle Pleistocene to the greater part of the upper Pleistocene.

2.1.6 Upper Palaeolithic Culture

2.1.6.a. Technology

The Upper Palaeolithic culture developed during the later part of the Upper Pleistocene. The assemblage is characterized by blade and burin tools. The principal artifact forms are

scraper (side, convex, notch, end, steep, round etc.), flake-blades, blades, cores and backed blade variants (points, lunates, triangles, and trapezes), burins and choppers. Of these, parallel sides blades are most common (Fig. 10).

Geographical distribution

Vestiges of Upper Palaeolithic culture have been discovered from the Belan river in Uttar Pradesh, Chota Nagpur plateau in Jharkhand, Chittoor, Nagarjuni Konda and Kurnoor in Andhra Pradesh, the Shorapur doab in Karnataka and Patne in Jalgaon district of Maharashtra. This assemblage lies stratigraphically between those belonging to the Middle Palaeolithic and the Mesolithic. The chief raw material used is fine to medium grained quartzite. However, the frequency of the various tool types and their size and raw material differ from region to region; for example, excavation of one of the famous Kurnool caves known as Muchchatla Chintamanu Gavi, yielded 90% bone tools. The Upper Palaeolithic industry at Renigunta in district Chittoor is marked largely by blades and burins.

According to B.K. Thapar (1985: 12) the stratigraphical position of the this industry can be worked out as follows:

The stratigraphical position of the industry has been recorded in five regions, namely, the Shorapur doab, cliff sections of the Hunsgi nullah and its tributaries showed a succession of fivefold deposits, containing (from bottom upwards) bedrock; bouldary gravel, yielding Lower Palaeolithic tools; pebbly cobbly gravel, yielding Middle Palaeolithic tools; brown silt; and black-brown silt with lenses of pebbly granular gravel, yielding artifacts of the blade-tool industry. Tools of the Mesolithic Age were found to occur on several places on top of the terrace of the black-brown silt. The stratigraphical occurrence of the blade industry within the black-brown silt places it in a time scale covering the terminal phase of the Upper Pleistocene and the early part of the Holocene.

Fieldwork on the fossil dunes formed around Visadi and Pavagarh hill (near Baroda) showed the presence of an unmistakable blade-tool industry within the dunes, the top of the dunes being invariably covered by a scatter of microliths. This pattern of occurrence of the two assemblages suggests that during the period in which Upper Palaeolithic people inhabited the area, arid conditions were prevailing but during the subsequent period the environment became more humid with conditions approximating to those of the present. What is more relevant in this case is to ascertain whether the dune-formation, during which period Upper Palaeolithic people lived, took place in the terminal phase of the Palaeolithic. Analytical pollen studies of the salt-lake basins in Rajasthan indicate that "the basins were probably formed

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during pre-Holocene times by the damming of the ancient valleys by wind-borne sand at a time when the sand dunes were still active".

Another almost complete sequence of archaeological evidence is available at Pushkar in Rajasthan, in the vicinity of a group of fresh water lakes. While Mesolithic living sites have been found on the crests of dunes around Budha Pushkar lake, Upper Palaeolithic living and working floors have been identified in the exposed area of buried red soil in the same basin and an adjacent one. Middle Palaeolithic tools also occur in the same horizon.

In the Belan valley, stratigraphical evidence of the Upper Palaeolithic industries in Cemented Gravel III was established by excavation. Cemented Gravel I and II yielding respectively Lower and Middle Palaeolithic artifacts. The brownish clay, overlaying Cemented Gravel III, yielded microliths. The levels containing the main concentration of Upper Palaeolithic tools in this geological sequence re dated by radiocarbon to a time range of ca. 23000-17000 B.C., the initial end of the bracket being also supported by two thermoluminescence dates from the corresponding deposits in the Belan and son, reading respectively 29,900 B.P. and 26,100 B.P. A mother goddess figurine in bone has also been reported from these levels,

Excavations at Patne, located in district Jalgaon of Maharashtra, likewise revealed a sequence of Stone Age industries extending from Middle Palaeolithic through Upper Palaeolithic to Mesolithic. Noteworthy among the finds of the Upper Palaeolithic deposits is a disc bead made from a fragment of ostrich eggshell. This is the earliest recorded find of an ornamental object of Upper Palaeolithic people in India. Moreover, a few pieces of ostrich eggshell were found engraved with a crisscross pattern between two horizontal lines.

2.1.6.b. Religious beliefs and art

Archaeological excavation in the Belan and Son valleys have furnished evidence of religious beliefs of the Upper Palaeolithic man. In this context mention may be made of the discovery of a mother goddess from the Belan valley and a shrine associated with the worship of mother goddess at Baghor I in the Son valley. This shrine consists of a rectangular stone rubble platform with a triangular stone with natural concentric circles installed in the center. Similar stone installed on stone platforms are today worshipped as mother goddess by tribal communities of the this area. It has been claimed that the Baghor structure probably represents the earliest shrine in India and suggests a remarkably long continuity of mother goddess worship. As stated above, ostrich egg shell pieces engraved with criss-cross designs placed between two horizontal lines have been found from Patne in Maharashtra. This has been taken

to be the earliest evidence of art. Besides, beads fashioned on ostrich egg shells and shell, the latter of estuarine origin, have also been found from the same site.

2.1.6.c. Palaeoenvironment

Upper Palaeolithic tools have been obtained from the cores of the sand-dunes in Gujarat and Rajasthan suggesting thereby that when these dunes were being formed, Upper Palaeolithic man was on the scene. Ostrich egg shells have been found from no less than forty Upper Palaeolithic sites in Rajasthan, Madhya Pradesh and Maharashtra. These indicate prevalence of arid climatic conditions. The Belan and Son section also furnish ample indications of the arid climatic conditions (V.D. Misra, 1999: 132). In the Son valley Upper Palaeolithic artifacts have been obtained from the Baghor formation which were deposited during a period of aridity. The rich fossil record from the Peninsular rivers provides a good picture of the fauna of this period. The Upper Palaeolithic horizons of the valleys of the Belan and Son on the one hand and the Kurnool caves on the other, have yielded animal bones ascribed to nilgai, chinkara, four-horned antelope, sambar, chital, barking deer, mouse deer, wild boar, jungle cat, porcupine, hare, monitor lizard, longoor, cattle, hippopotamus, rhinoceros, elephant, turtle, etc. This fauna suggests the existence of grassland environment with pockets of forests and swamps.

2.1.6.d. Chronology

A number of radiocarbon dates from Upper Palaeolithic sites available from Madhya Pradesh, Rajasthan and Maharashtra suggest the duration of the Upper Palaeolithic from 30,000 B.P. to 10,000 B.P.

2.1.7. Summary

To sum up, the Indian subcontinent has been inhabited right from the Lower Palaeolithic. The Lower Palaeolithic culture has two faces—a chopper/chopping tool tradition concentrated in the north-west and north of the Indian subcontinent and the Acheulian tool tradition prevailing in other parts of the country. Like western Europe, western Asia and part of northern Africa, the Palaeolithic culture of India is divided into Lower, Middle and Upper Palaeolithic. Archaeological investigations have indicated gradual evolution from Lower Palaeolithic to Neolithic through the Middle Palaeolithic, Upper Palaeolithic and Mesolithic.

A survey of Palaeolithic culture presented above demonstrates that most of the Lower Palaeolithic sites have been located in surface explorations only and very few Palaeolithic dwelling sites have been excavated. Among the excavated sites, Bhimbetka is most important.

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This site is located on the Vindhyan range, about 50 k.m. from Bhopal in district Raisen in Madhya Pradesh. There are more than 200 rockshelters and caves on the Bhimbetka hills. Here one of the caves measures 40x12x15 metres and provides ideal setting for the abode of pre-historic man. Excavation conducted by V.N. Misra in one of the shelters revealed a 2.5 metres thick Acheulian occupation without any perceptible break. This excavation yielded about 5000 artifacts of which 68% were waste products and 32% tools. Misra considers it a late (Mousterian) stage of the Acheulian industry representing the terminal phase of this tradition.

Again, Shanti Pappu excavated in 1999-2000 the well known Palaeolithic site of Attirampakkam, situated in the Kortalar valley 1999-2000. The most significant discovery of this excavation is the presence of nearly 300 Acheulian artifacts. A detailed report of this excavation is eagerly awaited. Thus it is obvious that the location and excavation of primary sites belonging to the Palaeolithic period is a desideratum for reconstructing environmental and social conditions of pre-historic man.

2.1.8 Assignment

1. Discuss the lower palaeolithic cultures of India.
2. Write short notes on -
 - a. Middle palaeolithic culture of India
 - b. Upper palaeolithic culture of India
3. Explain the meaning of the following terms -
 - a. Pliocene
 - b. Holocene
 - c. Acheulian
 - d. Abbevillan
 - e. Thermoluminescence

2.1.9 Activity

1. Prepare a map of India showing important Palaeolithic sites.
2. Make drawing of the following tool types:
 - a. Acheulian handaxe
 - b. Clactonian flake

- c. Mousterian handaxe
- d. Bifacial chopping tool
- e. Parallel-sided blade
- f. Triangle

2.1.10 Glossary of Technical Terms

- Abbevillian** : This culture of the Lower Palaeolithic takes its name from Abbeville in northern France. The characteristic tools are pear-shaped handaxes with a heavy butt and pointed end.
- Acheulian** : This culture derives its name from the type-site of St. Acheul in northern France. The characteristic tools of this culture are two types of handaxes; those with a point and round butt for holding, and 'ovates' which were trimmed to a thin edge round their whole circumference. The Acheulian culture is found in Europe, nearly all parts of Africa, in western Asia and south India.
- B.P.** : Before Present
- Clactonian** : The type-site of this lower Palaeolithic culture is an old channel of the Thames at Clacton-on-Sea in England. Its characteristic tools are thick, square flakes of up to six inches across. This culture produced no handaxes.
- Holocene** : It is an incomplete recent epoch of the Quaternary period which spans the last 10,000 years and merges with the historical period.
- Homo erectu** : An extinct form of man. *Homo erectus* lived during the Middle Pleistocene, about half a million years ago. He was short (just over 5 ft. tall), walked upright, had a receding forehead, prominent eye-brow ridges and no chin. His brain size was 800-1200 cc. He made handaxes and knew the use of fire.
- Palaeolithic** : This period begins with the emergence of man and the manufacture of the most ancient tools some 1.75 million years ago. It lasted through most of the Pleistocene Ice Age until final retreat of the ice sheets in about 8300 B.C. It is generally sub-divided into Lower Palaeolithic, Middle Palaeolithic and Upper Palaeolithic.

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Pleistocene : This epoch is a part of the Quaternary Period which spans 2 million years. This epoch is marked 'Great Ice Ages' in which large continental areas of the northern hemisphere were mantled by ice sheets which formed during long intervals of the climatic cooling. In the so-called interglacial intervals, however, warmer conditions prevailed, and the ice was reduced in extent. Four glacial and three inter-glacial episodes have been recognized in the Pleistocene of northern parts of Europe, Asia and North Africa.

Radiocarbon

Dating : First suggested by W.F. Libby in 1946, this method gave the first universal means of absolute dating quite independent of subjective archaeological methods.

Thermoluminescence (TL): It is a technique of dating, still in experimental stage. The analysis is done on pottery hence this dating method can be used for all periods of the past when pottery was in use.

2.1.11 References for further reading

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UNIT-2 MESOLITHIC CULTURES OF INDIA

- 2.2.1. Introduction
- 2.2.2. Objectives
- 2.2.3. History of Research
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- 2.2.7. Chronology
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- 2.2.9. Check your Progress
- 2.10. Activities
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- 2.2.1. Introduction**

The Mesolithic phase constitutes a transitional stage from the Palaeolithic to Neolithic. The Mesolithic sites, characterized by microliths, have been reported from different ecological zones, across the length and width of the country, excepting from the major portion of the Indo-Gangetic plain and the north-eastern part of India. The technology of Mesolithic is primarily based on microliths. These are tiny tools made from micro-blades of one to five centimeters length, by blunting one or more sides with steep re-touch. The main tool-types

are backed blades, obliquely truncated blades, points, crescents, triangles and trapezes. These microliths were used as components of spear-heads, arrow-heads, knives, sickles, harpoons and daggers (Misra, 2001: 498). They were fitted into grooves in bone, wood and reed shafts and joined together by natural adhesives like gum and resin. Evidence for such hafting comes from later sites in India and from Mesolithic and Neolithic sites in Western Asia, Africa and Europe. The use of bow and arrow for hunting became common during this period.

2.2.2. Objectives -

The objective of this unit is to make the students aware of the stage of transition from the Palaeolithic to Neolithic age.

The use of microliths, traces of wheel made pottery and the evidence of circular or oval huts is advanced mesolithic (proto vedic) sites the Chappani Mandi, paintings at the rock shelters like Bhimbetka are some of the salient features of this age. The study of the above features would help the student in understanding the development process from palaeolithic to neolithic stage.

2.2.3. History of Research

In India the microlithic tools were first discovered as early as 1867-68 by A.C.L. Carlleyle, an Assistant of Sir Alexander Cunningham, the first Director General of the Archaeological Survey of India, in the caves and rock shelters of the Kaimur ranges of the Vindhyan hills. Subsequently in 1980-81 he excavated some of the rock shelters and came across microliths and other stone tools, living floors with hearths containing animal bones, ash and charcoal and human burials. At about the same time, Carlleyle's contemporary, Robert Bruce Foote discovered many microlithic sites in different parts of South India and in Gujarat, including the now famous site of Langhnaj. Small scale diggings of microlith bearing deposits were carried out by G.R. Hunter and D.H. Gordon in the rock shelters at Pachmarhi in Madhya Pradesh in the thirties of the last century. However, significant advance in our knowledge of this period was made only when H.D. Sankalia undertook excavation at Langhnaj and other sites in Gujarat in the early forties of the last century. Among Sankalia's contemporaries who contributed to the study of the Mesolithic period, mention may be made of A. Aiyappan, K.R.U. Todd and G.R. Sharma. While Aiyappan explored the teri sites of Sawyerpuram and published analysis of its microlithic industry, Todd explored the microlithic sites on the Islands of Bombay. G.R. Sharma with his colleagues R.K. Varma, V.D. Misra, B.B. Misra, J.N. Pandey and J.N. Pal discovered and excavated many Mesolithic sites in Mirzapur district; the Balen valley in Allahabad district; and in the Ganga valley in Pratapgarh district. One of the pioneers in the

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Mesolithic studies in India is V.N. Misra who explored the Berach basin in South Rajasthan and discovered more than thirty Mesolithic sites. He excavated two sites, Tilwara and Bagor in districts Barmer and Bhilwara respectively, both in Rajasthan, which unfolded many hitherto unknown facets of this culture. In the last four decades several thousand Mesolithic sites have been discovered in widely separated areas of India and as many as thirty-five of them have been excavated on varying scale. The important excavated sites are Langhnaj in Gujarat, Birbhanpur in West Bengal, Tilwara and Bagor in Rajasthan, Chopani Mando, and Lekhahia in the Vindhyan hills and Sarai Nahar Rai, Mahadaha and Damdama in the middle Ganga plain. A brief account of these excavations is presented below:

2.2.4. Mesolithic sites of West Bengal, Gujrat and Rajasthan

2.2.4.a. Birbhānpur

This site is located on the middle terrace of Damodar river in Burdwan district of West Bengal and it can be approached from Durgapur Railway station. It was excavated on limited scale by B.B. Lal during 1954 and 1957. The microlithic industry is essentially non-geometric comprising of fluted cores, blades, lunates, points, borers, scrapers and burins mainly made on milky quartz and occasionally on crystal, chert, chalcedony and fossil wood. Geochronological studies indicate that the climate was comparatively dry and mild during the Mesolithic period. This mild climatic phase was followed by a period of increasing aridity and violent wind activity so that the habitation layers were covered with wind borne sand.

2.2.4.b. Langhnaj

Langhnaj is one of the hundreds of sites in the sandy undulating alluvial plains of north and central Gujarat. This site was excavated by H.D. Sankalia for several field seasons between 1944 and 1963 and a total of 12,800 sq. ft. area was excavated.

This excavation showed that this site was a habitation-cum-cemetery. In all, fourteen skeletons, all intentionally buried, were exposed. Of these, thirteen skeletons were buried in flexed position with legs bent back while one was buried in extended position lying over its back. The preferred orientation was east-west, the head lying on its right. Sophie Ehrhardt who studied the skeletons found up to 1958, thought the Langhnaj people were cannibals, and their bodies were thrown into the ground subsequent to some battle or traumatic event. The Langhnaj skeletons betray mixed racial features: dolichocephalic head with fairly large cranial capacity, medium and long stature with thin legs due evidently to continuous movement, pronounced supraorbital ridges, and a slight prognathism of the mouth and probably a snub nose. The highly ground surface of the teeth suggests the use of a coarse diet (Sankalia, 1974: 256).

Since no mud walls or post-holes could be exposed in the excavation, it is believed that the Mesolithic man of Langhnaj lived in temporary camp-like habitations. He knew the use of fire and cooked the animal food over it. Radiocarbon dates of charred bones from this site suggest a date around 2000 B.C.

The pottery found in association with the microliths, though in small quantity, is present at this site. It comprises Burnished red ware, Burnished black-an-red ware, Incised coarse red ware and Rusticated ware. The pottery is largely hand-made, though there seems to be traces of wheel-made ware as well. Since the sherds are very small, no recognizable shapes can be made out.

2.2.4.c. Bagor

Bagor is one of the most extensive habitation sites of the Mesolithic age. This site lies on the left bank of the Kothari river, a tributary of the Banās, 25 kms. west of the town of Bhilwara in the district of the same name. This site lies on a large and prominent sand-dune. It was discovered in January 1967 and was excavated on an extensive scale by V.N. Misra for three seasons from 1968 to 1970. The total thickness of habitational deposit in various trenches is about 1.50 mtrs. It revealed an uninterrupted occupation of this site over a period of five millennia immediately before Christ (Sankalia, 1974: 261). On the basis of changes in the material culture, three phases of Bagor culture have been identified.

Phase I (c. 5000-2800 B.C.)

This phase is represented by a habitational deposit of 50 to 80 cms. The Microlithic industry and animal remains are most profuse. The stone industry of Bagor is based on mass production of micro-blades and their conversion into various microlithic forms like obliquely truncated blades, triangles, trapezes, transverse arrowheads, crescents and points made on quartz and chert. The microlithic industry is essentially geometric and geared to hunting economy. An extended human burial was found from the settlement area. Its head was towards the west. No grave-goods were found with this burial. The economy of early Bagorians of Phase I was based on hunting. A large number of charred and fragmentary bones were found. The fauna of Phase I was entirely wild and comprised cattle, hog-deer, barasingha, wild boar, jackal, rat, monitor lizard and river turtle.

Phase II (c. 2800-600 B.C.)

This phase is represented by a cultural deposit of 30 to 50 cms. The microlithic industry and animal bones began to decline in quantity but metal (copper) tools and pottery make

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their appearance. The pottery is hand-made with incised decoration on it. It is made of a gritty and micaceous clay. One or both surfaces of the pot are treated with a slip of fine clay. Most of the parts were made entirely by hand or by the use of slow wheel or turn table. The shapes comprise broad mouthed large jar, and small lota like pots, large shallow basins, large deep bowls or small basins and small bowls. The copper tools comprise one spearhead, one thin rod and three arrowheads. The arrowheads are provided with two parallel holes near the base. The holes were intended to secure the arrowheads to the shaft with the help of a string, metal wire or rivets.

Three graves of Phase-II were exposed. In all the three burials of this phase the body was laid in a flexed position, and oriented in an east-west direction with head to the east. The graves were richly furnished with earthenware pots, metal pots, ornaments and food offerings. Increased material prosperity implies a more secure and stable economy suggesting the possibility of the introduction of plant agriculture and certainly a great reliance on domestication (Sankalia, 1974: 262).

Phase III (c. 600 B.C - 200 A.D..)

Habitation of this phase is restricted to the central part of the mound and has a thickness of 35 to 75 cms. Microlithic industry declines and animal bones are scarce and highly fragmentary. Iron tools came into use and the pottery is more plentiful and entirely wheelmade.

2.2.4.d. Tilwara

This site is located some 23 kms. to the west of the town of Balotra in district Barmer. The pre-historic settlement is located on a sand-dune in the bend of river Luni. The surface of the dune is littered with microliths and pottery. An exploratory dig revealed a cultural deposit of 60 cm., though stray microliths and obliquely blunted blades and lunates, besides scraper and burin chips, occurred up to 90 cm. The raw material of the microlithic industry consists of chert, quartzite, quartz and rhyolite, all of which were obtained from the rock outcrops a few kilometers away. The industry consists of blunted back and obliquely blunted blades and lunates, besides scrapers and burins. A number of kankar blocks obviously imported to the site from the adjoining river bed occurred in the excavation and were possibly, like the stones at Bagor, connected with some sort of structures at the site. There are also fragmentary pieces of querns made out of kankar blocks suggesting some grinding activity. Besides, there are small clay balls.

Animal bones occurred here sparsely but were too small and fragmentary to be useful for identification.

Pottery consists of red and grey ware fabrics, but the sherds are even more fragmentary than at Bagor. The suggested shapes are all of small vases. Both the wares are wheel-made and decoration consists of incised parallel lines and punctured designs.

2.2.5. Mesolithic Sites in the Vindhya and the Ganga Valley

A large number of Mesolithic sites have been excavated in the Vindhyan hills as well as in the Ganga valley. These comprise Baghaikhor, Lekhahia, Morhana Pahar, Bhadahwan, Laharia Dih, Chopani Mando, Sarai Nahar Rai, Mahadaha and Damdama. Of these, the first six sites are located in the Vindhyan hills while the last three are situated in the Ganga plain.

The Mesolithic sites of the Vindhyan region are found scattered all over where water and raw material was available. Analysis of the tool assemblages indicates that some times the assemblage of one site differs from the others. This is because of the fact that the sites represent different stages of development within the Mesolithic. The important excavated sites are described below:

2.2.5.a. Chopani Mando

Chopani Mando is situated on the middle terrace of the Balen river, about 77 km. south-east of Allahabad. This site is spread on an area of roughly 15,000 square metres, of which nearly 680 square metre area was excavated to varying depths from 30 cm to 80 cm. This excavation, conducted in 1967 and again in 1977-78 brought to light ten layers divisible into three uninterrupted cultural phases: Epi-Palaeolithic, Mesolithic, and Advanced Mesolithic or Proto-Neolithic.

Epi-Palaeolithic: Layer 10 belonging to this phase has yielded both Upper Palaeolithic (20%) and Early Mesolithic (80%) artifacts. The assemblage comprises large and broad blades, burins, parallel-sided blades, blunted back borers, scrapers and points along with numerous cores, flakes and blanks, mostly fashioned on cherty material.

Early Mesolithic: This phase is divided into sub-phases A and B on the basis of the absence and presence of geometric tool shapes. Early Mesolithic sub-phase A is marked by non-geometric microliths unassociated with pottery and is represented in layers 9 and 8. Early Mesolithic sub-phase B, represented by layers 7 to 4, yielded geometric microliths, also unassociated with pottery.

Advanced Mesolithic or Proto-Neolithic: This phase is represented in layers 3 to 1. Besides microlithic tools, cores, flakes and debitage, plans of as many as 13 circular or oval huts and four hearths have been exposed. The huts lie very close to each other, varying in diam-

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eter from 4.5 m. to 2.5 m. On the floor of the huts is a concentration of microliths and stone pieces, pot sherds, fragmentary animal bones, charcoal pieces, burnt clay lumps with reed and bamboo impressions, hammerstones and anvils of different sizes and shapes. This phase is also characterized by the emergence of handmade pottery comprising ill-fired khaki coloured ware, ochrous red ware and moulded or stamped ware. Bowls or vases of medium to small size with featureless rims are the only shapes met with in all the above wares. A few burnt clay lumps from the Proto-Neolithic levels of the sites contain rice or husk impressions of a wild variety of rice. This is very important discovery, particularly in view of the occurrence of domesticated rice and handmade pottery from the Neolithic levels at Koldihwa and Mahagarha in the same region.

2.2.5.b. Sarai Nahar Rai

Mesolithic settlement in the Ganga valley in districts Allahabad and Pratapgarh are centred on the shores of the lakes formed by abandoned meanders of changing river courses. Among the first site to be excavated is Sarai Nahar Rai, situated at a distance of 15 kms. southwest of Pratapgarh on one such lake. The implementiferous locality of this site has an area of 1800 square meters which was excavated for two seasons during 1971-73. This excavation revealed eleven graves (one with four burials), eight pit hearths and a hut floor.

It is believed that the lake near Sarai nahar Rai was much larger in extent about 8000 years ago. It provided hospitable conditions to large animals such as the bison, rhinoceros, stag etc. ; bones of which have been found at this site. Besides bones of smaller games like the fish, tortoise and shells have also been found. The habitation remain constitute hearths, a limited number of post-holes and paved flooring. The area having a paved floor and post-holed enclosure has been identified as a community hearth (Sharma, 1973: 1975).

Sarai Nahar Rai provided for the first time, evidence regarding disposal of the dead in the mid-Ganga valley. Out of the total number of 15 burials, eleven were exposed. From 10 graves skeletal remains of single individuals were found while in one grave four individuals were buried at one and the same time. The dead were buried in oblong pits in extended position in west-east orientation. The right hand in the case of the male and the left in the case of female was placed across the abdomen. The grave goods comprise microliths and a particular type of shells. The skeletal remains belong to 16 to 30 years old males and females with well-built structures, the average height being 1.80 m.

2.2.5.c. Mahadaha

This site is situated at a distance of five kms. north of Patti in the Patti sub-division of

Pratapgarh district. This site is situated on the western bank of an ancient horse-shoe lake. A number of human burials were exposed at this site in 1953 during the digging operation of the Jaunpur Minor, a branch of the Sharda Sahayak Canal, but the full archaeological potential of the this sites was realized in the excavation of 1977-78 and 1978-79, conducted by the University of Allahabad. This excavation revealed three distinct complexes:

- (i) Cemetery-cum-habitation complex
- (ii) The butchering complex and
- (iii) The lake complex

The Cemetery-cum-habitation complex comprises mainly the burials and hearths. The butchering area is situated to the east of this complex. The excavation revealed a 60 cm. thick habitational deposit, divisible into four layers (Joglekar, Misra et.al. 2003). During the two seasons excavations at the site as many as twenty-eight human graves and thirty-five hearths were excavated. All the burials with one exception, were extended burials in which skeletons were placed in the supine position. The general orientation of skeletons was west-east, with the head to the west. Barring two, all the graves contained the skeletal remains of single individuals, male or female. In two graves two individuals were found buried. While both these skeletons interred in Grave X were male, the skeletons buried in Grave IX were male and female. Burial goods found in some graves, comprised bone ornaments, charred and semi-charred animal bones, microliths, bone arrowheads etc. A noteworthy feature of these burials is that most of the individuals buried at Mahadahā died young. There was one individual, a female, whose age was estimated between 40-50 years.

The hearths excavated this site belong to the category of pit-hearths. These were oval or circular in shape. These hearths yielded burnt clay lumps and bone fragments.

Excavation conducted in the butchering complex yielded animal bones. This indicates that the Mesolithic hunters used to bring the carcass of small game and the dismembered parts of big animals and cut them into small pieces in the area. This area was also used for fabricating bone tools and ornaments. Majority of available bones belong to stag and deer.

The microlithic assemblage of Mahadahā comprises chips, cores, core-fragments and finished tools which comprise scrapers, points, blades, blunted backed blades, borers, lunates, triangles and trapezes. These tools are fashioned on chert, chalcedony, carnelian, agate, quartz and crystal. However, their number is comparatively small because of the non-availability of required semi-precious stones in the Ganga valley. Besides, querns, mullers, anvils, hammers,

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sharpeners and sling-balls, made of sandstone and quartzite were obtained from excavations. This suggests that the Mesolithic man at Mahadaha started gathering wild grains and other edibles for food.

The paucity of stone tools at this site was compensated by manufacturing tools of bone. These implements consist of arrowheads, points, blades, knives, chisels, scrapers, and saw etc. Small sized horn cores, mostly of stag were also used as tools.

The faunal assemblage of Mahadaha was studied by P.P. Joglekar (2003). He remarks that a wide spectrum of animals was utilized during Mesolithic phase. Animals were not only consumed but also their bones, teeth and antlers were utilized for making a variety of tools. Since there was no evidence of any domestic species, it can be securely concluded that the economy of the Mesolithic Mahadaha inhabitants was completely based on hunting-gathering/foraging-collecting. Carcasses of some of the large animals such as wide buffalo, gaur, rhinoceros and elephants were scavenged to obtain meat and/or the bones for making tools (Joglekar et.al. 2003: 116). The reptiles, fish and birds played a supplementary role in the food economy during the Mesolithic phase at Mahadaha.

2.2.5.d. Damdama

This site is situated in Warikalan, a revenue village in Patti sub-division of Pratapgarh district, five kms. towards north-west of Mahadaha. The Mesolithic settlement is spread over a slightly raised ground on the confluence of the two branches of the Tambura Nala, a tributary of the Pili Nadi which discharges itself in the river Sai. This site was located in 1978 and was extensively explored between 1979-1982.

The lithic industry of Damdama comprises microliths including finished tools, used flakes and debitage. They may be described as pre-pottery and geometric in nature. Blade tools form the largest single category, followed by triangles, lunates, flake tools, scrapers and trapeze. The artifacts are made on chalcedony, chert, quartz, agate and carnelian. Bone tools form an important part of the artifactual repertoire at this site. Arrowheads made of split bones are important tool type. Bones horn cores were used as tools for digging and engraving. A large number of stone objects comprising querns, mullers and anvils were found. These tool were presumably used for processing vegetal food. Seeds of millets collected by flotation technique from the excavation shows that this cereal formed an important component of their diet. Ornaments (pendants, beads and bangles) made of bone and ivory provide and indication of the aesthetic sense of the Mesolithic man of the Ganga valley.

At Warikalan-Damdama forty-one graves were exposed. Of these, thirty-five graves yielded skeletal remains of single individuals. In five graves double burials were encountered. One grave yielded skeletal remains of three individuals. Of the double burials, in four cases, the skeletal remains were those of male and female. In one grave both skeletons appeared to be those of males. The triple burial at this site yielded skeletal remains of two males and one female.

The Emerging Picture

2.2.6. Technology, material culture and subsistence pattern in the mesolithic age

A survey of the data presented above gives some idea about the technology and material culture of the Mesolithic people as also the subsistence pattern of these folk. This can be summarized as follows:

Technology and material culture

Microlithic industries of India present considerable variation in typology, technology and raw materials used in the manufacture of tools. As attested in rock paintings, microliths were used as components of arrowheads, spearheads, daggers, sickles and harpoons. Besides, other types of tools, like scrapers, points and burins, were also used. In addition to flaked stone tools, some implements include hammerstones, sling balls, perforated discs or ring stones and querns and rubbers. There is also evidence for the use of bone and antler tools. Bone points, pendants and antlers with sharp cut marks have been found in the Mesolithic deposits of Bhimbetka caves. But the best evidence for bone and antler work comes from Mahadaha in the Ganga valley. Bone and antler tools include arrowheads, points, blades, knives, chisels, scrapers and saw. Besides, a number of rings cut from antlers and worn as earrings and necklaces have been found from this site.

Our knowledge of the material culture of the Mesolithic peoples is very limited, mainly because of the poor survival of the items made of organic materials. In central India Mesolithic people often inhabited readily available rock shelters. But from one shelter at Bhimbetka there is evidence that they raised a stone wall inside a shelter to partition off some area. Rock paintings show circular huts made of tree branches and leaves. There is also evidence of circular stone-lined huts from Bagor and Tilwara. At Sarai-Nahar-Rai a rectangular floor made by ramming clay has been found. Post holes found at the corners of this floor suggest some kind of a superstructure over the floor. Material possessions of the social units included bows and arrows, spears, traps and nets, lower and upper grinding stones for processing food, stone hammers, sling balls, ring stones, bone and antler tools and ornaments. Rock paintings also

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show that both men and women wore some kind of dress around the waist, probably made of leaves. Hunters are often shown wearing masks. Human skeletons in the burials from Mahadaha in the Ganga valley are shown wearing earring and necklaces made of rings cut from antlers.

Subsistence

Commenting upon the subsistence pattern of the Mesolithic people V.N. Misra (1996: 323) writes:

Knowledge of the subsistence pattern of the Mesolithic people is mainly based on the animal bones which have been found in large quantities and often in well-preserved condition at several sites. This is supplemented by depictions of scenes of hunting, trapping, fishing and plant food collecting in the rock paintings. The animals most commonly represented in the bone record are Indian humped cattle, gaur, buffalo, sambar, chital, gazelle, hog deer, nilgai, fox and jackal. Besides, barasingha and rhinoceros were hunted at Langhnaj, elephant at Sarai-Nahar-Rai and porcupine at Adamgarh. At Bagor there are bones of tortoise and fish and at Sarai-Nahar-Rai of tortoise. Paintings at Bhimbetka and other sites show hunting of a variety of animals by spear and bow and arrow and by trapping and snaring. There are also scenes of trapping of rats and of fishing. Besides, at Bagor and Adamgarh there is evidence of domestication of cattle and sheep and goat. The bones occur in broken, spilt open and charred condition, showing that meat was cooked on open fires and marrow was extracted from bones. Paintings in rock shelters at Bhimbetka and other places show scenes of plant food and honey collection. Besides, the deciduous forest country in central and eastern India where a larger number of Mesolithic sites are located, is very rich in a variety of plant foods which are even today extensively exploited by the local aboriginal populations and there is no reason to believe that ancient hunter-gatherers did not do the same.

2.2.7. Chronology

Commenting upon the chronology of the Mesolithic cultures of India V.N. Misra, (2002: 34-37) writes:

Although not all the excavated sites have been dated by radiometric methods, the chronology of the Mesolithic period can be determined on the basis of around 50 uncalibrated radiocarbon dates from 20 sites (Table 3) and eight TL dates from three sites (Table 4). The oldest available date is 10,100±100 B.P. and it comes from the site of Inamgaon near Pune. A date of c. 10,000 B.P. is known from Sarai Nahar Rai, but, as it is obtained from uncharred bone, its reliability is low. From Bhimbetka the oldest dates is 7,790 B.P., and from Adamgarh

it is 6430 B.P. The beginning of the microlithic industries can therefore be assigned to c. 12000 B.P. However, it needs to be pointed out that microlithic industries in Sri Lanka are dated by radiocarbon as early as 35000 B.P. Since the microlithic industry of the teris of Tamil Nadu is closely similar to that of Sri Lankan caves, it is reasonable to assume that the teri microlithic industry should be of equal antiquity. Two dates from Phase II of Bagor, which has an association of copper tools and pottery with microliths, are 4715 B.P. and 4060 B.P. Several dates from the upper levels of Bhimbetka shelters have readings between 3000 and 2000 B.P. It is significant that Mesolithic occupation in central Indian caves as well as on the sand dunes in western India came to an end soon after the beginning of the Christian era. Iron first appeared in the Ganga valley at the beginning of first millennium B.C. and slowly diffused to other parts of the country. As iron tools began to be available to microlith-using hunter-gatherer communities, they started giving up the use of stone technology. Both archaeological data and radiocarbon dates suggest that the use of stone tools had completely disappeared by the beginning of the Christian era. The Stone Age finally ended after the introduction and diffusion of iron technology.

2.2.8. Summary

The mesolithic phase constitutes a transitional stage from the palaeolithic to Neolithic. The technology was based on microliths which are tiny tools made from micro blades of one to five centimeters in length.

The well known mesolithic sites of India are in west Bengal, Gujarat, Rajasthan in the Vindhyan and Gangetic valleys.

The microlithic industry of Birbhanpur in west Bengal is non-geometric comprising of fluted cores, blades, lunettes, points, borers, scrapers and burins.

Langhnaj in Gujarat is a habitation cum cemetery site. The pottery is identified as burnished red ware, burnished black and red ware, incised coarse red ware and rusticated ware.

Bagor in Rajasthan shows three phases of development. Phase I shows evidences of a hunting economy, phase II a secure and stable economy and the possibility of introduction of plant agriculture. Phase III shows evidences of iron tools and wheel made pottery.

Tilwara, a votive site in Rajasthan shows evidence of red and grey ware fabric which is wheel made and shows incised parallel lines and punctured designs.

Chapani Mandu near Allahabad shows three uninterrupted cultural phases: Epipalaeolithic, Mesolithic and advanced Mesolithic or proto-neolithic. The last phase shows

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evidences of the presence of rice, Sarai Nahar Rai gave hospitable conditions to large as well as small animals and provides interesting information regarding the burial system of the age. Mahadaha revealed three distinct complexes Cemetery cum habitation complex, butchering complex and the lake complex.

Damdama also reveals microliths which include blade tools, triangles lunets, flake tools, scrapers and trapeze. The artifacts are made on chaladong, chert quartz, agate and carnelian. Seeds of millets and ornaments are also found. Out of the forty one graves single, double and triple burials are found.

Technology, material culture and subsistent patterns in the mesolithic age - The technology included microlith industry. They inhabited readily available rock shelters, circular huts which had some kind of super structure over the floor. This is indicated by post holes found at the corners of floor. Among the various material possessions are found bows and arrows, spears, traps and nets, grinding stones stone hammers sling balls, ring stones, bone and antler tools and ornaments. Rock paintings show that both men and women wear some kind of dress around.

Subsistent pattern of the mesolithic people - Subsistent pattern can be gleaned from the rock paintings. Evidence of hunting of animals by spear and arrow and by trapping and snaring. The sites seem to be very rich in plant food and honey.

Chronology - The oldest available date of mesolithic period is 10,100 + 100 B.P. and it comes from the site Inamgaon Near Pune.

And an uncertain date 10,000 B.P. is known from Sarai Nahar Rai. The oldest date from Bhimbetka is 7,790 B.P. and from Adamgarh 6,430 B.P.

The beginning of microlithic industries in Sri Lanka are dated by radio carbon as early as 35,000 B.P. The two dates from Phase II of Bagor are 4,715 and 4,060 B.P. The dates of upper levels of Bhimbetka shelters have readings between 3,000 and 2,000 B.P. The mesolithic occupations ended soon after the popularizations of iron technology.

2.2.9. Check your Progress

1. Discuss the technology material culture and subsistent pattern in the mesolithic age.
2. Discuss the mesolithic sites of the Vindhya regions and the Ganga valley.
3. Write short notes on -

- a. Chronology of mesolithic cultures of India.
- b. Birbhanpur.
- c. Bagor
- d. Tilwara

2.2.10. Activities

- a. Visit a nearby museum and make a list of the neolithic artifacts.
- b. Mark the Neolithic sites in the map on India.

2.2.11. Suggested reading

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UNIT - 3 NEOLITHIC CULTURES

- 2.3.1. Introduction
- 2.3.2. Classification of the sites of Neolithic Cultures
- 2.3.3. Northern region
 - 2.3.3.a. Burzahom
 - 2.3.3.b. Gufkral
- 2.3.4. The Vindhyan Region
 - 2.3.4.a. Chopani Mando
 - 2.3.4.b. Kaldihawa and Mahagara
- 2.3.5. Mid Eastern Region
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- 2.3.7. The Central Eastern Region
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- 2.3.9. Summary
- 2.3.10. Check your progress –
- 2.3.11. Self Activity –
- 2.3.12. References
- 2.3.1. Introduction**

The story of evolution is the story of increasing distances between Man and Nature. With the advancement of technology as the size of tools got diminished man started keeping himself at safe distances from the animals under attack. From the position of hunter-gatherer, he tried to evolve himself mainly into gatherer-cultivator position by the time he reached the Neolithic stage. It is believed that generally the food-gathering or hunting economy of the Mesolithic forebearers of late Pleistocene times gave way to one of deliberate food production involving husbandry and stock raising. This change in human economy constituted as what has been termed as "Neolithic Revolution", and took place in different areas over a great range of time. But in Northern India and Western Sub-Himalayas so far, as no Mesolithic precedence has been encountered, it is likely to have succeeded the Palaeolithic directly. In Western sub-Himalayas the Neolithic sites are mostly located at those places that were for-

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merly palaeolithic stations. As there are some faint indications available for the continuance of final Soan Culture beyond the limits of Pleistocene (Mohapatra, 1979), it is likely that the food gathering stage of man represented by this culture was replaced by an incipient food producing one i.e. the present Neolithic without much time gap.

Gordon Childe (1957) has defined Neolithic to be essentially an economic term, 'a self sufficing food-producing' economy' implying the following traits-

1. A food-producing economy dependent on the domestication of animals and cultivation of plants. Hunting and food-gathering however, continue though in a subsidiary role.
2. Sedentary nature of habitation.
3. Absence of dependence on trade for essential commodities. Though sporadic trade in luxury goods might well be present as was the case with some of the Upper Palaeolithic and Mesolithic communities.
4. Absence of full time specialists in the society.

3.2 Sites of Neolithic Cultures –

Neolithic cultures have been identified in the following six different geographic regions in India.

1. Northern region, covering the Kashmir valley, Punjab and Himachal Pradesh.
2. Vindhyan region, covering the BÈlan valley and the Vindhyan plateau in Districts Allahabad, Mirzapur, Rewa, and Sidhi.
3. Mid-eastern region, covering the northern Bihar District of Saran.
4. North-eastern region, covering Assam and adjacent sub-Himalayan regions.
5. Central eastern region (Bengal, Bihar, and Orissa complex), covering the Chota Napur plateau with its peneplains extending to West Bengal and Orissa.
6. Southern region, covering peninsular India.

3.3 The Northern Region :

The Northern Neolithic in India conform to these traits. In North India evidences about the Neolithic Civilization is mostly available from the valley of Kashmir, as it is only in this

region that the evidences have come from scientific excavations whereas from other parts whatever is known is from the surface indications. A large number of Neolithic sites have been reported from the region of Kashmir valley, Laddakh, the Jammu sub-Himalayas, Kangra valley and Nalgarh-Pinjore dun in Himachal Pradesh, from the Hoshirpur Siwalik range in the Punjab and on the outer slopes of the Siwalik frontal range near Chandigarh (Mohapatra, 1981). In western sub-Himalayas all the sites occur in the well defined geo-environmental zone, i.e. the sub-Himalayan low hilly terrain and are situated within the 1500 to 1000 m.m. rain-fall zone. In most of the cases the vegetation around the sites could be classified as mixed-deciduous whereas in the rest it is sub-tropical dry thorny scrub. For the later types the sites are either situated at comparatively higher levels of a water divide or on the desiccated outer slope of the Siwalik hills. They are mostly located on the alluvial terraces on the banks of medium size perennial streams within small sub-montane valleys located at heights between 300 to 350 meters from the mean sea-level. The lithic artifact assemblage consists of six main types-chisel, pick, axe-hammer, ring-stone, and grinder-muller.

In Jammu sub-Himalayas the Neolithic sites in Akhnur and Kathua districts have yielded lithic industry comprising of axe, chisel, pick, axe-hammer, ring-stone and grinder-muller. Axe are triangular in form with rounded butt, having elliptical to lenticular cross-section, bifacially polished and with sharp edge. In Laddakh region two sites i.e. Kairi and Gaik in the Upeer Indus valley region have yielded ring-stones, edged stone axes, knives, pestles, saddle-querns and burnishers. Light-brown hand made pottery was also found. The only shape available is a high-necked red-ware vase having featureless rim and concave neck. Fragmentary bones of Capra, Bos sp., bird and rodents were also found. The C-14 dates from the charcoal samples from the hearths came to be 4710±130 B.P. (Ota, 1993).

From the Kashmir valley a large number of Neolithic sites have been reported, all generally located on the top of the Karewa mounds and most of the sites associated with the Megalithic menhirs which followed the Neolithic period. The Kashmir valley is marked by flat topped plateau surfaces, called Karewas in the local language. These Karewas are the remnants of the lacustrine sediments of the primaeval Karewa lake. These low flat mounds which are fluvial lacustrine or glacial deposits are found bordering the slopes of the mountains above the modern alluvium of the Jhelum. The main evidence regarding the Northern Neolithic has come from the two excavated sites of Burzahom (34°10'N, 74°54'E) and Gufkral (34°54'N, 75°60'E). As both the sites have given very important evidences it will be worthwhile to discuss them in some detail.

2.3.3.a Burzahom -

Burzahom lies 16km north-east of Srinagar in the district of the same name, above 180m, above the sea-level. The site was first noticed by De Terra and T.T. Paterson as a result of the work of Yale-Cambridge Expedition in 1935 (De Terra H., 1936). In a short excavation they brought forth a sequence of Neolithic, Megalithic and Early Historical cultures. Extensive excavation were conducted by the Archaeological Survey of India under the supervision of T.N. Khazanchi and his associates from 1960 to 1971 (I.A.R. 1960-1, 1962-3; 1965-6; 1966-7; 1968-9; 1971-2, and Pande, B.M. 1971, 73.). The excavations revealed fourfold sequence of cultures; Period I and II-Neolithic; Period III-Megalithic, and Period IV-Early Historical.

Period I has revealed dwelling pits, scooped out in the Karewas. These pits are generally circular or oval on plan, narrow at the top and wide at the base. There are square or rectangular pit chambers also. The floors of these pits are flat with side walls occasionally plastered with mud. These pits were provided with landing steps. Presence of post-holes on the periphery of the mouth of these pits indicate a rood with wooden posts to cover the dwelling pits. The filling in some of the pits consists of ash and charcoal in regular bands, indicative of human occupation. Storage pits containing animal bones, stone and bone tools were in close proximity to the dwelling pits. In the squarish or rectangular pit chambers, stone or clay hearths containing mainly ash or burnt clay were found, generally in the centre of the pit. In Period II new structural pattern was evolved. The semi-subterranean pits and pit chambers were filled up and plastered with mud and sometimes painted with a thin coat of red-ochre solution. This was done as a measure of anti-termite exercise. Over the rammed floors, the presence of numerous post-holes suggest that extensive timber and thatched roof structures were created. Well arranged post-holes on the floors and mud and mud brick structures were also noticed. The houses yielded hearths and grinding stones with mullers.

In Period I the pottery is mostly crude and hand made, the colour being chiefly steel-grey and shades of dull red, brown and buff. It is coarse in fabric and is represented by the bowl, vase and stem. Mat impressions on many types especially on pots having flat base have also been notice. The evidence of large number of well-polished bone and stone tools is noteworthy. The main types of bone tools are harpoons, needles with or without eyes, awls, spear point, arrow-heads, daggers and scrapers. Stones tools comprise of axes, chisels, adzes, pounders, mace-heads, points and picks. The pottery in Period II is also generally hand made. A burnished black ware of medium fabric makes its appearance. The types are dish with provision of a stand, bowl, high necked jar, etc. Mat impression on the bases con-

tinue. A wheel-made red-ware pot containing 950 carnelion and agate beads was recovered from the early levels of Period II is the one with classic Kot-Dijian features on which is painted one of the "horned deities" as seen at Kot-Diji (Khan 1964) and Gumla (Dani 1970-71). The pot acquires special significance pointing towards economic relationships between the neighbouring plains and the Neolithic people of Kashmir. Stone and bone objects of this period are similar to those of Period I. Interesting are the harvesters in stone and bone-rectangular or semi-lunar in form with a sharp cutting edge and pierced holes at the upper end; double edged picks in stone and long sized needles in bone. A copper arrow-head has also been reported from the end of this period.

Another important find from the middle levels of Period II is a stone slab depicting hunting scene. Though no human and animal burials have been reported from Period I, several of them were excavated from Period II. Humans were buried both primarily and secondarily, in oval pits, mostly dug into the house floors or inside the compound of a house. The filling of the pit consisted of ash, stone pieces and pot sherds. Most of the skeleton were found in crouching position and some were treated with red-ochre solution. both human and animals were buried in north-south orientation, with the skull towards north. In most cases human burials were accompanied by the burials of their pet animals or fragmentary bones in the same pit. Animals were also given ritualistic burials like their human master, in oval pits duly plastered from inside. The animals represented in the burials are dogs, wolves, Himalayan ibex, and the barasingha.

The Neolithic people of Burzahom were both hunter-gatherers and cultivators of selected varieties of food grains. By about 2400 B.C. (uncalibrated ascribed date from the lowest level) people have settled with a subsistence economy showing specialized food-gathering including fishing. The animals represented are the Indian buffalo, wild urial, domestic sheep and goat, large Asiatic wild sheep and the Himalyan ibex. The plant remains recovered belong to wheat, barley and lintel. Apart from the other varieties of trees like Pinus, Betula, etc, growing around, of special mention is the occurrence of *Buxus wallichiana* (box wood tree) which I highly esteemed for engraving and carving work. The floristic complex indicated by the charcoal determinations is characteristic of a temperate forest. (Buth G.M. and R. N. Kaw). Microware studies on the Neolithic artifacts by paint (1979) reveal that most of the stone axes were used for wood cutting and chopping and some for dressing wood. Adzes were used for digging earth while flake knives were used for reaping the crops. Morphological studies on Burzahom human skeletal remains show that during the Neolithic period long headed, dolichocranic individuals were in basic population and show more similarity to the Harappans from Cemetery R 37.

2.3.3.b Gufkral-

The site is located 41km south-east of Srinagar in Pulwama district of Jammu and Kashmir. In the imposing mound nearly 3.10m. of habitational deposit is present on an extensive loessic silt over 35m. high upper Karewa. Two seasons of dig have revealed five main periods of occupation (Sharma, 1982).

	Uncalibrated	Calibrated
1. Period IA - Aceramic Neolithic	2420-2000B.C.	2787-2350B.C.
2. Period IB - Early Neolithic	2000-1700B.C.	2347-2000B.C.
3. Period IC- Late Neolithic	1700-1550 B.C.	2000-1850 B.C.
4. Period II- Megalithic	1550-1100B.C.	1850-1300B.C.
5. Historical		

Period IA: Aceramic Neolithic

This Period having a habitational deposit upto 1.20m accounts for three phases of occupation, distinctly marked by floor levels and changing settlement and economic pattern. In the beginning the Neolithic people started living right on the loessic deposit by creating shallow, wide, circular dwelling pits. The floor of the pit and the adjoining area was plastered with white kankary clay and was coated with red ochre solution. The largest pit encountered had the diameter of 1.65m. and a depth of 0.20m. In the second phase of occupation both, mud platforms and rectangular dwelling pits were made. They were surrounded with post-holes indicating that thatched superstructures were raised over them. The sides of the superstructure was covered with reed and plastered with mud as evidenced by the presence of mud chunks with reed impressions. Inside the rectangular dwelling pits, 3.3.m in length and 1.50m. in width and 1.58m deep, apart from the raised central platform 0.65, deep storage pits were found. One of the storage pit yielded two stone adzes one of which was painted with red-ochre solution, a good number of bone tools, a stone slicer with sharp edges and plenty of animal bones with cut marks. Third phase of occupation has revealed a number of floor levels having post-holes, hearths etc. In this phase apart from the circular dwelling pits a double dwelling pit with two chambers, was also encountered. From the occurrence of the floors around the dwelling pits it is apparent that in fair weather, people spent their time, performing their daily activities like cooking, tool making etc. in the open. The evidence recorded

show that the same area of dwelling pits continued to be occupied for generations, as successive floors were made one over the other and repaired several times.

The stone implements recovered include polished stone celts, ring stones, pounders. Pestles, points etc. Out of two celts recovered two were adzes shaped out of Himalayan shale. The bone tools comprise points, arrow-heads, awls, scrapers, long borers, needles, harpoon, and splinters of long bones of animals with their tips well polished. A large number of micro bone points were also recovered. Other artifacts include a small cylindrical paste bead, a barrel shaped bone bead having three holes, two on the sides and one in the centre.

As from Phase I of Period IA neither the bones of domesticated animals nor grains of cultivated plants were recovered; it is obvious that the first arrivals were purely hunter-gatherers. Recovery of bones belonging to the wild species of ovis, capra, Bos, red deer, cervus, canis, ibex, and ursus from the habitational deposits of Phase I show that the early Neolithic settlers killed species of game ranging in size from ovis to ibex and cattle. From the percentage of bones recovered it appears that the most popular food animals was ovis followed by red deer and cattle. Capra and ibex accounted for fourth and fifth preferences. In Phase 2 people still depended on hunting of the above mentioned animals though they might have started taming the pre-daters like wild dogs and wolf. Overwhelming percentage of adult bones indicate that large mammals were preferred since they provided larger returns for their risk involved job. During the final phase of the Aceramic Neolithic Period, the inhabitants, as per evidence, had started capturing and taming dogs, sheep and goat. From the total collection of bones, 5% and 3% belong to the domesticated variety of sheep and goat respectively.

Presence of milling implements indicate that during this period plant foods were being processed. The people in the beginning, only collected wild barley and primitive wheat. Towards the close of the Aceramic Period they had started cultivating the following cereals which were identified by Dr. Kajale (1982), Chanchala (1986) and Lone and other (1988). Cereals and pulses occurred in carbonized forms whereas seeds of weeds were found in uncarbonised forms.

Barley-six row barley (*Hordeum vulgare* Linn. variety hexastichum, Wheat (*Triticum aestivum*), Lentil-Masur (*Lens esculenta* Moonch); Common pea-Matar (*Pisum arvense* Linn); Clover (*Trifolium* sp.) presently fed to domestic animals, Alfa-alfa (*Medicago denticulate*); Corn Cromwell (*Lithospermum arvense* Linn.; *Ipomoea* sp.; *Lotus corniculatus*; *Avena fatua*. Wood charcoal remains of *Celtis* sp., *ulmus* sp., *Centrus deodara*, *Pinus* sp.; *Parrotia jacquemontiana*, *Pinus wallichiana*, *Aesculus indica*, *Juglans regia*, *Picea smithiana*, *Ulmus wallichiana*, *Prunus cornuta* were exploited by the settlers primarily for building activities.

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Period IB in the site is represented by 30 to 35cm. of habitational deposit, Settlement pattern in this period comprised of circular dwelling pit with stepped entrance of one side. The pit was cut through the natural soil. The mouth of the pit lined with a ring of hard clay had the diameter of 0.95. From the same level, near the dwelling pit, a soakage jar of long necked burnished grey ware, sunk deep in the natural soil and surrounded by thin mud wall, a saddle quern with the pestle kept nearby on the plastered floor and a circular mud structure having a rectangular mud-stump in the centre and with ash all around, were recovered. A number of post-holes varying in diameter from 15 to 20 cm., were also noticed around the complex which was having a well rammed whitish floor., Presence of thick floors made of yellow compact clay mixed "chunam", post holes, chunks of fired clay having deep and wide reed impressions, indicate the pattern of housing in this period. Beautiful well plastered circular hearths having mouth for inserting fire wood and having refuge pits nearby were also exposed. The new innovation in the structural activity of this period was the construction of mud and rubble walls which were low structures meant to protect the floors and bases of the thatched huts. Rectangular dwelling pits were discarded after the Aceramic period.

The artifacts recovered from this period include stone points, pounder, pestle, ring stones, sling balls whereas the bone implements include points including double end points, piercer-cum scrapers, awls, arrow-heads and side scrapers. Amongst the ornaments there were two beads, one a barrel shaped stone bead and the other a circular carnelian bead. The art of making pottery was the advancement of knowledge of the people of this period. For the first time hand made pottery made its appearance. It comprised of mostly coarse grey ware with small quantity of dull rough red ware, black burnished ware and Grey burnished ware with knobbed designs. The shapes represented are big jars, bowls, vases, basins, dish-on-stand etc.

Decorations made on these pots are mat impressions on flat bases, pinched designs, and rough and oblique incised designs. A potter's kiln having outer diameter of 2.50m.

The period witnessed increase in the percentage of domesticated animals with domesticated cattle forming the largest percentage followed by sheep and goat. Percentage of sheep was still higher than those of the goat. Inspire of domestication of these animals, the collection had a good percentage of their wild counterparts. Wild canis was replaced by the domesticated ones. One important addition in the menu was Gallus (fowl) indicating that the process of poultry keeping, had started. Bones of fish were also recovered from this period. Though cultivation of cereal grains was firmly rooted by this time, people, to certain extent, still substituted their food by hunting animals which were available in the nearby forested areas. Hunt-

ing of large animals was now seen as an occasional part of the hunter-gatherer subsistence strategy. The change from hunting-gathering to pastoralism was a change from predation strategy dependent upon wild indigenous large mammals to a parasitic strategy dependent upon domestic exogenous large mammals. As they practiced the domestication of wild species, they did selective hunting in which they did not kill the young ones which were easier prey, but captured and tamed them.

All the cereal grains and wild plants found in Period IA were also recovered from this period.

Mature phase of Neolithic period at Gufkral-Period IC was represented by 0.70 to 0.75m, thick habitational deposit. The period experienced substantial constructional activity. Three types of structures have come to light. In the first type a number circular dwelling pits and storage pits were cut through the rammed earth. Inside the dwelling pits storage pits and hearths were found. Both dwelling pits and storage pits were quite deep, their depth varying from 1.30 to 2.15m.

In the second type circular mud walls were exposed which formed the base of the thatched super structures. The huts having 30 to 40 cms. thick mud walls were 2.00m. in diameter externally. Outside these circular mud walls post-holes were also present on the floor. Apart from these two types of structures, mud and rubble walls were also raised. Around these three types of structures a number of circular as well as rectangular hearths were found. The hearths contained charcoal, ash, few small pieces of stones and pot sherds. The noteworthy find from these hearths were large quantity of charred cereal grains.

Stone implements recovered include well polished axes with faceted edges and rounded butts, scrapers, polisher, sharpner, pestles, pounders, saddle querns and ring stones. The stone point which became scarce in Period IB, made their appearance again, in good numbers. New innovations in tool technology were harvesters, and spindle-whorls. The sides of the harvesters were rounded whereas the working edge was very sharp. Spindle whorls shaped out of pot sherds were also recovered. The size of the perforations in the centre of the spindle whorls indicate that by now the Neolithic people of Gufkral had started making woolen threads for garments, out of animal hair. Large number of well polished bone tools include handles, points, double points, micro-points, scrapers shaped out of horn tips, arrow-heads with tanged butts and sharp shooting points, spatulas, awls, long thick bone needles having rounded section and flattened straight butt with large eyes. Introduction of bone handles shaped mostly out of radius, tibia or tarsal bones of sheep and goat, taking advantage of their shape and

bone-marrow cavities, were meant to hold smaller tool for easy operation. This was an advancement in tool technology. Harpoons having teeth only on one side, were shaped both on bone and stone.

Other cultural assemblages include terracotta bangles with triangular cross-section; Cowrie shells; carnelian beads and 'comma' or 'tiger's nail' shaped pendent on light green zade with a pointed end and straight flat top having a hole. Such a pendent has been reported for Leobanr III. In India such tiger nail shaped pendants are in wide use, particularly in rural areas, where children are made to wear such pendants with the belief that it facilitates eruption of milk-teeth-clearly a part of imitation magic. There were pot sherds with graffiti marks, amongst which the noteworthy was a Grey ware sherd having straw and reed impression and decorated with one vertical and two oblique strokes. The strokes were made to depict human figure in walking posture-a fine example of linear Neolithic art. Towards the end of this period copper was introduced in Gufkral. Four copper objects recovered include an antimony rod, and a 7.5 cm, long half-pin made of copper wire with flattened coiled head, similar to one found at Chanhudaro, A Harappan site in Pakistan. it points to contact with more advanced cultures of the southern plains.

Pottery of this period consist of Grey ware, burnished Grey ware alongwith black burnished ware and wheel turned black burnished ware. It is in this period that the wheel turned pottery made its appearance Few examples of red gritty ware were also found. All the shapes of Period IB continued. Apart from bowls, vases, jars, stem, dish with provision for stand, funnel shaped vases, high necked jars with flaring rim, globular body and flat base were the other types that formed the assemblage. Decorations include cord and mat impressed bases, reed and straw impressions on the body to create rough surface; pinched and oblique designs in the neck region.

By this time the domestication of animals was fully achieved. The entire herd belonged to domesticated variety of sheep, goat and cattle. Percentage of domesticated dog increased. Pig in its wild form (*Sus scrofa* Linn) made its appearance. Suddenly the percentage of *Cervus* and ibex declined whereas those of sheep, goat and cattle increased. Bones of domestic fowl, nilgai, wolf, the Kashmir stag, red deer, common rat, Indian hare, rabbit and India mole rat were also found. With the increase in rain-fall which led to the increase of grass land environments, most suitable for the specialized herbivores capable of achieving high biomass, there was sudden increase in large sized herbivores as clearly indicated by the overwhelming percentage of cattle, capra and ovis bone in this period. The presence of large immature propor-

tion of herbivores in the faunal collection of this period is evidence of domestic stock and pastoralism, even though the features of skeletal morphology known to appear as a result of domestication or herding are not very clear. It appears from the cut marks that late immature animals were slaughtered as from the pastoralist's point of view by slaughtering at a point late in an animal's immaturity, maximum return of feed and forage recourses is obtained.

All the cereal gains in Period IB were also present in this period. From the upper levels of this period datable to the beginning of the second millennium B.C. grains of cultivated rice (*Oryza sativa* Linn.) which now makes the staple diet of modern Kashmir, were identified. It may be that the first few Megalithic arrivals brought the grain with them, as from Period II (Megalithic) right from the lowest levels immediately succeeding the Late Neolithic Period, grains of rice were recovered in abundance, particularly from the hearths and area surrounding them. There is no doubt that rice as a staple diet was introduced to the valley by the Megalithic people around 1850B.C. Moreover between the uppermost layer of Late Neolithic and the beginning of the Megalithic levels there is no hiatus in the cultural deposits. As from the entire Neolithic deposits, except the uppermost level, at Gufkral, neither the grains of *Oryza sativa* Linn. (the cultivated rice) nor of the *Oryza rufipogon* Giff. (wild rice) and/or *Oryza Nivara* (wild annual rice) were recovered, it is obvious that rice was not domesticated in the valley but the cultivated variety was introduced straightway. It also likely that as contacts had already been established with other advanced cultures, particularly with the Indus valley civilization, there is abundance chance of cultivated rice from this area reaching Kashmir during the late levels of Neolithic Period.

Discussion:

With the discovery of large number of Neolithic sites in northern India, particularly in the Kashmir valley, with the multidisciplinary results now available from well planned excavations at Burzahom and Gufkral, things are now becoming clearer regarding the development from hunting-gathering status to well settled sedentary life. With the calibrated radio-carbon dates available, it can now be safely surmised that the Neolithic Period began in the region some time in the beginning of the third millennium B.C. and continued to develop through various stages of economy and social life for more than 1200 years till another wave of people carrying knowledge of iron and rice cultivation entered the Kashmir valley. The second wave specialized in erecting huge monoliths called menhirs as memorial columns. This was around 1800B.C.

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The identification of Aceramic levels at Gufkral, similar to al Kili-Gul-Mohammad and Mehrgarh has demonstrated that like north-west of the sub-continent, Kashmir did undergo an aceramic stage of sedentary food growing period. The evidence that has come to light from Burzahom and Gufkral show that the Neolithic people in Kashmir had multidirectional contacts, Baramulla and Sindh valleys where also such settlements have been located, most probably, served as the main contact routes with regions outside the valley. These contacts were of two types, racial contacts and trade contacts. While racial contacts could be traced to Central Asia and West Asia on the basis of cultural equipments, domestication of plants and animals; trade contacts appear to have been established, also, with North China, southern Iberia, in the vicinity of Lake Baikal, and with the more advanced cultures of Indus valley and neighbouring areas.

The evidence of contacts with the southern plains which was geographically closer to Kashmir and where chronologically Pre-Harappan and Harappan settlements were flourishing, is strengthened with the Kot Dijian painted pot from Burzahom and carnelian beads both from Burzahom and Gufkral, towards the last phase of the Neolithic period. Apart from these two noteworthy objects, there is a long list of products found at Pre-urban and Urban Phase Harappan sites in the plains, which are likely to have come from the Himalayas (Fentress, Marcia A. 1976). Presence of Boxwood (*Buxus Wallichiana*) at Gufkral, and particularly the two species, *Buxus papillosa* and *Buxus wallichiana* which are found in Murree, Baluchistan etc. in North Western Frontiers, and in the region of Poonch and Udhampur, south of Pir Panjal, clearly shows that during Neolithic times and later also, people of the valley had close contacts with the people of the above mentioned areas from where they imported this highly esteemed wood. As Boxwood is mainly used for engraving and carving work, its presence at Gufkral, right from the Neolithic levels, shows that the delicate work of engraving and carving which is the hallmark of craftsmanship of Kashmiri people today, was very much known to them as early as 4500 years back.

In pottery, bone and stone tools, cereal grains and later on in settlement patterns, Kashmir Neolithic displays affinity with Saraikhola, Ghaligai Cave Period III (Stacul 1967; Shaffer 1992) and Loebanr III (Stacul 1977; Shaffer 1992), both in Swat, Pakistan. Further typological parallels appear in the Neolithic levels of Sarai Khola, near Taxila in north-western Pakistan (Halim 1972). M. Rafique Mughal's analysis of the Sarai Khola ceramics contains a discussion of these ties and of parallels with the Neolithic of north China (Mughal 1972). There are also general typological similarities between the Kashmir Neolithic and materials from southern Siberia, in the vicinity of Lake Baikal (Henry N Michael 1958). Discovery of perforated rectan-

gular harvesters from Loebanr III, a 'comma shaped' pendent of light green zede from Gufkral and Loebanr III, show very close contacts between Northern India and the areas mentioned above right from the Neolithic times. According to Gregory L. Possehl and Paul C. Rissman (1992) "the chronology for these far-flung materials does not rule out the possibility that the mountains and plains of the subcontinent represent the southwestern edge of what would otherwise be a northeastern Asian cultural tradition".

In 1965 B.K. Thapar opined that the Northern Neolithic Culture has a unique assemblage quite unlike that of the other Neolithic cultures of India. It was thought previously that the Neolithic phase of Kili Gul Mohammad might have inspired the 'loessic Neolithic industry of Kashmir'. However in view of the close resemblance of certain tool types, notably the harvesters (semi-lunar or rectangular knives) in the Neolithic period of China and Japan we are now led to look towards East for the diffusionary impulses. Besides, the use of bone implements and the practice of pit dwellings are elements quite familiar with the Neolithic cultures of the East". Thapar's hypothesis now does not hold good with the discovery of harvesters from Loebanr III and radio-carbon dates of Aceramic Period of Kashmir Neolithic Age going back to 2800 B.C. (Gupta 1965) supporting Thapar's hypothesis stated "that the perforated rectangular or crescentic harvester of northern and central China infiltrated into the valley of Kashmir. In fact Burzahom seems to have assimilated with its own pattern a few traits from the Deccan and few from China. The crescentic butt type of polished axe with flat section and a slight chamfered edge on the one side, is paralleled in Chinese Turkestan at Lou Ean. Bone harpoons, points, needles etc., seem to be local in character, necessitated by the presence of fish in various ponds that must have existed around Burzahom. Though bone harpoons are found in Manchuria and Lake Baikal areas, yet not only these regions are far removed from Kashmir but they also differ considerably in type-technology. Over and above this the pit-dwellings in the loessic deposits of Central China, Yunan, and Burzahom have their ultimate origin in the Mesolithic Ordos culture of northern China. It is plausible that the relationship between China and Kashmir was established through Gilgit and Sarhad and then along the foot-hills of the Kun Lun ranges. Alternatively, there was another route along the river Khotan upto the middle Tarim" He emphasizes that by this he does not mean to suggest that there was a migration of people as such, unless of-course the skeletal remains from Burzahom establish a definite Mongoloid population. He says that he only means to indicate possible routes of 'trait infiltration'. Gupta made these observations in 1965 and in 1980 (Arbinda Basu and Anadi Pal) the report on morphological studies on human skeletal remains from that site have clearly shown that in the Neolithic levels there was not a single

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skull with Mongoloid features. The one skull which was excavated away from the regular habitational area and which belonged to a fifty year old male, was on the border of dolico to mesocranic. This person had great cranial width, wider zygomatic and nasal breadth, wide palatal breadth, and low upper facial and nasal height. The presence of this person at Burzahom during the last phase of the Neolithic Period is, probably, indicative of Gupta's 'trait infiltration' which might have been the by product of regular trade contacts with China (Sharma 1983).

Wheat, and barely were domesticated in west Asia by 7000 B.C. (Harlan J.R. 1971). The plant remains recovered from Burzahom (Buth etc. 1985) and Gufkral (Kajale 1982; Sarawat 1992) belong to both wild and cultivated varieties. Amongst the cereals, wheat, *Triticum compactum*, *Triticum sphaerococum* and *Triticum aestivum*; barley, *Hordeum vulgare*, six-row hulled species were recovered. Pulses include lentil (*Lens culinaris*) and field pea (*Pisum arvense*). Rice (*Oryza sativa*) appeared at Gufkral in the Megalithic Period, around 1850 B.C. It appears that in ancient north-west Indian sub-continent, cultivation of *Triticum sphaerococum* was widespread. It has now gone out of cultivation and has been replaced by the more high yielding bread and durum wheat. Naked variety of barley has been found at Gufkral. This variety (*Hordeum nudum*) has also been reported from Mohenjodaro. Lentil is associated with the beginning of the agricultural revolution in the Old World. Its presence at Burzahom and Gufkral is significant. At Mehrgarh the Neolithic deposit, Period I and II datable to 6000 and 5000 B.C. respectively; have revealed cultivation of Einkorn (*Triticum monococcum*), emmer (*Triticum dicoccum*) and bread wheat (*Triticum aestivum*), and (*Triticum durum*) and two-row hulled barley (*Hordeum vulgare*) and naked barley (*Hordeum vulgare* variety *nudum*). In Period III two new varieties of bread wheat (*Triticum compactum*, and *Triticum aestivum sphaerococum*) and six-row hulled barley (*Hordeum vulgare*) were added. The principle food grains consumed by the Harappans have been found as belonging to the species of wheat (*Triticum aestivum*, *T. compactum* and *T. sphaerococum*) and the hulled and the naked forms of six-row barley. The geographical proximity of Kashmir with the Harappan sites in north-west India and Pakistan seems to be the reason for similar cereals found in both the regions. The crops of wheat and barely which were supposed to have been imported from west Asia have been demonstrated by Buth and others (1985) to be a process of indigenous domestication in the north-western region of the subcontinent. Evidence from Gufkral show that cultivation of plants preceded the domestication of animals as in the Aceramic Period (Period IA) cultivation of cereals like wheat, barley and lentil and pea were available while amongst the animals only sheep and goat were domesticated towards phase 3 of this

period while in the beginning only the wild varieties were hunted and captured. This position is expected because the Neolithic settlers, who entered the valley, though possessed the knowledge of domestication of plants and animals, might not have brought with them the domesticated varieties of animals but had to start afresh the process of domestication of wild varieties, in a new environment; while it was easier to carry with them the cultivated variety of food grains, though the wild progenitors of domesticates might have been present in the valley.

The main evidence of ancestral or racial links come from the results of study of human skeletal remains from Burzahom (Basu and others 1980). Burzahom crania that are basically long headed resemble the Cemetery R 37 series more closely. At Burzahom during the Neolithic Period long headed, dolichocranic individuals were the basic population. The major features of this type are long and narrow head protruding occiput, somewhat low receding fore-head and medium to prominent supra-orbital ridges. They were of sturdy built with tall to medium stature (mean male stature 5'9" and mean female stature 5'3"). There is no evidence of brachyranic skull in either sex. The similarities in morphological features between the Neolithic people from Burzahom and Cemetery R 37 skeletons, probably, reflect their genetic affinity, and probably, also hints towards an ethnic continuity. This suggests that inspite of culture differences the basic long headed element was common to both, and continued to exist as the Harappan culture in the plains and Neolithic culture in Kashmir valley, during the same time span. The occurrence of Charle's facet in two femora of Burzahom is also interesting, considering the fact that similar facets in high frequency have been observed in modern day Punjabi population (Basu etc. 1980).

2.3.4 The Vindhyan Region :

In the Vindhyan region excavations have been conducted at three sites: Chopani Mando, Koldihawa, and Mahagara (G.R.Sharma et al. 1980). The findings indicate a continuous sequence of transition from the stage of intensified food gathering and selective hunting (Epi-Palaeolithic) through incipient food producing (Advanced Mesolithic or Proto-Neolithic) to settled village farming (Neolithic). This admittedly 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 Southeast Asia and to establish the primacy of the Neolithic Culture in the Belan valley, particularly in the light of the chronology proposed and the existence of antecedent stages.

2.3.4.a Chopani Mando

Chopani Mando is located within a former loop of the river on the left bank of the Belan. The excavation revealed a threefold sequence of cultures, extending from Epi-Palaeolithic

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through Early Mesolithic to Advanced Mesolithic or Proto-Neolithic. The first two cultural periods are distinguished largely by the occurrence of particular tool-types such as blades, non-geometric and geometric microliths, their gradual reduction in size, and the change in raw material. In the Proto-Neolithic period significant additions to the repertoire of tools and other cultural equipment consisted of: (a) tranchet; (b) ground stone tools like hammer stones, anvils, querns, mullers, and ring-stones; and (c) handmade pottery (red ware and khaki or brownish grey ware), sometimes decorated with impressed designs.

Of special importance at this site was the discovery of a number of hut foundations and hearths which began to appear from the Early Mesolithic period onwards. Thirteen such huts belonging to the Proto-Neolithic period were exposed and were found to be closely situated to each other in a bee-hive fashion. The floors of the huts were found to be littered with a large number of microliths, hammer stones, anvils, sling balls, mullers, querns, and other stones tools, as well as fragments of burnt clay, animal bones, and potsherds.

The economy of the settlement was based on gathering and hunting. There is no evidence for the domestication of animals and plants. From the presence of the querns and mullers, however, one may infer some sort of incipient cultivation. Perhaps the people were on the very threshold of effective food production. The excavation yielded remains of wild rice (embedded in lumps of burnt clay) and bones of wild cattle and sheep/goat. The Mesolithic period is ascribed to ca. ninth-eighth millennium BC.

2.3.4.b Koldihawa and Mahagara

The other notable sites excavated in the region are Koldihawa and Mahagara, situated on the opposite banks of the river Belan, the former on the left bank and the latter on the right, only 3 Kilometres from Koldihawa revealed a threefold sequence of cultures, covering the Neolithic, the Chalcolithic, and the Iron Age. The Neolithic Culture was distinguished by the occurrence of ground stone tools (including celts), microliths, and handmade pottery, represented by cord-impressed, rusticated, and burnished wares. Palaeobotanical analysis of the rice husks used in the paste of pottery showed that the rice belongs to a domesticated variety which, on the basis of the C-14 dates obtained for the neolithic deposit (7th-5th millennium B.C.), provides the earliest evidence for rice cultivation in the subcontinent.

Mahagara is a single culture (neolithic) site with a 2.60-metre-thick occupation deposit, indicating six structural phases. As many as twenty huts, represented by floors and postholes, were exposed in the excavated area. Of these, eighteen belonged to the last structural phase.

The sides of these huts were perhaps retained by wattle-and-daub screens as evidenced by the presence of burnt fragments of daub, bearing impressions of reed or bamboo. These eighteen hut floors are reported to constitute the remains of eight houses situated in a nucleated ringlike fashion rather than along a line. On these hut floors lay scattered Neolithic blades and microliths, pottery, querns, mullers, sling balls, celts, bone arrowheads, terracotta beads, and slashed and split bones of animals.

An interesting feature of the excavation was the discovery of an irregular rectangular cattle-pen, measuring 12.5 x 7.5m, with the larger axis oriented north-south. The cattle-pen seems to have been fenced by twenty posts with wider spaces left for the openings, of which there appear to have been three, two on the eastern side and one on the western side and one on the western. Within the fenced area no pottery or other artifacts were found. However, a large number of hoof impressions of cattle, belonging to different age groups, occurring in clusters, were recorded. Outside the pen, near the hut clusters, sheep and goat hoof-marks were found.

The ceramics of the period are represented by four wares called cord-impressed, rusticated, burnished red, and burnished black, all handmade and ill-fired. Among these, the cord-impressed ware is the most distinctive, forming a diagnostic trait of the assemblage. The rusticated ware, however, formed the larger percentage. The shapes represented are mostly bowls and globular jars with a few examples of spouted bowls, handis (cooking vessels), and basins.

The subsistence economy of the people consisted in stock raising, farming and selective hunting, as attested by the occurrence of both wild (cattle, deer, and boar) animals and domesticated rice.

As regards similarities with other neolithic regional and extra-regional cultures, we find that cord-impressed ware alone provides some comparative basis. In India this ware has been reported from Daojali Hading, a neolithic site of the north-eastern region (below p. 44). But in surface colour and the range of decoration pattern, the wares of the two regions differ from each other. Furthermore, the Neolithic Culture of the north-eastern region, which is younger than that of the Vidhyan, shows a complete absence of a stone-blade industry, an integral part of the Vindhyan Neolithic. Outside the subcontinent cord-impressed ware has been found in neolithic contexts over a wide-ranging in East and Southeast Asia, notably associated with the Jomon culture in Japan and the Hoabinhian in Southeast Asia, ranging in time from the seventh to the third millennium B.C. Here again, the resemblance is confined only to the third millennium B.C. Here again, the resemblance is confined only to the technique of pottery

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the remaining industries in the assemblages of each region being different. In the absence of any mechanism of diffusion between such disparate regions, the significance of this remains inadequately understood and can hardly be stressed.

The excavations at these sites have furnished evidence of a transition from wild animals to domesticated ones such as cattle, sheep/goats, and horses. Similar evidence is also available for rice. This is, therefore, the only Neolithic region in India that shows transformation from a foraging to a farming economy. Significantly enough, in this process no aceramic stage of the Neolithic has been discovered. Instead, pottery makes its appearance in the Proto-Neolithic or Advanced Mesolithic period when both animals (cattle, sheep, goats) and plants (rice) were undomesticated, indicative thereby of the primacy of the manufacture of pottery over the domestication of animals and plants. Considering the chronological bracket to which this period has been assigned, ca. ninth-eighth millennium B.C., it would appear that it is the earliest recorded evidence of the use of pottery. It is widely known that both in West Asia (Jericho, Catal Huyuk, Hacilar, Cayonu, Jarmo, Tepe Guran and Aq. Kupruk) and in East and Southeast Asia (Spirit Cave, Non Nok Tha, Laang Spean, Gua Kechil, and Padah Lin) the manufacture of pottery started later than the eighth millennium B.C. and followed the domestication of animals and plants. Consistent with this date for the Neolithic period-seventh-fifth millennium B.C.- discounting all the more recent dates obtained from Mahagara and Koldihawa (G.G.R. Sharma et al. 1980). This indicates a far earlier initial end of the time bracket than that of the Neolithic cultures in other regions of India (Thapar 1978), discounting the recent conjectures which place the North-eastern Neolithic Culture in c. 5000-2000 B.C. (T.C. Sharma 1981), The neolithic occupation at Mahagara seems to have a long history and may have continued in subsequent millennia. An Koldihawa a break in occupation after the Neolithic has, however, been suggested.

2.3.5. The Mid-eastern Region

In the mid-eastern region two sites have been excavated: Chirand (Verma 1970-71) and Chechar (IAR 1980). The former is located on the confluence of the Ganga and the Ghagra in District Saran and the latter on the northern bank of the Ganga in District Vaishali, both in Bihar. Excavations at these sites yielded a sequence of threefold cultures of which the earliest (Period I) belonged to the Neolithic, followed by the Chalcolithic and the Early Historical. The cultural assemblage of the Neolithic consisted of; (a) artifacts of bone and antler, including needles, bodkins, drills, points, borers, pins, celts (including a double-forked pic-axe with a carved socket for hafting), scrapers, chisels, awls, tanged and socketed arrowheads, and

items of personal ornament such as pendants, earrings, combs, etc.; (b) ground stone objects such as celt pestles, and querns; (c) microliths, representing parallel-sided blades, scrapers, serrated points, lunates, and borers; and (d) terracotta objects, including beads, bangles, and serpent and bird figurines.

The associated ceramic comprise red, grey, and Black - and Red wares most of which showed a burnished surface. Some of the grey ware pots were decorated with linear designs of crisscross lines and concentric circle painted in red ochre, recalling the Neolithic tradition of the south.

As regards structural evidence, it appears that in the earlier phase pit-dwellings with thatched roofs were used, while in the later phase over ground huts seem to have been built, as indicated by postholes, floors composed of tempered earth, and clay bins. The house were made of wattle and daub as attested by the find of burnt clay chunks bearing reed impressions. An interesting discovery was a semicircular hut with a series of hearths (chulhas), intended perhaps for community cooking. Paddy husk impressions on some of the pieces of burnt clay as well as the occurrence of charred grains of rice provide evidence for the use of rice. The other known domesticated plants were wheat, six-rowed barley (both naked and hulled), lentil, and green gram. The assemblage as a whole indicates an advanced stage of Neolithic economy. On the basis of C-14 determinations this Neolithic Culture is dated to ca. 1800-1400 B.. (discounting some incompatible dates).

2.3.6. The North-eastern Region

Ever since the first discovery in 1867 of a jadeite Neolithic tools from upper Assam (Lubbock 1967), a large number of sporadic finds of Neolithic tools from the north-eastern region have been reported; the main tool-types are faceted axes, shouldered celts, ground hammer stones, and wedges. Most of these Neolithic collections remained undated until excavation began at Dao-jali Hading in North Cachar Hills of Assam and Selbalgiri in Garo Hills of Meghalalya (T.C. Sharma 1967, 1981) and Sarutaru and Marakdola on the Shillong plateau in Assam (Rao 1977).

The excavation at Daojali Hading showed a 76-centimetre-thick occupation deposit yielding Neolithic implements together with pottery. Common tools were shouldered celts, rectangular adzes, axes, chisels, corn-grinders, mullers, and milling troughs, generally made of shale or sandstone. Earlier scholars thought that the shouldered celts were cut by metal wires to obtain the angles and were possibly copied from metal prototypes (Dani 1960). It has now

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been demonstrated that shale and sandstone can be cut by a shell piece or slivers of bamboo and as such knowledge of metal need not be assumed for the manufacture of shouldered celts.

The associated ceramics consisted of cord-marked grey ware, incised and stamped ware, and plain red ware. Of these, the cord-marked grey ware formed the dominant group. While the plain red ware was made of fine clay and was thin-walled, the fabric of the remaining wares was heavily tempered with quartz and sandstone grit. The latter seems to have been made by coil or ring method and imperfectly fired showing an unoxidized core section.

No direct evidence for the domestication of animals and plants has so far been obtained, but from the circumstantial evidence it can be inferred that slash-and-burn (jhum) and shifting cultivation must have been practiced during that period. Since the available technology combined with ecological factors was incapable of improving the yield, shifting cultivation was the most expedient solution to the problem. The people probably lived in mud-walled houses.

At Selbalgiri the Neolithic occupation was found to overlie a stratum yielding geometric and non-geometric microliths together with handmade pottery of gritty fabric, grey and dull-brown in colour. No decoration was observed on this pottery.

The other excavated site is Sarutaru, located 25 kilometers south-east of Gauhati. Excavation revealed a 40-centimetre-thick occupation deposit, yielding ground stone axes of both shouldered and rounded butt-end variety and a handmade buff to grey ill-fired quartz-tempered cord-impressed ware.

Two phases of the Neolithic Culture in the north-eastern region have been postulated, the earlier being ascribed to ca. 5000 B.C. and the later to ca. 2000 B.C. The assemblage, however, has not so far been objectively dated. Of the component elements of this assemblage, the shouldered celt and the cord-marked pottery have a widespread distribution in East and Southeast Asia, while the red ware shows affinities with the red pottery of the Yellow River valley, extending south up to Sichuan. However, in the absence of sufficient data, exact parallels with cultures of other regions cannot be established. Nevertheless, the Neolithic assemblage of this region has been compared with the late Bacsonian of Southeast Asia which revealed significant influence from Sichuan and Yunnan (T.C. Sharma 1967, 1981).

2.3.7. The Central Eastern Region

In the central eastern region the first Neolithic implement was discovered in 1868 in Singhbhum in Bihar by Captain Leeching (Ball 1868). Since then quite a large number of

Neolithic tools have been collected from different parts of this region—Santhal Pargana, Chakradharpur, Manbhum, Ranchi, etc. The artifacts included rounded butt-end axes, hammer stones, faceted tools, shouldered celts, bar-chisels, and splayed-edge axes. It was not until the 1960s that systematic excavations were undertaken at Kuchai in District Mayurbhanj, Orissa (IAR 1964) and Barudih in District Singhbhum, Bihar (IAR 1967).

Kuchai (fig.20) is situated about 8 kilometres to the north of Baripada along the national highway to Keonjhar. The excavation revealed a 40-45 centimeters thick occupation deposit, yielding Neolithic artifacts together with a coarse grit-tempered red ware, sometimes also slipped and showing incised and finger-tip decoration, and an orange-brown ware. Although a shouldered celt had earlier been collected from the area, no such tool was re-covered from the excavation. The stone artifacts (fig.21) included rounded butt-end axes, faceted hoes, chisels, maceheads, pounders, and grinding stones. Evidence of domesticated rice was obtained from Baidyapur, a Neolithic site in District Mayurbhanj. From the underlying deposit, composed of gravel mixed with grayish earth and loose laterite, microliths of an essentially non-geometric industry were obtained. No pottery was found with these tools.

At the other excavated site, Barudih, the excavation revealed a 50-centimetre-thick occupation deposit, yielding Neolithic implements like rounded butt-end axes and adzes, together with a grey and orange-brown pottery. In some places the basal red soil also yielded microliths. C-14 determinations obtained from this site indicate a time spread of ca. 1200-800 B.C. for this culture. Thermoluminescence dating of the potsherds from Kuchai also falls within this same range.

2.3.8. The Southern Region

As stated earlier, over a dozen Neolithic sites have been excavated in the southern region, namely, in Andhra Pradesh, Palavoy, Utnur, Nagarjuna konda, and Ramapuram; in Karnataka, Kodekal, Terdal, Maski, Piklihal, Hallur, Tekkalakota, Kupgal, Sanganakallu, Brahmagiri, T. Narasipur, and Hemmige; in Tamil Nadu, Paiyampalli, besides section scraping at many, results obtained from these sites have been strikingly similar. Some scholars (Paddayya 1973), however, have identified some variants within this region and have suggested that they should not be treated as a homogeneous entity. This postulate remains yet to be established. Meanwhile, it may be worth noting that despite local variations there are observable regularities which can be related to factors controlling the location and distribution of Neolithic would involve unnecessary repetition and is therefore, not attempted here. The principal sites which provide the framework for the present general survey are Brahmagiri

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(Wheeler 1948), Maski (Thapar 1957), Nagarjunakonda (/sarkar 1975), Piklihal (Allchin 1960), Utnur (Allchin 1961), and Sangana kallu (Subbarao 1948).

Two broad phases can be recognized in the evolution of this culture in the region. In the earlier phase, met with at sites in the granitoid hill terraces in the Shevroy hills (in Districts Salem, Dharamapuri, and South Arcot of Tamil Nadu) and also at Nagarjunakonda and Utnur, the principal traits consisted of a handmade coarse pale-red ware ground stone tools and microliths (non-geometric, with restricted use of blades), possibly a continuum of the Late Mesolithic tradition of the region, and occasionally bone tools. Ash or cinder mounds, considered to be an accumulation of cow dung (Proved by the excavation at Utnur, showing evidence of stockade and cattle-pen, hoof-marks, successive leveling, burning, and presence of postholes), are ascribed to the upper part of this phase (Zeuner 1959; Allchin 1961, 1963). A painted pottery, showing simple linear patterns in brownish purple colour over a red surface and a post-firing red ochre painted ware in grey fabric, was also associated with this assemblage. The later phase is distinguished by: a dominant handmade dull burnished grey ware along with a wheel-or turntable-picks, grinding stones, hammer stones, and pounders; microliths and parallel-sided blades (the latter constituting over 60 per cent of the assemblage); bone points; and other miscellaneous crafts like bead making, including some of steatite, shell, carnelian, agate, terracotta, etc. Ear ornaments of gold showing solid coiled rings with trumpet mouths from Tekkalakota are note-worthy. The associated architecture was marked by houses of wattle and daub sometimes with rubble plinths. Two types of burial practices were in vogue: one was in-burial for infants. From the burial at T. Narasipur, pottery head-rests of distinctive forms were also obtained.

Cattle, buffalo, sheep, and goat were commonly domesticated. Bones of cattle, however, formed the large majority (80 to 85 per cent of the collection), indicating that animal husbandry became the mainstay of the economy during that period. Among cattle, both the short-horned and long horned varieties were known. Two more points merit our attention in this respect: (i) the occurrence of charred and split bones is indicative of the use of animal flesh as an item of diet; and (ii) the ankylosis of the hock joint and the presence of the exostosis on certain parts of the skeleton show that the cattle were used for heavy draft or weight-bearing work. Bones of horses have also been reported from the Neolithic-chalcolithic deposits at Hallur (Naga-raja Rao 1971). It may be recalled that the horse belongs to the category of animals domesticated primarily for transport and labour (Zeuner 1963). The presence of the ass has been reported from Maski and Brahmagiri. This animal must have been a beast of burden. The pastoral and agricultural character of the economy of these people is thus clearly

evident. Whether all these animals were locally domesticated from corresponding wild species in this region or were brought as a ready-made breed, perhaps like the horse has not been investigated. Among the wild fauna the tortoise, the monitor lizard, the hare, the spotted deer, the nilgai, the back duck, and the gazelle may be mentioned. The presence of so many species of wild animals indicates sources of food. The evidence for the domestication of plants is admittedly inadequate and consists only of millet (*Eleusine coracana* and *Eleusine Indica*) and horse-gram (*Dolichos biflorus*).

Sometime during the later phase of the Neolithic Culture in the region, contact with the chalcolithic culture of the north Deccan resulted in the introduction of the use of copper and customs such as the burying of adults in multiple urns. On the basis of the available C-14 dates, a time spread of 2500-1000 B.C. is indicated for both earlier and later phases of the Neolithic Culture of the southern region.

Most of the Neolithic sites in this region are situated on granitoid hill terraces, level areas on hillsides and near rock shelter, etc. The hill- and boulder-faces in the vicinity of these sites often show brushings, peckings, and paintings either in white or in red (Allchin 1963), depicting bull, deer, gazelle, sheep, goat, horse, stylized humans, and occasionally a trident. From circumstantial evidence and from their content, it is reasonable to argue that most of these depictions may have been made by the Neolithic settlers of the region. A grey ware lid, depicting two antelopes, a bull, and a cobra in pin-head incisions, obtained from Tekkalakota (Nagaraja Rao and Malhotra 1965), supports this surmise. It is quite possible that a few of these depictions may have been the work of Mesolithic forebears and some of a much later date.

Considering the chronological span of the Neolithic Cultures in the various regions, it may be seen that in India there was no single nuclear zone from which the ideas and techniques of a food-producing economy were diffused to the other regions. The appearance of early farming communities in India, except in the Vindhyan region, is shown to have come about later than in West Asia and Southeast Asia. This is rather difficult to explain, but may have been the result of several factors including the level of exploitative technology, environment, and late continuance or survival of the Mesolithic economy.

2.3.9. Summary

The food producing economy dependent on the domestication of animals and cultivation of plants has been termed as neolithic revolutions in the history of man.

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The neolithic cultures have been identified in the six geographical regions in India –

Northern region covering the Kashmir valley, Punjab and H.P.

Vindhya region covering the Belan valley and Vindhyan Plateau in Allahabad, Mirzapur, Rewa and Sidhi.

3. Mid eastern region covering the Northern Bihar district of Soran.
4. North Eastern region Covering Assam and adjacent sub Himalayan regions.
5. Central eastern region (Bengal, Bihar and Orissa complex)
6. Southern regions.

Burzahom and Gufkral are important sites of the northern region. Burzahom has been studied under four periods two of which (Period I and II) belong to the Neolithic phase. Period one several dwelling pits, crude and hand made pottery of steel grey and shades of dull brown and buff, is coarse fabric, has mat impressions on many types. In the phase two a burnished black ware of medium fabric is seen. Period two also reveals human burials. The pits were also buried along with them. Among the plants wheat barley and centel are common.

Gufkral shows five main periods of occupation with period first aceramic neolithic early neolithic late neolithic third A, B, C belonging to the neolithic phase.

The early period of phase I (Aceramic Neolithic) one reveals dwelling pits which had thatched superstructures. It seems as if the earlier phase comprised of hunter gatherers as no evidence of animal bones or grains of cultivated plants can be seen.

Towards the close of aceramic period the cultivation of plants can be seen. Period IB shows circular dwelling pits, hand made pottery, poultry keeping can be seen.

The nature phase of Neolithic period IC circular dwelling pits with circular as well as rectangular hearths are found. Stone implements like well polished axes with faceted edges, rounded butts, scrapers, polishers, pestles, pounders, saddle querns, ring stones, harvesters and spindle whorls can be evidenced. The spindle whorls also indicate the making of woolen garments. Towards the end of this period copper was introduced in Gufkral.

The evidences in Burzahom and Gufkral show that the Neolithic people in Kashmir had racial contacts with other civilization like central and west Asia and trade contacts with North China, Southern Iberia, Indus Valley and neighbouring areas. Evidence of boxwood shows that the delicate work of engraving and carving was known to them 4500 years back.

The Vindhyan regions has three important sites - chopani Mando, Kaldihwa and Mahagara.

Chopani mando reveals huts of proto neolithic period the floors of which were littered with microliths, hammer stones, anvils, sling balls, mullers, querns, fragments of burnt clay, animal bones and potsherds.

Koldihwa and Mahagara are situated on the banks of the river Belan. The neolithic phase shows ground stone tools, microliths, hand made pottery cord impressed, rusticated and burnished ware. Rice husks found provides the earliest evidence for rice cultivation in the sub-continent (neolithic deposit from 7-5 millennium BC)

Mahagara reveals huts with neolithic blades, microliths, pottery, querns and mullers, celts, bone, arrowheads, terracotta beads and slashed and split bones of animals. It also shows an irregular rectangular cattlepen.

The tow sites of the mid eastern region are Chirand and Chechar. The former is located on the confluence of the ganga and ghagra in the district Saran and the latter on the northern bank of ganga in the dist. Vaishali.

The cultural assemblage of the neolithic period consisted of artifacts of bone and antler including needles, badkins, drills, points, borers, pins, cults, scrapers chisels, axes, tanged and socketed arrowheads, pendants, earrings combs etc., celts, pestles and querns, microliths and terracotta objects. Ceramic objects with are red, grey and black ware. Structural evidences are semi circular huts with series of hearths.

The neolithic sites of the North-Eastern region are Dao jali Hading in North Cachar hills of Assam and Selbalgiri in garo hills of Meghalaya Dao jali Hading shows Neolithic implements along with pottery.

The ceramics consist of cord marked grey ware, incised and stamped ware and plain red ware. At selbalgiri neolithic occupation overlies a stratum yielding geometric and non geometric microliths and hand made pottery of gritty fabric. Another site is Sarataru.

Two phases of neolithic culture in the N.E. region have been ascribed to 5000 BC and 2000 BC.

The central eastern region reveals neolithic tools from Santhal paraganas, Chakradharpur, Manbhum, Ranchi etc.

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The Southern region includes over a dozen neolithic sites in the southern region namely in Andhra Pradesh, Palavay, Utnur, Nagarjunikonda and Rampuram, Kodikal, Terdal, Maski, pelckhal, Hallur, Tekkalakola etc.

The earlier phase of this culture consisted of hand made coarse pali red ware, ground stone tools and microliths. The later phase is distinguished by a dominant handmade dull burnished grey ware along with whell or turn latile picks, grending stones, hammer stones and pounders, microliths and parallel sided blades. Ear ornaments of gold from Tekkalkota are noteworthy. Evidence of burial practices, cattle rearing etc. are also common.

Sometime during the later phase of the neolithic culture with the chaeolithic culture of the north Diccan is also seen by the evidence of the use of copper and custom of burying the adults in multiple urns.

2.3.10 Check your progress –

1. What do you understand by the neolithic age? Enumerate the various neolithic sites of India.
2. Discuss the neolithic ages in Burzahom and Gufkral.

2.3.11. Self Activity

1. Make a list of neolithic artifacts displayed in your nearby musium :
2. Mark the neolithic sites in the map of India

2.3.12. References

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BLOCK - 3 : HARAPPAN & BRONZE AGE CIVILIZATION
UNIT - 1
INDUS VALLEY OR HARAPPAN CIVILIZATION

- 3.1.1. Introduction
- 3.1.2. Nomenclature
- 3.1.3. Extent of Harappan Civilization
- 3.1.4. Who were the Harappans
- 3.1.5. Date
- 3.1.6. Origion
- 3.1.7. Megration
- 3.1.8. Important features and settlement patterns
- 3.1.9. Social strati fensation
- 3.1.10. Fegirives and toys
- 3.1.11 Jewellery
- 3.1.12 Seals
- 3.1.13. Poltery
- 3.1.14. Religion and rituals
- 3.1.15. Mediaeval and Surgery
- 3.1.16. Tools and weapons
- 3.1.17. Burial
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 - 3.1.20.a Internal trade
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- 3.1.21 Late Harappan
- 3.1.22 Decline of the Harappan Civilization
- 3.1.23 Harappan Collection in the National Museum

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- 3.1.24. Harappan legacy
- 3.1.25. Summary
- 3.1.26. Check your progress
- 3.1.27. Self Activity
- 3.1.28. Suggested readings.

3.1.1. Introduction

During the third millennium B.C. (Circa 2700-2000 B.C.) a highly developed civilization known as Harappan or Indus Civilization, existed along the rivers Indus and Sarasvati and Western Uttar Pradesh, all located in north-Western part of South Asia. Charles Masson, who first noticed the mound of Harappa in 1826, had hardly realized that Harappan mound contained remains of the earliest Bronze age, civilization of South Asia. In 1862 Alexander Cunningham did limited excavation at Harappa and found ceramics and seal. Later on Major Clark also found a seal of a humpless bull from the same site. In 1917 Italian scholar Luigi pio Tessitori had excavated at Kalibangan but he could not publish his reports. Tessitori's Harappan material of 1917 excavation is now in the collection of State Museum Bikaner. Tessitori explored some 85 sites and excavated at Rang Mahal and Kalibangan. Nayanjot Lahri recently studied the collection of Tessitori now displayed in State Museum Bikaner and she confirmed that this material belongs to Indus or Harappan age. Nothing of this Civilization was known until the early part of 20th Century (1920-21) when two archaeologists, R. D. Banerji and D. R. Sahani discovered Mohenjodaro in Sind and Harappa in Punjab both now in Pakistan. During the last eight decades more than 2650 Early Harappan, Mature Harappan, Late Harappan and O.C.P. or Copper Hoard sites showing Harappan contacts have been discovered in South Asia. Most of these newly discovered sites are in Sarasvati Basin. So far 203 Harappan and its associated sites have been excavated. Mohenjodaro, Harappa, Dholavira, Mehrgarh, Nausharo, Dhalewan, Kalibangan, Lothal, Mehrgarh, Rakhigarhi and Banawali were excavated extensively.

3.1.2. Nomenclature

The discovery of Indus civilization was first made during 1920-22 in the Indus Basin. In the succeeding decades after 1920 a large number of sites were discovered in the Indus Valley and the Archaeologist named this as Indus Valley Civilization. This was due to the fact that the civilization was then limited to the Indus Valley proper. Some archaeologists have called it Harappan Civilization named after Harappa, the first discovered site. Some South Asian ar-

chaeologists (B.B.Lal) have now come out with a new nomenclature as Indus-Sarasvati Civilization or Sarasvatī (Hākrā) Civilization. It appears that the name of this civilization as Harappan Civilization or Indus Civilization is more appropriate.

3.1.3. Extent of Harappan Civilization

The area covered 1-6 million-sq. km by the Mature Harappan Civilization extended from Sutkagendor, on the Makrān coast situated on the border of Iran and Pakistan, to Alamgirpur and Hulas, Mandi and Shamlinagar on the Hindon in western Uttar Pradesh, and Shurtaghai (Afghanistan) in the north to Daimabad in western Maharashtra. Late Harappan village chalcolithic sites (1900-1500 B.C.) like Bhorgarh and Mandavali have been reported from East Delhi which are located on old bank of River Yamunā. The extent of Harappan Civilization in South Asia was greater in area than the contemporary civilization of the Nile in Egypt and Euphrates and Tigris (Mesopotamia) in Syria and Iraq. The Ganweriwala situated on the bank of river (Sarasvatī) Hākrā is the largest mature Harappan site covering an area of 250 hectares. Next comes Rakhigarhi on the bank of river Drasdāvati tributary of Sarasvatī and excavator of Rakhigarhi had claimed its area to be 140 hectare. Another newly excavated site Dhalewan in Mansa district of Eastern Punjab (India) covers 70-hectare area. Mohenjodaro and Dholavira are spread in 110-hectare area. Harappa situated on the Banks of the river Rāvi covers 80 hectares.

Lothal, Kuntasī and Padri were Small port towns of Harappan period. The pattern of this urban civilization in certain respects was uniform as is evidenced not only from the seals, sealing, writings, beads, weights and measures, pottery etc., but also from the bricks and brick-laying technique which are the same.

Early and Mature Harappan sites are located along the Major rivers and contrary to this late Harappan sites are found along tributaries and in its upper reaches of the rivers. For convenience sake, the area of Harappan civilization can now be divided into eight zones as follows:-

1. Afghanistan (type site: Shortaghai)
2. Punjab (type sites: Harappa, Rahira and Dhalewan)
3. Rajasthan, Haryana (type sites: Kalibangan and Rakhigarhi)
4. Bahawalpur (type site: Ganweriwala and Jalilpur)
5. Sind (type site: Mohenjodaro and Chanhudaro)
6. Baluchistan (type sites: Kulli Harappan phase and Nausharo)

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7. Gujarat (type sites: Dholavira, Lothal, Rojdi and Padri)
8. Western U. P. or upper Ganga-Yamuna Doab and Eastern U.P. (type sites: Mandi, Hulas Alamgirpur, Mandavali and Bhorgarh in Delhi)

3.1.4. Who were the Harappans

In India Harappan sites are located on the eastern and southern region of Harappan area. A few important excavated mature Harappan sites in eastern region are Ropar, Dhalewan, Kalibangan, Mitathal, Siswal, Banawali, Rakhigarhi, Bhagwanpur, Manda, Hulas, Mandi and Rohira. Harappan excavated sites of southern region are Rangpur, Rojdi, Bhagatray, Surkotada, Lothal, Prabhas, Daimabad, Dholavira, Kuntasi and Padri.

3.1.5. Date

The Early Harappan is a formative stage of an antecedent village Chalcolithic Culture and this stage has been dated to Circa 3500-2700 B.C. and this preludes later Mature Harappan Bronze age urban civilization of South Asia. Late Harappan is a post mature Harappan village Chalcolithic Culture and this has been ascribed between Circa 2000-1500 B.C. On the basis of calibrated radiocarbon dates the age for the Mature Harappan urban Civilization ranges to Circa 2700-2000 B.C. The sites located nucleus region in south east region are little younger than nucleus region and these have been dated between 2600 - 1900 B.C.

3.1.6. Origion

A few Harappan sites show continuous sequence i.e. Early, Mature and Late Harappan. Such sites are Harappa, Nausharo, Dholavira, Banawali, Kalibangan and Dhalewan. Few dates from Neolithic and Early Harappan deposits of Mehrgarh and seabed underwater sites are going back between (8000 to 2800 B.C.)

The latest evidence from the sites such as Dhalewan Harappa early deposit, Banawali, Kunal, Rakhigarhi, Dholavira, Bay of Cambay, Nausharo, Mehrgarh, Lewan, Sothi, Sherikhan-Tarakuai, Rehmandheri, Amri, Ghazishah, Kotdiji shows independent growth of Harappan culture spread from Circa 8000 to 2000 B.C. The transitional phase between Early Harappan village Chalcolithic and mature urban Harappan has been reported from Banawali, Kalibangan, Dholavira, Padri, Rakhigarhi, Dhalewan, Kunal and Nausharo. Present author has dated the transitional phase between Circa 2800-2700 B.C. The transitional phase material from Kunal is most interesting where two crowns, Armlets, Bangles, Necklace and Pendants of various sizes in precious metals (Gold and Silver); 12000 beads of Carnelian; and seven Steatite Seals having Mature Harappan square shape with boss at back but without the typical animal and some geometric graffiti's mark have been found.

On the basis of archaeological finds from Early Harappan sites we can say that the Early Harappans had the knowledge of building of mud citadels and dish-on-stand shaped pots and were also acquainted with the fish scale swāstik symbol and pīpal leaf design on pottery. They had knowledge of long trade. The Horn design and pīpal leaf are well depicted on ceramics of Early Harappan Period. The concept of the square seals without script was there but with crude graffiti's mark. Early Harappan seals are made of clay, bone and ivory. At Kunal seven steatite seals of early Harappan age have been found these have a geometric motif and an incipient boss on the back. Microblades of chalcedony stone were also reported from Kunal. Triangular terracotta cakes, dices and chert blades are also available in the Early Harappan level. Some graffiti's marks found at early Harappan sites like Harappa etc. are akin to Mature Urban Harappan. Graffiti marks above-mentioned elements are an integral part of Mature Harappan bronze age Civilization. The Harappan revolution took place in the region of Mehrgarh, Kotdiji, Harappa, Dhelanwa, Rehmandheri, Anartha Bay of Cam bay and Kunal around Circa 2800-2700 B.C.

J. P. Joshi has observed that the Ghaggar-Sarasvati (Hakra) river system had three major economic pockets. The first pocket was on north along Sirhind river a tributary of Ghaggar having an area of 120 k.m in Mansa district, Punjab, where seven very big mounds, six middle mounds and five small mound's associated with Harappan period have been discovered. They are indicative of a Harappan Civilization and commercial interaction. Dhalewan, a Early & Mature Harappan site is located in this region and this site shows a transitional stage between early to Mature Harappans. Kunal, Rakhigarhi, Dhalewan and Banawali fall in nearby of first region.

3.1.7. Migration

The early Harappans first made their settlement around 3500 B.C. in Baluchistan. Later on they shifted to Harappa and Mohenjodaro and developed themselves further and became Mature Harappan Bronze age urban civilization. Harappa and Mohenjodaro are the nucleus regions of Mature Harappans. J. P. Joshi recently suggested, "from Sind, Harappans migrated eastward and made the fortified cities at Kotara near Kuran and Khavada. Later on they crossed a strip of Rann of Kutch at Amarakpur and again made a big urban Harappan fortified city at Dholavira. The Harappans came via Allahdino and Kotara to Dholavira. Later on they made a citadel at Surkotada. They also made their settlement at Lothal, Kuntasi and Padri. After the end of the Mature Harappan period they moved to Western Maharashtra. Through Hakra Sarasvati (Gaggar) region they came to Kalibangan, Dhalewan in Eastern Punjab, Banawali

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and Rakhigarhi in Haryana. Around Circa 2000 B. C. they moved to the region of upper Ganga Yamuna doab in western U. P. and east Delhi and made their Harappan settlements at Alamgirpur, Hulas, Mandi, Mandvali and Nayaban's on the banks of river Hindon and Yamuna. In the last they mixed up with the local cultures of western U. P., Ahar, Balathal and Oziyana in village Chalcolithic Culture of Rajasthan and adjoining region of western Madhya Pradesh. On the basis of C14 date Ahar (Balathal) village Kayatha Chalcolithic Culture has been dated between Circa 3500-1500 B.C. We can correlate Ahar (Balathal) material culture with the Early Vedic (Rgved, Yajurved, Sāmaved and Atharvaved).

Who were the Harappans - Early Vedic people were contemporary with Early Harappan. The Mature Harappans were having contacts with Samavedic and Atharvavedic people. Late Harappans were contemporary of late Ahar or later Vedic culture. The copper hoard culture was contemporary of Mature Harappan. One thing is very clear that Harappan Bronze age urban Civilization was not Rgvedic but its shows contact with Atharvavedic Āryans of Vedic age.

The Harappans belonged to the homogenous race. The latest excavated evidence now indicates that the Mature Harappan settlement pattern like fire altars reported from Rakhigarhi, Banawali, Lothal, Kalibangan and Dholavira show close affinity with those of the early Āryans. The burial practices and Lingayat cult associates the Harappans with proto-Dravidian of South Asia. The Harappans were mostly mixed population of Aryans and proto- Dravidian. Bhagwan Singh has suggested their affinity with the Vedic Aryans. However, the present author feels that the Mature Harappans were very different from Rigvedic people and they may be contemporary of ATHARVAVEDA AND SĀMAVEDA Āryans who were different from Mature Harappans.

HARAPPAN COLLECTION IN THE NATIONAL MUSEUM

Through this topic you know the collection of antiquities which are found from various Indus sites and possession National Mesuem at new delhi.

The National Museum, New Delhi in its pride possession has a collection of around 3800 artifacts collected from various sites like Mohenjodaro, Harappa, Chanhudaro and Amri and Nal, all situated in Indus Valley region of Pakistan, apart from 1025 objects from Indian Harappan sites recently received from the Archaeological Survey of India, New Delhi on temporary loan. The new material are from the sites of Dholavira, Dhalewan, Kalibangan, Banawali, Lothal, Sothi, Rakhigarhi, Mandi, Hulas and Burzahom. This new permanent gallery is a Joint Project of Archaeological Survey of India and National Museum, New Delhi. Many questions

remain unanswered about this urban civilization. No one is very sure about the mysterious written record or script and some scholars have recently suggested that Harappan script is on the way to final decipherment. The Archaeologists have found a number of clues and the search and serious study of the great Bronze Age civilization continues with greater enthusiasm till date. With these objects and the photographs of the archaeological remains, this Harappan gallery of National Museum, New Delhi, presents a picture of how things might have been during the development of Harappan Bronze Age Civilization.

Archaeological Survey of India and the National Museum, New Delhi have jointly set up a new permanent Harappan Gallery, for the visitors in the very first year of this new century. The material on display has been selected carefully to make the gallery more exciting, charming and meaningful from the educational point of view and the new publications like Terracotta Art Jewellery script and Minor Art & crafts of the Harappan-civilization will be an added attraction. We are going to introduce multimedia in Harappan gallery.

3.1.8. Important features and settlement patterns

The settlement pattern of this civilization includes a well planned town area, wide straight streets and major roads running north-south and east west and cutting each other at right angles (grid ion pattern) with covered drains running along the sides. Most of these towns were divided into two parts and were fortified with high walls made of bricks or stones. The Major town found at Dholavira has three parts, and these three architectural components were enclosed by an outer fortification wall. Rock-cut reservoirs discovered at Dholavira suggest a unique water management system at this Harappan site. Rakhigarhi had the largest animal husbandry and minor art crafts centre located on eastern periphery of Harappan civilization discovered so far. Mandi in western U.P. seems to be a Goldsmith workshop or storehouse of mature Harappans.

The mature Harappan houses were built mostly of bricks and stone on high platforms. They had stairs, bathrooms and well-laid drainage system both covered and open. The pots used were made of baked clay and the people lived in a prosperous style as is evident from the gold jewellery, clay and stone toys, terracottas, seals and a variety of figurines of faience and paste. They farmed the land with ploughs near the settlements and grew plenty of wheat, barley, cotton, millet and crops besides date, sesame and melon. They were keeping surplus grain in the store (Granary). Ploughed agricultural fields and terracotta models of plough were discovered from Kalibangan & Banawali.

The Mature Harappan settlements were mostly located on the banks of river Indus, Sarasvatī and its tributaries. According to J. P. Joshi "Harappans were conditioned by the be-

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haviour of the river providing an active flood plain and ecology, navigability of the river, accessibility to natural resources and trade routes both internal and external. Development of Harappan urban centre is mostly dependent on these factors".

settlements were built of mud bricks, burnt bricks and chiselled stones. They also used wood for doors. The use of bricks was limited at Dholavira, Rojdi and Surkotada, all Mature Harappan sites in Gujarat. The ratio of Mature Harappan brick size is 1 : 2 : 4. The Mature Harappans executed their town planning with the geometric instruments and they had developed i.e. the accuracy, the plumb bob and the right angle etc. These instruments gave them the correctness in town planning and building the streets. Measuring instruments were found at Lothal, Dholavira, Mohenjodaro, Kalibangan and Allahdino. The right angle measuring instruments were found at Dholavira, Lothal and Mohenjodaro. The linear measuring scale has been found at Lothal, Kalibangan, Mohenjodaro and Allahdino.

Mature Harappan sites like Harappa, Mohenjodaro and Kalibangan had each a citadel on high mound in the west and a fortified chessboard patterned lower town in the east. Harappan citadels have gateways with the flight of steps to climb upto the platforms. The citadel is divided into two parts i.e. one having platforms and the other having a residential complex for the elite, separated by a wall.

The Lothal port town had a dockyard, a warehouse, a granary, a high acropolis and a lower town. Surkotada stone town planning differs from Kalibangan. Surkotada had a citadel and a fortified lower residential town. These two divisions were surrounded by a rectangular fortification wall made of stone rubbles. The fortification wall had an imposing gateway. The citadel and the lower town had interred communication ramp and later gateways. The stone architecture was also discovered at Rojdi. The houses there were built of stone rubbles. Kuntasi in Gujarat was a centre for procuring raw material and processing them into finished products. It was another Harappan port town for exporting item to West Asia.

The Dholavira town planning was having three principal divisions named as Acropolis (Citadel), middle town and lower town, which was surrounded by a rectangular massive stone fortification wall. The entire Harappan walled city occupied an area of nearly 100 h. The Citadel was provided with one gate at each side. Highly polished stone blocks and pillars used in the passage and architectural components were without parallel at any other Mature Harappan site discovered so far. Around the Citadel there are almost 13m wide water reservoirs along with a feeder channel covered with slabs and provided with manholes for occasional deslting. So far around 18 reservoirs and one stadium have been reported from Dholavira. The most out-

standing discovery is the find of a large sized signboard inscription of ten letters of Harappan script. The town planning of Banawali shows some differences from Kalibangan and Mohenjodaro. The Banawali Citadel and lower town was secured by mud brick fortification on three sides and was designed like an irregular trapezium following the planning of Early Harappans with a few marginal modifications in the lay out. During late Mature Harappan period people of Banawali dug a deep and broad moat around the town. The Lower town and citadel were set within one compound of semi-circular shape. The street systems of Banawali are radial type.

The town planning of newly excavated Harappan sites like Rakhigarhi (Haryana) and Dhalewan (Punjab) is identical with Kalibangan. The mud brick architecture of these sites reminds of the typical Mature Harappan Style. Rakhigarhi seems to be a Mature Harappan animal husbandry centre and Dhalewan represents a transitional stage between Early & Mature Harappans. Further extensive horizontal excavations on these sites will provide final answer of settlement pattern.

SETTLEMENT PATTERN IN GHAGGAR-SARASVATI (HAKRA) REGIONS.

Hakra or Ghaggar or Sarasvati river with its tributaries was a mighty river during Early and Mature Harappan period (Circa 3200-2000 B. C.). A large number (around 1000) of Harappan and its associated sites lie in this region. This river system provided better communication in Haryana, East Punjab, Bahawalpur and Katch regions for getting timber (wood) from Himachal Pradesh, which was used as Harappan building material. The largest Harappan settlements like Mohenjodaro, Harappa, Ganweriwala, Dholavira, Rakhigarhi etc., are located along the major and perennial rivers.

The Katch region of Harappan mounds are larger and have a thicker habitation deposit. This area is located in Sarasvati (Hakra) region and lower Sarasvati joins Arabian Sea near Desalpur in Katch.

J. P. Joshi called these areas of Sarasvati region as the foundation of urban boom but this region is located in circumference or Eastern region of mature Harappan Civilization. Its Nucleus region is Mohenjodaro and Harappa where urban phase begins around Circa 2700-2600 B.C. Sites like Mehrgarh, Nausharo, Rehmandheri etc., shows continuous evolution from Circa 8000-7000 B. C. to Circa 2700 B. C. and this suggests that the Harappan Civilization urban boom in Mehrgarh region. Recent discovery of continuous developing sequence from 1000 B.C. to 3000 B.C. at below the sea level at Gulf of Cambay also supports observation of J.P. Joshi.

3.1.9. Social stratification

On the basis of settlement pattern of Mature Harappan sites J. P. Joshi and B. B. Lal have suggested "The Mature Harappan seems to be divided into three classes one elite associated with the population of citadel (Acropolis), a well to do middle class occupying the lower town and a relatively weaker section working for the upper and middle class". Separate workmen quarters found at mature Harappan sites suggest social stratification. On the basis of available archaeological evidences it was observed, "Harappan habitation pattern was not based solely on the economic status of people but it was on the basis of the power status of the ruling class including priestly one".

On the basis of two divisions of town planning i.e. citadel and lower town we can conclude that the religious elite population had occupied the citadel area of mature Harappan town. The Wealthy traders, occupational class and the poor section i.e. workers etc., lived in lower town. The citadel was having more civic amenities than the lower town. The Archaeological evidence from Lothal and Dholavira suggests that the entire Mature Harappan trade and marketing, was done from lower town.

BUILDINGS

The houses were built of bricks & stones along the roads. Every house contained several rooms, a kitchen, a well and bathrooms around a courtyard. The drainage system was perfect. The house drains emptied all the wastewater into the street drains. The Great Bath tank at Mohenjodaro shows the state of perfection reached in perfect building techniques. Fired bricks were held together by chuna mortar and asphalt to make it watertight. It could be drained out by an opening in one corner Great Bath and was surrounded by a cloister, into which opened a number of small rooms. It is 39 x 23 feet in area and 8 feet deep. The rock-cut 18 Reservoirs and stone buildings have been discovered at Dholavira, a mature Harappan site in India, which were used for storing water.

The second Harappan pocket was in Bikaner/Bahawalpur of Ghaggar region, where around 800 Harappans sites have been discovered in an area of 1000 k.m. It includes area from Yazdan to Derawar fort belonging to the Early and Mature Harappan sites and which have Harappan Influence. Ganweriwala a largest Mature Harappan site, covering an area of 250 hectares area is located in this region. The third southern area is in Katch, which is half way between Sindh and Gujarat. It has a concentration of 100 Harappans sites and the area of its influence Dholavira and Surkotada are located in this region. Dholavira was spread in a 100-hectare area. J. P. Joshi is of the opinion "These three economic pocket in the cultural

empire of the Harappan provided a strong economic base that is the foundation of the Harappan boom".

The River Hindon of western U. P. or upper Ganga-Yamuna doab was also a tributary of river Yamuna and around, 200 Harappan and its associated sites are located in the Hindon system. According to the present author Rgvedic and Yajurvedic culture as contemporary of Early Harappan village Chalcolithic Culture. We need some more archaeological evidence to show the close affinity between with Rgvedic, āryans and Mature Harappans. The Discovery of horse bones and terracotta fire altars and copper hoard from Mature Harappan sites simply shows that the Mature Harappans and the Atharvedic people had come in contact with each other but they were not the same. The recent findings of a terracotta figurine of a cow from Oziyana and the non Harappan Chalcolithic material from Balathal (which has been ascribed to Circa 3000-2500 B. C.) show affinity with the Yajurvedic and Rigvedic village Chalcolithic Culture. Rgvedic is not post Mature Harappan and its period can be pushed back up contemporary of Early Harappan Period (Circa 3200- 2800 B. C.)

3.1.10. Figurines and Toys

The most beautiful of all the figurines found at Mohenjodaro are two small figures of a dancing girl in bronze. The other rare bronze figurines are buffalos from Mohenjodaro and Bull from Kalibangan. This and other figurines of men, women, animals, birds and toys were solid cast in bronze by the lost wax or cire Perdue method. There is a finely crafted small buffalo and model of a cart with wheels. There are also bronze mirrors, hairpins and pots and pans. The other huge bronze images of late mature Harappan period (2000 B.C.) are one chariot and three animals from Daimabad. The most interesting is a terracotta toy animal with a head that moves. There is also a bird on wheels, a climbing monkey, horse, maze and a bull, all models of clay. The rare terracotta figurines male head, inscribed double male head and unhumped bull and charging bull from Kalibangan are of unique artistic value. There are a large number of terracotta figurines from Mohenjodaro, Harappa, Banawali, Chanhudaro and Lothal. Among these are figures of the mother goddesses, birds and water and land animals. The famous stone bust of a bearded man, clad in embroidered shawl with trefoil motif, now in the National Museum, Karachi, resembles the image of a priest. Its plaster cast copy is on displayed in National Museum, New Delhi. Similar type of a headless seated stone priest and Mongooses recently reported from Dholavira. Male torso and a dancer made of Jasper stone from Harappa and Male steatite head from Mohenjodaro now on display in National Museum, New Delhi, are other unique examples of stone art

3.1.11. Jewellery

The craftsmen in the cities of this period worked with gold, silver, copper, bronze, shell, paste, ivory, faience and clay to produce all kinds of ornaments. They made beads out of semi-precious stones, shell, ivory and clay. They used gold and silver to make bracelets, necklaces, bangles, earrings, head ornaments and girdles. Earliest Jewellery items of the gold and silver in South Asia have been recently reported from Kunal, Nindowari and Nagawada and these have been ascribed to 3000-2800 B.C. (Early Harappan period). The Gold Jewellery of Mature Harappan period was reported from Mandi, Mohenjodaro, Nindowari, Allahadino, Rakhigarhi, Lothal, Quetta, Dholavira and Harappa.

3.1.12. Seals

The majority of the mysterious seals, carved on mostly square pieces of steatite, bear engravings of animals with a short inscription. Since the mystery of the script is still on the way to decipherment we do not know what the engravings mean. The animals generally include the elephant, the bull and the unicorn. Other seals depict the mother goddess and some ritualistic scenes, which give the impression that the seals, although used as stamps of authority in trade, represented religious symbols used during the rituals. The Indus inscriptions are yet to be deciphered; they were using two languages i.e. Brahui and Sanskrit and their script was perhaps proto-Brahmī.

The Harappan Script now available from about 5500 inscriptions from various excavated remains is on the way to decipherment. No bilingual inscription has been found so far except two eastern island type brick inscription of Mature Harappan period from western U. P. and late Harappan biscriptual inscription from Betdwarika. Parpola's claim Indus script being of proto-Dravidian in Brahmi language may be correct. The claim by some other scholars (S. R. Rao) script is Prot-Brahui and in Sanskrit language may also be correct. B. B. Lal has observed that the writing direction of Harappan script was mostly from right to left. S. P. Gupta and Raja Ram say that the writing system was mostly from left to right. A few other scholars have suggested that the writing direction of Harappan script was bostrophedon (both sides). During Mature Harappan period Circa 2700-2000 B. C. direction of Harappan writing system was mostly from right to left and later on around 1500 B.C. (end of late Harappans) they started their system of writing from left to right. We get the Harappan script in an inscription found at Betdwarika. The discovery of long written inscription from left to right and a bilingual inscription could only solve the problem of decipherment of Harappan script. The recent discovery of an inscribed double-headed terracotta figurine from Kalibangan gives some impression of

a Harappan script bearing a Proto-Brahmī script. The present author and other scholars read this inscription as ŚIVAM.

3.1.13. Pottery

The pottery, excavated at Harappa, Nal, Kalibangan, Dhalewan, Sothi, Lothal, Dholavira, Rakhigarhi and Mohenjodaro and at other centres of the Civilization, was made on a potter's wheel and was fired or baked at a high temperature. There seems to have been a wide range of standard shapes and forms pottery jars in particular were used for a variety of purposes. The distinct among the pottery of this period are large storage Jars, tall perforated cylindrical vessels and dishes-on-stands. Many of these are decorated with designs in black, depicting pīpal and other leaves, animals, fish, fish-scales and intersecting circles. A few potsherds even have graffiti marks bearing symbols and letters. The early Harappan Ceramics, from Rakhigarhi, Kalibangan, Dhalewan, Dholavira, Harappa, Nal, Kunal, Dholavira show the origins of Harappan Pottery. Perforated red ware Jar is typical characteristic of Harappan civilization.

3.1.14. Religion and rituals

The fire worship was a typical characteristic of Mature Harappans and there are evidences from Lothal, Kalibangan, Rakhigarhi and Banawali. The fire worship shows the influence of Atharvedic Āryans. The cult of Śiva and Śakti (mother goddess) was an important religion of Mature Harappans. The worship of a horned deity called Paśupati, Earth Goddesses, Liṅga and yonī, other sacrifices, pīpal tree worship, snake worship and yoga were the other facets of Harappan religion and ritual. Some religious practices and influence of Early Harappans (Rgvedic and Yajurvedic) also continued during mature Harappan.

3.1.15. Mediaeval and Surgery

The Harappan burials at Kalibangan and Lothal bear the evidence of trephination i.e. brain surgery. Similar evidence of trephination was reported from Burzahom, which is an early Neolithic site in Kashmir contemporary with early mature Harappans.

3.1.16. Tools and weapons

The Museum has a number of copper tools from Harappan sites. These include flat axes, chisels, knives and a small saw. Although the cities of the Harappan Civilization generally had protective walls and bastions around them, it is believed that they did not develop sophisticated weaponry. Only simple spearheads and arrowheads have been found. These people were basically peace-loving traders and Agriculturists. Long chert stone blades reported from Harappan sites is peculiarity of Mature Harappans.

3.1.17. Burial

The dead were usually buried in extended position with head towards the north. The offerings in graves generally included earthen pots and pans. The personal ornaments like bangles, necklaces, anklets, finger-rings and earrings, etc. were sometimes found on the skeletons. At Lothal, some burials have yielded skeletons of two individuals together. At Kalibangan, some large pots, with or without human bones, were buried in pits, possibly as memorials. Harappans were also cremating the dead bodies. A complete human burial from Rakhigarhi is on display in Harappan gallery of the National Museum, New Delhi.

The mature Harappan Burials were of three type (1) extended (2) rectangular pot burial with bones and (3) circular or oval pot burial mostly without bones.

At Kalibangan there are evidences of the modes of disposal of the dead i.e. 'NADI PRAVAH' (flowing in the river) and cremation. The burials were reported from Mature Harappan sites like Surkotada and ortho stated type cairn circle and row of barrow burial of Rath-chiti burials at Dholavira suggests similarities with megalithic tradition of later period. This evidence suggests existence of memorial burial and perhaps cremation. The variation in Harappan burial types and Nadi Pravah is also indicative of different groups. S. R. Rao and J. P. Joshi are of the opinion that "Most of the Āryans seems to have changed from inhumation burial to cremation in the R̥gvedic period is clear from R̥gvedic verses VII 39. R̥gvedic literature were composed during second millennium B. C. and actual period of R̥gvedic event could be dated during fourth to early third millennium B. C".

The discovery of coffin type burials from Harappa and BHUMIGRAHA type from Kalibangan supports the various types of disposal of the dead, which have been described in detail in ATHRAVAVEDA and R̥GVEDA SAMHITĀS. J. P. Joshi has recently given reference of Vedic literature as follow. "There are different types of the trunks of trees; BHŪMĪGRAH; AGNIDAGDHA; PAROKTĀ, (Cast aside); UDDHITAH (deposited in trees and canes). In the Harappan context there are evidences of MUKHĀGANI and memorial burials. These tally well with the Vedic references as mentioned above. We need more archaeological evidence to prove that the Harappans were R̥gvedic Āryans which is lacking, however, we can say early Harappan were contemporary of R̥g Vedic people and their influence continued during mature Harappan period.

3.1.18. Industry

Industrial base is an important feature of any Urban Civilization. The making of beads of carnelian and other stones was an important feature of Mature Harappans of Gujarat and

other states. The Copper/Bronze industry was an important industry of the Mature Harappans. The Harappan copper/Bronze industry was flourishing at Harappa, Chanhudaro, Lothal, Kuntasi and Dholavira. The copper smelting furnace, Susa type copper ingots and melted copper and crucibles were discovered from Mature Harappan sites. The Harappans were knowing copper casting and hammering technique. The two dancing girls from Mohenjodaro and animals from Daimabad, all made of copper, show the high perfection of indigenous sculpturing during Harappan times. The separate rows of copper smith quarters found at Lothal and Harappa confirmed the existence of copper-casting technique at the Harappan sites itself. The copper implements have been reported from all the Mature Harappan sites.

The Shell industry has been reported from Lothal, Nageshwar, Allahdino, Dholavira, Mohenjodaro and other Harappan sites. Nageshwar was a shell industry centre of Mature Harappan period. Shell fragments of ladies, bangles and inlay pieces alongwith fragments of chank shell were found in excavations at Nageshwar which confirms the flourishing of shell industry of Mature Harappans on the north western coast of South Asia. The Mature Harappans grew Cotton. The cotton clothes were noticed on the figurines and stone sculptures of Harappan period. A piece of cotton cloth was found at Mohenjodaro, which is now in the collection of Pakistan. Cloth impressions are found on the terracotta sealings from Lothal, Kalibangan and other sites. The discovery of a number of spindle whorls suggests that Mature Harappans were making yarn.

Chanhudaro was a seal-making centre. A large numbers of unfinished seals in various stages have been found alongwith engravings and the metallic equipment needed for the seal industry. For Industrial base the Harappans needed raw material and markets for their finished products. There is ample evidence of internal and external long distance trade during Mature Harappan period.

3.1.19. Transport

For Harappans trade and movement of people in transport are very important. Animals like camels, elephants, horses and asses were used for transport of men and materials. A bronze model of two-wheeled carts at Harappa, Chanhudaro, Mohenjodaro and Daimabad has confirmed that Harappans were using these for land transport. The cart models and solid wheels made of terracotta discovered from Harappan sites suggest that the bullock carts were the most popular mode of transport.

The flat-bottomed boats were used for transport in rivers and lakes. The models of boats from Lothal and depiction of a boat on a seal from Mohenjodaro suggest existence of sea transport. The Harappans were using these boats in their sea journeys to West Asia.

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The discovery of a Harappan ploughed field from Kalibangan indicates the pattern of ploughing. The terracotta models of a plough from Banawali and Kalibangan suggest the shape of the ploughshare, which is not much different from the present ones. Harappans main food was wheat, barley, rice, ragi and jowar. The evidence of granaries from Mohenjodaro, Harappa and Lothal indicates surplus food production. Harappans of Allahdino were master in hydraulic engineering. The discovery of 18 reservoirs from Dholavira suggests that the Mature Harappans were excellent in water management. This also suggests the existence of reservoirs were used for portable water and bunds for irrigation purpose. A Harappan period canal in the Ghaggar-Hākrā plain was exposed by Frankfort. They were expert cotton producers and Harappans cotton were exported to Iran and Mesopotamia. The Harappans were also cultivating grapes. The West asian millets like Jowār and Bājṛā were introduced at the Harappan sites from the Gulf region. The oil seeds, sesam and mustard have also been reported from Harappan sites. These oily items could be the cooking mediums of the Harappans and also for lighting the lamps. Beside the above agricultural produces, the Mature Harappans supplemented their food with meat of domesticated and wild animals e.g. cattle, buffalo, sheep, goats, pigs and rodents. Bones of chicken have been found at Harappan sites. Mature Harappan also practiced animal husbandry and poultry farming. Discovery of large number of terracotta bulls from Rakhigarhi and other Harappan sites confirms the same.

3.1.20 Trade

3.1.20.a. Internal trade

J. P. Joshi is of the opinion " that the Mature Harappans internal trade could have been done through the guilds in an organised fashion on major items but the non-organised trade was done by nomads at individual levels. The items included natural produce, some metallic handicrafts and spices and some herbal medicines etc."

The Khetri area of Rajasthan supplied copper-ore to Mature Harappans. The Rajpipla and Khambat area in Gujarat supplied semiprecious stones to Harappans. The Harappans of Punjab, Haryana, Baluchistan and western Uttar Pradesh supplied surplus wheat and Barley. The Gujarat regions were used to supply Bājṛā, Jowār and Cotton. Shell came from coastal region of Gujarat and Sind. Steatite seal's were supplied from Chanhudaro. J. P. Joshi has observed, " that the internal trade was conducted by guilds that had their own seals and tablets. The base towns were Mohenjodaro yielding 1540 seals and Harappa 1100 seal and sealings which are made of steatite, terracotta, copper, silver and other material". Mark Kenoyer sug-

gested, " As a totemic symbol the animal represented a specific clan or official. At least ten clans of communities are represented by these totemic animals". The present author is of the opinion that the above observation of Joshi and Kenoyer requires some more archaeological evidence, which is lacking. The standard system of Harappan weights and measures that was followed throughout, which confirms some authority over trade.

3.1.20.b. External trade

Around Circa 2700-1900 B. C. the Harappans were having trade contacts with Mesopotamia and other regions of Soutasia. Bahrain played the vital role of a halfway house transmitting cultural cross currents from the east to the west. The discovery of a tidal dockyard at Lothal has confirmed the archaeological evidence of maritime activities of the Mature Harappans. The discovery of a Bahrain type seals at Lothal and a Mesopotamian, type cylindrical seals from Kalibangan, Mohenjodaro and Rakhigarhi shows that trade contacts with Mature Harappan and West Asian region. The other Harappan port towns are Kuntasi, Padri, Dholavira and Prabha Spatan. The Harappan traders were having colonies at Urs in Mesopotamia. On the basis of Mesopotamian inscription their trade in eastern region was with Dilmun, Makan (Magan) and Meluha. The Persian Gulf area is identified as Dilmun Makan as Makran coast and Meluha as Katch or Mohenjodaro or Ganeshwar. On the basis of an Akkadian inscription we can say that boats from Meluha or Harappan region were bringing carnelian, ivory, shell, timber, textile and copper. Harappan had Archaeologists have identified Magan with Oman.

The Harappan objects like seals, carnelian beads, figurines, shell and ivory dice have been reported from Tell Asmar, Kish, Lagash, Umma, Nippur, Tapa Gawra, Jokha, Tell Agrab and Ashur which has confirmed Harappans trade links with Mesopotamia. The Harappan cubical stone weights and dozens of Persian Gulf type seals reported at Ras-al-Qala in Bahrain show some sort of partnership between Mature Harappans and Persian Gulf merchants. The Mehi (Harappan) type copper mirror reported from Barbar (West Asia) also supports the trade links. At Hammad (Bahrain) the archaeologists have reported Harappan seals with engravings of Harappan charging bull, peacock and five Harappan graffities, which shows the contact between Indus region and Bahrain.

At Rosal Junyaj in Oman the discovery of a Harappan seal and pottery with four graffities and the pottery from Hili with painted peacock and pipal tree shows Harappan influence. At Shorthgai located near Badakshan in the oxus region in Afghanistan the mines of Lapislazuli might have attracted the Harappan merchants who had exploited these mines for their lapis

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bead industry. The Harappan traders were having settlements at Altyn Depa and Namazgatepe in Turkmania where Harappan seals and sealings have been reported. The terracotta model of an Egyptian mummy and a West Asian human head from Lothal and West Asian hairpins from Harappan sites and reserved slipwares from Surkotada, Lothal, Dholavira and Mohenjodaro also support the existence of trade of Harappans with West Asia.

The above evidence suggests the Harappan Maritime trade with Mesopotamia, Egypt and Persian Gulf during Circa 2700-1900 B. C. We may conclude that the earliest record (inscription) for direct trade contact between Mature Harappan (Meluha) and Mesopotamia (West Asia) hails from the region of Sargon (Circa 2334-2279 B. C.). According to Archaeological evidence this trade flourished throughout the Akkadian and UrIII periods and continued down into I sin Larsa Period (Circa 2017-1763 B. C.). The text records the Meluha and Magan. The other Mesopotamian records mention Magans (Oman), which confirms long distance trade down the Persian Gulf into the Harappan region. The cone inscription of Nammu King of Ur (Circa 2112-2095 B. C.) UrIII period mentions about the ship of Magan (Oman).

In addition to textual evidence a number of Harappans seals were found in the sites of Mesopotamia, which also confirm Harappan trade contacts with West Asia. These seals are circular and are made of steatite and have a single groove across the back. Vessels of soft stone (Chlorite) made in Iran and Afghanistan were traded upto Indus region. Such vessels discovered from Mohenjodaro, Dholavira and Lothal suggest trade links with West Asia.

3.1.21. Late Harappan

The Harappan urban phase ended around Circa 2000-1900 B. C. Harappan Civilization ended due to massive flooding, climatic changes and increase of aridity, tectonic movements and decline of trade with West Asia. According to Nayanjot Lahri the Aryan invasion theory of massacre at Harappan sites does not hold any ground. Sareen Ratnagar has suggested that the collapse of the distant trade mechanism and population explosion and over use of land resources set a devolutionary process that brought the decline of Harappan Civilization during the first quarter of second millennium B. C.

The late Harappan Culture (Circa 1900-1500 B. C.) shows a stage of de-urbanization after the mature phase of Harappans. The late Harappan village Chalcolithic Culture is characterized by the absence of monumental architecture, big settlements, citadel and lower town i.e. two division of town planning, inscription devoid of Harappan animals long chert blades. However, the pottery shapes of the Mature Harappans continued. It appears during the late

Harappan period surplus food production, distance trade with West Asia and the strong hold of central authority did not exist. Recent excavations at Mandi and Quetta where large jewellery hoards came to light suggests that the late Harappans were familiar with the Mature Harappan type Gold and Silver ornaments during late Harappan period which shows mature Harappan legacy.

During the late Harappan period phase the Harappan urban process could not survive. According to J. P. Joshi the hydrological changes adversely affecting the availability of water in the lower and middle courses of the perennial river system like the Ghaggar (Hakra) or Sarasvati made the Harappans to leave their settlement and break their urban fabric forever. The late Harappans preferred alluvial fertile region of eastern Punjab, Haryana and upper Ganga-Yamuna doab of western U.P. because this area still retained water in the rivers besides nearness of timber and mineral, which were the essential needs of these people. Now the late Harappans preferred the nearby area of tributaries and this was the situation in the area of upper Ganga-Yamuna doab. The late Harappans favoured tributaries of the Yamuna. There are around 100 Late Harappan sites situated on the bank of Krishna, Kali and Hindon rivers, which are tributaries of Yamuna. During Circa 1600-100 B. C. river Sarasvati was also joining Yamuna somewhere between Ambala and Hisar.

The late Harappan sites are smaller in size, located on higher elevation at a distance of 5 to 12 km and had close contacts and communication with each other's. These have an agricultural base. In Rajasthan and Upper Ganga-Yamuna doab region the late Harappans are associated with ochre coloured ware and copper hoard culture. Some mature Harappan shapes are present in O.C.P. O.C.P. was existing in India from Circa 2800-1000 B. C. and they were having contacts with early, mature and late Harappans. We can associate O.C.P. people with village Chalcolithic Culture of Atharvedic period and they were different from Harappans. The copper hoard culture was also contemporary with Mature Harappan and late Harappan culture and they were different from Harappans. Archaeologists have certain reservations in the labeling O.C.P. as late Harappan. The copper hoard objects like Anthropomorphic figures and Harpoons found in Harappan deposits of Lothal and Mitathal suggest that the copper hoard people of western group were contemporary of Mature Harappan, O.C.P. and Anthropomorphic figures of copper hoard culture have been reported from Saipai and Madarpur. We can conclude that the copper hoard people, O.C.P. people and Mature Harappan were contemporary.

J. P. Joshi has observed, that the O.C.P. culture of upper doab represented by Ambakheri derived from Mitathal B (where copper hoard, harpoon was also found) and is the second in

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the central doab of western Uttar Pradesh and Haryana represented by Atranjikhera, Jakhera and Saipai (where copper Anthropomorphic figure was found). We need some more sites where we get O.C.P. and copper hoard together. We can thus conclude that the O.C.P. and copper hoards began during Early and Mature Harappan periods and continued contemporary to late Harappan time. We associate copper hoard and O.C.P. with the Atharvedic Aryans.

The excavations at Manda, Hulas, Dadheri, Katpalon, Nagar, Bhagwanpura, Siswal, Mitathal, Mirzapur, Balu, Banawali, Alamgirpur, Ambakheri, Hulas, Mandi, Mandavali and Bhorgarh have given more details of late Harappan Culture of India.

At Mandi, Dadheri, Sanghol, Mandavali and Bhorgarh the late Harappan culture is followed by the painted grey ware culture. At Bhagwanpura there is overlap of Late Harappan and painted grey ware culture. The discovery of a 13-room mud house at Bhagwanpura shows the influence and legacy of Mature Harappan culture. Similar situation we notice at Bhorgarh and Mandavali in Delhi.

Mitathal II B and Daultapur I deposits belongs late Harappan culture. The deposits of PdII of Banawali are Bara culture, which is contemporary of late Harappan. The deposit of phase C. of Bara belongs to late Harappan and Bara culture.

Alamgirpur period I is also late Harappan and the shapes in the ceramic of this phase are dish-on-stand, goblet with pointed base beaker, shallow basin and goblet with a concave neck and elongated base. The ceramics is red slipped decorated with black designs. The designs include bands, intersecting circles plants and peacocks. The pottery also has black and hatched designs. There are evidences of kiln burnt bricks and Harappan graffiti without animals. The beads of semiprecious stones. Cakes and inscribed dish-on-stand. Some potteries have textile impressions. The archaeological material of Alamgirpur gives an impression of Mature Harappan site. However, there is no evidence of Mature Harappan seals, chert blades and systematic two divisions of Mature Harappan town planning. J. P. Joshi has rightly called late Harappan site was succeeded by painted Grey ware culture.

Hulas in western U. P. are also a late Harappan site. The rectangular, circular and mud brick houses belong to late Harappan phase. Ceramic is sturdy red ware and the motif is non Mature Harappan. A unique find is a seal without knob having three graffiti. There are evidences of cultivated rice, grams, ragi and barley. The excavations at Mahorana have revealed the presence of Bara ware, which overlapped, from early Harappan to late Harappan period. Bara is another ceramic and we can correlate this with early Aryans. The inscribed red ware of Early-Harappan period of Kalibangan also continued during the late Harappan pe-

riod in Punjab and Haryana. Cemetery H. Red ware of the late Harappan period of Harappa is present in Haryana, Punjab and Bahawalpur areas. C14 date of the late Harappan period of Sanghol goes back to Circa 1785-1500 B. C. and another date from Bhagwanpura to circa 1700 B.C. Thus we can date the late Harappan period from circa 2000 to 1500 B.C.

HARAPPAN LEGACY

The Harappan culture ended around Circa 1600-1500 B. C. but its impact has been tremendous on later Chalcolithic Iron age cultures. There is Harappan influence on post Harappan Chalcolithic Cultures of Malva and Northern Deccan. The long chert blades, thin disc beads of steatite, copper axes, painted pots, beads and burials showing late Harappan influence continued till 1000 B.C.

According to J. P. Joshi, systematic town planning, fortification of citadel, granaries, surplus production, weight and measures, compass, scale, plumb bob, pipal motif, Burial system, swastika and seals etc., are the gifts of the Harappans to the later cultures of South Asia. The maritime trade, bullock cart, wheat, Siva worship, yoga, sakti or mother goddess worship, chess and dancing are Harappan legacy.

We can say that our Harappan ancestors were neither aggressors nor conquerors. They were peace-loving traders. Their economy was mainly based on agriculture and trade.

3.1.22. Decline of the Harappan Civilization

The Harappan Civilization declined slowly and gradually when sites like Mohenjodaro were repeatedly threatened by heavy floods in the river Indus. Kalibangan in Rajasthan, Banawali and Rakhigarhi in Haryana were situated on the banks of the river Sarasvati and its drying up resulted in these settlements losing their very existence. Lothal and Dholavira in Gujarat suffered heavy losses in trade with Mesopotamia, and at Surkotada, Harappa, Rakhigarhi, Banawali, etc., man interfered with environment by cutting trees for fuel and grazing lands indiscriminately.

M. R. Sahni has confirmed that the occurrence of Earthquakes at Harappan sites. According to him a collision of earth plates resulted in the uplifting of land and consequently the Indus river was damned leading to the submergence of large Mature Harappan sites. Dilip Chakraborti, Nayanjot Lahri and the present author are of the opinion that the all reasons cited above caused the decline of the mature Harappan urban system.

HARAPPAN ARCHAEOLOGY AN UPDATE

Some Harappan Archaeologists named Harappan Civilization, as Indus-Sarasvati Civilization and they prefer its name as Indus-Sarasvati Civilization. The horse was known to Harappans. Bisht and Bhagwan Singh are now of the opinion that Harappans and Vedic people were the same. However, present author is of the view that the early Harappan Village Chalcolithic Culture (Circa 3200-2700 B.C.) and early Rig Vedic and Yajurvedic were same. The Early culture was village Chalcolithic culture and we can correlate the same with the Rig Vedic, Yajur Vedic culture. The Chalcolithic cultures as follows:

- (1) Togau phase C. 4300-3800 B.C.
- (2) Kechi Beg Phase C. 3800-3200 B.C.
- (3) Hakra Ware phase C. 3800-3200 B.C.
- (4) Ravi Ware phase C. 3500-3200 B. C.

Mehrgarh III, Mundigak I-II-III, Rana Gundai III A and Sheri Khan Tarakai represents Togau phase I. The Important Kechi Beg phase sites are Anjira, Sheri Khan- Tarakai, etc. The Hakra ware phase sites are Amri IA, Jalilpur and the lowest deposit of Harappa. According to Kenoyer and Kondo, the Poly Chrome Ravi Pottery from the lowest level was made before the advent of early Harappans around Circa 3500-3200 B. C. Ravi Ware is a hand made ceramic and the designs are painted in shades of white, red and black. The motifs are intersecting circles and waterfowl.

The Early Harappan (C.3200-2700 B.C.) was a developed village Chalcolithic culture and this precludes Mature Harappan Civilization. A few important Early Harappan excavated sites are Amri (late phase), Nal, Anjira IV, Harappa early deposit, Nundara, Nagwada, Dholavira, Dhalewan early deposit, Padri, Somnath, Banawali Pd I A & B, Kotdiji, Nindawari, Kalibangan period I, Killi Gul Mohammad, Mehrgarh VII, Sothi, Siswal, Rehmandehri etc.

Possehl has Listed 2600 sites of Early-Harappan, Mature Harappan, Late Harappan and other Harappan associated contemporary sites of O.C.P./Copper hoard etc. During the last few years 50 more Harappan sites have been discovered, now we can say so far around 2650 Harappan and its associated sites have been reported from north western part of south Asia.

The Horse bones, brick Altars of rituals and copper hoard weapons have been discovered from the mature Harappan sites shows contact between early Atharvedic Aryan and Harappan people.

3.1.25. Summary

Harappan or Indus Civilization existed in the third millennium BC. The civilization has been divided into eight zones.

1. Shortaghai in Afghanistan,
2. Harappa, Rashtra and Dhalewan in Punjab
3. Kalibangan and Rakhigarhi in Rajasthan and Haryana
4. Ganmeri wala and Lalitpur in Baramalpur
5. Mohenjodaro and Chanhudaro in Sind
6. Kulli and Nausraro in Baluchistan
7. Dhalanira, Lothal, Rajdir padri in Gujrat
8. Mandi, blulas, Alamgirpur Mandavali and Brorgarlim Delhi, Harappa, Nausharo, Dholahira, Banowali, Kalibangan and Dhaliman show a continuous sequence of civilization.

The settlement pattern includes, well planned town areas, wide straight streets and major roads running north south and east west and cutting each other at right angles with covered drains running along the sides. Most of the towns were divided into two parts and were fortified with high walls made of bricks or stones. The town of acropolis middle town, lower town Dholavira has three parts enclosed by an outer fortification. It also has a unique water management system. Harappan houses were made of bricks and stones and had stairs, bathrooms and well laid drainage system. Dholavira has the earliest sign board inscription of the letters of Harappan script.

The artifacts found in the above sites include figurines and terracotta, seals and pottery.

The religion seems to be a cult of Siva and Maths goddesses.

An advanced medical science is evidenced by the evidence of trepanation or brain surgery.

The various copper tools recovered from these sites are flat axes, chisels, knives and small saw.

The dead were buried with head towards North. Their personal ornaments etc were buried along with them. Harappans also cremated their dead.

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Bead shell copper/Bronze industry were common in there civilization.

Transport system was well developed.

The main food of the Harappans was wheat, barley, rice, ragi and Jowar. The evidence of gravary in Mohanjodaro, Harappa and Lothal evidicates surplus food production.

Internal and external trade was in a flourishing condition. The Harappan had trade contasts with Mesopotamia and other regions of South Asia.

The Harappan civilization ended due to massine floading, climatic changes, increase in aridity, tectonic movements and the decline of trade with west asia.

The Horse lover brick altars of rituals and copper board weapons have been discovered from motive Harappan sites. This shows a contact between vedic and Harappan people.

3.1.26. Check your progress

1. What do you know about the different Harappan sites in India?
2. Discuss the important features and sittlement patterns and of the Harappan civilization.
3. Write short notes ?
 - a. Harappan poltery
 - b. Harappan industries
 - c. Trade is Harappan civilization
 - d. Date and decline of the Harappan civilization.

3.1.27. Self Activity

Visit the state archaeological Museum/National Meseum and make a list of the Harappan artifacts present there.

3.1.28. Suggested readings.

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UNIT-2 CHALCOLITHIC CULTURE

- 2.1 Introduction
- 2.2 Objectives
- 2.3 Meaning of the word Chalcolithic
- 2.4 Kāyathā
- 2.5 Ahār
- 2.6 Navdātoli
- 2.7 Jorwe
- 2.8 Summary
- 2.9 Check your Progress
- 2.10 Activities
- 2.11 Bibliography

2.1. Introduction

Chalcolithic cultures were rural cultures which existed in the second millennium BC. The first phase of some of these cultures began contemporaneously with the Harappan cultures in about 2000 BC and some of these existed till late as 500 BC. The prominent chalcolithic cultures which existed in India were Kāyathā, Ahāra (Banas), Navadātoli (Malwa Culture) and Jorwe (Nevāsā Culture). These cultures do not show any evidence of writing. Every Chalcolithic culture has its own distinct pottery traditions.

2.2 Objective -

The objectives of this unit are to make the students aware of the cultures of the second millennium BC, their technologies and life styles. After studying the above chalcolithic cultures the students would be able to trace a chronological sequence in the development of cultures of India.

2.3 Meaning of the word chalcolithic -

The word chalcolithic is made from the words "chalcos" or copper and "lithos" or stone. The people of this culture used implements made from copper and stone. They were rural cultures and had distinct pottery traditions.

2.4 Kāyathā -

(a) The prominent sites of this culture are Tripurī (Jabalpur), Eraṇ (Sagar), Ujjain and Kāyathā (dis. ujjain). This culture was brought to light for the first time by V.S. Vakankar in 1964.

Kāyathā is situated at a distance of 25.75 km from Ujjain on the bank of the river Kālī Sindhu. Some scholars have identified this site with the ancient site *Kapithaka* of Varahāmihira.

Excavation has revealed five archaeological cultures in this area among which three were chalcolithic.

(b) Kāyathā shows three pottery traditions - (i) Red or Brown slip ware, (ii) Buff ware (iii) Plain red ware.

i) The red or brown slip ware has purple geometrical designs over it. The main utensils were handis, basins, bowls, pitchers etc. Many of these wares have a round base.

ii) The buff ware was made from well prepared clay. The pottery is of a thin and elegant variety. They have red designs over them. The main geometrical designs are loops, festoons, diagonal lines etc. Medium sized lotas, pitchers and basins are common types of pottery.

iii) The plain red ware seem to be ornamented with a comb type of impliment. Wavy designs and chevrons are prominent. Bowls and basins are main pottery types.

(c) Implements and other archaeological remains - Impliments unearthed include two copper axes which were made by casting. Twenty eight bangles and beads of agate, carnilian, crystal were also found. Blades, bone points etc are the common microliths found.

d) Houses were round and square by fixing wooden pillars. The walls were made of bamboo sheets which were smeared with mud.

After examing the wheel turned pottery which was pointed in various wyas, copper impliments and leads etc it by many scholars that kāyathā cultive evas not an evediginous culture but was established by people from outside.

The date of this culture is surmised as 2000 BC - 1800 BC

2.5 The second chalcolithic culture from kāyathā belongs to Ahāra culture. The pottery consists of black and red ware with white designs. The date is surmised as 1700 - 1500 BC.

The third chalcolithic culture at kayatha belongs to the Malwa culture. The pottery is pink or light red ware with block design. The date is 1500 - 1200 BC.

2.5 Āhara - (a) This culture flourished in Southeast Rajasthan when Indus valley culture was still existing in Gujrat and Rajasthan. It was discovered by R.C. Agrawal in 1952-54. This culture was situated on the banks of Ahar river and is a part of Udaipur city. Ahar is known as Dhulakota by the local people other sites include Gilunda in Chittorgarh district which was excavated by BB Lal, Balathala in Udaipur district discovered by VN Mishra, and Kayatha mentioned before.

b) Many types of potteries were used. The black and red ware with white design is the characteristic feature of the Āhar pottery. The prominent types of pottery are as following -

The first type is of milky slip along with yellow, black and red, shiny grey ware and red ware. The red and black ware comprises mostly of bowls, grey ware comprises of pitchers, basins, plates with base, red ware is mostly in the form of pitchers, bowls and plates with base.

The second type includes stone ware also. Plates, carinated bowls and round utensils occur as common pottery types of the period.

The third stage includes red ware along with pointed black and red ware and red slipped ware. Stone ware is not found in this phase. Bowls of various types and dishes on stand are common during this phase.

Beside the above types the decoration of pottery in Āhar has appliques punctured and ribbed decoration.

Implements and other artifacts -

c) Copper implements were popular which include flat copper celts knives, bangles, rings and bars. Most probably the mines of Khetari provided the copper. RC Agrawal has discovered the evidences of smelting copper from nearby areas like Matoon and Umra and also from Balathal.

Beads of ruby and steatite have also been found. Terracotta beads with scratched and grooved designs and spindle whorls along with stylised terracotta bull used probably for cult purposes are among other significant antiquities from Āhar.

d) **Habitation** - Houses of mud and stone were made. The stone slabs were used for laying down the foundation. The walls were made of mud in Ahar and Kayatha but of stone and unbaked brick in Balathal. Chulhas, grinding stone were also used. Baked brick was used for the construction of houses in Gilund.

At Balathal a large stone fortification with corner bastions has been brought to light

e) **Agricultural produce** - Evidences of rice husk, cana, munga, jau (barly) and wheat

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were grown Cattle rearing of cow, bull, buffalo, sheep, goat and pig was popular.

f) **Date** - The dates of this culture vary at different sites. The date of Balathal goes back to third millenium BC. The date range from 2500 to 1500 BC.

g) HD Sankalia has pointed out the similarity between the terracotta beads of Ahar and those of Troy at Asia Minor (Turkey). The handles with animal motifs resemble shah Tepe end Tepe Hisar from West Asia.

But scholars like JN Pande opine that although the elements of this culture may be derived from foreign lands but its salient features by and large were indigenous and original.

2.6 Navdatoli or Malwa culture -

a) The Malwa culture is marked by Malwa ware a buff or orange slipped pottery painted in black or dark brown, the use of copper and stone tools and thirdly small settlements of wattle or daub huts. The main sites of this culture include Nandatole and Maheshwar Nagdā, Kāyathā, Eraṇ, Dangawada etc. In the areas of Maharashtra its presence has been noted in sites like Jorwe, Daimabad Sonegaon and Inamgaon.

b) Navdātoli is the best example of this. Navdatoli means the village of the boatmen. It is on the southern bank of Narmadā. Maheshwar is situated on the other side.

c) The chalcolithic period of the site is divisible into four phases. Phase I is marked by the Banasian type of black and red ware, phase II by the cream slipped ware, phase III seems to be the black on red ware, phase IV is constituted by a coarse red ware in association with lustrous red ware like that of post Harapan Gujrat cultures.

d) Navdātoli's Malwa ware which continues through all the four phases is painted pottery in black or brown over a buff orange slip but the fabric is thick. A thennes variety is found at Eraṇ. The prominent shapes of the Malwa ware are lotas, channelled spouts and pedestalled goblets.

The Painting on the pottery has about six hundered motifs - both geometric and naturalistic. Black buck dog, bull, deer, panther, fox, tortoise human figures are among the naturalistic motifs and lozenges, triangles etc. are geometric motifs. Paintings depicting animals and human figures are highly stylised. Figures of dancing girls with joined hands, slim waist and dishevelled hair, male figure with spear like weapon at the interior base of a channel, spouted bowl are some of the examples. These paintings are said to have been inspired from Iran or west Asia.

e) **Implements and other artifacts** - A variety of stone tools made of milky chalcedony

were used. Crested guided ridge technique was used for making blades, Pen knife, blunted backed, serrated and parallel sided blades, trapezes and lunates were the main tool types. That copper celts with convex cutting edges, arrowheads, spearheads and chisels have also been found. Beads of agate, jasper, carnelian, have been found in Malwa culture. Copper and terracotta bangles and rings of copper have also been discovered.

A huge jar decorated with applique figurine of female worshipper and a lizard throw light on their religious beliefs. A terracotta female figurine could be a mother goddess. A pit of 2.5, 2. 1.2 m with plastered bottom and four charred logs on four corners of the pit have been identified as *vedī* by some.

f) **Houses** - Navdātoli does not have fortification wall like that in Eran or Nāgdā but the people built circular huts with thatched and conical roofs. The material was split bamboo and mud.

g) **Agriculture and Cattle rearing** - Barly, wheat, cana, lentils, peas, rice, mung etc were the grains which were cultivated. Cows, Oxen, buffaloes, sheep and goat were the cattle that were reared.

Date - A bracket of 1700 - 1400 BC is assigned to this culture.

2.7 Jorwe Culture -

a) Jorwe culture was spread widely in Maharashtra. The main sites of Jorwe culture are Inamgaon, Jheue, Songaon and Chandoli in district Pune, Bahal in district Jalgaon, Prakash in district Dhulia, Jorwe and Nevasa in district Ahmeda Nagar.

b) **Pottery** - The Jorwe pottery has a red or orange malt surface painted with geometric designs in black. It has a fine fabric and is well baked. The well known examples are Spouted jars with flaring mouths, the carinated bowls and the high necked jars with globular profile. Storage jars, platters, dough plates and lamps were hand made and were of coarse red or grey ware. Kiln for firing pottery has been discovered in Inamgaon.

c) **Implements and other artifacts** - Implements comprised of dolerite axes, blades of chalcodony and agate. Copper was used to make axes, chisels, knives, fish hooks, beads and bangles. A boat shaped kiln to smelt copper ores has been identified at Inamgaon.

Beads of agate, carnelian, jasper and chalcedony, baked and unbaked female figurines have been discovered at Nevasa and Inamgaon. Females are shown with pendulous breasts to emphasize fertility.

a) **Burial traditions** - Adults and Children were buried with their heads facing north.

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The skeletal remains were put in urns. The dead were provided with food and drink for after life as is indicated by the presence of spouted jars and bowls.

Houses - The planning was such that crafts men and lived at the left of the entrance of the settlement and the elite occupied the centre of the settlement. A granary has also been discovered. The date is surmid as 2500 - 500 BC.

2.8 Summary - The Chalcolithic cultures include the rural, non Harappan cultures which are characterised by the use of copper and stone. Whereas the Harappan cultures show a marked uniformity, these cultures show regional variations. The main differences among the various chalcolithic cultures are due to their distinct ceramic traditions. The first phase of these cultures began contemporaneously with the Harappan culture about 2000 BC and some of them existed till as late as 500 BC, or earlier. Kāyathā, Āhar, Navdātoli and Jorwe are best examples to study this culture.

2.9 Check your progress -

- a) Discuss the chalcolithic culture of Kāyathā.
- b) Discuss the Navadātoli Chalcolithic culture
- c) Write short notes on
 - i) Jorwe
 - ii) Āhar

2.10 Activities -

- a) Visit the state archaeology museum and write a report of its chalcolithic artifacts.
- b) Sketch and label the pottery types of chalcolithic cultures.

2.11 Bibliography -

- a) D.P. Agrawal - The Archaeology of India, Guraon Press
- b) J.N. Pandeya - Puratattva Vimarsa.

UNIT -3
OCHRE-COLOURED POTTERY CULTURE (OCP)
AND COPPER HOARDS

- 3.3.1 Introduction
- 3.3.2 Objectives
- 3.3.3 Distributions
- 3.3.4 Excavations
- 3.3.5 Settlement Pattern
- 3.3.6 Ceramic Industry
- 3.3.7 Metallurgy
- 3.3.8 Other associate findings
- 3.3.9 Subsistence and Economy
- 3.3.10 Chronology
- 3.3.11 The Author
- 3.3.12 Decline
- 3.3.13 Copper Hoards
- 3.3.14 Summary
- 3.3.15 Check Your Progress

3.3.1 Introduction

The term 'Ochre-coloured pottery culture' or as it is popularly known 'OCP' culture is derived from the name of the characteristic pottery of this culture. Prof. B.B. Lal has coined the name on the basis of its physical characteristics after he noticed this ware in stratigraphic context at Hastinapur excavations in 1951. Before, he had noted this ware in the trial excavations at the copper hoard sites of Bisauli and Rajpur Parsu. Later on OCP and copper hoards were found together at a number of sites, Bahadrabad, Saipai, Noh, etc. The pottery was also noted from the excavations at Ahichchhatra.

3.3.2. Objectives

The OCP culture has posited a number of questions in front of the archaeologists, such as-(a) a group of simple-living people with sophisticated tools (copper hoards), (b) overlap-

ping of OCP and Harappan cultures, (c) the authors of this culture, etc. The excavations at various sites and intensive explorations have revealed many clues or answers, however, still there is a lot under the coverage of time to come out.

3.3.3. Distributions

The major concentration of OCP sites is confined to the Ganga-Yamuna doab or western Uttar Pradesh. Besides, the culture has been reported from Rajasthan, Haryana and Punjab. In Rajasthan over 200 sites are discovered from Jaipur, Sikar and Jhunjunu districts. A number of sites are noted in the districts of Jind, Karnal and Ambala of Haryana and there are sites present in the eastern Punjab. In western Uttar Pradesh the districts of Saharanpur, Muzaffarnagar, Meerat, Bulandshahr, Aligarh, Etah, Etawah, Badaun, Shahjahanpur, Bareilly and Pilibhit have yielded most promising sites; some of which have been excavated. However, the sites are spread over up to Allahabad in the eastern Uttar Pradesh roughly forming a triangle connecting Katpalon in Jullundur District on Sutlej and Jodhpura in Jaipur District of Rajasthan. In the Ganga-Yamuna doab the sites are spread across an area of 60,000 sq. km.

3.3.4. Excavations

Following the stratigraphic evidence of OCP culture in the excavations at Hastinapur in district Meerut, a number of sites have been excavated in different regions of the above-mentioned states. Some important excavations of them are Bahadrabad, Bargaon, Ambkheri and Hulas in district Saharanpur, Ahichchhatra in district Bareilly, Alamgiripur in district Meerut, Atranjikhera and Jakhera in district Etah, Lal Qila in district Bulandshahr, Saipai in district Etawah of Uttar Pradesh, Katpalon in district Jullundur of Paunjab, Noh in district Bharatpur, Ganeshwar in district Sikar and Jodhpura in district Jaipur of Rajasthan, etc. The habitation deposit of about half-a-metre to one-and-half-a-metres formed of brown to yellowish brown silty clay has been found capping the natural soil in most of the sites. The soil is very often noted in damp condition, which is responsible of the corrosion of pottery, and is at times suspected to be redeposited by the river floods.

3.3.5. Settlement Pattern

The occupational deposits of OCP culture at most of the sites are encountered in highly disturbed condition. Therefore, very little to no remain of residential structures have been registered. The only exception is the site of Lal Qila, which has been noted in fairly intact condition with deposits of successive structural remains. Three floor-levels have been observed in a deposit of one to 1.5m. The first phase immediately overlying the natural soil is

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marked by ordinary rammed earth floor with burnt patches or fireplaces. In the succeeding phase horizontally laid rammed potsherds were found in the floors with clay plaster. A number of postholes were present on the floors. There was a corner formed by two walls of a house with five courses of mud bricks. No complete plan of house was found in this phase. The bricks were laid with mud-mortar. A floor and a mud-platform of rammed earth were associated with the structure. In the last phase, debris of burnt bricks and mud bricks were noticed. No complete shape of bricks was noted other than a wedge-shaped brick-30 x 21 x 7.5 cm in size. The occurrence of a large quantity of reed impressed burnt clay plasters suggest that the people lived in wattle-and-daub houses with thatched roofs.

At Atranjikhera the habitation deposit of OCP culture varied from 0.8 to 1.5m, which was extremely disturbed. There were living floors and the burnt clay plasters suggesting wattle-and-daub houses.

At Ambkheri, a brickbat-lined floor was found with a complete hearth made of ill-fired bricks. It was measuring 58 x 30 x 18 cm. The size of an intact brick was 33 x 18 x 8 cm. A brick kiln was unearthed on the southern periphery of the site. It was 1.6m in length and 30 cm in width. A fragmented terracotta figurine and a cartwheel with a central hub were found from this kiln.

The site of Jodhpura has produced evidence of successive stages of development of residential structures. Here beginning of building activities is noted in Phase Ic with discovery of rammed earth floor having potsherds embedded in it, pieces of reed impressed burnt clay plasters and a fire pit. In the succeeding Phase Id, mud brick structures were encountered. The sites of Hastinapur, Bargaon, Bahadrabad, Noh, etc., did not yield any structural remains.

3.3.6 Ceramic Industry

The Ochre-coloured pottery as the name indicates is made of ochrous clay. The fabric is porous, medium to fine in texture and is ill baked. It is found with or without slip. The surface of pottery rubs off easily and the edges are often eroded badly. The pottery may be plain or decorated with incised or painted designs. There are seven types of shapes commonly occurred in the ceramic assemblage, such as storage jars, vases, basins, bowls, lids, dishes-on-stand and miniature pots. It is difficult to assume whether the pots are turned on wheel or handmade due to erosion of surface features.

Nonetheless, with the evidences coming from excavations in different quarters, regional variations in the ceramic assemblage of OCP have been sought. These have been catego-

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rized into three groups-(1) genuine OCP as noted at Atranjikhhera, Saipai, Lal Qila, Noh, etc., (2) OCP with Harappa influence as found at Bahadrabad and Ambkheri, etc., and (3) Late Harappa ware with OCP influence as encountered at Alamgiripur, Bargaon, etc.

(1) At Atranikhhera, the OCP is found in shades of creamy-red, yellowish red and orange red. Many of them bear red slip, which at times is quite thick and burnished. The pottery is made of medium fabric, wheel-turned and ill baked. Sometimes incised designs and paintings in black pigments are noticed. The common shapes are convex-sided bowls, carinated bowls, lids with central knob, basins, spouted basins, troughs, dishes-on-stand, storage jars, vases and miniature pots. A dull Red ware is also present.

The OCP at Lal Qila is obtained in ochrous to brownish shades. These are wheel made. The fabric varies from medium to fine in texture. The pots are well fired, sturdy and generally treated with a slip. A large number of pots are decorated with paintings in black pigment. Besides, incised designs and graffiti marks are also present. The majority of shapes are similar to that of Atranjikhhera. Some new shapes are vases with side handles attached between rim and shoulder, bowl with a set of legs attached to its base, large basins with horizontal or vertical loop handles, etc.

Some noteworthy painted designs on the pottery are -an elongated humped bull having prominent crescent-type horns, serrated leafy motifs with a spiral end on either sides of the bull and designs like a row of ribbon knots and some floral motifs. The graffiti marks are a ladder type design, cross, parallel lines, three lines intersecting at one point, etc.

The OCP of Saipai is pale-red in colour. Some complete pots are found besides the fragments. Some sherds bear red slip. One has black painting on an incised design. The common shapes are vases with flaring or horizontally splayed out rim, jars, deep bowls, basins, miniature vase, various types of handles, spouts, lipped bowls, knobbed lid, stems of dishes-on stand. A number of incised designs are noted.

(2) The OCP of Bahadrabad is made of medium fabric, well-levigated clay mixed with fine or coarse sand as temper. The pottery is thick and has bright red to terracotta-buff surface and is occasionally greyish. No painting has been noticed; it may be due to the peeled off slip. Wavy incised decorations or cord-impressed designs occur along the waist of some pots. The shapes are dishes-on-stand with a wide and short stem and shallow dish, pedestalled cup, internally incised basin with open base, bowl or dish with under-cut, beaked or out-turned rim, deep bowl, knobbed lid, jar with flat base, narrow long neck and everted rim. The ceramics have characteristic resemblance with that of Bara.

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At Ambkheri the OCP is inadequately fired and was devoid of slip apart from a few with slip. The pottery was ill fired. The important shapes are large trough, bowl-like lid with central knob, dish-on-stand vase with flanged rim and oval body, ring-stand, basin with under-cut rim and vase with cord-design, mat-impression and horizontal raised bands on the exterior—all those are in thick fabric. The shapes in thin fabric are long-necked flask with flaring rim and flat base, lid with central knob, bowl with slightly out-turned cup and vase. A grey ware with a wash is present in thick, medium and thin fabric. The shapes comprised pedestalled miniature cup and vase. Albeit the ceramic assemblage shows generic affinity in terms of its fabric with that of genuine OCP, the shapes resembles with those of Bara and Ropar, etc.

(3) The Period I, a deposit of about 1.2m, at Alamgirpur, has revealed Harappa and Bara culture influence along with unslipped OCP pottery. Similarly, the site of Bargaon has produced Harappa ware along with OCP in a deposit of one metre thick. Here the principal pottery comprised dishes-on-stand, bowl with featureless rim, lid with central knob, Indus goblet, ring stand, miniature pedestalled cup, long-necked globular flask and vase with cord impressed designs and incised bands on the exterior. Some painted pottery and incised decorated potteries were obtained. The pottery and other finds imparted a fresh thinking over the relation of Harappa and the OCP cultures.

3.3.7. Metallurgy

Other than Noh, which has produced iron, most of the OCP sites have yielded copper implements. There are five copper objects been recovered at Lal Qila, such as a bead, a pendant, an arrowhead, a celt fragment and an indeterminate object. Saipai has produced a copper hoard consisting of celts, harpoons, spearheads, anthropomorphic figurines and rings. Later on excavations by ASI discovered a hooked sword. A hoard was also reported from the site of Bahadrabad that included rings, flat celts, a shouldered celt and a hooked spearhead. Some unidentified objects, pins and a fragment of thick flat celt were reported from Alamgirpur. Bargaon has yielded only a few rings. A piece of copper and broken pieces of terracotta crucible containing copper granules were found at Atranjikhera. There was no copper object found from Hastinapur.

The copper implements were produced in highly sophisticated techniques. The purity of copper used in them is up to 99%. The objects were made by single or double moulded method. They were subsequently subjected to beating, trimming, shaping and polishing. In some cases tin was noted up to five per cent. Some people view their foreign origin, the mid ribbed antennae swords in particular.

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The site of Ganeshwar, Sikar district, Rajasthan has produced the maximum number of copper objects from the excavations. Following discovery of 60 flat copper celts in late 1977, known as 'Neem-ka-thana Treasury Hoard', the State Archaeological Department excavated the site in 1979. More than 5000 copper artefacts were recovered along with OCP, which included arrowheads, beads, rings, bangles, fishhooks, pins, spearheads, celts and balls. On examination it was found that these were made from copper derived from local mines. The laboratory analysis of copper celts has resulted that these contained copper (97%), silver (0.2%), arsenic (0.3%), lead (1%), nickel (0.6%), zinc (0.1%) and tin (0.01%).

3.3.8. Other associate findings

The associate findings are terracotta objects including typical human figurines, bangles, and beads of stone and bone objects including a few ornaments. Atranjikhera recorded fragments of querns and pestles of quartzite and sandstone, a terracotta bead, a sling ball, a dabber and two pottery discs. Lal Qila has yielded some impressive terracotta objects. They are bangle pieces, plain and incised balls wheels, beads, gamesmen, pieces of crucibles, pottery discs and a few indeterminate objects. The note worthy objects are two handmade female figurines. One is well preserved with a short head, bulging eyes with holes in the centre indicating pupils, pinched nose, depressed cheeks, broad jaws with protruding lips divided by a horizontal slit, a protruding chin and elongated neck. The hands have not been modelled; each shoulder has a transverse hole for hanging purpose. The breasts are prominent with pointed nipples. The rest of body is broken. The second figurine does not have prominent breasts and was provided with hands of which only a part of the left arm has survived. Besides there are carnelian and soapstone beads, an agate point, net sinkers, querns, mullers, pestles, etc. Bone objects comprise arrowheads, points and styluses.

A number of terracotta objects consisting animal figurines-humped bull, cart-wheel with a central hub, beads, oval-shaped cakes with finger tip impressions and stone saddle querns with pestles have been found from Ambkheri.

The terracotta findings from Alamgirpur include fragmented humped bull and a snake. Besides, triangular cakes, cart-frame, models of doorframe, door-leaf, cubical dice, gamesmen, bangles and beads; faience bangles, beads and miniature bowls; steatite short cylindrical and thin discular micro-beads; stone beads of carnelian, long barrel banded agate and tiny triangular pyramids of quartz and carnelian are noteworthy.

There are chert blades, weights, faience and terracotta bangles, bull-headed terracotta toy-carts and terracotta cakes with finger impressions recovered from Bargaon.

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These evidences portraint the artistic taste of the people and economic viability of their society. The occurrence of semiprecious stone ornaments suggests their contacts with other cultures. There was certainly some exchange or commercial activities with outside people.

3.3.9. Subsistence and Economy

There is ample evidence for domestication of animals and small-scale agriculture of cereals and pulses, such as rice (*Oriza sativa* L.), barley (*Hordeum vulgare* L.), gram (*Cicer arietinum* L.) and khesari (*Lathyrus* spp.), etc. Cattle (*Bos indicus*), buffalo (*Bubalus bubalis*), sheep (*Ovis aries*) and dog (*Canis familiaris*) were the main domesticated animals. Besides, people consumed meat by hunting wild animals or butchering domesticated animals. There are examples of charred bones with sharp cut-marks. The bone arrowheads envisage use of bows & arrows for hunting animals and birds.

The presence of querns and pestles indicates their use for grinding cereals for food. The utensils also throw ample light on the delicacies of food items. By and large, animal husbandry or cattle rearing was the mainstay of the people's economy and agriculture played a subsidiary role.

3.3.10. Chronology

A dozen of pottery samples from Atranjikhhera, Lal Qila, Jhinhana and Narsipur have been examined by Archaeological Research Laboratory, Oxford, and have been dated between 2600 BC to 1200 BC by thermoluminescence method.

3.3.11. The Authors

There is uncertainty still shrouded on the authors of this culture. The people who lived in wattle-and-daub houses and used inferior ceramics could produce highly sophisticated and technically advanced copper tools and weapons is enigmatic. Some experts, therefore, have opined their foreign origin. There are a number of hypothesis in the field on this problem of the authorship, such as Aryan origin, Late Harappan origin, Harappan refugees, indigenous origin and pre-Harappan origin. The last hypothesis is based on the affinities of painted decoration traditions noted at Atranjikhhera and Lal Qila with that of Sothi (a pre-Harappa site on Saraswati river in northern Rajasthan).

3.3.12 Decline

Most of the excavated OCP culture sites have produced similar evidence of a cultural break after the decadence of this culture. It seems the OCP people deserted the sites long before the arrival of their successors. Whether it's the same catastrophic deluge, experts talk

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about that submerged the sites, responsible for their desertion is not known clearly so far. The question arises how did some sites like Lal Qila remain unaffected?

3.3.13 Copper Hoards

The history of Copper Hoards stretches back to 1822 when the first hoard was discovered. Later on a number of discoveries added up and currently more than 1000 artefacts have been reported.

As the artefacts occur in hoards, they have been known as 'Copper Hoards'. These discoveries in absence of stratified evidence raised a series of problems related to their origin, authorship, culture and chronology.

The distribution of copper hoards has been in a widely spread area with the major thrust in Ganga-Yamuna doab. These are located from West Bengal, Orissa in the east to Gujarat and Haryana in the west, Karnataka and Andhra Pradesh in south to Uttar Pradesh in north. The largest hoard is found outside the doab region from Gungeria in Balaghat district of Madhya Pradesh. It comprised 424 copper implements weighing about 400kg and 102 thin sheets of silver objects mainly ox heads and discs of indeterminate use.

The copper hoards include a large variety of tools and weapons, such as flat celts, hatchets, shouldered celts, bar celts, rings, antennae swords, harpoons, logged spearheads and anthropomorphic figures, each with a number of subtypes. Many scholars have classified these objects according to their distinct characteristics. Some typical objects of Copper Hoard are described below.

(1) **Anthropomorphic figures:** This object is made copiously like that of an image of a human being. It has a semicircular head joined with two hanging coiled hands followed by a short body and two widely stretched long legs. The arms have triangular cross-section with the edge to the outside. There are four subtypes of this object found. The first type has long legs and short arms with diamond or thick head. The types second, third and fourth are comparatively smaller in size and do not have diamond or thick head. The first type is 30.2 to 47cm in length with average weight of 4500gms. The other three types range about 23 to 24 cm in length with weight averaging about 1260gm. The anthropomorphic figures are basically confined to the Ganga-Yamuna doab except one fragmented object found from Lothal. Stone anthropomorphic figures are noted from Megalithic sites of south India. Some present-day figures of Shani Devta resembles with that of anthropomorphic figures. Some scholars identify them as symbolic image of Indra.

(2) **Antennae Sword:** This weapon is noted in two distinct types. One is comparatively bigger in size about 57cm to 76.6cm in length and 1238 to 2380 gm in weight. These have long leaf shaped blade with a midrib and a rectangular handle six to 10cm in length and two antennas like projections. These types of swords are recovered mostly in middle Ganga-Yamuna doab region. The second types are shorter about 40 to 48cm in length and half kilogram in weight. These have short leaf-shaped blades with distinct midrib and short handle with two antennas. These are found across the country, in Ganga-Yamuna doab, Haryana, Gujarat, Karnataka, Kerala, Tamil Nadu, Maharashtra and Rajasthan.

(3) **Hooked Sword:** These are 43.6cm to 47cm in length and have sharp midrib. There is a hook like projection in the middle of the handle. These are well finished with smooth surface.

(4) **Harpoon:** These are spearhead like weapons with series of barbs on both sides. They vary in length and type and are grouped into three categories. The first type is smaller in size varying from 17.5 to 28.6cm and weighing between 215 to 915 gm. It has four to six angularly disposed straight barbs. The second type is 21 to 49cm in length and 360 to 450 gm in weight. It has a long spear tip about four to six centimetres and curved barbs. The third type is 37 to 44cm in length and weighing between 475 gm to 1 kilogram. This has straight barbs and a hook near the butt. These are recorded from Ganga-Yamuna doab, Rajasthan, Haryana, etc.

(5) **Lugged Shouldered Axes:** These have semicircular sharp cutting edge with straight or convex butt and concave sides. There is a set of lugs projecting from either side of the shaft, which are meant for hafting to a wooden handle.

Earlier chemical analysis of copper objects showed that these are made of pure copper up to 98% purity. Recent analysis has proved that some of them have one to eight per cent arsenic. The harpoons, antennae swords and anthropomorphic figures were casted in closed moulds, which is a difficult process. The artisans pioneered the skill of making tools from the pure copper, sometimes using lead in it to facilitate casting. The objects were finished by hammering, chiselling, filing and tempering. By studying the presence and absence of some common impurities in the copper minerals it has been suggested that the Rakha copper mine of Bihar was probably used by certain groups of Copper Hoards people.

Experiments and ethnological parallels indicate they are likely to have been used in war and chase as well as in jungle clearance; agricultural implements are yet to be found. The utility of anthropomorphic figures is still uncertain. They may be weapons or cult objects.

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The relation of OCP and Copper Hoards has been already discussed, which is advocated by B.B. Lal since 1951. However, a few experts have contended the view. There are a number of theories on the authorship of the Copper Hoards. They have been variously ascribed as Harappan refugees, Aryans and itinerant craftsmen. The subject has been thoroughly examined by Lal who concludes that the hoards were produced by the Mundas, Santhals and other tribes of the Proto-Australoid group of the Indian population.

None the less, the problems remain unabated. The occurrence of a fragmented anthropomorphic figure in the regular Harappan deposit at Lothal, two harpoons and 13 copper rings of typical Copper Hoard type from Mitathal-a Harappa and Late Harappa site should not be ignored. Associating the OCP culture with the Copper Hoards does not solve the problem, since the former is confined to the Ganga-Yamuna doab while the latter is spread across the country.

Among the tool types some are characteristic of the earlier Harappan industry, while others show definite external features such as midrib on the swords, daggers, spears and harpoons and the pierced lug for hafting, which could well have originated in Iran or the Caucasus region, some experts suggest.

The chronology could be related to some stratified occurrence of the objects, such as from Saipai, Lothal (1750 BC) and Navdatoli, etc., and a date bracketed between the chronological period of OCP could be suggested, i.e., second millennium BC.

3.3.14 Summary

The discovery of a number of sites in association with a peculiar type of rolled pottery with badly corroded surface and edges, made of ochre coloured clay, mostly without slip, prompted the excavator B.B. Lal to christen the name 'Ochre-coloured Pottery Culture' after the excavations at Hastinapura in Meerut district of Uttar Pradesh in 1951. Since then due to the concerted work of archaeologists a large number of such sites have been brought to light which spread cutting across the boundaries of states of Rajasthan, Haryana, Punjab and Uttar Pradesh. The major concentration of these sites is noted in the western Uttar Pradesh or the Ganga-Yamuna doab.

A number of sites have been excavated, which revealed multifaceted features of this culture as one gradually proceed from west to east. Largely through the intensive analysis of ceramics of different sites it has been proved that this culture is cotemporary to the Pre, Early and Late Harappan cultures of Rajasthan, Haryana, Punjab and Western Uttar Pradesh.

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The people of this culture were living sedentary life and stockbreeding was the mainstay of life supplemented by small-scale agriculture. The houses were mostly made of wattle-and-daub apart from some occasional use of mud bricks. The objects of daily use and weapons mainly constituted terracotta figurines, beads and bangles, stone beads, bone points and copper objects.

The most outstanding discoveries are the Copper Hoards from some of the OCP sites. These are highly sophisticated tools made of advanced technology. They comprise anthropomorphic figures, antennae swords, barbed spearheads, shouldered celts, lugged shouldered axes, harpoons, etc. The excavation at Saipai has proved the association of OCP and Copper Hoards. However, there are still some problems hovering around in the mind of experts, such as the authors of the culture and the spread of Copper Hoards outside the doab belt, etc. Though there are opinions of their indigenous origin, some also point out their characteristic foreign origin. Lal with some careful observations and analyses has conclusively asserted the authors of Copper Hoards to the Mundas, Santhals and indigenous aborigines. The chronology of this culture has been computed by Thermoluminescence dating method to second millennium BC.

3.3.15 Check Your Progress

1. What is OCP culture? Describe its main characteristic features?
2. What is Copper Hoards? How it is related to the OCP culture?
3. Throw substantial light on the origin of OCP culture?
4. Describe main types of Ochre-coloured potteries?

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BLOCK-IV IRON AGE AND EARLY HISTORICAL CULTURE

UNIT- 1

PAINTED GREY WARE CULTURE

- 4.1.1. Introduction
- 4.1.2. Objectives
- 4.1.3. Description of Pottery :
 - 4.1.3.a. General features
 - 4.1.3.b. Painted Designs
 - 4.1.3.c. Common Shapes
 - 4.1.3.d. Associated Wares
- 4.1.4. • Nucleus and Geographical Spread
 - 4.1.4.a. Earliest Evidence of PGW
 - 4.1.4.b. The main area of PGW: _____
- 1.4.3 Peripheral areas and Occasional finds :
- 1.5 P.G.W. Culture :
 - 1.5.1 What is P.G.W. culture ?
 - 1.5.2 General aspects of P.G.W. Culture :
 - 1.5.3 Important sites having PGW Cultures :
- 1.6 Date bracket, position and theories regarding P.G.W. Culture :
 - 1.6.1 Date Bracket :
 - 1.6.2 Sequence of Cultures :
 - 1.6.3 Hypotheses regarding P.G.W. :
- 1.7 Summary :
- 1.8 Check your Progress :
- 1.9 Points for Clarification :
- 1.10 Assignment / Activity :
- 1.11 References for further Reading :

4.1.1. Introduction

The Painted Grey Ware, more commonly referred in literature as P.G.W. is an important pottery type of the protohistoric period that helps to fill, at least partly, the vast gap in knowledge of the dark age between the first and second civilizations. One most distinctive feature of the P.G.W. is its uniform grey colour being fired under reducing condition. It is made of fine-grained and well levigated clay. However, without the painting most frequently occurring in black the P.G.W. will only qualify as an ordinary Grey Ware, that is commonly noticed in different periods. Further, even by mere virtue of grey ware of fine fabric being painted, would not entitle it to be classed as P.G.W. As PGW besides the above, is surely identified on the basis of a well recognised set of common motifs. Therefore at least few common motifs should be found painted on the grey wares of a site enabling the correct identification of PGW.

The PGW cultures takes its name due to the presence of PGW pottery in identifiable percentages amidst other pottery types of the same time at a site. It is never found more than 10% in any assemblage of pottery types. The pottery types associated with it, include Black and Red Ware, Black Slipped Ware and Red Ware Grey Ware and Northern Black Polished Ware.

The importance of P.G.W. lies in the well defined geographical region it is found besides the limited time period it is known to occur. And any finding of the P.G.W. in far off areas throws up questions whether it is due to extension of culture or due to links between various contemporary cultures. Across time also, PGW cultures provided continuity, on the one hand between Late Harappan, Ochre Colour Pottery, and BSW/BRW cultures earlier and NBPW cultures later.

4.1.2. Objectives

After going through the unit you would be able to

- a Understand what is meant by P.G.W.
- b Know its identifying features and other aspects
- c Know certain features that occurs as an aberration
- d Know the potteries associated with P.G.W.
- e Know what is meant by P.G.W. cultures
- f Know the geographical spread of this culture

- g Know about occasional finds outside the main area
- h Know in general about the technological levels achieved in house construction, metallurgy, ornamentations etc besides aspects of agriculture and animal husbandry, during the period.
- i Know the culture with reference to particular sites
- j Know the importance of this culture as a source of information regarding the dark age
- k Know the time bracket of this culture
- l Know the position of this culture amidst the sequence of other cultures
- m Know the associations claimed by scholars including on origin and who were the associated people.

4.1.3 Description of Pottery :

The following paragraphs would give a brief detail of the general features including colour, fabric, the type of vessels and common shapes, the types of painting seen over it besides some lesser known shapes and other types of potteries commonly associated with it.

4.1.3.a General features

As mentioned above the P.G.W. is a grey ware that has some characteristics motifs painted on it. The paintings are done on both the surfaces, inside as well as outside particularly on dishes and bowls. The potteries are made of fine clay and fired under reducing conditions giving it the characteristic grey colour. The potteries are generally made on fast wheel. However base of the thicker wares are hand made. The ware is generally thin in section and is represented by such shapes like the dish, bowl and a *lotā* like vase.

Evidently this slender type of ware was used mostly as a dinner set. Whereas for the purpose of cooking and storage other sturdy wares were used. An exception to the fine fabric and thin section of PGW has been reported from Kausambi (Sharma (1960) which is coarser and thicker besides the paintings are also not of the same type. Admittedly, therefore not all scholars agree to these finding from Kausambi as genuine P.G.W. similarly due to the lack of some of the identifying features, the reported finding of P.G.W. from Vaishali and Sravasti are also doubted (Takahashi et al 2000). Thus P.G.W. to be identified as such should have characteristic grey colour, fine fabric, thin section, it should have the common shapes, form and painted designs generally associated with the ware.

4.1.3.b. Painted Designs

The painting on the pottery are done when it is leather hard and subsequently fired.

The common motifs include

- i rows of dots,
- ii rows of dots and dashes,
- iii rows of thick dashes
- iv groups of vertical,
- v oblique and criss cross lines,
- vi concentric circles scalloped concentric circles and semi circles,
- vii sigmas,
- viii spirals
- ix a chain of short spirals,
- x rows of circular wavy lines,
- xi intersecting semi circles or group of inter secting 'U',
- xii occasionally Swāstikas are also noticed on the paintings.

A horizontal band around the rim both inside and outside is also a common feature in P.G.W. Regarding the groups of painted lines whether straight or wavy the scholars in general are of the opinion that multiple brushes were used to produce the effect. However (Ansari 1994) on observing the nature of groups of painted lines has suggested that these are not parallel in the real sense. Besides the thickness and length also varies. He has suggested the so called parallel effect has been created by painting along side by one brush rather than multiple brushes in one stroke. Although the P.G.W. has black painted designs Occasionally dark chocolate colour also has been noticed on some sherds. In passing it may also be mentioned that the decorative motifs on the Painted Grey Ware has been compared with paintings of Chalcolithic cultures with a view to establish the genesis of P.G.W. from these. Although some coincidental similarity between designs on P.G.W., B.R.W. and Malwa Ware, has been observed, scholars by and large have not favoured such suggestions.

4.1.3.c . Common Shapes

The P.G.W. is marked by a limited number of shapes of which the most dominant are the bowls and dishes. However vases and miniature bowls are also occasionally noticed. One of

the most common shape is the bowl with the straight side. Dishes with convex sides are also common. Generally the shapes of bowls, cups and dishes can be classified into the following types :

- (i) straight sides
- (ii) convex sides
- (iii) carinated
- (iv) tapering
- (v) ledged or corrugated sides and with round or sagger base.

The dish types have a restricted variety, the larger ones amongst these have a diameter of about 30 CM. It has been noticed that the PGW shapes have also been influenced by shapes of other wares namely : Black and Red Ware and vice versa. In the upper middle Ganges Valley it is worth while noting that some forms of bowl and dish of the BRW/BSW are seen among the P.G.W., which were not seen in the early PGW phase. The transition of shapes, however was not unilateral from BRW/BSW to PGW but was interactive. Perhaps the information and material transporting network of the BSW/BRW and the PGW cultures had started exchange of ideas and materials.

4.1.3.d. Associated Wares

The PGW forms only a small percentage of the total pottery in all the excavated sites. The associated wares frequently are the BRW, BSW, Red Ware, Grey Ware and NBPW. The Red Ware and the Grey Wares are having both the types namely fine and coarse fabric. The Red Ware if of fine fabric has its shape comparable with those of the PGW. More often the Red Wares are of medium to coarser type with the common shapes being storage jars and basins. Stamped and incised designs are also observed on these red wares. The common designs being spiral and concentric circles. The fine grey ware, which resembles the PGW to a large extent is classed seperately due to the lack of painted designs. These like the red ware have stamped spirals and concentric circles besides incised crisscross and zigzag pattern on the entire surface of the vessel. The BRW/BSW and NBPW which are found with PGW later occurred alongwith the latter due to the amalgamation of various cultures that had its genesis in the lower middle Ganga valley. The occurrence of associated wares its preponderance etc depends on two main factors namely

1. the geographical location of the site
2. what was the absolute time range

4.1.4. Nucleus and Geographical Spread

The following paragraphs will throw light on the earliest generally accepted area of the PGW culture followed by its spread eastward to the Gaṅgā-Yamunā doab. After giving a brief account of the main area of the PGW culture the remaining part of the section deals with sites where presence of PGW has been reported in areas not commonly seen as the main PGW region. It also mentions several sites that have yielded occasional PGW sherds, and the probable reason for such findings:

4.1.4.a. Earliest Evidence of PGW

Although various scholars have compared potteries from Shahi Tump, Gandhara and even further west as having similarity with P.G.W. yet these have not been largely agreed on. The earliest evidence of PGW is in the upper most Ganges Valley where it made its appearance during the survival of the late Harappan and it continued consistently down to the middle first millennium BC. In this region the pottery is associated with copper whereas iron technology was not in vogue with these early PGW people. The above fact indicates that the PGW appeared in this region prior to any other region and had a longer existence here. Akinori Uesugi has listed the following sites, namely: Bhagwanpura, Dadheri, Rupar, Sanghol, Daulatpur, Nagar, Katpalon, Manda etc. Other sites reported without the presence of iron include, Chak 86 and Sardargarh, both in Dt. Ganganagar.

4.1.4.b. The main area of PGW :

Following the subsequent expansion of the PGW culture towards east (Fig. 3) the basic distribution of the pottery during its peak has been recognized in the Indo-Gangetic divide and the Upper Ganga Valley. This Ware occurs practically in entire Punjab and Haryana in northern Rajasthan and Western Uttar Pradesh. In fact many sites with PGW has also been reported from the Hākrā river bed in Bhawalpur in Pakistan. This however could be explained by the proximity of these sites with the Sarasvatī river in Rajasthan which forms the southern boundary of the Indo-Gangetic divide. Earlier it was believed that the PGW people did not penetrate mountain region and confined themselves to the Indo-Gangetic plains but with the discoveries of PGW at Thapli (Alaknanda Valley) Purola (Yamuna Valley) this cultures has been recognized to exist in central Himalayas, as well. Some of the major sites spread in the upper middle Ganges Valley are Hastinapur, Ahichchatra, Alamgirpur, Allahapur, Purana Qila, Mathura, Atranjikhhera, Noh, Jakhera and Jodhpura. The above sites mark the geographical extent of the main area of PGW besides those already mentioned as earlier sites. However all of these only total up to only a part of the PGW sites reported to be more than 300

in number. This number calculated on the basis of published findings more than 20 years back may have exceeded over 500 by now if one was to compile the known PGW sites. With every passing year many new PGW sites are discovered showing ever newer aspects about the culture.

1.4.3 Peripheral areas and Occasional finds :

Although the PGW culture was primarily thriving in the Indo Gangetic divide and the Upper Middle Ganga Valley in Western Uttar Pradesh, yet PGW found its way further ahead. This occurred perhaps more commonly during the NBPW period. In the words of Takahiro Takashi "during the early half of the 1st millennium B.C. Ganga plains were divided roughly into two regions in which two different information exchange systems of the production and circulation of the fine wares i.e. BRW/BSW and NBPW, and PGW existed. It seems likely that the social interaction from two different directions resulted in the cultural integration of the whole of North India". This cultural integration perhaps allowed for the movement of people along with their pots and pans.

As mentioned earlier PGW has been reported from Kausambi in District Allahabad, Sravasti in District Sravasti in Western U.P. and as far as Vaishali in District Vaishali, Bihar. The findings of P.G.W. especially in Bihar and also in Eastern U.P. has not been fully agreed by scholars. The genuiness of the PGW from Kausambi and Vaishali has been doubted. Regarding Sravasti also the P.G.W. is described as imitation PGW or else as imported from the main area. Recently PGW has been reported in sufficiently large numbers at Kutwar (Kuntalpur) in district Morena of M.P. indicating the southern limits of the culture. Interestingly Kutwar (Kuntalpur) is so named after its reputed association as home town of Kunti the mother of Pandavas. P.G.W. has also been observed further south in M.P. but in very less quantities namely at Ujjain, Kayatha (Ujjain district) Besnagar (Vidisha district). The occasional presence of P.G.W. may well have been brought about by exchange networks. Few sherds of grey ware having much similarity with P.G.W. has also been observed at Sandipini Ashram in Ujjain.

1.5 P.G.W. Culture :

After learning about the P.G.W. as a pottery type and the area of its geographical spread one would like to know about : What is PGW culture? What are its characteristic features? Which are the important sites which give a fair idea of the culture in general? In the following paragraphs these questions have been dealt upon with relevant examples, wherever necessary.

1.5.1 What is P.G.W. culture ?

By now one has come to know about what is PGW. Obviously the culture named after the pottery type has to be of significance in this context. Although the percentage of PGW comes to less than 10 in all the sites its significant presence unlike some occasional sherds observed in some far off areas, is a definite indicator of a culture that is crucial in time and space. Every new PGW site discovered opens up possibilities of new data that may raise new questions or provide some clue to the many problems that surrounds the PGW culture. Amongst the questions that arises about this culture, the prominent ones are :

- 1) How did the PGW as a pottery come into vogue?
- 2) Where did the culture originate?
- 3) Who were the PGW culture people?
- 4) Which were the cultures that were earlier and which were contemporary or later?
- 5) What was the actual geographical spread of the PGW culture?
- 6) Why PGW is limited in geographical space unlike BRW/BSW which was much wide-spread?
- 7) Why PGW is limited in time unlike BRW/BSW which was earlier contemporary and later?
- 8) Can the cultural remains be associated with an ancient community or religious text.

For searching the solution to these problems, a fair amount of knowledge regarding the PGW sites is a must.

1.5.2 General aspects of P.G.W. Culture :

The PGW culture primarily spread in the Indo Gangetic divide and the Upper Ganga Valley was essentially a village culture. Typically all PGW sites are small. There are no signs of urbanization namely : town planning, large scale trade, coinage, writing etc. Although some trade of materials is not denied yet in all the sectors observed the PGW is far behind in urban way of life than the much earlier Harappans and the later NBPW culture for example. People generally lived in houses made of wattle and daub or occasionally those made of mud bricks. Excavations more often revealed row of post holes that were forming the foundation for the vertical timber holding the mud plaster of the walls. The roof it appears was made of some perishable material like broad leaves and hay. The provisions for drainage of waste water and refuse materials was also lacking as noticed by the absence of well defined channels and ring wells.

The economy of the people of the P.G.W. culture was largely based on agriculturalism and pastoralism with occasional barter. The agricultural produce includes rice, wheat and barley. Amongst the domesticated animals the cattle, sheep, buffalo and pig deserve mention. Cut and charred bones of these animals indicate their use for meat also. Hunting also provided source of food. Meat of deer was also consumed and its antlers was used as pointed tools as understood from bone and antler remains at the site. Amongst the domesticated animals mention of horse deserves prominence as this animal known from Neolithic and Harappan sites has been reported more commonly from P.G.W. sites. The presence of horse bones in PGW sites was cited few decades back as an evidence regarding the association of PGW culture with the Āryans. The presence of horse bones in several parts of the country including from Neolithic sites in south India besides Harappan sites has negated the association of PGW culture and the Āryans, if surmised only on the basis of horse.

Earlier, due to the absence of iron at PGW sites in the nucleus region it was felt that the culture was older and nearer to the Harappan/Late Harappan times. However, with ample discoveries of iron at the sites especially in West Uttar Pradesh the time range of PGW culture has been accepted from late Harappan at the earliest and NBPW period at the latest. Thus in fact during earlier time the PGW culture was only using copper, subsequently they also started to use iron. The artefacts of PGW culture sites although not very diverse are yet interesting. The most notable amongst these is the presence of glass bangles, the earliest specimens so far found in India. The other antiquities recovered from the excavated PGW levels of different sites include : terracotta toys, hopscotches, dice, beads of agate, carnelian and terracotta besides ear studs of jasper and agate. Obviously, several types of iron copper and bone tools were also found from these levels.

1.5.3 Important sites having PGW Cultures :

Of the several prominent PGW sites mentioned in the preceding paragraphs few are described here that one can get a fair idea of the culture. Amongst these sites Hastinapur stands out most prominently not only due to its various cultures but also its association with Mahabharata.

Hastinapura in district Meerut has OCP in the lowest layers followed by PGW, NBPW Śunga-Kuśān, followed by a hiatus. This hiatus was followed by another habitation known as period V which span the time from late 11th century to early 15th century AD. PGW culture which is enumerated as period II has been given a time range 11th to 8th century BC. The site has yielded wattle and daub structures and occasionally mud brick structure also. Among the

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animal bones including cut and charred ones indicate that these provided food resources as meat also. Both copper and iron were used during the PGW period. The other antiquities, include beads of carnelian, agate, jasper and bone, bangles of glass besides terracotta animal figures particularly of horse.

Bhagwanpura in Dt. Kuruksetra is an important PGW site as it is one of the earliest sites of PGW culture. The PGW culture has continued along with the late Harappan culture of this site. Interestingly, therefore PGW remains here, is without iron. Further, some aspects seen in Harappan times are also noticed in these levels namely the presence of baked bricks and also the dish on stand being copied in grey ware. The other materials remains obtained from this site include : terracotta anthropomorphic figures, animal figures, earstuds, ghata shaped beads. Bones of horse has also been found.

Noh in District Bharatpur is important due to a different sequence of cultures Here the Period I is of OCW culture followed by BRW/BSW culture. PGW culture is marked by Period III followed by NBPW and Sunga-Kushan cultures, in Periods IV and V respectively. The important discoveries from this site are beads and terracotta discs, bone styli, iron arrowhead and spearheads, copper implements, charred rice and a lid with a painted bird atop is interesting. Importantly, since this site has PGW in a comparatively later context the PGW level here shows the use of iron.

1.6 Date bracket, position and theories regarding P.G.W. Culture :

After going through the following paragraphs one would know the general time bracket of the P.G.W. culture, the cultures that preceded and followed the PGW culture. Further the different theories associated with P.G.W. has also been given very briefly.

1.6.1 Date Bracket :

The PGW culture on logical grounds, it seems, was there in the nucleus region before 1000 BC. On the basis of 14C dating several PGW sites have yielded absolute dates. Some of the uncalibrated dates from the mid level of the culture include 725 ± 150 BC and 820 ± 225 BC at Noh and 1025 ± 100 BC at Atranjikhera. These on calibration have the dates 805, 900, and 1115 BC respectively. The dates for the end period of this culture is around 600 BC. Although occasionally, 14C has yielded much younger dates these may have been caused by disturbances at the site, or else due to the presence of rootlets in the 14C sample. This surmise is strengthened by the fact that PGW is never found after the NBPW period. Lal (1989) has suggested that the culture corresponds to the late Vedic cum Brāhmanic period falling around 1000 BC.

1.6.2 Sequence of Cultures :

Broadly speaking the PGW culture falls between the end of the Harappan culture and the beginning of NBPW culture as seen at Ropar (District Rupnagar), Where the sequence of cultures is as follows period I Harappa, Period II PGW, Period III NBPW, Period IV Middle to Late Historical, Period V Late Historical and Period VI Medieval. It should be noted that the time brackets of Harappan and PGW periods are separated by more than 500 years at the least. Therefore other cultures obviously intervened between the two. The time gap in between the two is shown to have been occupied by either the late Harappan culture as at Bhagwanpura or O.C.P. culture as at Hastinapur or BRW/BSW culture as at Noh, briefed earlier. The decline of PGW culture started with the rise of NBPW culture. In almost all the PGW sites the PGW declines in numbers and is not seen in later layers after the introduction and establishment of NBPW, which became the deluxe pottery subsequently. However at Hastinapur the site was abandoned during the later part of the PGW period. After few centuries the NBPW culture established itself here, with out any evidence of transition between P.G.W. and NBPW. Thus the PGW culture which spread across a large area, is more often wedged between different cultures depending on the time and space aspect when they arrived at the site concerned. Although PGW has been reported in sites outside the main area of PGW culture like Kausambi, Sravasti and Vaishali it has not been accepted universally. Thus regarding such sites scholars have expressed the view that the PGW reported are not genuine or else were imported, imitated and sometimes too few to be recognized as culturally significant.

1.6.3 Hypotheses regarding P.G.W. :

Scholars in the earlier decades of discoveries and researches had given various origins and affiliations to the PGW culture. Some of the main hypotheses are briefly mentioned herein for knowing the history of research on the topic. There has been suggestions of similarity (see PGW ed R.C.Gaur) in aspects of the Painted Grey Ware and potteries from as far as Shah Tepe in Iran, Shahi Tump in Baluchistan and Gandhara Grave Culture in Swat Valley but has not been accepted by scholars in general. Krishna Kumar on the other hand suggests the indigenous origin of PGW from OCW which in turn, according to him, had its origin from the Harappan pottery types. As mentioned earlier scholars have also tried to show the origin of PGW from Chalcolithic pottery. However, none of these suggestions have found favour with majority of the scholars.

Regarding the people associated with PGW it has been suggested that the later Vedic Aryans were the authors of this Ware. Lal has made a stronger plea for associating the PGW

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culture particularly with the Mahābhārata. Incidentally PGW forms one common factor in many sites mentioned in the Mahābhārata. The sites namely Hastinapur, Mathura, Indraprastha, Ahichchhatra, Kampil, Baghpat, Barnawa, Tilpat, Kurukshetra, Kutwar (Kuntalpur) Parikshitgarh (Meerut District) are in one way or other connected with the Mahabharata and has evidence of PGW culture thereby reinforcing the above surmise. However, this suggestion has not received the unequivocal support, it perhaps deserves.

1.7 Summary :

The Painted Grey Ware culture recognized by its hall mark pottery namely the PGW fills an important segment of time and space in the proto historic period. This culture largely seen as later contemporary of the late Harappan has been known to occur at various sites after the OCP cultures and at few places after the BRW/BSW cultures and coeval with the latter at hundreds of sites. In between this time bracket it had a geographical spread from parts of Punjab and Haryana in the north and parts of Rajasthan in the west and western part of Uttar Pradesh in the east besides the northern parts of Madhya Pradesh in the southern extreme. The greatest concentration of PGW sites is in the Ganga Yamuna Doab known as the Arya Varta or Madhyadesha of the Upaniṣads, the Purāṇas and the Epics. However occasionally the PGW has also been found beyond this region. The time bracket of this culture is generally recognised as between 1100 BC to 600 BC. In the later part of the culture the PGW was replaced by the NBPW type of pottery as the delux ware. The PGW culture was slowly replaced by the NBPW culture which had an urban character compared to the former. The period and geographical spread of the PGW culture became crucial for the meeting and mixing of many cultures during part of the dark age between the first and second civilizations.

1.8 Check your Progress :

1. What do you understand by PGW? What are its identifying features?
2. What are the shapes commonly seen in PGW?
3. Give the name of motifs commonly observed on PGW?
4. What is PGW culture?
5. Demarcate the geographical spread of this culture?
6. What is the importance of PGW culture in the field of proto-history?
7. Describe the archaeological remains observed in the PGW levels during the course of excavations?

7. Describe the position of PGW culture in the sequence of cultures with example of different sites?
9. Why PGW culture is said to be a rural culture?
10. What are the different hypotheses regarding P.G.W. What could be the reasons that none have been universally accepted. Describe the merits and demerits of any one of them, in detail?

1.9 Points for Clarification :

1. PGW culture is named so after the Painted Grey Ware a pottery type that has its occurrence marked by boundaries of time and space.
2. The PGW is largely a wheel turned pottery with its base being shaped by hand. It is a deluxe ware mainly used as a dinner set.
3. Grey Ware without characteristic symbols painted over the surface would not qualify it as painted Grey Ware.
4. Occasionally in the PGW assemblage there may be some reddish coloured portions and chocolate coloured paintings. These are part of the painted grey ware but appears so due to the difference in firing conditions.
5. The position of PGW culture in the sequence of cultures helps in understanding the expansion of the PGW cultures.
6. The expansion of the PGW culture occurred primarily towards east in the Ganga Yamuna doab from the Indo Gangetic divide in the north.
7. There are various hypotheses regarding the identify of the PGW people, none of which have been universally accepted.

1.10 Assignment / Activity :

- 1) Locate the PGW sites on Map on the basis of districts mentioned in the text.
- 2) Draw the various designs of PGW by memory and check it with those in text.
- 3) Make vertically arranged correct sequence of cultures amongst the following : Medieval, Harappan, OCP, NBPW, PGW; Sunga, Gupta.
- 4) Search for more PGW painted designs in further readings.
- 5) Visit a museum in the general PGW area and ask the curator to show the PGW specimens.

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1.12 Glossary of technical terms :

BRW/BSW Black and Red Ware / Black Slipped Ware are pottery types quite common (particularly BRW) in almost all parts of the country during the proto historic period and the earlier part of the Early Historic period. However it should be noted that these have variations across time and space and they have not been reported frequently from Harappan sites.

Copper Hoard Literally means a hoard of copper but has been associated as cultural remains of hitherto unidentified people having good copper manufacturing technology.

Dark Age The intervening period between on the one hand, end of the Harappan Civi-

lization and on the other starting of Early Historic period in 6th Century BC.

Late Harappan A later culture, although not having all the Harappan features has many aspects in common.

NBPW Northern Black Polished Ware : A pottery with black colour and high gloss a pottery type generally observed in the later part of PGW and after wards.

OCP OCP earlier more popularly known as OCW stand for Ochre colour pottery and Ochre colour ware. Marked by Material remains representative of a simple rural life it is now more confidently associated by renowned scholars with the finds of Copper Hoards. Thus the Copper Hoards and OCP forms part and parcel of the same culture believed to be late RgVedic by some. It is found in an earlier context than PGW.

Post holes A hole in which the timber or bamboo post was kept vertically as part of the architecture.

Reducing condition Generally stated in the context of pottery making it means insufficiency of oxygen during firing/cooling due to which the potteries acquire a darker (greyer) colour. Oxidizing condition is opposite of the former.

UNIT - 2

MEGALITHIC CULTURES

- 2.1 Introductions
- 2.2 Typology
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2.1 Introduction –

The word megalith is etymologically derived from two Greek words megalos and lithos. Megalos means huge and lithos means stone. These were either created over the dead or over the commemoration of the dead.

Megaliths are of various types – cairns, circles, cists, menhirs, Dolmen and umbrella stones.

Cairn circles are composed of large round stones which were kept over the pits containing the skeletal remains of men, iron objects, bones of animals, pottery etc.

cist – Cists are those burials which have a wall surrounding the skeletal remains. The wall is made of small stones instead of three or four large stones and has a covering stone or coping stone over the wall.

Menhirs are single tall monolithic stones created over burials sometimes they are sculptured into anthropomorphic forms.

Dolmen – The etymological meaning of dolmen is stone take. There is a floor stone which the dead man and his belongings are kept.

Umbrella stone – Comprises of A vaulted stone over four stones.

The term Megalithic was originally introduced by antiquarians to describe a fairly easily definable class of monuments in Western and Northern Europe, consisting of huge, undressed stones and termed as Celtic dolmens, cromlechs and menhirs. It has subsequently been extended to cover a far more miscellaneous collection of erections and even excavations all over the Old World and into the New.¹ The researches on the megalithic monuments in India go back to 1823 when Babington brought out his "Description of the Pandoo Coolies of Malabar" in the Transactions of the Literary Society of Bombay.² In the West the interest in the study of such monuments could be seen hinted in the publication of J.Ferguson.³ A reference to the distinctive nature of Indian megaliths was denoted by Vanstaveen two in his 'Note on the Antiquities found in the parts of the Upper Godavari'.⁴ Later publications were Jagor's excavation report on the stone burials site of Adichennalur and Perumbiar in 1915; J.W.Breek's Account of Primitive tribes and monuments of the Neelgiris, London, 1873 and Foote's 'Catalogue of Prehistoric Antiquities, Madras, Govt. Museum, Madras, 1901.

In India, though Peninsular India has long been known to contain a large number of megalithic structures of varied types belonging to the early Iron Age, they now encompass almost whole of the Indian sub-continent right from Baluchistan and Baluchi and Parsian Makran, Waghadur, Shah Billawal and Murad Memon (the last three within a radius of 32 km of Karachi) to Manipur (Salangthel 65 km from Imphal) and from Leh valley of Ladakh, Burzahom, Gufkral, etc. in Kashmir valley to Pudukkottai in down south. Despite structural or regional disparities, they share a common cultural equipment, including the wide spread influence of a single technological tradition.⁵ Right from Bastar in Madhya Pradesh to Manipur in North-East India through Hazaribagh and Singhbhum districts of Bihar megaliths are a living tradition of the aboriginies, which according to many scholars, has affinity with the south-east Asiatic tradition. Prevalence of Megalithic culture in East Asian countries is well attested by the evidences of menhirs in north Japan, South Korea and Java, dolmens dolmenoid cists and cap-stones in north-east and east China South-Korea, North-Korea, Malayasia, Java, and Japan. Their striking similarity with those of their Indian counterparts point out towards cultural link in the distant past. They are mostly commemorative rather than sepulchral. The Maria Gonds of Baster,⁶ the Bondos and Gadabas of Orissa,⁷ the Oraons and Mundas of Chota Nagpur,⁸ the Khasis of Meghalaya and the Nagas of Nagaland⁹ and Manipur. The Todas¹⁰ of Nilgiris still erect dolmens, Stone circles and menhirs. Broadly speaking megalithic monuments

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of stone kind or the other are found over different parts of India, while the living tradition is restricted to eastern India, the ancient tradition, among with various trends and modification is confined to the south.

With the recent discoveries and excavation in far flung areas like Almora¹² and Kashmir,^{13&14} it now appears that with the spread of Megalithic culture, it was from the second half of second millennium B.C. that the Indian sub-continent was for the first time more culturally united. As per evidence, megalithic people are known for growing rice and smelting of iron, the later for the first time in our sub-continent.

The earlier lacunae of paucity of habitational sites of megalithic people has now been removed with excavation at Burzahom, Gufkral in Jammu and Kashmir and Naikund in Vidarbha region of Maharashtra and Karkabhat in Chhatisgarh., where sufficient habitational deposits have been located and exposed, revealing the structural and other remains of megalithic people. They selected such spots for their habitation and erection or excavation of burials where iron, copper and gold bearing deposits were available. Generally, they chose higher rock bench area with thin soil cover and monsoon fed lateritic areas for the erection of megalithic burials and memorials.

Investigations of the soil regions of the Megalithic (both burial and habitation) areas in Peninsular India and Sri Lanka's indicate that they are represented by three types of soil, i.e. yellowish brown, dark grayish brown and red gravel that are suitable for wet agriculture. The yellowish brown is unsuitable for dry agriculture due to low water retention (high sand content does not encourage water retention) low will were close to the ancient mine sites point (as a consequence of low water retention will were close to the ancient mine sites point is reached fairly rapidly.) High acidity of soil during the rainy season minerals such as ferrous, magnesium and sodium are leached out to a lower horizon. Under drier conditions these minerals surface and get deposited at the very upper horizons. Consequently this makes the soil very acidic. The PH value of this soil type is lower than 7.

It suggests that the Early Iron Age people selected this soil type areas which is unsuitable for agricultural purposes, for erection of megaliths.

Another reason for motivating the selection of sites by Early Iron Age folk was that the areas provided a relatively easy subsistence basis in sustaining lineage based simple societies of the Early Iron Age. As early as 1921. Munn (1921) writing in Manchester Memoirs on 'Ancient Mines and Megaliths in Hyderabad' made clear the fact that megalithic sites were close to the ancient mine sites in the region. Large number of iron artifacts and some gold

ornaments encountered in the burials stand testimony to this selective choice of Megalithic habitations / burials.

The megaliths of Chhattisgarh are concentrated on high rock-bench areas, where abundance of iron ore and traces of gold is available in open hills and need not be dug out. Iron could be smelted by simply collecting the ore nodules from the slopes of the hills. Megaliths of Vidarbha are concentrated in Bhandara, Nagpur and Chandrapur districts in Maharashtra which have abundant supplies of raw iron, coal and manganese. Hospet region in Karnataka has plenty of high quality iron ore.

The evidences now accumulated show that the megalithic people apart from practising hunting gathering economy were also partly agriculturists. Recovery of rice, wheat, barley, pea and lentil at Gufkral from the habitation site, common pea, wheat, black gram, lentil, Indian jujube and barley from Naikund and Bhagimohari in the Vidarbha area; remains of charred grains of gram, green gram, and ragi from Paiyampalli and remains of paddy husk/ rice and millet seeds from Adichanallur in Tamilnadu and paddy husk from Farserpet and koppa in Karnataka along with the sickles from various sites and plough-share from Karkabhat¹⁶ in Chhattisgarh., and Ramapuram in Karnataka, datable to the beginning of the first millennium B.C., show that the megalithic people had started growing cereals also. Thus Thaper's¹⁷ postulation that the megalithic people did not practice agriculture on a settled scale and led a pastoral life as supported by dominance of cattle bones in the faunal assemblage and presence of the horse skull among the skeletal remains and horse bits and stirrupa among the miscellaneous metal objects deposited in some of the megalithic burials, is not tenable. In almost all the habitational sites in India, to whatever period they belong, cattle bones are always numerically dominant except during the beginning of the neolithic period and presence of harnessed horses does not mean a nomadic way of life, as all domesticated horses have to be harnessed for effective control over them. With the excavation of well established habitational sites like Gufkral, Burzahom, Takalghat, Neikund, Karkabhat, etc., it is now clear that the megalithic people led a settled way of life, practicing, both agricultural and hunting economy.

The nature and dimensions of burials and memorials erected/excavated speak of collective efforts of a large homogenous community with well laid norms excavated under the leadership of all respected religious authority. This could be possible only when the society is a settled one. If they were not practicing agriculture, then they had to acquire cereals from other communities of the area on barter basis. At least in Kashmir this was not possible as so far there is no evidence of existence of any other agriculturist community in the valley. Production of wheel made pottery is possible only in a settled economy.

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The cist with a low post hole contained two terracotta sarcophagi with the usual funerary furnishing. At kunnattur²¹ a burial site with a habitation area nearby was excavated. In the excavation the cairn and stone-circles showed simple or lined pits with human remains, stone cists, and legged terracotta sarcophagi. At Sanur²² (Banerjee and Soundara Rajan 1959) the graves are marked on the surface by low cairns and stone-circles. Five cairns opened revealed that the grave construction was a plain pit, sometimes lined with boulders. One of these contained three terracotta sarcophagi with the usual deposit of pottery and iron objects including a horse bit. At Amrithamangalam²³, urns covered with domed lids containing fractional human bones and pottery and a few iron objects were found. At Tiruvakkarail²⁴, District South Arcot, cairn circles with shallow pits were excavated. None of these, however, yielded any skeletal material. Only few sherds of black-and-red and coarse red wares were recovered. Excavation at Auroville²⁵, District South Arcot, Tamil Nadu revealed (i) urn-burials within stone circles; (ii) urn burials without stone appendage; (iii) cists and (iv) cairn circle. In case of urn-burials within stone circles, the grave pit contained a huge urn and pieces of sarcophagus besides vessels of black-and-red ware. It was devoid of any skeletal remains and iron objects and contained only bowls and a lid made of black-ware. In the second type sherds of black-and-red were along with an iron axe were recovered from the urn. In the third type, from the pit, iron objects were recovered along with the pottery. From inside the urn four pots of black-and-red were, a lid of polished black ware besides iron objects like axe, knives, sword with mid rib were recovered. No skeletal remains were found.

Kerala :- At Porkalam²⁶ an urn-burial, surrounded on the surface by a circle of dressed laterite stones and covered by a granite capstone, was excavated by Thapar in 1948. The urn, which was pyriform in shape, contained vases, iron objects, and etched carnelian beads. Above the lid were also some earthen pots. At Kodakuthiparamba, District Calicut, excavation of Kudaikal revealed a pit sunk below the ground level of the supporting clino-stats, which in turn contained a bronze vase, a few iron objects, and some fragile potsherds overlying a lid-covered pyriform urn. At the base of the urn lay yellowish clay mixed with charred bones (John 1982).

Megalithic site of Managadu²⁷ situated 8 km northeast of Kollam town in Kilikkolur village of Kollam Taluk in Kerala was excavated by the Department of Archaeology, Government of Kerala in 1991. It is an urn-burial site. The urns contained post-cremation fragmentary charred bones. Pottery consisted of huge urns, medium sized jars and associated wares.

The main jar had always a beaded thumb tip or nail impressed design on the part just below the shoulder and immediately above the belly region. The urns and jars were hand-made and were of red ware, whereas associated grave pottery were wheel-made black-and-red and red wares.

The antiquities recovered from jars were carnelian beads (etched and unetched) and iron objects. Iron objects comprised mostly of agricultural equipments like blades, wedges, long cutting knives and sickle. The occurrence of large number of agricultural implements.

indicate that the people of Mangadu were primarily agriculturists. The tombs were repeatedly used and contained globular pots, bowls, vases and stemmed cups. C-14 dates Viz. 2890 + 70 and 2850 + 90 Y.B.P. were obtained from urn Nos. 6 and 10 respectively. The dates are corroborated by the typology of iron implements found associated with urn No. 12, which are more primitive. In the light of C-14 dates it could be said that iron technology was introduced in south India around circa 1000 B.C., probably, through coastal routes, from North India.

2.3.b Karnataka :-

Among the excavated sites, the more noteworthy are Brahmagiri (Wheeler 1948), Piklihal (Allchin 1960), Maski (Thapar 1957), Terdal, Hellur (Nagaraja Rao, 1971), and Halinghalli (Sundara 1975). At Brahmagiri two types of burials, pit-circles and cist-circles were excavated. Both of these were marked on the surface by a circle of semi-dressed stones. The cists had a port-hole on the east while the pits were approached by a shallow ramp closed by a functional slab. Both types of burials contained the usual associated pottery and iron objects. At Maski, on the other hand, besides the menhirs which had no sepulchral association, five classes of burials were excavated: (i) oblong grave-pits with extended skeleton and grave-goods, (ii) oblong grave-pits with fractional burial and grave-goods, (iii) urn-burials, (iv) pit-circle with extended skeleton or fractional burial with the usual funerary offerings. At Terdal and Halinghalli, passage chamber tombs, demarcated on the surface by a cairn enclosed by a circle, were excavated. At Hallur a three fold sequence of cultures, extending from the Neolithic through the Megalithic to the historical period, was revealed at the habitation site. The three cultures overlapped as at Brahmagiri. The overlapped phase of the Neolithic-Chalcolithic and Megalithic deposits was dated to circa 1000 B.C. through radio-carbon determination. At Banahalli 28., in District Kolar of Karnataka, excavations revealed besides megalithic burials circular-houses measuring 6 m in diameter with a ridge on the periphery and well prepared floors. The houses on the exterior had an apron made of well-rammed potsherds. Each house had an area marked, probably for smelting iron as indicated by the presence of plenty of slags

and furnace-like structures. The antiquities recovered included beads, iron objects like spear-head, arrow-head and knife. Two megalithic burials, showing cists with U-shaped porthole, closed externally with a slab, were excavated. While one of the megaliths was empty, the other yielded funeral furnishings consisting of black-and-red ware vessels.

2.3.c. Andhra Pradesh :

Among the excavated sites of the region, Nagarjunakonda, Yelleswaram, and Satanikota deserve our attention. Excavations at the former two sites were taken up as salvage operations stemming from the construction of the dam (Nagarjunasagar) across the river Krishna which was to submerge large parts of the ancient sites located on either bank of the river. Like-wise the excavations at Satanikota were necessitated by the construction of a hydroelectric project at Srisailem some 100 kilometers upstream from Nagarjunasagar across the same river Krishna, which would submerge archaeological sites and remains.

At Yelleshwaram (Khan 1963) 29 both cist and pit-burials were exposed. One of the cist-burials contained two cists covered by a capstone. Each compartment contained a quantity of human bones including skulls. Pottery was also found both inside and outside the cists. Another cist showed a porthole cut into the northern wall in sharp contrast to the Brahmagiri cists which had portholes in the eastern wall. This cist contained another smaller cist with the unique structural feature of a gabled roof. This is particularly significant because gabled roofs are met with in cists at Tepe Sialk. In one of the pit-burials two complete human skeletons in extended position were found one on top of the other. Near the upper skeletons lay a tanged dagger and horse bones. Above the level of the upper skeleton were other funerary offerings in two stages.

At Nagarjunakonda³⁰ (Subrahmanyam et al. 1975) the excavated megalithic burials were recognizable by surface indications of cairns with surrounding circles. The graves entombed within these burials were either pits or cists with the former outnumbering the latter. An ash or lime layer was spread over the pit floor of the burials which was found at a depth of 2 to 3 metres. Skeletal materials were deposited on this, the remains being completely articulated. Together with these remains other funerary offerings including pottery and iron and gold objects were deposited. In one of such pits disarticulated human skeletal remains and a bovine skeleton were found at different levels. From the cut marks on the bovine skeleton, the animal seems to have been slaughtered ceremonially. The stone cists were found to be both with or without porthole. These cists contained only fractional skeletal remains together with pottery and metal objects. Another habitation site was excavated at Kesarapalle,³¹ where a threefold

sequence of cultures was laid bare (H. Sarkar 1973). The Megalithic Culture was found interlocked with the Neolithic at one end and the Historical at the other.

At Satanikota³² (Ghosh 1986) excavations revealed three types of Megaliths, namely, cist with passage, cist-circle, and pit-circle, located in three clusters. All these megaliths were oriented north-south. Occasionally, the passage-type cists have low platforms abutting the platforms externally.

Clusters of burials with megalithic pottery, large sized iron objects, stirrups and sarcophagi of different sizes were noticed in either side of the Godavari-basin extending from Pasara-Tanduvvari ranges upto the borders of Khammam in Khammam and Warangal districts. Six megalithic burials and more than one hundred cairn circles were located at Evladinne in Mehbubnagar district.

2.3.d. Vidarbha :-

In this region excavations were conducted at Junapani (IAR 1964), Kaundinyapura (Dikshit 1968), Paunar (Deo and Dhavalikar 1968), Khapa (Deo 1970), Takalghat (Deo 1970), Mahurjhari (Deo 1973 a), Naikund (Deo and Jamkhedkar 1982), Bhagimohari and Raipur 18 km west of Nagpur. Culturally they were found to belong to the south Indian tradition. Kaundinyapura, Paunar and Takalghat were habitations sites; Junapani, Khapa and Mahurjhari, burial sites, while Naikund was both a habitation and a burial site. At the habitation sites, Black-and-Red ware, together with iron objects and beads of semiprecious stone, including etched carnelian, were found in occupation deposits indicating thereby a Megalithic Culture horizon.

The burial sites at Junapani, Khapa, and Mahurjhari contained only cairn-burials surrounded by stone-circles. These burials, without exception, contained grave-pits. Funerary objects, including pottery, iron and copper objects, beads, bones of the equidae family etc., were placed in different stages of the filling or on the pit floor. Among the pottery all three ceramics obtained from the habitation sites were duly recorded with the painted black-on-red ware, occurring only at Manurjhari and Naikund. Noteworthy among the funerary objects were the copper dishes with decorated lids, bangles, bells and a head ornament of a horse obtained from Khapa and Mahurjhari, and gold ornaments from Mahurjhari and Junapani.

At Raipur as many as 391 stone circles were found. The excavation of four circles with cairn filling revealed some new features. Megalith 1 with a diameter of 15m had a cist in the centre. The centre was dug in a rectangular pit into the rock to a depth of 15 m to form a cist and was filled with compact black clay. Over the black clay, slabs of cist were placed. Though the cist was found to be empty, outside within stone circle, partial skeletal remains of three

human beings were found. The accompanying pottery consisted of Black-and-Red ware, black burnished and the micaceous red ware. Other finds included iron objects nail-pairers, lamps, adzes, arrow-heads, copper bangles, and a lid with the finial of bird motif as at Mahurjhari, Takalghat and other megalithic sites in Vidarbha. Megalith 2 was distinguished by the

use of exceptionally large boulders with a group of boulder-heads jutting out in the centre. The stone chamber was empty. This megalith within the cairn-circle yielded painted black-on-red pottery, black and-red ware, micaceous red and coarse red ware. Large number of copper and iron objects including horse ornaments made of copper sheet were recovered along with teeth of horse and human. From Megalith 3 skeletal remains of two horses, fragmentary human bones, iron axes with cross ring-fasteners, hoes and copper bangles were recovered.

2.3.e. Extra Peninsular and Vindhyan Region :-

Whereas the megaliths of north-eastern India have been extensively studied and are found to be more or less a living tradition of the aborigines (Wheeler 1959, quoting an earlier reference), very little systematic work has been done on those of extra peninsular India and Vindhyan. Recent excavations at Burzahom and Gufkral have indicated the association of iron, without the distinctive black-and-red ware, with the menhirs which were found to be non-sepulchral. Similarly, excavation of some of the megalithic tombs in District Allahabad have established the presence of iron in the graves. In the same region (Districts Mirzapur and Varanasi), iron was not recorded in the excavated megalithic burials, which nevertheless show a likeness of those of District Allahabad and of the peninsula. On the other hand, microliths and pottery comparable with the Chalcolithic culture of central India (Mandal 1972) have been obtained from the Mirzapur-Varanasi group.

K.P. Nautiyal³³ of Garhwal University found two types of burials; (i) dolmenoid cist, and (ii) Urn-burials in the excavations at Jainal-Naula, District Almora, Uttaranchal. To erect the rectangular cist chambers which were oriented east-west, a pit was dug in the gravel section of the river-bed. The cists consisted of three to six orthostats placed vertically with one or more capstone covering the chamber. The cist contained dishes, bowls, miniature bowls invariably deposited at the central axis or at the end of the chamber. The pots contained tiny fragments of human bones along with fragmentary iron pins, nails and a sickle.

At Ladyura in District Almora of Uttaranchal, the author³⁴ found a large number of cist-burials under 1 to 2 m thick lateritic deposit in the terraced fields. All the cists were erected inside the pits into the shale bed-rock. They are oriented north-south lengthwise and vary in

size. Most of the cists were found to contain only one compartment but few with more compartments but few with more compartments were also available. The uprights were covered with coping stones that run throughout the length of the cist. The capstone normally projects laterally on all sides across the top edges of the orthostats. The northern end of the cist is blocked by a single upright. The cists are generally filled with self same material contained by cutting the pit. The most interesting feature is the presence of post-holes on both the sides (east and west) of the grave-pit. The post-holes were sunk through the bed rock. Their presence indicates erection of canopy over the mortal remains of the deceased and other funerary goods after the pit was filled up. From inside the pit fragmentary human bones along with pieces of iron objects and pottery were recovered. The pottery consisted of wheelmade coarse red ware with thick section, ill fired and having mat impressions on the outer surface. In few cases red slip was noticed on the outer surface. Grey ware of medium fabric, a black ware bowl with featureless convex sides and the of fine fabric were also recovered. On the basis of pottery the burials could be dated to the second century B.C. Presence of more than one compartment in some cists are perhaps indicative that the mortal remains of more than one individual were interned in them.

The author on behalf of the Archaeological Survey of India, in 1990-91, excavated a sprawling megalithic site of Karkabhat in Durg district of Madhya Pradesh. The site is located in the high rock-bench with thin soil cover in the monsoon fed laterite zones with the added advantage of having a large number of low natural rock-shelters nearby. There are outcrops of trap and sand stone, ideal for shaping menhirs, in between the two natural, perennial springs. The location of the site also appears to have been influenced by the availability of iron, copper and silver ores within a radius of 25 kms.

The site could be divided into three areas e.g. (A) the habitation, (B) the factory area and (C) the megalithic memorial area.

A. In Karkabhat-Sorar area two habitational sites are located : (i) Low rock-shelters to the south and south-west of natural spring and (ii) The open habitation area located to the north of the burial site. The latter has 2 m deposit belonging to the megalithic culture followed by deposits of later periods. The limited dig yielded typical Black-and-Red ware, dull thick red ware and black burnished ware. In Black-and-Red ware the predominant shapes were bowls and jars. On the structural side several mud or lime plastered floors, ashy deposits and hearths were encountered.

B. The factory area - In between the two springs and to the south of the burial area, lies

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the factory site for shaping menhirs out of the out-crops. Menhirs in various stages of preparation are lying scattered in the areas.

C. The memorial area - It is located in between the factory site and the open habitation site. Even after large scale destruction of cairns and menhirs, 517 megaliths in good condition still exist. On the basis of morphological features, seven types could be identified being three more than those identified and excavated by M.G. Diskshit at a nearby site of Dhanora.³⁷

A limited number of each type were opened. Each cairn circle was lined with big boulders in the northern half and at the bottom level of the cairn heap a distinct circle of stones was made. This stone circle was enlarged with great precision with the inclusion of more menhirs, in course of time. Even in the case of single menhirs the successive layer of boulders were arranged in a pyramidal fashion, slowly rising to the top. In each case, right from the bottom, the entire space around the menhirs/capstones was filled with boulders arranged in circles. Each stone of the circle formed the center of another circle, and in this way a number of circles were created filling the whole area. After the creation of first stage of circles, the boulders were covered with yellow or red fine silt. Over the filling the process of making circles was again repeated. This was done till the filling reached the desired height.

The menhir are fish shaped, obliquely pointed, conical or straight at the top end. They were so erected that the finished surface faces north and the unfinished south. They were put either straight or inclined either to the east or west, with angle of deviation from the magnetic north, probably, indicating the time and period of the year when the deceased left the world.

As the megaliths at Karkabhat are memorial burials, they did not yield any skeletal remains. Even the pottery was confined only to few shards in some of the burials. Some of the burials generally included iron objects like daggers, blades, arrow-heads, spikes and spear-heads. The lone agricultural implement recovered was an iron plough-share. Other objects were copper bangles, silver and gold rings and a soap-stone long barrel bead. The objects were generally deposited inside one of the circles, at various levels. From the habitation the antiquities recovered were iron objects, pestles and hop-squatches.

The most remarkable discovery was a huge sculptural menhir having the facial profile of a man. The sculptured menhir was erected over a cairn heap, almost in the center of the area of memorials. Above the cairn heap the available height of this menhir is 2.57 m and greatest width is 1.91m. It was erected in perfect north-south orientation, i.e. width wise east-west with the finished surface facing to the north and sculptured edge facing towards east. The masterly stroke of the sculpture has brought out a magnificent facial view of a man having receding,

broad fore-head, prominent glabella point, sharp long nose, broad and prominent ridge in the upper lip below the nasal spine, pronounced lower lip and chin. On the top of the head, in the centre, there is a domical projection to show the bun of hairs. Such a bun of hairs is sported by a 'Baiga', a priest-cum-medicine man in tribal villages who is respected by the entire community and who plays a dominant role during religio-ocial functions of the society.

On the basis of iron tool typology in general and plough-share in particular and ceramics, Karkabhat megaliths could be dated to the beginning of the first millennium B.C.

2.4. Cultural artifacts

Whether sepulchral or commemorative the megalithic monuments are associated generally, with iron objects, frequently human bones, animal bones, personal ornaments like bangles of copper, beads and rings of gold, stone beads, black and red ware and or rough red or grey ware. Apart from these the other ceramics are all black ware, micaceous red ware and Russet-coated painted ware. The pots are wheel made, seemingly on a slow wheel and fired at a comparatively low temperature. Common shap are bowls, dishes, lids, funnel-shaped bases, tulip-shaped vases, ring-stands for pots, etc. Occurrence of graffiti on some pots is another characteristic feature. The iron objects include both tools of offensive and domestic use, like swords, daggers, barbed and plain arrows-heads, lances, flanged spears, flat axes with cross bands, chisels, frying pans, saucers, ladles, lamps, tridents, nails, sickles, hoes, etc. The daggers were either tanged or have riveted wooden handles. In some cases the daggers were equipped with copper hilts as at Mahurjhari and Pochamped. The equipment for horses include bridle bits, snaffle bits, and barbed bits with looped ornament of a horse made of copper sheets with iron-riveted knob stitched over leather and bead ornament of a horse from Khapa, for mounting on a leather base.

Copper and bronze were also used. The objects consisted of bells with iron clappers, bangles, dishes and ferrules for sticks. Noteworthy are the copper dishes and lids with finials in the form of perching birds from Khapa. Some of the bronze objects, particularly those from Nilgiri and Rajgir, contain a high percentage of tin ranging from 29 to 21 percent. Golden bangles, rings, spiral rings, diamonds and beads of silver and gold were obtained from many sites. Beads of semi-precious stones like agate, carnelian, coral, crystal, quartz, lapis lazuli, glass, steatite, and terracotta have been reported as other personal ornaments. A distinctive features of the beads is the etching of the designs, some of which are typically megalithic. Traces of cloth were found on some bronze objects at Adichanallur and in the Nilgiri hills.

The structural remains at Brahmagiri, Paiyampalli, Takalghat, Karkabhat and Hallur

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indicate patches of floors, occasionally with postholes, suggestive of modest timber constructions. The Megalithic Culture made significant innovations by introducing (a) basic metal technology, (b) dam and tank irrigation, (c) craft specialization, (d) a new pottery technique of dual colour and (e) harnessing of the natural resources with greater efficiency.

2.5. Chronology

So far as north Indian megalithic culture is concerned the C-14 dates from Noah in Rajasthan and Sonpur in Bihar and Pirak, Baluchistan cairn-burials, and swat graves in Pakistan indicate a time range of 1000-700 B.C. for the introduction of iron in that part of the sub-continent. Whereas C-14 dates from Megalithic levels at Gufkral (Kashmir) are around 1500 B.C. and approximately same at Burzahom (Kashmir) for the introduction of iron and rice in Kashmir Valley. The menhirs in the Kashmir valley, after excavation, were found to be non-sepulchral and in a cultural sequence follow the Neolithic occupation. For the Vindhyan megalithic C-14 dates for iron using people at Kotia give a date of 270 + 150 B.C. on the basis of typology of iron plough share at Karkabhat, Chhattisgarh megaliths could be dated to the beginning of first millennium B.C. For South Indian and Vidarbha megalithic seven C-14 dates are available. They are Paiyampalli - 640 + 105 and 20 + 100 B.C., Hallur 110.5 + 105 and 955 + 100 B.C., Veerapuram 1000 + 140, 970 + 150 and 1290 + 140 B.C.

The dates from the Neolithic - Megalithic overlap phase from Hallur is supported by six TL dates from Komaranhalli (Karnataka) with a time range of 1440 - 930 B.C. The Hallur dates which give a central date of 1000 B.C. are significant for introduction of iron in south India. The megalithic culture in south India endured for nearly a thousand years. Same is the picture in Kashmir Valley. The urn-burial, the passage grave and the cairn-circle may have an early beginning, and dolmens and slab-cists are likely to be a later intrusion. Still later are the monuments like umbrella stones, hatstones, etc of Kerala and the rock-cut caves of the same region.

These facts support the theory of introduction of megalithic traits overland, through Baluchistan and then traveling to south India and other parts. Views like that "India megalithism was derived from the Mediterranean region via the coastal route" (Sundara 1975), and Aryan origin of the south Indian megaliths (Asko Parola 1973) now appear to be superfluous. So far as Aryan migration was concerned it is now being widely accepted that there was no such migration of Harappans on horse-back. This is only a myth.

The studies of the skeletal material from Brahmagiri and Yelleswaran by S.S. Sarkar³⁸ and others indicate, besides an autochthonous Australoid type, a brachy-mesocephalic people

similar to the Scytho-Iranian stock as encountered in Necropolis B of Sialk VI. The same type of people seems to be present at Piklihal and Maski. The skeletons from cists at Raigir show a dolicho-mesocephalic people. It appears that the great migration of these Scytho-Iranian took place between 2000 and 1000 B.C. from the region of Ukraine.

Some of the skulls from Nagarjunakonds and Yelleswaram are brachy-cranial. On the other hand, cists at Raigir, in Andhra Pradesh, brought to light the remains of a dolicho-mesocephalic people. The autochthonous Australoid element was also present at several sites like Raigir and Yelleswaram.

In a study of head-forms from different types of megaliths, it has been shown that the jar-burial people like the one at Adichanalur, in the extreme south, appear to possess smaller head-forms, the cranial index being 71-80. It thus falls within the dolichocranial range, through verging towards the Hyperdolichocephaly. In this study Sarkar S.S.⁴⁰ made a comparison between the different cranial types occurring in the earth burial, jar burial and cist burial and the result was quite interesting.

	Earth burial	jar burial	Cist burial
Hyperdolicho cranial	33.33%	46.67%	12.50%
Dolichocranial	33.33%	40.00%	20.00%
Mesocranial	14.29%	13.33%	30.00%
Brachycranial	14.29%	-	27.50%
Hyperbrachycranial	4.76%	-	10.00%

Thus the headform occurs in the highest frequency (46.67%) amongst the people practicing jar-burial and it may constitute the earliest stratum; significantly, there is brachycranial people amongst them. On the contrary mesocranial and brachycranial people are common in the cist burial and these cists are mostly slab-cists. In the circumstances, it may well be concluded that real megalithic monuments in the form of dolmenoid cists or slab-cists are perhaps connected with meso-brachy-cranial people who might have migrated to India from West Asia by about 1000 B.C. There must have occurred intermixing and hybridization amongst different groups with the fusion of central traits and elements. The conclusion based on anthropometric analysis is no doubt on small samples and might not provide a comprehensive picture. Yet it does furnish certain indications which with the comparison of data from other countries are bound to shed light on many unanswered queries to megalithic culture in general and dolmen culture in particular.

2.6. The Sculptured menhir

At Karkabhat the most startling and important find is the sculptured menhir. Almost at the highest point in the area of memorials one of the biggest menhir was found to be sculptured giving the profile of a man. The sculpted menhir has been put in the centre of cairn heap. Above the cairn heap the available height of the menhir is 2.57 m and width is 1.91 m. It has been erected in perfect north south position, i.e. widthwise east-west with the finished surface looking to the north and sculpted edge towards east. The masterly stroke of the sculptor has brought out a magnificent facial view of a man having receding broad forehead, with prominent glabella point, sharp long nose, broad and prominent ridge in the upper lip below nasal spine, pronounced lower lip and protruded chin. On the northern face eye has also been carved out. A look at the southern surface of the menhir also shows the evidences of workmanship to create the profile. In the absence of chisel marks, it is at the moment difficult to find out the type of tools or tools used by the master sculptor to prepare the grand profile.

Through anthropomorphic forms of menhirs have been reported from many sites in South India, Karkabhat has the distinction of having, so far, the only sculpted menhir in the form of a human figure showing details of facial profile and gives three dimensional perspective. Though the Karkabhat sculpture does not reveal any sexual features, but the facial expression indicates that it is that of a male. Some scholars may argue that the menhir might have been shaped into sculpture, later and not by the megalithic people who erected it. Absence of any waste flakes around the menhir indicates that it was worked upon and carved out to create human facial profile before its installation in the cairn heap. Moreover the sculptured menhir forms part of a cairn circle and has been duly installed in the centre of the cairn heap with nearly one third of the menhir buried under it. Another strong point is that this sculptured menhir is just in the centre of the area covered by Karkabhat megalithic memorials and occupies the highest position contour wise. This is not the case only at Karkabhat but at many other sites enumerated by other explorers and excavators in South India. In Chattisgarh, Karkabhat example may not be the only one, if proper investigations and close examinations are made, we may encounter such figures, elsewhere. But unfortunately at many other sites like Tengna, Aroud-Lilar, Muchagahan, Dhanora, etc., where standing menhirs were present earlier, most of them have now been totally wiped out.

Large number of anthropomorphic figures in the form of menhirs have been reported from a number of Megalithic sites in South India. In Andhra Pradesh, they have been noticed at Midimalla, 41 in Chittor district, Domada, 42 Dongatogu, 43 Galabha, 44 and Tottigutta 45, all in Khammam district. William King⁴⁶ reported some cruciform monoliths of which one

measured 4.00 m in height with length of the arms being 0.97 m, amidst dolmenoid cist burials at Kaperlaguru, 13 km to the south-west of Mungapet. Mulheran, J.⁴⁷ had also noticed some crosses at Malluru and Kalapru, while king William⁴⁸ had noticed at Mungapetta on the banks of river Godavari in Warangal district. Such figures have also been reported from Lingala⁴⁹ in Krishna district. Four anthropomorphic figures carved out of lateritic stone were discovered in Nellore district⁵⁰. One of them was found at Vedayapalem and the other three at Golagamudi. Among the two figures are crude having only the outlines of a human body, whereas the other two are having round heads over the flat trunks.

In Karnataka Sundara ⁵¹ has reported a crude, small, monolithic anthropomorphic figure, without arms from Aihole in North Karnataka region from Rajankolur in Gulbarga district, Kumali in Bellary district. From Maribetta Raghunath⁵² has reported curious looking anthropomorphic figures from Somvarpet area of Mercara district of Coorg. A huge well carved monolithic anthropomorphic figure has been reported by Narasimhaiah ^{53&54} from Mottur, Chengam Taluk in District North Arcot. The figure is lying amongst the ransacked ruins of post-holed dolmenoid cist burials. The figure carved out of a granitic slab measures nearly 3.50 m in height, 1.75 m in width and 0.16 m to 0.23 m in thickness. It has curved arms measuring 0.92 m. Neck and head are represented by a semi-circular projection above the shoulder. A pedestal is provided instead of legs. The slab is well dressed and faces south.

The figure can be conveniently dated to the megalithic period, on the basis of the evidence of local traditions. According to local tradition, a megalith is called Valiuyar Vidu (house of the Valiyar) and the figure is named Valiyar Daivam (God of Valiyars).

Most of the anthropomorphic figure reveal only the upper limbs and the head. Legs and other parts like eyes, ears, nose and mouth are generally not depicted. Hands are also missing from some of the figures. The one at Tottigutta had feminine features in the from Katapur and Malin closely resemble the Latin cross. At Kumati (76° 35'45"E, Long. 14° 41'30"N Lat.) along the north-south oriented longer axis of the ellipse three anthropomorphic figures and some rectangular stones are located. The northern most figure, which is extant only upto 1.31 m and the broken top edge has a width of 0.40 m. The thickness of the slab varies from 0.90 m at the centre to 0.65 m at the edges. The figure 1 and 2 are in alignment with north-south axis, whereas the 3rd figure is located 1.26 m west of the main axis. The second anthropomorphic figure stands 2.28 m south of the first and measures 3.08 m in height and has a maximum width of 1.40 m at the shoulders. The figure has a distinct head, neck, broad shoulders and a broad body further broadening at the ground level. The thickness of the slab varies from a maximum of 0.16 m at the central part to minimum of 0.80 m at the periphery. The head

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Chenchus and the Mandadan Chettis resort to both burial and cremation. Among Indian tribes, a stone is planted at the head and foot of the grave. Sometimes a grave is enclosed with a fence, "too high for the ghost to cross particularly without arm" - This is said to be the origin of the stone circles. It was the ancient rule that when the mourners left the cremation ground the priest raised a barrier of stones between the dead and the living.⁶⁵ The Gonds believe that there is a continuity beyond death⁶⁶. According to them the dead have wishes, desires and needs, which the living must fulfill. They believe that the spirits would kill their cattle, if they remain unsatisfied. So, to satisfy the spirits stones have to be planted and offerings, including animal sacrifice, have to be made. According to them there are three reasons for erecting megalithic monuments.

1. The soul need not wander after death.
2. They must not worry or harm the descendants; and
3. They must help in bringing rain and driving away the harmful and destructive spirits.

2.7. Authors of the megalithic culture

At the end it will be worthwhile to give in brief the opinions of various scholars about the origin and distribution of Megaliths in India so that the reader could formulate his own opinion as the problem to some extent still persists. Of course, through recent researches and unbiased views, by and large, the earlier opinion of megalithic culture reaching India from east or west or from both, is being slowly discarded. It is now being widely accepted that the culture originated and developed in the sub-continent, independently, probably evolving from Neolithic cultures of the area concerned. There were internal migrations and in the process the local traits and traditions were acquired and assimilated. In the case of introduction of iron technology also, there is now no doubt, in the light of results of excavations at Gufkral, in Jammu and Kashmir, that the megalithic people in this part of the country possessed the knowledge of iron around 1500 B.C.³ Similar developments of iron technology, in other areas also took place, probably a little later.

With the excavation of cist burials yielding iron in Almora^{67&68} and wide spread occurrence of Black-and-Red ware, throughout the country, associated with megalithic culture, there is now no doubt that from 1500 B.C. to around the beginning of the Christian era, megalithic monuments were civilization with cultural affinity throughout the length and breadth of the country with knowledge of iron and community living well entrenched.

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Huttan, J.H. through his various articles expresses the view that the elaborately carved forked and cylindrical monoliths of Dimapur in Nagaland are closely linked with the parallel ceremony of the Angami Nagas and similar to Munda monoliths in Chota Nagpur. He is also of the view that the conch ornaments worn by Nagas and also found from the Odugattur graves have affinities with South Indian ones. In "Prehistory of Assam" (1928), he states that the Dolmens in Assam came from South India across the Bay of Bengal.

Professor Elliot Smith holds the view that the megaliths had their beginning in the proto Dynastic Egypt from where it spread to other places. Walhouse and others advocate a western origin. Longhurst favours an Egyptian-like culture which produced megaliths in the Deccan around 1000 B.C.

Hunt, E.H. in his papers on "Hyderabad Cairn burials and their significance" (1929), and "Megalithic burials in South India" (1933), found external association and possible foreign influence on the basis of presence of beads of lapis-lazuli in the burials.

Ghurya, G.S. in his article on 'Funerary monuments of India' (1926), states that Indian Megaliths are intimately connected with the Egyptian funerary monuments. On the basis of architectural development these burials are dated to 1000 B.C. He is also of the view that India is the home proper of the dolmens.

Haimendorf, C. Von E while describing Megalithic ritual among the Gadabas and Bondos of Orissa (1943) states that the megalithic monuments and rites of the Gadabas and Bondos fit well into the general picture of the megalithic civilization of South East Asia. The similarity of these with the Assam megaliths both in the underlying idea and nature of monuments stress that the megalithic culture of Orissa is a branch of that megalithic civilization which is so widely distributed in South East Asia. He is of the view that the migrations took place in neolithic times and they did not penetrate beyond the Godavari.

In his paper on 'The problem of megalithic cultures of Middle India' (1945), Haimendorf further states that the purpose and meaning of the megalithic monuments of the Gadabas and Bondos have the same basic idea as that of the Assam tribes. The connecting links between the Gonds and the Nagas is to be found in the forked 'Y' posts. (A huge 'Y' forked menhir is also present at Karkabhat - author.) Similarities of customs and rituals are found between the middle Indian and north-east Indian tribes. He is of the opinion that the megalithic culture of the South East Asiatic type found among the Gadabas, Bondos and the Bastar Gonds come from the east with its centre of diffusion in eastern Assam or north Burma or south-west China.

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The people speaking Austronesian languages are connected with this culture. It is quite likely that there was an earlier migration of Austroasiatic culture untouched by the Austronesian. This megalithic culture was already developed before the commencement of the migration of Austroasiatic races westwards into peninsular India. The author discounts the Dravidian speakers as possible representatives of the megalithic culture of South East Asiatic affinity. But after nearly ten years the same author in his article, "New aspects of the Dravidian Problem" (1953), revises his opinion and says that the Iron Age megalithic builders were Dravidian speakers. This iron using culture in South India was an intrusion superimposing itself on the more primitive indigenous cultures and iron did not come from the north. He postulated a theory of immigration by sea or southward movement along the west coast of India some time about 700-400 B.C. According to his new theory, megalithic builders were a people of Mediterranean stock, who probably came to the western coast by sea, entered South India in about 500 B.C. and spread northward subduing the early neolithic and microlithic people who were in a semi-nomadic foodgathering state of culture. He further says that since the distribution of South Indian megaliths was almost coterminous with that of Dravidian language, it is this people who would have introduced the Dravidian language in the region.

Aiyappan, A. in his Presidential Address in XXXIIInd (1945) session of Indian Science Congress Association pointed out that (i) Megaliths have a world wide distribution, (ii) different types of monuments, even though belonging to the same period reflect cultural diversity and (iii) since megaliths are still being practised by certain Indian tribes, they could not have been a sudden exotic introduction.

Srinivasan, K.R. in his article on "Indian Megaliths with special reference to Pudukkottai" (1944), expresses the view that neither the Vedic Aryans nor the Indus people were responsible for these monuments. He states that Tamil literature is replete with ample evidence for the knowledge of this cult from atleast 1000 B.C. Survival of this cult and the knowledge of iron among some primitive tribes in the south and central India would suggest an earlier period, probably 2500-1000 B.C. He also indicates Egyptian origin for this cult. He also states that the megalithic monuments bear witness to a highly advanced state of civilization with knowledge of iron and community living.

Yazdani, G. (1917), while examining some peculiar marks on the pottery from megalithic burials of the Deccan, remarked that these megaliths of South India resembled those of Etrucia. He stated that possibly the early settlers brought with them the mode of megalithic tomb-building, speech and semi-hieroglyphs, which perhaps, was gradually modified by local and foreign influence. The megalith-builders migrated via Makaran, where similar sepulchres and a dialect Brahui akin to Dravidian is to be seen.

Subbarao, B in "Megalithic Problem of South India and the Dravidian Language", (1962) is of the opinion that the megalithic cult was adopted or introduced into South India by a people who had already come into contact with the Iron Age people in northern and central India. Maritime movement theory is not acceptable to the author. He indicates terrestrial movement from north to south. Regarding the theory of eastern origin for the megaliths, he feels that central and south India was meeting place of ideas and cultures from the east as well as west. He is of the opinion that linguistic evidence indicates to mutual assimilation of words between Dravidian and Sanskritic languages. He does not favour the idea of evolution of megalithic Iron Age people out of the earlier neolithic stock. He postulates that the Dravidians seemed to have moved southwards and eastwards from Rajasthan across central to South India.

N.R. Banerjee, while discussing the Megalithic problem of Chigleput concludes that there was a settled community life, perhaps the result of mutual contract, trade, etc. with others or perhaps due to the ethnic and cultural homogeneity of megalithic-practicing people. They knew smelting and forging of iron for their implements and weapons. They believed in life after death.

While discussing the 'Chronology of Megaliths in South India' Banerjee further states that the impact of the neolithic and the chalcolithic periods (1500-80 B.C.) would effect the chronology of the megaliths in South India. He is of the opinion that the Dravidian speakers were indigenous people inhabiting the whole of the Indo-Pakistan Sub-continent.

While describing the human remains from Megaliths of Yelleswaram, Pabitra Gupta and Pratap Dutta state that 'the general morphology and the metric characters did not favour an autochthonous theory but indicate to Scytho-Iranian affinity. This supports the view expressed by S.S. Sarkar after examining human skeletal remains from Brahmagiri. He concluded that the Crania from megaliths reveals an autochthonous Australoid type and a more or less medium statured mesocephalic, medium vaulted flat nose type with robust constitution and powerful upper and lower jaws probably of the Scytho-Iranian stocks.

Dikshit, K.N. in his Seminar Paper on "The Origin and distribution of Megaliths in India", (1969) opines that the Indian megaliths appear to contain different traits introduced by different peoples at different times. While some of the types seem to have been imported, quite a few evolved independently. Urn-burial and inhumation in pits are indigenous contributions of the Neolithic-chalcolithic communities of South India. It is likely that the Western Asiatic Maritime communities practicing megalithic architecture entered South India through the Persian Gulf or Southern Arabia.

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Ramachandran, K.S., (1969) feels that in spite of a chronological gap of 1700 years, the Megalithic Rock-cut caves in Kerala were as a result of contact with west Asia, around 1000 B.C. The variance in burial furnishings were probably due to their mingling with the local population and assimilation of their traits and funerary traditions. He points out that iron diffused into India from the north and the west coast.

Purshottam, Singh (1969), is of the view that the megaliths of North-Western India and South India have no relationship whatsoever.

Soundar Rajan, K.V., (1969) is of the view that Megalithism might have arrived into India from more than one source, not only from the west but equally by overland route, along the coasts or across the sea. The megalithic types of Uttar Pradesh are not genetically related to tomb-architecture with the peninsular megalithic types.

While commenting on the paper 'Prehistoric Remains in Central India' by Rivelt, Carnac, J.H., in 1979 Mr. Blandford observed that the peculiar and restricted distribution of burial circles seen at Junapani, near Nagpur, would indicate their attribution to an immigrant race and not from aboriginal tribe. The shaffle bits and stirrups would connect the circle building race with the tribes of Central Asia, who have been horsemen from time immemorial. None of the wilder tribes of Indian Peninsula used horses and it is not indigenous to the country.

M.D. Khare 69 while discussing megalithic culture states that Gordon's view that megalithic people entered India from the west by a direct maritime route is unconvincing. The maritime contacts were bound to be few and far between in such remote time and adventurous expeditions if any by a few, fail to bring about any drastic change in the already existing set up of a country like India. This seems to be an all time truth as far as India is concerned and curiously even after extensive contacts with the various cultures of Western Europe from the 16th century onwards the core of Indian Civilization did not undergo any metamorphosis.

A ceremonial burial custom appears to be purely of Indian origin or more precisely of a Dravidian origin. But it is not unlikely for them to have adopted a few peripheral pattern which appealed to their imagination and were likely to go along with their tradition harmoniously. The west Asian contacts either maritime or otherwise may have accustomed to one sort of ceremonial burial or other. Thus the much discussed posthole was in all probability a western innovation which to the imagination of a section of megalithic builders, who readily adopted and made it a part of their tradition. The discovery by Fairservice of a posthole cist in the neighborhood of Karachi by itself is too weak in support of a land route theory.

As none of the finds from the megalithic tombs contain even remote traces of a script, it appears that bulk of the tombs of the south were the work of petrified tribes who rendered themselves incapable of assimilating further developments of the general fabric of South Indian culture. If we accept that the megalithic builders were already in decadent stages of evolution as early as 3rd century B.C., their origin has to be traced to a much earlier period.

After the megalithic period when the practice of erecting memorial, megliths receded to tribal areas under the onslaught of ever expanding other cultures, the idea of erecting memorial monuments percolated to these cultures also and in later times, in different religions, we find the practice being adopted in some form or the other. Amongst Jains, particularly of Karnataka, it took the form of a domical structure as is called nisiddi or nisidhi⁷⁰. It is often a slab of stone, or a boulder, a square platform with or without corner pillars for resting a massive dome-like umbrella made of stones or bricks. On them are found footprints and sometimes an image to represent the deceased individual. This old custom perhaps goes back to the time of Kharavela, if not of Chandragupta Maurya. Several inscriptions at Sravana Belgola, Koppal and other places also bear this out.

The 'Satapatha Brahmana'⁷¹ gives interesting details regarding erection of a monument over the bones or relics. It is worthwhile to note that the proper time prescribed for the erection of a monument should be so long after the death that the memory of the time, date, month or even the year of the event should go beyond human remembrance. The direction for the selection of the site of such a monument are also specified. It should have charming objects to its north or south or waters to west or north. The site should further be not visible from the village.⁷² The monument is required to take the form of a mound or clods of earth (lostacitti) and bricks (eduka). There is no reference to a stone pillar or to an upright as a monument. The texts prescribed the shape of the mound normally as four-cornered or quadrangular for those who follow the Vedas (i.e. for the Aryans). But at the same time they say that the easterners or the followers of the Asuras make the mound circular or round. ⁷³

A few scattered reference to pillars are found in the Rigveda in connection with funeral practices of the Aryans. While making mention of the lostacitti (i.e. laying the clods of earth) the Rigveda, (X, 13, 12 and X. 18.13) refers to sthuna or pillar, indicating very probably a wooden post. The significance of the references to pillar or pillars as part of the sepulchral mound or lostacitti or eduka. The word eduka is more commonly to be found in post-Vedic literature like the Mahabharata and the Puranas. The pillars were very probably of wood and not of stone. In the excavations of two circular burial mounds at Lauria Nandangadh in north Bihar, a wooden post was found in the centre of each of the two mounds at the spot where the bones were deposited.

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It is not clear whether the wooden post erected within the sepulchral mound were in later periods replaced by more durable material, stone or were independent developments, in no way connected or influenced by those mentioned in the Vedic texts. 74

In tribal areas the erection of the menhir is necessary to placate or lay at rest the hanal, the departed. The laying at rest of the "shadowy soul" or the "erecting of the power" of the deceased in a stone monument which is worshipped as if it were a living being is a widespread custom of popular belief in the southern half of India and has already found expression in the early hero stones mentioned in the Sangam literature. 75 The best known memorials of Bastar are the wooden urasgattas. According to Varrier Elwin⁷⁶ they are not substitutes for the stone menhirs (uras-kal) but are erected in association with them. The upright stone pillars or menhirs (uras-kal) are erected by some of the Madiya clans. Other have instead the so-called danya-kals. These large horizontal slabs are supported by a number of smaller stones. At the head of such burial places we may find wooden pillars which roughly resemble the shape of human beings and have at times horns similar to the headdress of the Bisonhorn Madiyas. 76 Sometimes only small stones are erected to grow in course of time. The erection of the menhir is necessary to placate or lay at rest the hanal, the departed.

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UNIT-3

NORTHERN BLACK POLISHED WARE

- 4.3.1. Introduction
- 4.3.2 Objective
- 4.3.3 Description of Pottery
- 4.3.3. A Early Discoveries
- 4.3.4.b Wide Spread Distribution
- 4.3.3.c Common Shapes
- 4.3.4 Nucleus and Geographical Spread
 - 4.34.a Primary Area
 - 4.3.4.b Wide Spread Distribution
 - 4.3.4.c Reasons For Spread
- 4.3.5 NBPW Period
 - 4.3.5.a What is NBPW Period
 - 4.3.5.b General aspects of NBPW Period
 - 4.3.5.c Important Sites
 - 4.3.5.d Date Brackets and NBPW as an Aid in Dating
- 4.3.6 Summary
- 4.3.7 Check Your Progress
- 4.3.8 Points For Clarification
- 4.3.9 Assignment/Activities
- 4.3.10 Reference for further Reading
- 4.3.11 Glossary of technical terms.
- 4.3.1. Introduction**

Northern Black Polished Ware commonly said as NBPW is one of the finest quality pottery made in ancient India. The surface color of this pottery is more often black. It has a strikingly lustrous surface polish and it is found in significant numbers particularly in north India during a specific time span that has come to be known as the NBPW Period However this pottery is not restricted to only the northern parts of the country. This ware incidentally

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has also been reported from other countries of the neighborhood. These are generally monochrome specimens and have a thin fabric. They are made of well-levigated clay and potted on a fast wheel. The core of the ware is grey, blackish grey but in some cases reddish. Although, the most common color of the exterior is black, there are other colors also, of which the main types are: brownish black and bluish black. As a standard criterion of recognition even though these are accepted as monochrome, NBPW of the bichrome variety is also known from some sites. These are also seen in different combinations of colors. The shapes are largely represented by: dishes, bowls, lids and sharply carinated handi. This pottery was a deluxe ware and evidently was not for rugged use. The pottery types associated with the NBPW for common use were the plain/dull Red Ware, Grey Ware and other wares of miscellaneous descriptions. The NBPW is found in significant quantities in north India particularly in the mid Gangetic and lower Gangetic region spread over a period of about 600 years at the least. In this context of time and space it is associated with different hallmark potteries, like: PGW, BSW and BRW. The three types of potteries are known to have preceded the NBPW, but none found as wide a dispersal as the latter. The NBPW has been found from widely different parts of the country and beyond in several different contexts. Scholars, attribute various reasons for this dispersal, which would be outlined later.

4.3.2 OBJECTIVES

After going through the unit you would be able to Understand what is meant by NBPW

Know its characteristic features that is helpful in the correct identification

Know its general features which is essential part of the description

Know the rare features which occurs as an exception

Know the time span of the occurrence of NBPW

Know the broadly accepted area of dominance of the NBPW

Know the areas where the NBPW was found away from its core area

Know the reasons for such spread

Know the major associated wares, in the general sequence

Know about the technological levels achieved during this period with regard to house construction, metallurgy, and ornamentations like bead, bangle production technology.

Know about other aspects of the society during the NBPW period.

Know the cultural traits of the NBPW period with reference to particular sites in the area where this pottery was dominant. Know the associations claimed by scholars including on the origin of NBPW, the geographical spread of the area of origin.

4.3.3 DESCRIPTION OF POTTERY

The following paragraphs would give a brief description of various aspects related to NBPW, namely earliest discoveries, detail of general features including like: color fabric the type of vessels and common shapes, variant types seen in the pottery, besides other potteries associated with it.

4.3.3.a EARLY DISCOVERIES

It was in the early part of the twentieth century that this pottery was discovered at some sites in the northern part of the sub-continent. This pottery, which invariably attracts attention of the onlooker, was noted first at Sarnath near Varanasi, and Bhita near Allahabad, within the first decade of the last century. At Bhita it was enumerated as 'fine black lustrous'. In the early days of discoveries, when the presently used name was not even thought of scholars were providing names to the ware on the basis of aspects they understood to be the most relevant about the pottery. Thus, this pottery type on being found at Bhir Mound in Taxila was identified as 'Greek Black Ware' due to its supposed similarity with pottery originating in Greece. Today, as would be seen later in the text that there is nothing Greek about the pottery, neither it was imported nor made locally under Greek influence. Yet, one could remember this as an example of the confusions that generally prevail during the initial stages of any researches when even scholars are searching in the dark

4.3.3.b GENERAL FEATURES

The NBPW of the monochrome variety is having a fine thin fabric. The clay used is very well levigated and the ware is shaped by using a fast wheel. In general the pottery is devoid of tempering material. The most important characteristic of this pottery however is its striking lustrous surface, with mirror like reflection, even though the surface color is more often jet-black. Other surface colors are brownish-black or bluish black. Surface colors rarely seen are steel-blue, silvery, brown, pinkish, chocolate, deep red and violet. In fact like in other wares the northern black polished ware also was not invariably made to the highest standards mentioned above, particularly of luster, delicate shapes etc. The best quality of this ware is marked by a glossy surface with a metallic sheen. Its good firing resonates in the sharp note it emits when struck. These are also difficult to scratch with knife. Another

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feature common to this category of the ware it has a fine body fabric having a delicate luxurious form marked by the thin wall of the ware. The second category of this ware is not so thin in make nor has as hard a surface as the former. Moreover it is neither as glossy nor as smooth as the best quality NBPW mentioned above. Obviously in the third category the qualities of this ware are further subdued. The third category NBPW sherds found from different sites therefore are thicker in section it does not have as good a shine as the two better categories. When struck it makes a dull sound. This coarser variety of NBPW is easily scratchable by a knife.

Another variety of NBPW although not commonly found, yet worth attention is the bichrome variety of the ware. Significantly, the difference of this variety is not based on the technique of pottery making like, levigation of clay, shaping or firing methods but on the basis of a superficial aspect, i.e. the presence of two shades. Thus, this decorative endeavor of providing two contrasting shades is used with pleasing effect. Wherein one shade is used as the background and the other is for displaying the designs. The combination of bichrome colors commonly seen are: black and brown; dark steel blue and deep red; black and dark brown; grey and light red; black and ash grey besides black and pale red. Generally the designs on this bichrome NBPW are: horizontal bands both thin and thick in width. Other designs include: transverse bands vertical strokes coming out of horizontal bands, vertical bands, dots curvilinear lines and arches.

4.3.3.c Common Shapes

The NBPW is commonly regarded as the dinner set. However, certain types of small vessels with lids have been found inside relic chambers of Buddhist Stupas. Besides certain shapes of this ware, found along with the main types, definitely indicates that the ware was used in purposes other than for dining. The main shapes include bowls, dishes, lid, and carinated handi. The bowls are generally having straight or concave sides but bowls with corrugated and tapered sides are also found. The dishes on the other hand are having inverted or straight sides. The lids are having flat terminal, while the handi is sharply carinated. Some of the lesser known shapes are: bottle necked jar; knobbed lid; and lid with tapering sides. Some of the shapes are seen in other associated wares, like; the Black and Red Ware and Painted Grey Ware. This is a natural product of interactions between the PGW and NBPW as both the wares are found overlapping in space and time. The Black and Red Ware has along with Black Slipped Ware been found earlier in the area of origin of the NBPW and have definitely influenced the shapes of the latter.

4.3.3.d Associated Wares

The NBPW being a deluxe ware did not form the dominant pottery in any of the presently known sites. The percentage of this pottery especially in the areas outside its epicenter was naturally significantly less. Evidently, ordinary wares like Red Ware and the Grey Wares. Both the two types of wares are having the fine wares and the coarse wares. More often these wares are medium to coarse-grained showing that these were the sturdy wares. The common shapes in the Red Wares are the storage jars and the basins. Depending upon the time and space considerations the NBPW was associated with different types of potteries other than the almost ubiquitous type of potteries like the Red Ware and Grey Ware. Amongst these the most significant one are the BRW and the BSW. According to Akinori Uesugi the creation of the NBPW through the predominance of the BSW occurred in the later half of the late BRW/BSW phase. He further stress that "NBPW can be considered as a developed form of the BSW with some innovations and changes in the treatment of surface and shapes. Thus, there seems to be a clear continuity between the BSW and the NBPW, indicating that the NBPW was created by the people using the BRW/BSW." The other important type of pottery is PGW. Unlike the BRW/BSW, which more often preceded the NBPW in the entire Ganges region the PGW area had its spread only in the upper Ganges and upper middle Ganges valley. Evidently, the NBPW and PGW were associated only in the two above mentioned regions. Pertinently, although the three types of potteries precede the NBPW there is a crucial difference. Both BRW/BSW has been known to have largely continued till the very end of the NBPW as reported from several excavated sites. On the other hand the PGW does not continue except for the early part of the NBPW period. Thus, in general, the occurrence of associated wares its preponderance etc depends on two main factors, namely:

- 1) the geographical location of the site
- 2) what was the absolute time range.

4.3.4 Nucleus and Geographical Spread

The following paragraphs will throw light on the earliest generally accepted area of the NBPW culture followed by its spread westward and in other areas where the BRW/BSW was already existent. After outlining the general area of the creation of NBPW the remaining part of the section deals with the extensive geographical spread the pottery has been found, albeit in lesser quantities. It also mentions the probable reasons for the reporting of NBPW from widely different sites far off from the general area.

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4.3.4.a Primary Area

The NBPW is generally regarded as having originated in the region of east Uttar Pradesh and Bihar largely in the east of the north and middle Ganga valley and in the lower middle Ganga valley. However, the ware spread very soon to other areas, especially to some areas of upper middle Ganges valley. Some of the prominent sites which have significant finding of NBPW in the middle Ganga valley, marked by the middle part of present Uttar Pradesh, are: Kausambi, Sringerapur, Rajghat and Prahaladapura. The sites of the lower middle Ganges valley marked by eastern fringes of Uttar Pradesh and Bihar, are Narhan, Khairadih, Chirand, Vaishali, Maner, Pataliputra, Sonpur, and Taradih. Gaur, however differs from other scholars that eventhough the maximum concentration of this ware lies in eastern Uttar Pradesh and Bihar both in quality and quantity the region might not have been responsible for the origin of NBPW. According to him "the early attempts for its manufacture might have started at some PGW site like Atranjikhhera, where iron technology was well known. After its 'know-how', when the manufacturing technique moved towards east and came within the reach of the iron-field of Bihar, that region became the epicenter, from where it was distributed for and wide up to Gandhara and Kamboja territories." However, on the basis of the earliest NBPW being found in the eastern region rather than the western region besides the fact that larger amounts are found in the eastern parts, show NBPW was created by the people using the BRW/BSW. Moreover, even if the development of NBPW is thought to be related to the development of iron technology the BRW cultures also had iron technology at that time in fact with a longer tradition of handling iron than PGW cultures. In fact there is no logical reason to assume that NBPW had originated in west Uttar Pradesh at sites like Atranjikhhera and got implanted farther east, when the spread of this type of ware is known to have occurred from east to west.

4.3.4.b Wide Spread Distribution

The discovery of NBPW from different sites spread all over the country has shown an ever increasing trend. In the first decade of the last century whereas only few sites were known, a list published in 1961 gave the number of site with NBPW as 111. With more explorations this number was reported to be 415 in 1977. Although no thorough compilation up to the present day is known, yet at least 1000 sites with NBPW may have already been reported. As already mentioned this ware has been reported from neighboring countries also. The northern most sites are Udegram, Charsada, and Taxila. The southern most extension of the spread of this ware is known from Sri Lanka from a Buddhist site known as Anuradhapuram. Lengthwise the distance between the two farthest points is over 2500 km. On the other hand the diffusion of NBPW in the east west direction is also nearly 2000 km. The eastern most site

known is Chandraketugarh in District 24-Parganas while Prabhas in the Kathiawad region happens to be the western most site which contains NBPW. Some places with at least some evidence of the ware, include: Alangankulam, District Ramnad; Awra, District Mandasaur; Bahal, District Jalgaon; Bairat, District Jaipur; Besnagar, District Vidisha; Chebrolu, District Guntur; Ismail (Kola ala), District Rohtak; Kardhan District Ambala; Nevasa, District Ahmednagar; Pandu Rajar Dhibi, District Burdwan; Tripuri, District Jabalpur and ancient city of Ujjain. Evidently, these are only some of the numerous sites, which however would give a fair idea of the extensive spread of the NBPW.

4.3.4.c Reasons For Spread

This wide distribution of NBPW has attracted the attention of scholars, now for many decades. Some scholars have alluded the spread of this ware to Mauryan imperialism. Others have disagreed on the ground that the NBPW has been found in such time and places where Mauryans had never ruled or had not ruled at that point of time. Another reason ascribed is that the NBPW spread with the spread of iron technology along the trade routes. However this contention is also now refuted as iron was quite widespread in the middle Ganga valley during the earlier BRW/BSW culture itself. Even the megalithic cultures in south India and the PGW cultures in the north had iron technology within the communities even before the advent of NBPW. Thus, when iron technology was known far and wide there is no reason that this ware spread with the introduction of iron technology. Yet another reason ascribed is that this ware found larger distribution with the spread of Buddhism. According to Gaur, the Buddhist monks carried this pottery with them as alms-bowls or drinking-pots wherever they went. Evidently, wherever required they could also import other types of NBPW ware. The connectivity provided by the Buddhist community could be one possible reason for the spread of this ware, as most early Buddhist sites have this ware, including as part of the reliquaries of stupas. However, the important function of the trade routes in the dispersal of NBPW cannot be ignored.

4.3.5 NBPW Period.

The general time span marked by the significant presence of NBPW particularly in the context of lower middle Ganges valley is understood as the NBPW period. Alternatively said, the congruence of both time and space besides the presence of NBPW in quantities that are significant are pre-requisites for defining the period. In the following paragraphs the NBPW period is described in brief with regard to changes in architecture, portrayal of art, increase in number of cosmetic items. Further, brief description of sites having NBPW is given with particular reference to the findings of the period.

4.3.5.a What is NBPW Period

Obviously the NBPW period as mentioned above refers to the finding of these sherds in the correct context of time and space. Unlike PGW, which is spread in a particular region, NBPW as mentioned above has a wide distribution including in the PGW area, in Buddhist sites and complexes, etc.. Thus to describe the NBPW period one has to stick to the area of origin of NBPW in the lower middle Ganga valley. Yet one has to cite examples from extraneous areas to give a holistic picture of the developments in art, architecture, metal and crafts technology, during this time span. By now one has come to know about what is NBPW period. Obviously, the period means the time span when the pottery type has been found in significant quantities in its appropriate time and space context, which is generally understood as from about 600 BC to about 200 BC. Although, from different sites evidence of the pottery has been reportedly found from dates about 100 years earlier or later-as would be briefed latter. Yet for the purpose of this study and understanding the main features of the period the time bracket of 600-200 BC is more suitable. Unlike the PGW period, wherein the pottery is always less than 10 % during the NBPW times the percentage of this ware is much higher in the area of NBPW dominance especially. In fact, at Rajghat, Distt Varanasi the NBPW accounts for nearly 50% of the total pottery obtained from the site. Kausambi, in Distt Allahabad has also yielded this ware in profuse amounts. Chirand in Distt Saran and Sonpur in Distt Gaya besides several other sites in Bihar has also yielded significant amount of NBPW. Abundant quantities of the NBPW have been reported from the phase 1B of Banjarahi in Distt Lumbini (Nepal). Alluding to the association of Buddha in this region and the presence of PGW at its terminal stage and NBPW at its earliest stage of appearance in phase 1A, N.R. Banerjee has given a date of circa 600 BC to the NBPW found at Banjhari. Excavations conducted around the pillar and temple at Lumbini besides surface explorations has also yielded some sherds of NBPW. All these sites with remains of the ware not only show the spread of the culture but also the general background in which Buddhism came into existence. However for the researcher every new site discovered and reported to have NBPW sherds opens up new data that may raise new questions or provide some clue to the many possibilities linked with this pottery. As scholars have linked the Ramayana period to this ware.

4.3.5.b General aspects of NBPW Period.

Unlike the PGW, BRW/BSW cultures earlier the sites that are associated with the NBPW have shown a quantum improvement in matters of art, architecture and metal technology. The NBPW in the area of its origin namely the lower middle Ganges valley was

precede by the BSW/BRW potteries. In the context of Prahaladpur, Distt Varanasi, P Singh states the PGW of the upper Ganges valley the Black Slipped Ware is the more crucial pottery found from the first occupation of the site and NBPW is only a quality culmination of the former. Some of the sites, which are having these potteries preceding the NBPW in the lower middle Ganges valley are: Chirand, Narhan, Khairidih, Vaishali, Maner, Pataliputra, Sonpur and Taradih. While in the middle Ganges valley sites like Kausambi, Sringerpura, Rajghat, Prahaladpur, .etc. BSW/BRW precedes the NBPW. Towards the north western part of the Ganga valley other pottery types frequently along with the BSW/BRW or without it preceded the NBPW. Thus at Atranjikhera, Distt Etah the OCP (Ochre Coloured Pottery also known as Ochre Coloured Ware, OCW) precedes the Black and Red Ware. The PGW period precedes the NBPW. Similarly, at Noh in Bharatpur Distt the OCP, BRW and PGW precedes the NBPW. At Hastinapur in Distt Meerut only the OCP and PGW periods precedes the NBPW. However during the PGW period the BSW/BRW especially the latter occurs in larger percentages. During the NBPW period the rapid progress in the field of metallurgy helped in the formation of urban centers. As now clearing of forests, ploughing quarrying etc became easy with the ample use of iron. At Hastinapur we see a sense of town planning, wherein the houses are built along the cardinal directions. Now houses are built not only of mud bricks but also of baked bricks. The open drains along the streets are now covered. The introduction of Punch marked coins occurred in the early part of this period. At Prahaladpur, like at other sites there is evidence of increase in multifarious growth in the arts and technical skills. At this site now the Punch marked coins, ring wells are noticed for the first time. New types of beads of semi precious stones, new additions in terracotta human and animal figurines are the other notable improvements. Other sites, which are of importance with regard to the NBPW period have been described later.

Following the expansion of the BRW/BSW culture towards upper middle Ganga valley and the dominance of BSW over BRW the expansion of NBPW to the above region was a natural corollary. The BRW/BSW and the NBPW to a larger extent provided the cultural continuities and similarities of material remains with the larger part of the country that was non-existent in the Ganga Yamuna Daob region. The dissimilarities outnumber the similarities in this region during the OCP times and would have remained so with regard to the PGW culture also, had not interactions with the BRW/BSW culture started, in the meanwhile. Even then the impact of PGW people remained dominant in this region until the emergence of NBPW when earlier traditions began to manifest itself. The earlier traditions however could only find full expression during the Nandas and more specifically during the

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Mauryas, as evident from the large volume of material remains. In fact scholars have traced several similarities with the Harappan period that was not traceable in the intervening periods like OCP and PGW. Similarity in execution of terracottas has been traced between Harappan and the Pre Mauryan / Mauryan periods. Thus applique technique was used both in the Harappan times as well as the Pre Mauryan and Mauryan periods while making terracotta figures. Holes in the base of neck were provided for head to be fixed in a movable manner has been noticed at Harappa and Mohenjodaro as well as at Pre Mauryan and Mauryan sites. A fan shaped hairdo of a terracotta head recovered from Pre Mauryan levels of Rajghat has invited comparisons with similar ones of Harappan period. Apparently all these later sites showing similarity of execution techniques with Harappans have NBPW as common thread.

4.3.5.c Important Sites

Important Sites Having NBPW in Significant Amounts As mentioned in the earlier sections there are numerous sites with NBPW sherds of which there are many with conspicuous amounts of this ware. If all these important sites are described with bare minimum detail the present enumeration would become too lengthy. Therefore only few representative sites are being described herein that would touch on the sequence of periods at the site and then the general features of the NBPW times of the sites would be given in greater detail. One could get brief ideas about other sites on going through the unit on Painted Grey Ware. Chirand located in Saran Distt of Bihar is a site that has great antiquity. The earliest period revealed a full fledged Neolithic culture. The hand made pottery have a predominance of red ware besides some grey ware, black and red wares are also known. The period II is shown in strata, by thick levels of Chalcolithic deposits predominated by the Black and Red Wares. The presence of Black Slipped Ware is also brought to notice. Some creamy white paintings are also noticed on the potsherds of this period. The period III is marked by the conspicuous presence of NBPW, which is found in different shapes and shades. These are associated with painted Black and Red Ware. Significant amount of iron was in use as understood by the finding of implements like: sickles, axes, ploughshares, daggers, lances and knife blades. Further the presence of human terracotta figurines, terracotta figurines of animals, objects of ornamentations including of semi precious beads and lastly the burnt brick structures all show the prosperity of this site and the region in general during the NBPW period. Period IV is marked by the time span between 1st century BC to the 3rd century AD of which the latter part typifies the advent of the Kusānas. After the 3rd century AD the site was abandoned for a large period of time only to be reoccupied in the late historical and medieval

periods clubbed together as period V. Kausambi, an ancient site by the side of the Yamunā is an enormously large ancient site in Allahabad District. According to the Purānas king Nikakṣu, a descendant of Parikṣit of the Pāndava lineage came to live here after flooding of Hastināpur. The excavations of the site, has yielded along continuity of human activity at this site. The earliest levels coeval with the defences there has yielded some pot sherds which reportedly has some similarities with the OCP. According to Ramachandran, the sherds obtained from this site on comparison with those of OCP levels at Atranjikhera although has shown wide dissimilarities at least three shapes were found common to both. The second period of occupation has shown the evidence of several types of pottery, namely Red Ware, Black, and Black and Red Wares. Some evidence of Black Slip is seen on the Grey to Buff Ware. The PGW is also observed in the period II along with the BSW which as mentioned earlier becomes dominant in the later part of the BRW/BSW periods in this region. It is believed that the PGW is later at this site. In period III the NBPW becomes conspicuous in profuse amounts. The PGW, BSW, BRW also continue but with changes. The PGW for instance becomes coarser. In the earliest part of the period III, the NBPW has yielded the evidence of painting. The lower part of the NBPW is not much different from the earlier levels regarding materials used in building houses. However, vestiges of mud block walls, earthen floors and ring wells are seen. The upper part of the NBPW period is marked by prolific activities that show increased competence in technological levels besides prosperity of the site. Some of the significant improvements include the building of walls using brick structures, terracotta drains, larger number of ring wells, use of lime mortar, sanitary and waste disposal arrangements. The site also yielded evidence of rampart, bastion and moat, besides several constructions during the NBPW period that reinforced the defence systems. In the period IV NBPW disappears completely. The finely finished and well fired red ware becomes popular now. The site was in active existence up to the times when Huna invasions took place. Rajghat is on the northern outskirts of Varanasi city. It is another important site which has yielded large amount of NBPW during the course of the excavations but is different from the sites mentioned earlier. The earliest evidence of activity at this site is seen from about 800 BC in period one that terminates at about 200 BC. The period is further sub divided into three sub periods. Amongst these the sub period IA is marked by the presence of Black and Red Ware, Black Slipped Ware both of which may contain white paintings. The slipped red ware and unslipped red ware are also seen. Incidentally, the presence of iron without the PGW context is interesting as it corroborates the earlier evidence of iron in the BRW/BSW related cultures before the advent and diffusion of PGW. (PGW is not reported from Rajghat) The sub period IB besides the above and introduction of NBPW is conspicuous for its wooden structures

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and an embankment. Although, in the next sub period there is a decline in the quality of the NBPW there are several other facets that underwent substantial improvements. The most important innovations are the presence of ring wells, the larger quantity of copper coins and the use of moulds. Black and Red Ware is found in negligible amounts. The period II covering the two centuries before the Christian era is having a coarse variety of NBPW that too in diminishing quantities. The other wares include the coarse grey ware and a stamped red ware. The latter has stamped designs like leaves and floral designs and *triratna* symbols. Burnt brick structures are noticed for the first time now. According to T. N. Roy the earliest example of *makar mukha* occurs in the late levels of this period. The habitation continued to be in existence from the up to about 1200AD, which has been described as three different periods from III to V, by the excavator. The latter mentioned periods being not relevant to aspects related to NBPW, its origin, time span and material remains have not been described as per the limitations of the prescribed topic.

Ayodhyā is a site that has been an ancient city and capital of the Kosala kingdom. Besides Rāmāyaṇa, the city also finds reference in Buddhist and Jaina texts. According to traditions Buddha had visited this city while the Jaina traditions maintain that the city was the birth place of the first and the fourth Tirthankaras. Earlier excavations at the site had showed that the site came into existence when NBPW of a very fine quality was in vogue, which at the earliest was stated to be not early than 7th century BC. At this early stage the houses were of mud or wattle and daub and no kiln-burnt brick houses are reported. However, evidence of the metals, namely copper and iron is noticed in these levels of excavations. In later levels kiln burnt bricks built houses and ring wells are also found. The discovery of a Jaina figure of grey terracotta dated to about 4th - 3rd century BC obtained from these levels happens to be the earliest known so far. The site has been in active existence after the NBPW period also with a major abandonment between 5th and 10th centuries AD. There have been other fluctuations in the density of the habitation. However these facts do not necessarily portray Ayodhya as a whole as the excavations were done in only limited area of the ancient site. In view of the fact that the NBPW is found to be the common denominator in sites like Ayodhya, Nandigram, Srīngaverapura, Chitrakuta, Bharadvaja Ashram and Pariar associated with the Rāmāyaṇa and the ware being later than PGW many archaeologists claimed that Ramayana is later than Mahābhārata. According to the contentions made since the time bracket of PGW falls between 1100- 600BC and that of NBPW from about 600BC-200BC obviously the associated epics would have taken place within the respective time slots. Evidently, these occurred in the earliest possible time of the associated period. These conten-

tions however are in contradiction to the traditional beliefs that Rāmāyaṇa era occurred before the Mahābhārata. K.N. Dikshit on the basis of the latest excavations conducted in the year 2003 at Ayodhyā has tried to resolve the problem. According to him, at Ayodhyā pre-NBPW levels were encountered at the bottom most layers, which have provided 3 dates of much higher antiquity than that was known till now for the site. The calibrated age ranges fall in the brackets of BC 1190-840; BC 1210-900; and the older BC 1680-1320. Thus it has been surmised by him that as pre NBPW sites have older dates (even before the PGW period) the earlier stand of associating the Rāmāyaṇa with NBPW period now stands altered and goes more in favour of placing the Rāmāyaṇa episode to pre-NBPW horizon.

4.3.5.d Date Brackets and NBPW as an Aid in Dating

As mentioned above there is a generally accepted time bracket for the ware. However there are some exceptions also depending upon the place of origin of NBPW and late persistent existence of this ware in some pockets where the tradition survived or else some specimens of the ware remained with a particular community like Buddhists for a larger period of time due to religious reasons. Thus various scholars give different age range to the pottery type most of which are largely overlapping but that is yet not accurate for reconstruction of history on the basis of the archaeological excavations. However, the presence of NBPW in archaeological layers, are useful markers of time as it is known that these are found largely after the PGW period and mostly even the coarser varieties become conspicuous by their absence with the establishment of the Śuṅga rule. Secondly, even if found outside the general area of dominance, in the Buddhist context like stupas, apsidal temples and monasteries the sherds of this ware indicate to the possibility of establishment of the Buddhist site from the Mauryan times. However, this alone cannot be thought of as a positive evidence for granting earlier status to any Buddhist site as frequently cremated remains of Buddhist monks have been kept in NBPW wares, which have been carried over to much later generations.

Due to the reasons mentioned earlier the dates of NBPW is understood to be partially at variance. According to Dikshit the acceptable time span of the NBPW period has been bracketed between 600-300 BC. R. C. Gaur has quoted that the time span of this ware as generally acknowledged between 600-200 BC. He has differed from the above and sub-grouped the NBPW time span from 600-50 BC into three distinct phases. Thus in the earliest phase from 600-400 BC the NBPW is associated with the later part of the now declining PGW. The second phase between 400-200 BC saw the rise of the Magadhan empire marked by the Nanda and Mauryan dynasty. This phase is marked by growth of cities. The third phase covering 200-50 BC is the age of the Śuṅgas and the Kaṇvas when the NBPW saw decline and decay. Akinori Uesugi on the other hand gives the time bracket of NBPW, inclusive of the

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degenerate variety in the later phase from 600-50BC. There have been several dates ascribed to the different sites on the basis of carbon dates or other logical surmises. B. B. Lal had suggested in the context of the earlier Ayodhya excavations that the NBPW may go as far as 700 BC. Sonpur, Distt Gaya and Chirand Distt Saran have yielded significantly early dates of about 635 and 765 BC, respectively. Other early dates obtained are from Noh in Bharatpur Distt (685-05 BC); Atranjikhera Distt Etah (530-85 BC); Kausambi in Allahbad Distt (500-10BC) and Rajghat in Varanasi Distt (490-110BC).

4.3.6 Summary

The Northern Black Polished Ware (NBPW) in its early days of discoveries were known variously as Greek Black Ware in north western India due to its presumed link with the Greek Ware. On the other hand it was named also as 'fine black lustrous' after its discovery in the middle Gangetic valley. Later it was nomenclatured as NBPW which has since stuck to it. It is a different matter that scholars also are critical of this name also. According to them this ware is neither restricted to north India nor it is only black in color, nor it has a polish (technically speaking it is a slip over the pottery). However for all practical purposes this term is acceptable and retained for the last 60 years of its 100 years after discovery. This ware is largely accepted as having originated in the lower middle Ganga valley being developed from the Black Slipped Ware and quickly spread to the upper middle Ganga valley and elsewhere. However, there are divergent views also namely that the NBPW has developed in the upper middle Ganga valley like Atranjikhera and was implanted in the lower middle Ganga valley, from where the NBPW rapidly. However there seems to be no cogent reason to subscribe to this view as outlined earlier. On the basis of carbon dates it is an established fact that the NBPW spread to the western parts of the Ganga valley as understood by the dates given earlier. This mechanism, it appears was easily facilitated by the earlier existing BSW/BRW cultures spread in these areas. The NBPW was associated with various types of potteries namely BSW, BRW, PGW, Red Ware, Grey Ware at different sites depending on the time and space context of the site. Besides these potteries, due to its diffusion to widely different regions, including in other countries this ware could as well be found with many other types of regional wares, which would be too cumbersome to be detailed here. This wide spread distribution of the NBPW attributed to various reasons, like Mauryan imperialism, spread of iron, spread of Buddhism and the presence of trade routes. On the basis of available evidence it appears that the presence of active trade routes and the spread of Buddhism may have been largely responsible for its diffusion especially in far of Buddhist sites. This pottery generally known as a dinner set also has several shapes that do not conform to utility at the

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table. The use of this ware in Buddhist reliquaries has also been observed at several places. This shows the special status of the ware. Moreover, outside its area of dominance it might not have been cheap. This has been tested by the finding of some examples of NBPW pottery, which has been mended by using copper wires. The time bracket of this pottery is regarded as starting from about 600BC with degradation in the quality starting during the fag end of the Mauryan period. Although, the pottery continued even after the Mauryan period the quality and quantity was much lesser in the Sunga period. Researchers in the field are of the opinion that the NBPW might have continued up to about 50 BC. In fact these may be late persistent tradition in isolated pockets which were less affected by the winds of change. However it can be safely said that the best part of the NBPW was over by about 200 BC. The NBPW period is in general marked by urbanization particularly in the phase from around 400BC. The economic development is also observed by the larger quantity of coins both Punch Marked and cast. The ample amount of iron spurred more activities like forest clearing, agriculture, housing etc. Other significant developments include the use of kiln burnt bricks for building houses, ring wells used both as wells for drawing water and alternatively as for disposal of waste. The bead making industry at this time was very much developed with the use of many of the raw materials that was used during the Harappan times. This industry has many more forms of beads than was noticed during the earlier PGW period. The advent of script is again noticed during this period for the first time after nearly 1500 years since the collapse of the Harappan civilization. Other significant marker of developments is the conspicuous presence of lime technology. Although no comparisons are sought, yet it would be worth while to note that this technology had been forgotten in the north Indian context after the Harappans. All the above mentioned facts show that the NBPW period (especially the later part) was a period of developments in the fields of terracotta art, construction technology, metal technology, civic life and development of script. Thus one can allude the luster of the NBPW as representing the innovations and prosperity of the period.

4.3.7 Check Your Progress

Q 1. What do you understand by NBPW ?

Q 2. What are its characteristic features?

Q 3. What are the shapes common to the NBPW assemblage?

Q 4. What are the colors and shades seen in the NBPW monochromes and bichromes

Q 5. What do you understand by NBPW period?

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- Q 6. Why unlike the PGW the spread of NBPW cannot be marked within sharply defined geographical boundaries?
- Q 7. What is the importance of NBPW period in the Early Historical times?
- Q 8. Describe the archaeological remains observed in the NBPW levels during the course of excavations.
- Q 9. Compare the PGW cultures with the evidences of urbanism seen in the NBPW period.
- Q 10. What could be the possible reasons for the partial variance in the time brackets proposed by the different scholars?

4.3.8 Points For Clarification

The NBPW period is named so after the typical pottery described above which is marked by a generally accepted time bracket. Although NBPW is found in several areas in the sub-continent, yet the mere presence of these sherds does not qualify the site to be termed as NBPW culture. The NBPW is a pottery that is made on fast wheel. It is a deluxe ware that was mainly used as a dinner set like PGW in earlier period. Importantly the NBPW has many colors and shades that are distinctly different from the black color one would expect always. One of the most important feature of this pottery is its metallic shine.

This ware is recognized to be developed from the Black Slipped Ware in the lower middle Ganga valley in the later phase of the BSW/BRW cultures.

Many of the traditions that were observed in the Harappan period found revival now. Mention could be made of techniques of terracotta art, bead making, kiln burnt brick making, development of script, lime technology. However, to draw direct linkages would be futile given the more than 1500 years gap between the two.

Occasionally, the NBPW could as well be found in much later context, which may be due to the fact that it was carried forward to later context by conscious human intervention like, relocating the NBPW wares containing the relics in later built stupas.

Unlike the PGW culture which on several cogent grounds could be associated with the Mahabharatta, the NBPW period cannot be equated with Ramayana with as much ease. The Ramayana cannot be thought as have occurred as late as in the early part of the Early Historical period even though some of the sites mentioned in the epic have NBPW as the common denominator. Secondly, the traditions also speak of Rāmāyaṇa as earlier than the Mahābhārata. Thirdly, as observed by Dikshit in the context of Ayodhya the pre- NBPW cultures may well be searched for as the common denominator for the sites mentioned in

the Rāmāyaṇa. The above contention by Dikshit has two distinct advantages namely: the Ramayana will be not as recent as the Early Historical period ; the epic could as well be placed in earlier time slots depending on the carbon dates obtained.

4.3.9 Assignment/Activities.

- 1) Locate the NBPW sites on a map on the basis of districts mentioned in the text.
- 2) Make a map of the general area where NBPW has been reported in the earliest context in the lower middle Ganga valley as per the above text.
- 3) Now make another outline of the general area of distribution of PGW mentioned in the earlier unit. Make a comparative study.
- 4) Make a chart of available radio carbon dates mentioned in further readings.
- 5) Make a diagram of different shapes of NBPW as shown in the text mentioned in further readings.
- 6) Visit a museum and ask the curator to show some specimens of the NBPW.

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4.3.11 Glossary of technical terms.

BRW/BSW See PGW unit for the same.

Metallurgy Science of properties of metal, including its extraction from ores
OCP PGW unit for the same
Punch Marked Coins The coins in which the motifs are caused by punching the punch die either singly or in groups when the metal is hot
Reducing environment See PGW unit for the same.

Reliquary A container that is used to hold the relics.

Ring wells A system wherein large terracotta rings with diameter around 80 cm to 1m and height of the ring between 10 to 22cm are placed one over the other as lining of the well
Slip A very thin coating applied to the pottery.

BLOCK -5 : IMPORTANT EXCAVATED SITES AND ROCK ARTS

UNIT -1

IMPORTANT EXCAVATED SITES

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5.1.1 Literary Evidence and Historical Background

The excavation at Atranjikhhera associates the site with a place called Veranja. The Anguttara Nikaya refers the visit of Buddha to this place on an invitation from a Brahmin. The Divyavadana tells that he went first to Mathura, then to Veranja and Soreyya (Soron).

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According to Gaur, Atranjikhhera is the only considerable mound between Mathura and Soron, which might have been a flourishing city at that time. He also etymologically justifies that Veranja is a derivative of the Sanskrit word viranja means 'of conspicuous colour'. Since the words viranja and atiranja have more or less the same meaning, it is possible that the ancient veranja may be Atranjikhhera.

Albeit a number of literary evidences of Buddha coming to viranja are found, there is no unanimity among the scholars that Atranjikhhera is the ancient veranja. B.C. Law mentions the place veranja located very close to Mathura.

Alexander Cunningham identified Atranjikhhera with the site of P'i-lo-Shan-na, which was visited by Huien Tsang in 7th century A.D. The Chinese traveller had noticed five Deva temples at P'i-lo-Shan-na. One may see five elongated and heavy ancient Siva-Lingams at Atranjikhhera even today.

Atranji was name of a pargana during Akbar's reign. In Ain-i Akbari the paragana is recorded as Sikandarpur Atranji.

According to the 'Etah: A Gazetteer' Vol.XII of the District Gazetteers of the United Provinces of Agra and Oudh, 1911, before the invasion of the Musolmans, the ancestors of the celebrated Chakravarti Raja Ben built a strong fort. When Shahb-ud-din Ghori in 1193 after the defeat of Raja Prithiraj of Delhi demanded the submission, Raja Ben refused to render allegiance and defeated Raja Ben. After this the fort was destroyed and since then the Khera has remained uninhabited and desolate.

5.1.2 The Site

The ancient site of Atranjikhhera (270 42' N: 780 44' E) is located in the district and tehsil Etah in U.P. The famous site of Soron lies about 24 km to its north and that of Sankisa about 62 km to the east as the crow flies. The mound lies on the western or right bank of the Kali Nadi, a tributary of Ganga. The site is one of the four biggest in U.P. The other three are Sankisa (Dt. Farrukhabad), Ahichchhatra (Dt. Bareilly) and Kausambi (Dt. Allahabad). The mound is 1127.76m in length and 411.48m in breadth and the height ranges from six to 20.5m above the surrounding level. A modern Siva temple, enshrining ancient Siva Lingam and images of nandi and Ganesa of c.6th-7th century A.D., present on the top of the mound towards the southern side. A mazar is present on the north of the main mound.

5.1.3 Objectives of Excavation

The excavations at Atranjikhhera were taken up to shed more light on the grey areas

found in the result of excavations at Hastinapura. The main objectives were as follows:

- (i) To know more about the people and their lifestyle of OCP culture
- (ii) The breaks within different cultures were local or original. What happened in the other areas of the Doab during this period?
- (iii) If the cultural breaks were local, does it mean that the periods represent a cultural evolution of the same people? Or do these gap indicate arrival of new people particularly in OCP and PGW periods?
- (iv) To crosscheck the dates of all these periods as it is believed contaminated, and finally
- (v) To know more about the beginning of iron industry in this region

On the other hand the site was chosen for its majestic size and multiple culture sequence starting from protohistoric period to Mughal period as indicated by the surface exploration and also for the importance of the site apprehended from its vivid description in the literature.

5.1.4 Archaeological Evidences

The site of Atranjikhhera was reported by a Cunningham (1861-62) and visited by Fuhrer (1889) and V.S. Agrawala (1946). The site was excavated by the Aligarh Muslim University under the supervision of R.C. Gaur for seven seasons starting from 1962-63. There were seven cultural periods (I to VII) identified at the site as mentioned below. For the first time a new culture, Black and Red ware Culture, was noticed between the Period I- Ochre-coloured Pottery and Period III- Painted Grey ware cultures.

Period I - Ochre-coloured Pottery culture

Period II -Black-and-Red ware culture

Period III -Painted Grey ware culture

Period IV -Northern Black Polished ware culture

Period V -Sunga-Kushan culture

Period VI -Gupta culture

Period VII -Mughal culture

5.1.4.a Period I: Ochre-coloured Pottery Culture (OCP)

Ochre-coloured pottery is found in the lowermost deposit of the eastern part of the mound. The total area with OCP deposit is about 300 sq. m at Atranjikhera. The soil is hard, compact interspersed with sand and gravel. The thickness of this deposit varies from 0.8m to 1.5m. The deposit is disturbed and thus no regular habitation with structure or living areas is found. The evidences of houses are registered in the form of pieces of burnt clay-plasters with reed impressions and post-holes suggesting wattle-and-daub houses. Wooden posts of Babool, Sisoo, Sal and rarely Chir supported the walls of these houses. The walls were made of reeds and leaves, which were thickly plastered with mud on both sides.

Agriculture and animal husbandry was mainstay of the people. Charred grains of rice (*Oriza sativa* L.), barley (*Hordeum vulgare* L.), gram (*Cicer arietinum* L.) and khesari (*Lathyrus sativus* L.) indicate the cultivated varieties. However, according to the expert the agriculture was in primitive stage. Cow (*Bos indicus*) represents the only domesticated animal. The bones with sharp cut-marks indicate their participation in the regular diet.

The ceramics are broadly divided into two types - (i) Ochre-coloured pottery and (ii) Dull-red ware. In general these potteries are similar to those noted at Bahadrabad, Hastinapura, Ahichchhatra, Ambakheri, Noh, etc. The texture and thickness of the pottery vary. These are so fragile and highly weathered that powdery colour comes off with a gentle touch. The Ochre-coloured pottery is found in shades of creamy red, yellowish-red and orange red. Many sherds bear red slip, which at times is quite thick and burnished. The potteries are mostly wheel turned, of medium fabric and relatively ill baked. Other than the common shapes, the OCP of Atranjikhera shows distinct local characteristics. The vessels with their forms are decorated with incised designs and paintings in black pigments over a finely slipped surface, which are unique at Atranjikhera. The shapes are bowls with convex sides out-turned rim, carinated bowls with incurved rim, hemispherical bowls, lids with central knob, basins with tapering sides, incurved rim or out-turned rim, shallow basins and spouted basins, troughs, dishes-on-stand, storage jars, vases and miniature pots. Incised decorations on OCP are a special feature at Atranjikhera. Some of them are nail-impressed. The designs are, incised rib or chord, notches, parallel grooves, horizontal parallel multiple grooves, wavy lines, oblique strokes, zigzag parallel dashes and check pattern. The painted decorations in black pigment are found on shoulder, neck and body portions in the form of thick bands.

Other antiquities are fragments of sandstone and quartzite supposed to be fragments of querns and mullers, a terracotta bead, a sling ball, a potter's dabber and two pottery discs.

Chronology: First half of the second millennium BC (1800 to 1500 BC)

5.1.4.b. Period II: Black-and-Red ware Culture

The excavations at Atranjikhera have brought to light this hitherto unknown culture in the Upper Ganga valley, which is named after the characteristic ceramics as 'Black-and-Red ware culture'. This cultural deposit, about 15cm to 50cm in thickness, is found sandwiched between the OCP and PGW deposits and the thickness of the deposit recedes towards the northern part of mound. Some distinct features of regular inhabitation have been observed in this level with the presence of burnt bricks and domestic hearths. Out of three hearths, two in the lower phase are somewhat of oblong on plan with longer axis towards eastwest direction and are assumed to be sacrificial pits. The mud floor associated with hearths was made of yellowish-rammed earth.

The ceramic industry comprises Black-and-Red ware, Black Slipped ware, Red Slipped ware and Plain Red ware. The Black-and-Red ware is made of fine, well-levigated clay, potted on fast wheel and baked at a high temperature. It has burnished black inside and chocolate brown on the outside. However, a variant is also present that has a gritty fabric, potted on a slow wheel and is ill baked. The common shapes are bowls basins and dishes. The Black Slipped ware is also a fine variety, made of fine well-levigated clay, potted on fast wheel and treated with a dark black slip. It is highly burnished and well baked. The shapes are similar to Black-and-Red ware. The Red wares, slipped and unslipped, are generally wheel-turned. The former is medium in fabric while the latter is coarse to medium in fabric. The common shapes are storage jar, vase, basin, bowl and miniature pots.

Agriculture and stockbreeding were the major economy of the people supplemented by hunting, gathering, fishing and fowling. The people subsisted on rice, barely and meat, such as beef, mutton, turtle and fish. The people also consumed the meat of buffalo and barasingha. Bone remains of dogs are also found.

Among the other cultural findings the cores and flakes of semiprecious stones are important. The assemblage comprises 11 cores of agate and a considerable number of flakes of quartzite, chalcedony and carnelian. Besides, there are three carnelian and one shell bead, four copper objects including a ring and three beads, spike of a broken bone-comb and fragment of a pestle, obtained from this level. There are terracotta beads and finished and unfinished potters discs. The finished discs have ground edged and a perforation in the centre.

A group of scholars have opined that the people of this culture had some affinities with the Ahar culture people of southeastern Rajasthan. Perhaps these people migrated to Ganga

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valley from Rajasthan along the banks of Chambal River. Albeit a number of cultural materials including the Black-and-Red ware and Black Slipped ware continue through the succeeding Painted Grey ware culture, the excavator suggests there was a cultural break between these two periods.

Chronology: c. 1400 BC to 1200 BC

5.1.4.c. Period III: Painted Grey ware Culture

The culture gets its denomination after the name of type-pottery found in the excavation at Hastinapura. The Painted Grey ware period has the thickest habitation deposit ranging from 0.8m to 2.2m. It comprises homogeneous ashy layers with deep pits at times cutting down to the Ochre-coloured pottery level. An extensive area of Painted Grey ware culture, covering 1000 sq.m., has been excavated at Atranjikhera that provides a wide view of this culture. Nonetheless, no regular residential pattern is registered, the layout of post-holes indicate those were either rectangular or square. The reed impressed burnt clay plasters found in large number suggest wattle-and-daub houses was constructed. The floors of the houses were made of fine yellowish compact earth, which in some cases were rammed with small pieces of mud-bricks and burnt clay lumps. These floors were plastered time to time. A number of domestic hearths, fire-pits, furnaces and potters' kilns were also found.

Painted Grey ware is the hallmark potter of this period. Besides, plain Grey ware, Black-and-Red ware, Black Slipped ware, fine Red Slipped and Unslipped ware and coarse Red ware are found in the ceramic assemblage. Painted Grey ware is made of fine, well-levigated clay, potted on fast-wheel and baked under a reduced condition at a high temperature. The colour of the ware varies from ashy to dark or steel grey. The shapes and designs are similar to that of other Painted Grey ware sites. The shapes are bowls, dishes, basins and miniature pots. The designs are generally done in black and occasionally in red, chocolate, yellowish, whitish grey and bichrome. The common designs are groups of vertical or oblique strokes below the horizontal rim bands, rows of dots, parallel lines, loops, hooked circles, intersecting curved lines, etc. The plain Grey ware is similar to the Painted Grey ware in fabric and shapes. A few sherds have incised designs. The Black Slipped ware also retains its characteristics in terms of fabric and shapes, noted in Period II. It is highly lustrous and found in good number in the lower level of Period III. It is believed that probably this process of creating a lustrous effect on the surface gave birth to the Northern Black Polished ware in subsequent period. Some new shapes like bowls with vertical rim, corrugated sides and flat base and shallow bowls or lids having splayed-out concave rim and a hole in the centre of base are

introduced. The Red Slipped ware is medium fabric, wheel-turned and well baked while the unslipped Red ware is medium to coarse in fabric, wheel made and sometimes handmade and generally ill baked. Some of the pots are made in two parts. The rim portion is wheel made and lower portion, which is handmade, is luted to the rim. The clay of these pots contains mica and husks as degreassants. The shapes made in this procedure are vases, storage jars, etc. Some of the pots are decorated with mat impressions and chord designs.

A significant development in agriculture is noted in this period. Now people have started cultivation of wheat along with rice and barley. The surplus production of cereals ensures engagement of people in trade and commerce through which they procured semiprecious stones, ores of iron and copper from other places like Ranthambhore of Rajasthan, Agra and Gwalior region.

The faunal remains provide evidence of a number of domesticated animals, such as cow, buffalo, goat, sheep, pig and dog. The charred bones and sharp cut-marks on them indicate meat consumption. The people generally consumed beef, venison, mutton and pork. Bivalve, fish, turtle, varanus and fowl supplemented the meat requirements. Not only slaughtering was prevalent but also hunting of wild game was a favourite practice. Generally barasingha and nilgai were hunted along with leopard.

The metal industry proliferated with the beginning of iron smelting and forging. The main source of iron ore could be the region extending from south of Agra to Gwalior. The iron objects formed a good repertory of which a majority are reported from the upper level. A total of 135 tools and implements are recovered, which can be identified as arrowheads, spearheads, shaft, pair of tongs, clamp, chisel, bar, borer, needle, hook, nail, axe, knife and bangle. These can broadly be grouped into weapons, craft tools, household objects and ornaments. Surprisingly no iron implements related to agriculture were found from this period.

The copper industry also continued parallel with the iron industry. A total of 22 copper objects have been recovered in this period. They comprise chiefly ornaments, toilet-goods, decorative objects, kitchen-utensils, etc. A fragment of dish and fishhooks are noteworthy. The other objects are rings, antimony rods, bangle, clamp, nail-parer, pin and celt.

The other cultural materials obtained in this period are terracotta objects, beads of semiprecious stones and glass, and bone objects -this includes toy, ball, a variety of game-pieces, wheel or spindle-whorl, stopper, reel, net-sinker, crucible and clay stands; animal figurines comprise humped bull and pig. There are 240 discs recovered. These discs are

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made of a fine fabric and are of different sizes (0.25cm to 5.25cm) and thickness. These are found in red, grey and black colours and are decorated in various incised designs on both surfaces and edges. There are 26 terracotta beads recovered, which are well baked and generally slipped. The common shape is ghata-type.

Semiprecious stone beads comprise eight agate, two carnelian, one quartz and one marble. The shapes of the beads are truncated biconical, barrel, triangular, circular etched bead decorated with interesting circles, etc. Other stone objects include pestles, whetstone and a small ball.

The bone objects are obtained in large number, which comprise 53 arrowheads, 11 styluses, two sockets, two pendants, one knitting needle and one broken comb-spikes. The arrowheads are noted in several types of varying sizes and shapes, socketed and tanged. Some of them are decorated with one or two engraved circles. Two glass objects - a bead and fragment of bangle are found in this period.

5.1.4.d. Period IV: Northern Black Polished Culture

The people initially in this period occupied the space used by Painted Grey ware people and further down to the eastern side of the mound where directly they lived on the natural soil. Subsequently the people occupied the entire mound. The total deposit of this period is about five metres. It is important to note that in the earliest level of this period entire cultural pattern including potteries of previous period were retained. Since there was no cultural break, it is believed that Northern Black Polished ware culture is a gradual evolution of Painted Grey ware culture at Atranjikhhera. There was a landmark change in the settlement pattern of the people in this period. Though the poor man's house, i.e., wattle-and-daub house tradition was continuing, mostly the houses were made of mud bricks and burnt bricks. For the first time the settlement was fortified to check the floodwater and an apsidal temple was constructed later in this period. The brick sizes varied from 37cm to 50.8cm, in length, 21cm to 46cm in breadth and 6.3cm to 8cm in thickness. In total six sizes of bricks were used which were rectangular in shape. Trapezoidal and wedge shaped bricks were used for circular barns and in the capping of ring-wells. Due to vertical nature of excavations no detail plan of houses was traced. However, rooms like kitchen, granary and defence structures were identified. A number of ring-wells, which went down to natural level were found. The houses were rectangular in plan with larger axis in north-south orientation. The walls were plastered with thick yellowish clay mixed with chaff. The floors were also hardened with mud brickbats rammed into earth and were plastered time to time. In the

later level of this period broken burnt tiles were found. This suggests the houses had thatched roofs covered with tiles.

Northern Black Polished ware is a fine pottery, made of well-levigated clay, fast wheel turned and baked at high temperature about 8000 C. The surface of the ware is highly lustrous, which is found in grey, brown and black colours. There is no unanimity among the scholars regarding the technique of manufacture of Northern Black Polished ware. The general opinion is that some sort of ferruginous inorganic material was used for its manufacture. The important shapes are dishes, bowls, basins and rimless handis. The other associated wares are, (i) Painted Grey ware, (ii) Plain Grey ware, (iii) Black Slipped ware and (iv) Red ware. The Painted Grey ware became cruder and thicker with gritty core and blackish surface. The paintings deteriorated and became unsophisticated. Some new shapes, such as bowls with incurved rim and flat base appeared in the Grey ware, however, the fabric and the appearance remained same. The Black Slipped ware continued to occur without any change other than the decrease in number. The Red ware is made of medium fabric. It is either unslipped or treated with a wash. The clay contains lot of mica particles. The shapes generally found are bowls with incurved rim, pear-shaped vase, rimless handi, lids, troughs, sieves and storage jars. Majority of vessels are undecorated in this period. Nonetheless, some vessels are decorated with grooves, incised and impressed designs and occasionally painted.

A large number of terracotta objects are recovered from this period. They include toys, decorative materials and ritualistic materials through which the people have represented their artistic expression and aestheticism. The important ones are, human figurines-male and female-in the form of moulded plaques and modelled heads/busts with pierced nostrils, pinched ears, yawning mouth and protruded chin. The moulded plaques are found in good number. These are mostly well-adorned female figurines with ornaments and saris. Noteworthy is the moulded plaque of Gajalakshmi of 6.5cm in height. There are two elephants on either side, who are sprinkling round kundolas from the top having their trunks twisted above. The plaque is treated with red slip. The animal figurines consisted mostly humped-bulls. Besides horse, elephant, ram, goat, tiger, lion, monkey and unicorn and also recovered. The wheeled toy carts are also recovered. The wheels are decorated with spokes, circlets and floral motifs. Apart from these gamesmen are found. The ornaments of terracotta include beads of ghata shape and arecanut type, amulets, pendants and bangles. Terracotta discs, skin rubbers, stoppers, reels, pestles and querns, dabbers, net-sinkers, crucibles and ritualistic pots are some other important terracotta objects. Among these the terracotta discs are interesting. These are found in considerable number and are decorated with a number of incised or impressed designs.

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culture. Since the date of Mahabharata and Painted Grey ware culture overlaps, both have been enunciated to be coterminous by the archaeologists. What we observe in this period is with the introduction of iron tools there is a rapid burgeoning of settlements and agriculture in the region. Later, this period has given birth to the Northern Black Polished ware culture. In this period we find multifaceted development of the society. Monumental architecture, defence wall, town planning, apsidal temple, surplus production of crops, introduction of coinage, trade and commerce and an over all expansion of settlement and more luxurious life of the people have been encountered.

This period has been broadly placed within the time bracket c.600-50 BC. This is coeval to the Mahajanapadas, the Nandas, the Mauryas, the Sunga-Kushan, the Guptas and pre-Mughal cultures. In which we see monumental and industrial growth along with development of art and architecture, currency, trade and commerce in large-scale.

5.1.7. Besnagar

Literary Evidence and Historical Background

Vidisa or Vedisa (Sans. Vaidisa/Vaidasa) is the old name of Besnagar, which was also called Vaisyanagar, a ruined city situated in the confluence of the Bes or the Vedisa river and the Betwa or Vetravati river in the kingdom of Bhopal within two miles of Bhilsa. Vidisa was a famous city in early times immortalized by Kalidasa in his Meghadutam. It was the capital of Eastern Malwa. According to Bana's Kadambari a king of great valour named Sudraka ruled over Vidisa, whose commands were obeyed by all the princes of the world. It remained as the western capital of Pusyamitra and Agnimitra of the Sunga dynasty. According to Meghadutam it was the capital of the Dasarna country, which was one of the 16 Mahajanapadas of Jambudvipa.

Since the time of Asoka it became an important centre of Buddhism and later on of Vaisnavism. It came to prominence for the first time in Buddhism in connection with the viceroyalty of Asoka. The importance of Vidisa, the chief city of Dasarna, was due to its central position on the lines of communication between the seaports of the western coast and Pataliputra, and between Pratisthana and Sravasti. Vidisa (Vedisnagar or Vessanagar) was a halting place on the Dakshinapatha.

Vidisa was famous for ivory work. One of the sculptures at Sanchi was the work of the ivory-workers of Vidisa. The Periplus mentions Dosarene as famous for ivory.

The inscription on a stone column at Besnagar, discovered by J.H. Marshall, records the erection of a column surmounted by Garuda in honour of Krsna-Vasudeva by the Greek

ambassador Heliodoros, son of Dion, when he had been crowned 12 years. The inscription also testifies to the existence of diplomatic relations between the Greek king of Taxila and the king of Vidisa.

In ancient Vidisa copper karsapana was the standard money from slightly before the rise of the Mauryas to at least the beginning of the Gupta supremacy, i.e., for about 600 years. Punch-marked coins were found at Besnagar had its own individual marks, which continued till 400 AD.

5.1.8 Objectives

The site of Besnagar is famous for the Heliodoros Pillar and the inscription on it. It was also one of the important trade centres of the past. Its eloquent glory along with the surface find of Chalcolithic remains generated inquisitiveness among the archaeologists to unfold the hidden human past at this site. So, Archaeological Survey of India carried out excavations at selected places of this site. One should also look at the site for its geographic central position, which facilitated communications or contacts between coastal area and the hinterlands, i.e., a vast tract covering from western coast to Pataliputra and Sravasti to Dakshinapatha in one hand and flourishing of Buddhism and Jainism on the other.

5.1.9 The Site

The ruins of Besnagar (23° 32' N: 77° 48' E) is lying three kilometres to the northwest of the modern Vidisha. The site is seven kilometres in circuit with suburbs extending about a kilometre beyond, is girdled by the Betwa and Bes rivers on three sides and protected by a fortification wall with a moat on the west.

5.1.10 The Excavations

Lake carried out some excavations at this site in 1910 who found an Octagonal Pillar fragment with the inscription pasadattama. However, the Central Circle of the Archaeological Survey of India under Shri M.D. Khare undertook extensive excavations at the site, which revealed seven successive periods, I to VI, starting with aceramic microlithic period to Medieval and Modern period.

5.1.11. Period I: Aceramic Microlithic

A large number of microlithics, flakes and cores, are found from this period. This period has been divided into two phases-A & B. Period IA has yielded non-geometric microlithic and not pottery, while Period IB has no pottery. Out of 220 microliths tools 60 are from Period IA in which cores are irregular and the tools without retouch. Period IB has six each

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of triangles and trapezes some of which are retouched, besides, short blades and points are also found. Taking to account the Mesolithic characteristics, this period may be dated to c.5000 BC.

5.1.12 Period II: Chalcolithic

A fifty centimetres thick sterile layer separates Period I from Period II. Period II is a typical Chalcolithic culture having yielded Painted Grey ware in the upper level. A large number of post-holes forming circular or rectangular plans have been noticed. The posts of the midlevels were strengthened with lumps of clay and the floors were made of brick jelly, lime or clay. The Period is characterised by microliths.

Black Painted Red ware, white painted and Plain Black-and-Red ware (25%), fine Grey ware (5%) and coarse Red ware. Red ware comprised 70% of the ceramic assemblage. Black-and-Red ware has also graffiti marks. Besides, terracotta bulls, paste beads and ivory pendants are also found. Typical Neolithic pottery, a few with simple incised decorations, continue occurring down to the mid-levels, below which there is a rarity of beads but an abundance of terracotta bulls. A stone ball, a terracotta dabber and a channel spout found from the middle levels. A Neolithic celt, triangular in shape and thin in section, a solitary copper rod and most of the beads come from the upper levels.

The lower and upper levels of the Chalcolithic deposit could be dated to c.1800 to 900 BC on the analogy with Central Indian Chalcolithic cultures.

5.1.13 Period III: Pre-NBPW, NBPW and Sunga-Satavahana

The pre-Northern Black Polished ware period (IIIA) is marked by negligible quantity of tiny pieces of Northern Black Polished ware associated with Black-and-Red ware, Black Slipped ware and Plain Red wares of previous period, which predominates the ceramic assemblage. Other findings comprised various objects of copper, iron, terracotta beads, bone objects, terracotta votive tanks, stone pestles and querns; a collared copper bead, terracotta skin-rubbers, punch-marked coins and a stone lingam.

The structural remains are represented by an eight-course high baked-brick wall and some ring-wells. This period come to an end as a result of a conflagration.

There are three C14 dates 2420+ 105, 2350+ 100 and 2260+ 140 BC.

The Period IIIB is characterised by a large quantity of Northern Black Polished ware along with plain Red, Black-and-Red ware and Kaolin wares; marble objects, shell bangles, a large number of iron objects, punch-marked coins, terracotta and stone beads, stone pestles

and querns and polished and burnt bone objects. An inscribed stone seal bearing an inscription reading Nikumbha-ragasya in Brahmi characters of the Sunga period was recovered in the subsequent phase (Period IIIC). A lamp with pinched-lip of fine Red ware was also found.

5.1.14 Period IV: Naga-Kushan and Ksatrapa-Gupta

The former is characterised by a Red ware, some times painted in black represented by sprinklers and a Red Slipped ware. Votive tanks, terracotta beads, ear-studs, gamesmen, skin-rubbers and a few copper coins are some of the important findings.

In the latter phase, the painted tradition of earlier phase continued along with incised, stamped and impresses designs. The import findings of this phase are terracotta-stamping pieces with multiple designs, terracotta and shell bangles with incised designs. A circular brick pavement probably used for ritual purpose was unearthed in this phase. The end of this period led to desertion of the site for sometime.

5.1.15 Period V: Late Historical

Some rubble walls, enclosing about half-a-dozen earthen pots containing animal bones, marked it. A copper coin and a fragmentary stone sculpture depicting a sword and a shield in the hand; terracotta beads, circular discs or weighing-objects; and Grey ware (painted) were found along with a plain Red ware.

5.1.16 Period VI: Modern

The site remained unoccupied for several centuries. A coin of AD 1296, issued by one of the Nawabs of Bhopal marked the latest period, which continued till the date

The excavations at the Heliodoros pillar unfolded an elliptical temple of c. 4th-3rd century BC. It is roughly 30 x 30 m in size with 2.4m thick walls. The temple consisted a garbhagrha, pradakshinapatha, antarala and mukhamandapa. It has a brick plinth and super structure of wood, thatch and mud. After its collapse another temple was constructed over an earthen platform enclosed with coursed stone. To the east seven pillars, six aligned with the Helidoros pillar and the 7th in front of the central pillar, all of them firmly set and thick stone basal slabs and fixed by steel wedges, were exposed. The temple evidently of Vasudava referred to in the inscription on the Heliodoros Pillar, was contemporary with the pillars.

5.1.17. Summary

Besnagar or Vidisa has been vividly mentioned in the ancient epics and literatures. It

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was one of the business hubs in the ancient India for its central position on the trade routes those connected the seaports of the western coast and Pataliputra, and between Pratisthana and Sravasti. Vidisa (Vedisanagar or Vessanagar) was a halting place on the Dakshinapatha. Therefore, it was also known as Vaisyanagar from which the appellation Besnagar has been derived. The Periplus of Erythraean Sea mentions it as Dasarene famous for its ivory work.

The archaeological investigation at the ancient site of Besnagar brought to light a long history of the place starting from the microlithic age to the Modern time. People occupied the place time to time for its congenial climate and bountiful resource. According to Meghadutam it was the capital of the Dasarna country, which was one of the 16 Mahajanapadas. People occupied the place during the Northern Black Polished ware period and during this period large-scale building activities began. It is also famous for the Garuda pillar inscription. Heliodorus, the Greek ambassador, erected the pillar in veneration to Krsna Vasudeva. A temple of Vasudeva of 4th-3rd century BC with garbhagrha, pradakshinapatha, antarala and mukhamandapa was brought to light by the excavation near the Pillar area. During the time of Asoka it flourished as an important place for Buddhism and later for Vaishnavism. The trade and commerce was accentuated during this time. The city also excelled in art and architecture during the Sunga-Satavahana and Kushan time.

5.1.18. HASTINAPURA

Literary Evidence

Hastinapura, the ancient capital of the Kurus, is situated on the bank of Ganges. It has been traditionally identified with an old town in Mawana tehsil, Meerat, Uttar Pradesh. King Dhritarastra ruled over this city. During the reign of Nivakasu, son of Adhisima Krsna, this city is said to have been carried away by the river Ganges, and the king is said to have transferred his residence to Kausambi. The Markandeyapurana and the Bhagavata Purana refer to the Gajavayas, who were connected with Hastinapura, the Kuru capital. This city is also called 'Gajahvaya' according to Bhagavata Purana. The king Hasti or Hastin founded the city of Hastinapura on the bank of Bhagirathi according to Vividhatirthakalpa. Rsabha, the first Tirthankara, was inhabitant of Hastinapura. Mahavira, the founder of Jainism, often visited the city. The Harivamsa and Bhagavata Purana lend support to this fact. Now there are two Jaina temples belonging to Digambara and Svetambara sects present at Hastinapura.

5.1.18. Objectives of Excavation

The main objectives of the excavation were to ascertain the late Harappan and PGW relation; to throw more light on the dark-period after the Harappan and before the Mauryan

period; to know whether PGW can be ascribed to the Mahabharata period; and to compute the chronology of different cultures.

5.1.19 Archaeological Evidence

The site of Hastinapura (29° 09' N; 78° 03' E) is located in Mawana tehsil of Meerut district in Uttar Pradesh. The site comprises a series of high mounds, which rise about 18m above the ground level. The river Ganga flows eight kilometres to the east of the site. A tributary of Ganga called Budhi Ganga (old Ganga) flows very near to the site. The site spreads a kilometer from north to south and half kilometer from east to west. B.B. Lal, then superintending archaeologist, Archaeological Survey of India (ASI) successively excavated the site for two seasons in 1950-51 and 1951-52. The excavations revealed five successive cultural periods (I to V) with breaks in between each. These periods are described below.

Period I - Ochre-coloured Pottery culture (OCP)

Period II - Painted Grey ware culture (PGW)

Period III - Northern Black Polished ware culture (NBPW)

Period IV - Sunga/ Kushana culture

Period V - Medieval culture

5.1.19.a. Period I: Ochre-coloured Pottery culture (OCP)

The deposit of this cultural period, present at the lowest level, varied from 30cm to 45cm in the pottery ranged from orange-red to deep red and has a tendency to rub off. In some instances a red slip is applied. Since the sherds are very small, no form of pots except outlines of the rims could be obtained. No structural remains or other antiquities are found in this level. The stray occurrence of the potsherds suggests that the settlement was sporadic. The inhabitants well before the arrival of their successors deserted the site. Similar type of cultural remains are noted at a number of sites, such as Ahichchhatra (Dist. Bareilly), Lal Quila (Dist. Bulandsahar), Atranjikhera (Dist. Etah), Jakhera (Dist. Etah), Rajpur Parsu and Bisauli (Dist. Badaun), etc. The last two sites have yielded copper hoards along with Ochre-coloured pottery.

Chronology of this period is dated to Pre-1200 B.C.

5.1.19.b. Period II: Painted Grey Ware culture (PGW)

A thick, ashy colour deposit marks this culture, which is largely disturbed by deep pits

sometimes cutting down to the deposit of earlier level. The vertical excavation at the site has not yielded detailed plans of the houses of this period. However, remains of mud or mud-brick wall are noted. The fragments of mud plasters with reed impressions suggest that houses of wattle-and-daub were constructed.

Hastianpura is well known for its most distinctive Painted Grey Ware culture. The culture has derived its appellation from a typical ceramic called Painted Grey ware. The colour of the ware varies from ashy to dark grey. It is made of very fine and well-levigated clay, turned on fast wheel and baked under a reduced condition at a high temperature. The vessels, which comprise mostly bowls and dishes with straight or convex sides and sagger-base, have painted designs usually in black pigment but sometimes in chocolate or reddish-brown instead. In a few cases two colours-reddish-brown and cream-have been used simultaneously. The common motifs are simple band round the rim on both inside and outside, groups of vertical and oblique or crisscross lines on outside, rows of dots or dashes or dots alternating with simple lines, chain of short spirals on outer surface, concentric arcs and circles, sigmas and swastikas on either surface. The other associated wares are - (i) a ware with medium grained grey core but reddish-brown slip. It is pointed with deep-chocolate colour. However, it does not exhibit the variety of painted motifs noted in PGW; (ii) a Black slipped ware, which the excavator suspects as the forerunner of Northern Black Polished ware; (iii) Black-and-Red ware is represented by a few sherds; and (iv) Red ware is present in two types; one with a fine bright red slip and other is plain or devoid of slip.

The people were agro-pastoralists. Their economy was primarily based on agriculture and stockbreeding. Charred grains of rice and husk impressions on clay plasters and pottery are abundantly found. Among the animal bone remain the humped cattle and buffalo are found in large number. It suggests that, as in the present-day societies, cattle played a vital role in the agricultural society during PGW period. The animal remains also throw ample light on the food habits of the people. The occurrence of charred bones of the humped cattle (*Bos indicus*), buffalo (*Bubalous bubalis*), sheep (*Ovis vignei*), pig (*Sus crstatus*), etc., bearing definite cut-marks on them, show that these animals were slaughtered for food. Hunting of deer (*Axis axis*) was common practice. Besides, skeletal remains of horse (*Equus caballus*) have been found in this period. This is significant for its absence in the Harappan civilization and can be connected with the stalk of Aryans.

The industrial activities of the people, apart from the large-scale production of ceramics, was confined to copper and iron smelting and forging, bead manufacturing and preparation of ornaments other objects and weapons of terracotta and bones. The inhabitants at

this stage used copper as their chief metal of which an arrowhead, a nail parer, a borer, an antimony rod and a few other objects are noted. Iron is represented in the form of lumps and slags in the uppermost level.

The people were fond of embellishing themselves with ornaments. The semiprecious stone beads, one each of chert and jasper, three agate beads and one each of jasper and carnelian bead indicate this habit. Other semiprecious stone artefacts comprise two cylindrical objects. The terracotta objects of this period include animal figurines, discs and one each of feeding cup, pendant and stamp. The fragmented animal figurines suggest that of bull and horse. Among the bone artefacts mention may be made of a reel-shaped object could be gamesman or weight, a fragmentary bangle and several needle pointed tools or styli used for writing or weaving.

After the occupational strata had reached a thickness of about 2.5m, a heavy flood in the river devastated the settlement. The inhabitants fled away from this place and consequently there was no habitation at Hastinapura for some considerable time.

Chronology of this period is bracketed between 1100BC to 800 BC by C14 dating.

5.1.19.c. Northern Black Polished Ware Culture (NBPW)

An outstanding revolution was achieved in the settlement pattern, planning and house construction in this period. Now kiln baked bricks are exclusively used in construction. There were bricks of three sizes in use-(i) 44 x 25 x 7 cm, (ii) 36 x 22.5 x 6 cm, and (iii) wedge-shaped bricks - 30 x 22.5 cm and 15 x 7 cm. The first size of bricks are usually found in case of mud bricks while the second size appears little later in this period that continues through period IV. The wedge-shaped bricks were usually used in the circular structures like barns and capping of ring-wells, etc. The houses are constructed along the cardinal directions. There are covered street-drains for the discharge of sewage-water. A device for local soakage of water is used in which terracotta rings or jars with holes are placed one over the other in a cylindrical pit. Draw wells are too made 12 to 15 cm in height and 5cm in thickness. The number of rings varied from two in one case to forty-seven in another.

These are the people who produced a highly lustrous pottery called Northern Black Polished ware. Made of fine and well-levigated clay, baked at a high temperature under reducing condition, the ware has a jet-black or steel blue colour. At times it is golden and silvery white too. Its startling shine has remained a puzzle till the date. This ware comprises dishes and bowls with straight or convex sides and sagger base like that of Black slipped and Grey ware of Period II along with some new shapes, such as handis with sharp carination and

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vases with flat base. The other associated wares are plain Grey and Red ware. The plain Grey ware has coarse fabric and thick cross-section. It consists bowls, dishes, handis and basins with collared rim occasionally with lip. Some comparatively fine dishes bear on the interior of the base, impressed designs of concentric circles or rosettes. The Red ware is medium fine in fabric and is devoid of slip. The common shapes in this are pear-shaped vases, carinated handis, footed bowls and basins with lug-handles.

The socio-economic condition of the people was improved considerably. Iron implements brought revolution in agriculture. Agriculture and animal husbandry remained the mainstay of the people. Besides, proliferation of iron and copper industry is noticed. Iron is used profusely in this period. The most notable iron objects are barbed and socketed arrow-head, chisel and sickle-blade. The copper objects include antimony rods, nail parers and one each of latch, ferrule and reel. A copper bangle with a series of holes and a rivet finds the special attention. Beads, bangles and rings of terracotta, crystalline quartz, carnelian, agate and glass form a handsome collection. These indicate the aesthetic sense of the people.

The most important development in this period is the use of coinage system. Punch-marked coins, both copper and silver, uninscribed cast coins of copper were used as currency. This is a very good indicator of surplus production and promulgation of trade and commerce in this period.

A considerable progress is also reflected in the art of clay modelling. The terracotta animal figurines are well executed, particularly the elephants. The head, tusk and trunk are richly decorated with impressed designs of chakra, leaves and circles. The eyes are executed with a pierced circle within an incised lozenge. The other animals included a lion and a horse. All these figurines are hand-modelled. The human figurines are found to be casted in moulds along with a few hand-modelled ones. The female figurines are provided with elaborate headdress, ear ornaments and necklaces. These are found profusely adorned with garments. One of them has parrot sitting on the left hand and in the right hand she is holding a bunch of fruits. Noteworthy is the presence of therianthropie figure with human face and animal body. Other important terracotta objects are -skin rubbers, disc with rosette design on one side and swastika on the other, a seal impression showing loops in four quadrants, spindle-whorls and net-sinkers.

This occupation bites the clay as a result of a large-scale fire that engulfed the entire settlement. Chronology of this period is bracketed between 600 BC - 300 BC.

5.1.19.c. Period IV: Sunga and Kushan Period

This period is largely ascribed to Sunga and Kushan period on the basis of coins and terracotta figurin the house. Yaudheya coins (beginning of Christian era) are noted in the middle and late levels. Imitated coins of the Kushan king Vasudeva (c. mid-2nd to early 3rd century A.D.) are also found. Other noteworthy findings are rotary querns, terracotta votive tanks and a terracotta figure of Bodhisattva Maitreya.

5.1.19.d. Period V: Medieval Period

There is a gap of considerable time noticed between Period IV and V. The Period V begins in the late 11th century. The houses are now made with brickbats robbed from the earlier structures. The period comes to an end in 15th century.

The ceramics are dull-red, coarse to medium grained and occasionally stamped, incised or painted in black. A pottery made of whitish gritty clay with geometrical and floral designs in blue, brown and green colour on the surface is found along with a coin of Balban (1266-77 AD) in this level. The surface of the pottery is glazed. The inhabitants have imitated this pottery later.

A variety of iron objects including nails, tanged arrowheads, spearhead, hoes, door rings, knife-blades and awls are found. Terracotta figurines are unimpressive. Satti-satta plaques, stamps and dabbers are worth noting. Stone image of Parvati and Rashabhadeva are found. Ornaments comprise bangles of glass, ivory, shell and bone.

5.1.20. Summary

This has been conclusively proved from the above excavation that the OCP people inhabited in this region much earlier than the PGW people. Though there is no Harappan culture found at Hastinapur, the site like Alamgirpur (Dt. Meerut, U.P.) and Kotla Nihang (Dt. Rupnagar, Punjab) has established the chronology of PGW culture in a later date than that of Harappan. And the PGW culture preceded the NBPW culture. Thus the excavation at Hastinapur has brought to light two such cultures those bridged up the gap and throw substantial light on the dark period between Harappan culture and the Mauryan period.

As far as the PGW and Mahabharata relation is concerned, at the present conjecture it can be said that most of the Mahabharata related sites, such as Hastinapur, Ahichchatra, Kampil, Mathura, Kurukshetra, Indraprastha, etc. have yielded PGW culture. The date of the Mahabharata battle also falls within the bracket of PGW period. Since the epic Mahabharata was time to time appended with a large number of verses for at least 1100

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years, authenticity of the all the events of the epic in the present form could not be established. So, one has to rely on the archaeological evidences in such a condition.

5.1.21 Kausambi

Literary Evidence and Early History

Kausambi (Anc. Kosom, Chin. Kiau-Shang-Mi) was the capital of the Vamsas or Vatsas. The Kosam inscription of Bhadramagha's reign has been also discovered in course of exploration of the ancient site of Kausambi. The Puranas describe Udayana (the hero of popular story king Udayana and Vasabadatta) as one of the kings ruled over Vatsa with his capital at Kausambi.

Kausambi was one of the important stopover places of the traders along the great trade route connecting Saketa and Savatthi on the north with Paitthana or Paithana on the bank of Godavari on the south.

A. Cunningham identified 'Kausambi' as 'Kosam' on Yamuna about 48km southwest of Allahabad. Huien Tsang, who visited this city in 7th century, has described that the city was 6000 li in circuit and its capital was 30 li in circuit. He writes the Buddhist monasteries were in utter ruin and there were about 50 Deva temples. The Allahabad Pillar inscription of Samudragupta mentions about Kausambi. The brick built fort of king Pradyota still exists at Kausambi.

According to Matsya Purana, when Hastinapura was swept away by flood in the Ganges, the Kuru or Bharata king Nichakshu, the grandson of Arjuna, deserted the place and settled in Kausambi. The Mahabharata attributes the foundation of the city of Kausambi to prince Kusamba, 3rd son of Chedi king Uparichara Vasu.

5.1.22 The Site

Kausambi (25° 20' N; 81° 23' E), District Allahabad, is located 51.5km southwest of Allahabad, on the bank of the river Yamuna. Its enormous ruins spread over several villages; two of them Kosam-Inam and Kosam-Khiraj remind the ancient name of the city. The ruins are enclosed by an impressive rampart with an average height of 10.6m above the ground level. Its bastions rise much more about 21.3 to 22.9m. The rampart is quadrilateral in shape with perimeter of 6.4 km.

5.1.23 The Site Objectives

Planned excavations were carried out at different places to understand the development of the city and its town planning in different periods and the cultures associated with these activities.

5.1.24 Excavations

The University of Allahabad under the direction of G.R. Sharma undertook extensive excavations from 1949-50 to 1966-67. The excavations were carried out at four major areas, such as (1) the Pillar area, (2) the Defence area, (3) the Monastery complex and (4) the Palace Complex.

5.1.25 The Pillar Area

There were three periods identified in this region. Period I pre-dated the advent of Northern Black Polished ware. Northern Black Polished ware appeared in the Period II and disappeared in Period III. Period II is separated from Period I by a thick sterile layer and is marked by a few Painted Grey ware sherds. A few uninscribed cast coins assigned to c.300 BC and the coins of 'Lanky Bull' type, typical of Kausambi, appeared in this period. The Period III, dated to c.175 BC to AD 325, is marked by the coins of Mitra rulers, such as Brhispatimitra, Suramitra, Prajapatimitra and Rajanimitra, along with subsequent appearance of Kushan and Magha coins, which continued up to c. A.D. 250. The coins of Ganendra or Ganapatinaga appeared in c. 350 A.D. The habitation in this area continued till c. 400 A.D.

Period I & II did not yield any structure. In the Painted Grey ware level structural activities were attested by post-holes, wood remains and some evidences of earthen floors. The lower portion of Northern Black Polished ware deposit was lacking burnt brick structures but there were vestiges of mud or mud-block walls, earthen floors and ring wells. Burnt brick structures appeared in the upper part of the period. From this time on wards through the Period III building activities were prolific. The size of bricks used for construction ranged from 35 to 48 cm in length, 17.7 to 30.4 cm in width and 5.6 to 7.6 cm in thickness. The houses were not necessarily made in cardinal directions and there were several rooms with a central courtyard. Every house had arrangement for waste-disposal, such as brick drains, pottery pipes, ring-wells and soakage jars with perforation in single or multiple numbers.

5.1.26 The Defence Area

The rampart, 5.6km in perimeter, surrounded the settlement with towers and bastions at regular intervals. It had five main gates, two each on north and east and one on west, and six subsidiary gates. A moat of varying width encircled the rampart. There was an additional reservoir with a 3.96m high bank on the south and east of the watchtower and a road leading to the eastern gate. A 21.3m wide channel between the eastern gateway and the watchtower separated the road leading to the eastern gateway into two. Perhaps there was a drawbridge over this channel. The channel was connected with the reservoir to the east of the tower and

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also at the foot of the rampart on the northern side. During emergency water from the reservoir would inundate the area between the roads and watchtowers, converting the whole area into a broad sheet of water thereby extending the width of the moat to its maximum of 146m. According to the excavations the rampart was constructed in last decade of second millennium BC.

The 19.5m high tower in the eastern rampart revealed that the bastion was made of mud in the beginning. At the top of the bastion a central tower of 11.5m x 3.3m high was constructed. Projecting platforms on eastern and western sides and guardrooms on the other sides flanked the tower. There were five phases of constructions, reconstruction and alteration in the plan of the tower and associated structures noticed. The defences showed outstanding constructional features. It was built of mud with a battered burnt brick revetment in the English brick-bond system.

The trenches across the defences opposite the terminal point of the 99m long curtain-wall of the gateway brought to light five main periods of the defences, besides a pre-defence deposit with fine Grey ware including a few painted specimens.

In Period I, the defences consisted a mud wall with burnt brick revetment on the exterior of 13.5m. This period is divided into four sub-periods. The earliest sub-period has yielded plain Red and Grey wares. In two of these sub-periods a considerable building activities were made. In the latest sub-period Northern Black Polished ware was noted.

In Period II, the defence wall was raised by 4.8m and widened to the east by 8.7m. The extended portion was revetted on the northern and southern sides by brick facings and on the eastern side by a curved brick wall. The curved wall encased a stone-paved drain of 2m deep and half-a-metre wide. Northern Black Polished ware was found abundantly throughout this sub-period.

In Period III, the defences were further extended. Several guards' rooms flanked by a tower each on the northern and southern sides were built towards the city-side. There was a passage running from the guards' room to the rampart. An interesting discovery in the period was a syena-chiti or eagle-altar associated with purushamedha or human sacrifice. Coins of Mitra kings were found from both the sub-periods. The second sub-period marked the end of Northern Black Polished ware. The period ended with an extensive conflagration and destruction perhaps due to an invasion.

In Period IV the general outline of the defence remained unaltered. The structures of Period V have been divided into six sub-periods. Renovation was made to the guards' room and flight of steps. The entire area was razed to the ground due to outbreak of a fire.

The excavations in this area yielded a number of antiquities including terracotta human heads in the Grey ware and Northern Black Polished ware, arrowheads of bone and iron implements like leaf-shaped with a single or double tang, curved blades and curved hooks.

Chronology of these periods are as follows: Period I-c.700 BC, Period II-c.500 BC, Period III-c.200 BC, Period IV-c. 50 BC and Period V-c.150 AD.

5.1.27 The Monastery Complex

The monastery complex has been identified on inscriptional evidence with the Ghositarama monastery; the Buddha's disciple Ghosita laid the nucleus of it. It consisted cells for monks with a veranda on the inner side enclosing the main stupas, a shrine for Hariti, an apsidal structure flanked by two stupas as the entrance and a number of votive stupas. A boundary wall enclosed the whole establishment.

The evidence indicates a continuous occupation of the site from c.600 BC to 600 AD through 16 successive phases of structural activities. The Northern Black Polished ware and soakage pits without terracotta rings characterized the earliest occupation at the site. The main Stupa was built in the next period, i.e., c.500 BC. Additions were made to the Stupa at four different stages making finally for its square shape with doubly recessed corners. Huien Tsang credited Asoka for the construction of a Stupa at Ghositarama.

The walls of monastery, in 6th phase, were built of bricks of 30cm long laid widthwise. It was considerably enlarged during the eighth phase when cells and an inner veranda were built for monks all along the perimeter of quadrangle. The walls were lime plastered in the ninth phase. The maximum growth of the monastery took place in the 11th phase during the rule of the Maghas, particularly of Bhadramagha. An extensive boundary-wall was erected enclosing the entire monastery in 13th phase. The Hunas under Toramana destroyed the establishment in the 16th and last phase.

5.1.28 The Palace Area

A stone palace was brought to light in the southwestern corner of the walled city on the bank of Yamuna. The complex occupied an area of 315m x 150m. The excavations exposed the northern and parts of the eastern and western walls, all of stone set in fine lime, of the palace. It revealed that the level of the ground was raised by putting up a 2.5m high platform of mud and mudbricks before the construction started. The length and width of the northern wall was 130m and six metres respectively. There was a circular tower of eight metres in

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diameter at each junction of walls. Inside the palace showed systematic planning. A structural complex opposite the central tower comprised a hall flanked on two of its sides by a room having lime flooring. The walls were covered with lime-plaster of uniform thickness. Each room was provided with three shelves and the central hall with a flight of steps leading to the tower.

There were three main phases of architectural evolution. In the earliest phase the walls were built entirely of random rubble, huge undressed stones being set in lime mortar and perhaps the wall faces were plastered. This phase has two sub-phases. The sub-Phase IA of the palace-complex yielded pottery-types like the dish-on-stand with a corrugated stem and in other forms, vaguely resembling those obtaining from the post-Harappan Chalcolithic sites in western and central India. Some of them were painted in black on the red surface while others were decorated with incised designs. The use of the Grey, both painted and plain, and Red wares marked the sub-Phase IB. The foundation of the stone palace was laid early in this phase. Out of the five layers of this phase, four preceded the Northern Black Polished ware. The first phase of the palace, therefore, could be dated to c.800 BC. In the second phase, dressed stones with an average size of 66 x 53 x 20cm were used on the facings; however, the core remained of rubble. The southeastern tower of the palace with a diameter of 10.66m was built at a distance of 268m from the northeastern tower. The western boundary wall was built of huge dressed stones. A drain of 0.86m depth and 0.45m wide was traced up to a length of 4.64m. This phase was associated with the use of Northern Black Polished ware. Followed by an extensive destruction, in the third phase walls were no longer built of stone alone. The core was made of bricks, while dressed stones were used for the facings. The corner towers were rebuilt and enlarged with stone base and stone and brick upper part. Thick coating of lime plaster was applied on the walls. The structures were divided into three blocks enclosing two galleries running north-south. The doors in each block were found to be in a strict alignment of each other. The central hall of the central block, measuring 11.50 x 3.42m was possibly used as an audience-hall inter-communicating with all the rooms. The rooms may have served as residential block for the ruler. There were six structural phases noted in this phase. Of all the last structural phase is noteworthy. A vast network of underground chambers and the superstructure in the three blocks and the galleries were found to be built on the principle of true arch. The last structural phase where there was no Northern Black Polished ware recorded can be dated to c.100-200 AD.

Later some shabby floors, poor hearths and rooms with a different alignment were noted. The pottery and terracottas suggest a date between c.300-600 AD for this occupation.

5.1.29 The Ceramics

The ceramics of four cultural periods identified from the excavations are as follows.

Period I: The ceramics of this period mainly come from the earliest levels of the defence area. These are extremely fragile and tiny. Other than some similar shapes these are totally different from Ochre-coloured pottery.

Period II: The ceramics also come from defence area and lowest levels of the palace area. They are Red, Grey-to-Buff, Black and Black-and-Red wares. The Red ware is made of well-levigated clay, wheel-turned and sturdy. It has a bright red slip and the core is orange red. Some sherds bear black paintings on the rim and outer side. The shapes are bowl, dish, bowl-cum-basin and dish-on-stand. The Grey-to-Buff ware is also sturdy; some being black slipped on the smooth outer surface with occasional paintings. Not much can be said about the Black ware, which is mostly fragmentary. The Black-and-Red ware is turned on slow wheel and is ill baked; coarse with large quantities of rough organic materials and small stone particles in the clay. Some sherds bear white paintings on black background. At Kausambi this ware is associated with iron, but the analogies show the early origin of Kausambi and its contacts with the Chalcolithic cultures of central and western India and Harappan tradition.

The Painted Grey ware is obtained in Period II and III along with Black Slipped ware. The painted motifs comprise bands, groups of vertical and slanting strokes, loops, circles, dots and circles of dots, in some cases in deep chocolate or yellow on brownish-red surface. Though this ware is comparable with that of Hastinapur and Ropar, it admittedly belongs to a late stage. Many Red ware types, an associate of Painted Grey ware, also occur. The associated Black-and-Red ware is similar in fabric, texture and types with that from Atranjikhera III, Chirand IA & B and Sonpur IA & B. It has groups of lines painted in deep black pigment, the designs being dots and circles of dots, besides bearing incised horizontal grooves filled with white.

Period III: The Northern Black Polished ware occurs in abundance in this period. It is obtained in shade of steel-grey, black, chocolate, orange and golden. Some painted sherds are found in the earliest level. The paintings are bands on the rim and oblique lines, arches triangles and a complex motif in chocolate. The bowl and dish are the common shapes. The lid, vase and carinated handi are some of the other shapes. A coarse variety of Painted Grey ware continued in this Period. The Red Slipped ware contained husk, straw and sand in the core.

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Period IV: The Northern Black Polished ware is not found. A finely finished and well-fired Red ware appears in this period. According to the excavator the shapes of this ware evolved in northwest India under Saka-Parthian time. These potteries are classified into three groups, such as Early group -I represented by cylinder-conical pottery dated to 500 to 200 BC; Late groups -IIA & B represented by goblets with footed or flat base and shapes showing a fusion of Early group I and Late group IIA and dated back to 200 BC to 400 AD; and the Late group III comprise the surahi and enohoya dated to c.400 AD to 600 AD.

5.1.30. Coins

A number of punch-marked, uninscribed and inscribed cast coins were found from the excavations and collected from the surface as well. The earliest occurrence of an uninscribed cast coin was observed in a layer dated to the 9th century BC. The cast coins continued till the end of the first century BC. The Kausambi 'Lanky Bull' type occurred from about the end of the fourth century AD. Punch-marked coins, four of silver and three of copper, came from levels datable to 535 to 185 BC. The coins of Maghas, Mitras, Kashans and Nagas have provided significant information about the succession of kings and their dynasties.

Some seals and sealings of importance are also obtained. The first seal with a legend 'Dutika' belonged to second century BC. The seals of Toramana and Hunaraja are significant.

5.1.31. Terracottas

The terracotta of Kausambi have special place in the history of clay art of India. They have been classified into three groups on the basis of manufacturing techniques, such as (1) early handmade, (2) moulded and (3) later partly handmade and partly moulded. The first group has grey and dull-red pieces, sometimes with applied decorations. The second group, of 2nd-1st century BC represents contemporary art in dress, ornaments, etc. The 3rd group, in the round, recalls the features of contemporary Kushan art, particularly in facial features. Important are mother goddesses, reclining women, dancers and drummers with peaked caps indicating Saka-Parthian influence. The handmade-cum-moulded plaques are similar to that of Mathura, Ahichchhatra, Tamluk, etc. Votive tanks belong to the early centuries of Christian era.

5.1.32. Other Antiquities

A large number of antiquities were obtained from the excavations. They are styli or arrowheads of ivory, horn and bone; bangles of shell, stone, copper, glass and terracotta;

terracotta gamesmen; finger and nose rings of copper; ivory stands; stone toilet caskets; etched and plain beads of semiprecious stones, as also of shell, bone, copper, gold and terracotta, Iron arrowheads of eleven types are noteworthy.

5.1.33. Summary

Kausambi is a revelation of the Puranic texts through the archaeological findings. It is vividly mentioned in the Mahabharata and the Puranas. According to the Matsya Purana, when Hastinapura was swept away by flood in the Ganges, the Kuru or Bharata king Nichakshu, the grandson of Arjuna, deserted the place and settled in Kausambi. The excavations at Hastinapura and Kausambi have attested to the facts. The formation of city begins at Kausambi from a stage where it was ended at Hastinapur and the evidences of flood found from Hastinapura excavations also support the Puranic facts.

The importance of the city of Kausambi can be assessed from its active involvement in trades. It was one of the important stopover places of the traders along the great trade route connecting Saketa and Savasthi on the north with Paitthana or Paithana on the bank of Godavari on the south. A majestic city developed gradually during the late Painted Grey ware culture and flourished manifold in the Northern Black Polished ware culture and further later. The city was well protected by a strong fortification surrounded by a moat. There were bastions, watchtowers, guardrooms and secret chambers attached with the defence wall. The palace and monastery complexes were magnificently built. The religions like Buddhism, Jainism and Brahmanism, etc., were well patronised by the kings. So, there were stupas, biharas and temples built inside the city. The terracotta art of Kausambi was flourished to the acme during the Sunga-Kushan time and deserves a parallel place with that of Ahichchhatra, Mathura and Tamluk.

The city flourished some time during the 8th century BC and declined due to the Huna invasion somewhere during the 6th century AD.

5.1.34. Mathura

Literary Evidences and Historical Background

Mathura is famous for the birthplace of Lord Krshna, who killed his maternal uncle and the unruly king Kamsa to free his mother Devaki and father Vasudeva from the jail. It is a sacred place of Vaishnavism and great centre of Buddhism and Jainism as well. Mathura is variously mentioned as Madhura or north Mathura, Mathula, Mahura, Madhupuri, Madhupura, etc. It is mentioned in the Ramayana of Valmiki, the Mahabharata and the Puranas. Besides, it has made its way into the Astaddyayi, Mahabhasya and Yoginitantra.

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However, there is no mention of this city in the Vedic literature. The Greeks called this city as Methora and Madoura, the city of gods. The Chinese pilgrims Fa-hien and Huien Tsang mentioned it as Ma-t'aou-lo or the peacock city and Mo (Mei)-t'u-lo, respectively. Arrian and Ptolemy also mention about this city. The Jains knew it as Sauripura or Suryapura. Fa-hien saw many monasteries full of monks at Mathura and Huien Tsang found it to be 5000 li and capital about 20 li in circuit.

Mathura was the capital of Surasena country. Rama's brother Satrugna built it after killing the Yadava Lavana at the site of Madhuvana. He ruled over Mathura along with his two sons Suvahu and Surasena. Afterwards the country was called Surasena. According to the Mahabharata and the Puranas, Yadu or Yadava family ruled over Mathura. Ugrasena and Kamsa were the kings of Mathura, which was ruled by Andhakas descendants.

The Nagas and Yayudheyas reigned at Mathura before Samudragupta subjugated them. The Hindu kings of Mathura were finally ousted by Hagana, Hagamasa, Rajuvala and other Saka Satraps around first century AD. In the second century AD Mathura was ruled by the Kushans under the Huviska and was the capital city.

The early inscriptional mention of Mathura is found in Sohgaura plates and Hathigumpha inscription. The Buddhist Rail-pillar inscriptions at Mathura mark a transition from the Asokan Prakrit to the typical mixed Sanskrit of the Kushan age. Cunningham indentified the ancient city of Mathura with Kesavapura-mahalla of the modern Mathura city. Almost all of the traditional or literary accounts refer to Mathura's position close to the river Yamuna. Hence the identification of present Mathura on the west bank of Yamuna with the historical town is almost certain.

5.1.35. Objectives

The Bhagavata religion, the parent of Modern Vaishnavism, along with Buddhism and Jainism together formed the city of Mathura a sacred place. In the first and second centuries, Mathura developed as a distinctive school of Sculptural style and terracotta art, which soon became a world class. The city was connected with the trade routes. Moreover, the city has a long history starting with the Puranic age to the modern days through the Greek, Saka-Satrap and Kushan periods. It throws light on a spectrum of cultures and events of ancient India of worth studying.

Archaeological importance of the site can be apprehended from the valuable collection of coins, terracottas, inscriptions and stone sculptures recovered time to time from the surface and occasional diggings. The presence of Painted Grey ware and Northern Black Polished ware sherds further stretch back the antiquity of this site by centuries.

5.1.36. The Site

Mathura (27° 31' N; 77° 14' E), headquarter of the district of same name, is situated on the bank of Yamuna. The modern town of Mathura has shifted from the ancient one due to the constant encroachment of the river. The ruins of the city are spread over an extensive area of 3.5 sq. km. A massive mud wall forming a longish crescent on plan on three sides with Yamuna on the east fortifies it. There are rail-tracks and metal road cutting through the settlement.

5.1.37. The Excavations

The site of Mathura underwent first systematic excavations by the Archaeological Survey of India in 1954-55 under the joint effort of M. Venktaramayya and B. Saran. The small-scale excavation at Katra mound brought to light five successive periods bracketed from 600 BC to 600 AD.

M.C. Joshi of Archaeological Survey of India carried out the second excavation in large scale from 1973-74 to 1976-77. The objectives of the excavation were to examine the antiquity, growth and character of the city. The following cultural periods were found at the site.

Period I-c.600 BC to closing of 400 BC

Period II-closing of 400 BC to c. 200 BC

Period III-c. 200 BC to end of 100 BC

Period IV-Beginning of 100 AD to 3rd century AD

Period V-c.400 AD to end of 600 AD

5.1.38. Period I: The Beginning

This period has been divided into two sub-periods-IA and IB. The earliest settlers who lived right on the natural soil and inside the huts with mud floors represent the Period IA. The people used Painted Grey ware and Red ware. A few Black slipped ware, some fragments of inferior Black-and-Red ware and plain Grey ware were also recovered from this level. The Painted Grey ware comprised bowl and dish of usual fabric and form with paintings in black and rarely in white. The noteworthy designs are groups of parallel horizontal lines between two verticals, latticed frames and hook-shaped curve around spirals. Other objects of interest are terracotta discs in plain and decorated variety; ghata-shaped beads, fragment of a conch, a bone arrowhead, a terracotta amulet and two broken styli.

In Phase Ib, the people slightly improved their living-style. The huts are new made on

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extant mud platforms. However, no major change in ceramics except the introduction of Northern Black Polished ware is witnessed. Some of these are thicker in cross-section and have steel-black lustrous exterior and unslipped red interior. Other important findings are an ear-stud of translucent greenish glass; terracotta gamesmen, bone-arrowheads; figurine of a terracotta bird, a torso and a decorated hind part of an animal, an imperforated gadrooned bead, ghata-shaped beads and terracotta discs. Beads of semiprecious stones and terracotta figurines suggested some kind of contact of the local people with area outside the Mathura region.

5.1.39. Period II: Urbanization

This period is marked by proliferation of the settlement to an area about 3.9 sq. km and building of a massive defence mud wall around the settlement in a longish crescent shape. In a cutting of mud fortification two distinct phases have been noted. On the basis of objects and punch-marked copper coins, its construction may be ascribed to the early part of Period II. Originally with a height of about 6.5m the mud defence wall is built of several compact fillings of earth and kankar over the undulating ground. The remains of houses are noted in the form of mud platforms and floors associated with ring-wells. Remains of drains formed by soakage jars are also noticed. The mud platforms at times have facings of large burnt bricks.

The important objects of this period comprised punch-marked coins of copper, terracotta human and animal figurines, toy wheels, gamesmen, decorated discs, bangles and beads of semiprecious stones and bone arrowheads and skin-rubbers. A legged-quern carved with triratna motif, stone pestles and a variety of copper and iron objects are noteworthy. Among the figurines mention may be made of a damaged head of an elephant with lustrous slip bearing paintings in the Northern Black Polished ware tradition, different types of mother goddess figurines, terracotta figurines of monkeys, elephants and a vrsavyala in grey colour or black slip with paint. A significant find is a hoard of 24 beads of amethyst and topaz in a miniature pot.

The ceramics of this period comprised Northern Black Polished ware and associated wares including plain Grey ware.

5.1.40. Period III: Urban Refinement

In this period the settlement was confined within the defunct fortification wall. In the early level, the houses were made of mud and had mud platforms and rammed floors in some cases paved with brickbats. In the later level both mud bricks and burnt bricks were

used in construction. Some large houses had brick paved courtyards with bricks on edge border. Sometimes the floors were plastered with lime. The roofs of the houses were covered with tiles. Some channel-shaped ovens were found. The ring wells had lost their popularity in this period.

This period marked the last phase of Northern Black Polished ware, which showed a greater popularity with the utilitarian forms. The Red ware constituted bowls, lids, vases, storage jars and basins. The plain Grey ware also continued with dishes having dark slip.

There were inscribed coins issued by the Indo-Greeks and Mathura rulers found. Among the seals recovered from excavations important are one in shell reading I(n)chayasa and other in terracotta with triratna-headed standard within a railing and a svastika with legend yupalathikasa on a side.

Other objects constituted querns, pestles, bone arrowheads, borers and styluses, decorated wheels, toy cart frames and terracotta skin-rubbers. Beads of semiprecious stones and terracotta ghata-shaped beads and arecanut beads in particular were popular. Some copper objects including thin and short rods with thickened ends were recovered.

The terracotta art of this period though not very rich comprised terracotta plaques of human figurines prepared out of single-sided mould and handmade animal figurines. The terracotta plaques of interest are a female, a flute-player and an amorous couple. Besides, a terracotta bullock cart and a toy cart frame were noteworthy. A solitary stone sculpture of frontal part of a lion was embedded on a floor of the latest phase of this period.

5.1.41. Period IV: Cosmopolitan

This period witnessed significant structural development. The defunct defence wall was revived and enlarged. An inner fortification, roughly quadrilateral in shape with semi-circular bastions and a moat on the western and northwestern side was built in the northern area of Katra mound. It was built of mud and was strengthened by a short retaining wall of broken and over burnt bricks, tiles, clay lumps, etc. The width and height of this wall varied from 22 to 40cm and 80cm to one metre respectively. The maximum basal width of inner fortification was about 17m.

The houses were constructed of mud, baked bricks and brickbats, sometimes on raised platforms. Floors were paved with compact mud, lime nodules and bricks. Roofs were tiled. Stone buildings were confined to religious establishments.

In the immediate neighbourhood of the walled city, probably tanks and wells were built

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for the use of travellers and general public as suggested by the inscriptional records. An impressive brick-built complex was exposed at the site of the Jaina establishment of Kankali Tila, a few hundred metres outside the mud fortification. This water reservoir was constructed in four phases. Burnt bricks of various sizes-40 x 25 x 5 cm, 30 x 26 x 4cm and 30 x 17 x 5 cm-were used in the construction. The reservoir was dug into the natural soil to a depth of 3.96m in a rectangular shape. It had a ramp in the east and irregular oblong ancillary compartments along its north and south sides. On top of its north wall a stone channel is provided as an inlet for filling it up with water. The first constructional phase of the tank can be ascribed to the first half of the first century AD.

The ceramic industry was represented by Red ware with vases, storage jars, bowls, basins, lids, spouted jars, etc. The pots were decorated with stamped designs like fish, triratna, swastika, srivatsa, hamsa, sankha, etc. Besides, floral and geometric designs were very common. A Red polished ware with thin-section was present in limited number, which included only sprinklers.

The notable objects recovered from this period are terracotta votive tanks, seals and sealings, coins, bone points, terracotta skin rubbers, animal-headed gamesmen, spindle whorls, human and animal figurines prepared by single or double moulds, including a Yaksi in typical Mathura art tradition. Other interesting terracotta figurines were Vamanakas-some of which were glazed, a Saka or Kushan soldier, a princely male, females, Nagas, Bodhisattva Maitreya and Gaja Laksmi. Stone sculptures of two stales depicting scenes from the life of Buddha, a flaming Buddha image, a head of royal statue with several tiny Buddha figures on the crown; a head with moustache, curly hair and sikha-most probably of Kubera, forepart of an elephant and a lion, a salabhanjika figure and fragments of sucis reflected the contemporary artistic excellence. Human-shaped pendant with a peculiar interesting headdress and beads of semiprecious stones were some other noteworthy findings. Two stone inscriptions, one of 5th year (?) are among the significant discoveries of this period.

5.1.42. Cosmopolitan Period V

This period is characterised by traces of mud platforms with walls on the top and floors of mud and sukhi. The ceramics were cruder varieties. Some were painted and moulded with artistic decorations. The common shapes were bowl, basin, vase, sprinkler, etc. A Buddha head, in Mathura Art tradition, an image of Vishnu with head missing, fragments of a prabha-mandala, terracotta figurines in Gupta style and embossed figurines of Ganga on a potsherd constituted the important findings.

5.1.43. Summary

Mathura, situated on the bank of Yamuna river, is a sacred place for Hindus, Buddhists and Jains. It has a protracted history that can be traced from the Puranic age to the present-day. The city is famous not only for its religious background but also for its central location and connection with the important trade routes of north, south and east India. It is also famous for the Buddhist Rail-pillar inscriptions, which mark a transition from the Asokan Prakrit to the typical mixed Sanskrit of the Kushan age. The excavations at the site revealed five cultural periods (I-V) dated back from 600 BC to 600 AD. The beginning of settlement at Mathura is assigned to the time of late Painted Grey ware period. The people used Painted Grey ware, Red ware, Black-and-Red ware and Black slipped ware. Some terracotta and bone artefacts were also used. In the subsequent period people using Northern Black Polished ware and associated wares inhabited at this site. The city was fortified with a massive mud wall. The lifestyle of people shows marked improvement with introduction of punch-marked copper coins, well-planned residential structures with floors, ring wells, soak pits and drains; and utilization of ornaments of semiprecious stone beads, and art and architectures. In the overlapping period coins of Indo-Greeks and Mathura rulers were recovered. Further urban development and refinement marked this period. Northern Black Polished ware, Plain Grey ware and Red ware continued in this period along with the objects of toiletry made of terracottas, ornaments of semiprecious stones and terracotta art objects. In the subsequent period, the defunct defence wall was revived and enlarged. An inner fortification roughly quadrilateral in shape with semi-circular bastions and a moat was constructed. The residential structures were made of bricks. The period is important for its terracotta art objects, particularly of gods and goddesses. This indicates the culmination of Mathura School of Art. The ceramics, which comprised only Red ware, were decorated with stamped designs like fish, triratna, swastika, sri vatsa, hamsa, sankha, etc. The last inhabitation at the site is associated with Gupta period.

5.1.44. Taxila

Literary Evidences and Historical Background

This city has been identified with modern Taxila, in the district of Rawalpindi in Punjab. This city is also known as Bhadrasila and later on it came to be known as Takshasila (Chinese: Shi-shi-Ch'eng). It finds mention in the Astadhyayi and Mahabhasya of Panini and Patanjali respectively. The Kalinga Rock Edict I refers to the city. Arrian describes the city was great, wealthy and populous. Strabo praises the fertility of its soil. Pliny calls it a famous

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city situated on a level plain at the foot of hills. Huien Tsang visited the city in 7th century AD. He writes the city was 2000 li in circuit with capital more than 10 li in circuit. The people were adherent to Buddhism. The monks were Mahayanists. Some of the monasteries were desolate.

Takshasila was a great seat of learning in ancient India. Pupils from different parts of India visited this place to learn various arts and sciences. According to Cunningham, the site of Taxila is found near Shah-Dheri, just a mile to the northeast of Kala-ka-Sarai in the extensive ruins of a fortified city around which at least 55 stupas, 28 monasteries and 9 temples were found out.

Taxila was the capital of Gandhara, one of the 16 Mahajanapadas of ancient India. In the last quarter of 4th century BC Alexander, the Greek Hero, invaded it. After the Bactrian Greeks it came under the Sakas and Parthians, who were defeated by the Mauryas and Taxila was annexed with the Mauryan Empire. Subsequently, the Kushans and Huns ruled over it. In the 7th century AD it was part of the larger state of Kashmir.

5.1.45. Objectives

Taxila is one of the important ancient cities of India that has found a place in the most of the ancient scriptures and contemporary writings. It was a major city that trafficked trade and commercial activities since the ancient time. Being a major centre for the development of the religion like Buddhism, Jainism and Vaishnavism, Taxila emerged as a hub for classical art and crafts known as 'Gandhara-style of Art'. It was the door to the Hindustan through which several foreign invaders, the Greeks, Sakas, Parthians and the Huns, ventured in, settled for some time and left their impression in the local tradition.

These factors make Taxila an important city of worth noting for the academicians. This is the only excavated site, which brought to light complete picture of the Bactrian, Parthian and Kushan cities and the lifestyle of their common people.

The site of Taxila is situated a little over 32km northwest of the modern city of Rawalpindi, very close to the Taxila railway junction. The place was meeting point of three ancient trade-routes-one from Hindustan and Eastern India (the royal highway described by Megasthenes running from Pataliputra to northwest of the Mauryan Empire), second from western Asia through Bactra, Kapisi and Pushkalvati and so across the Indus at Ohind to Taxila; and third from Kashmir and Central Asia by way of Srinagar valley and Baramula to Mansehra and down to Haripur valley.

There are remains of three cities situated within 5.6km of one another. They are the Bhir mound city, the Sirkap city and the Sirsukh city. Each of them has a number of isolated monuments, mainly Buddhist stupas and monasteries; the most conspicuous among them is Dharmarajika stupa, locally known as 'Chir or Split' Tope; the Samgharama at Kalawan (anc. Chadasila); monasteries and stupas at Giri, Kunala and Ghai stupas, Sng'haram at Mohra Moradu, Pippala, Jaulian and Bhamala and Ionic temple at Jandial.

5.1.46. Excavations

Sir John Marshall excavated the site for a long time from 1913-34. The excavations were conducted in large scale at the above-mentioned three cities and some other places as mentioned below.

5.1.46.a. Bhir Mound

A large area at the centre of this old city was excavated, which revealed from successive strata (I to IV). The stratum I represents the last occupation at the site and has been found at isolated places in very obliterated condition. There was overlapping of structures of strata I to II found. A similar situation was also noticed between the strata II & III. It indicates the structures of the earlier stratum survived through the succeeding stratum. The depth of successive stratum from top to bottom (I to IV) is respectively, 1.2m to 1.8m, 2.7m to 3m, 4.2m to 4.8m and 4.8m to 6m.

The structural remains comprised blocks of dwelling houses and shops divided by streets and lanes in a haphazard manner. The main streets ran northsouth direction in straight line and the narrow lanes connected with them. The excavations have brought to light that the main streets were laid right in the beginning of settlement at the site. Rubble masonry of different kinds has been noticed in all the strata. In the top stratum structures are made of very rough limestone mixed with kankar (more kankar and less limestone). The structures in the second stratum are compact and well made. These are made of limestone mixed with kankar or only limestone and only kankar. The 3rd stratum yielded again rough and loose masonry. The last stratum was characterised by rough and massive masonry. In all the strata the walls of the houses were found thickly plastered with mixture of mud and chopped straw on both externally and internally. There were covered and open street drains and each household was furnished with one or more soak-wells for the disposal of sewage. A well-to-do quarter comprised an area about 334.5 sq. m of which two open courts cover 65 sq. m. The houses were double storied. There were a number of wooden pillars supporting the roof, which are even found at the centre of the room. These pillars were placed on a deeply

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inserted shaft packed with pebbles or stones. The depth of these shafts varied from 1.5m to 4.5m, which prevented from the risk of sinking. The ground floor consisted 15-20 small rooms. The courts had access from the streets. The floors were made of bajri rammed in mud. There was no well found from any stratum at this city. This indicate the use of river water for domestic use. There was a pillared hall on the western side in the second stratum, which might have been a shrine. A large number of terracotta reliefs representing male and female deity standing side-by-side and holding hands found from the debris of this hall support the assumption. The hall was oblong in shape, measuring 17.7m x 7.2m, with the major axis in north-south direction. The walls, made of rubble, were standing to height of 1.5m to 1.8m. Numerous number of terracotta tablets, pot-bellied dwarf, mould of a grotesque figure, fragment of a female dancer in relief, toy animals, four gold bangles were found from this area.

A large number of antiquities comprising objects of stone, bone, ivory, glass, terracotta, copper, gold and iron were recovered from different stratum as noted below with their chronology.

5.1.46.a.i Stratum IV: c. 500BC

This is the earliest deposit at this site. The ceramic industry comprised wheel-turned, narrow-necked wine jar with slender body, cooking pots or handis with lug ears, flat-bottomed jar, spouted kuza with ox-headed handle and gadrooned neck. All these are well-baked plain Red ware. A few squat flasks with convex base decorated with incised chevron and crossed pattern and narrow-necked flask with spiral pattern round neck are found in Grey ware. A few pieces of Black-and-Red ware jars and Greek Black ware bowls were also noted.

The copper and gold objects comprised mainly different kinds of ornaments. Iron objects comprised a double-edged dagger with tapering point, a spearhead and an axe with drooping head. A muller of green quartzite, a pestle of hornblende, beautiful ear-reel of greenish chalcedony and a star of highly polished crystal formed the important objects of stone. There were hairpins with shell-head handle of comb, skin rubber and several arrow-heads of bone; and ear-reels, pendants made of fossil ivory found from this level.

There were beads of semiprecious stone (65), shell (49), glass (black and deep green 25), bone (5), copper (2) and terracotta (1). The semiprecious stones comprised carnelian, agate, amethyst, garnet, jasper and malachite. The common shapes were spherical and barrel. Besides, disc, bicone and eye-beads of shell were also found.

The coins found from this stratum comprised, six punch-marked oblong bar, round and concave types, one rectangular and two local Taxilan punch-marked coins. Those coins date back to 400 BC.

5.1.46.a.ii. Stratum III: c. 400 BC

The ceramics noted in the stratum-IV, such as Grey ware, Black-and-Red ware, Black ware and Red ware, continued in this stratum. The Grey ware comprised carinated bowl and handi and there were small lotas, cups, bowls, basins, miniature jar, anthropoid vase, stoppers surmounted animals, ring stands and sprinklers with four spouts in Red ware. Noteworthy are the pieces of Hellenistic 'black' and 'embossed' wares. Three fragmentary vessels with characteristic Hellenistic designs of vine and floral scrolls, running spirals, etc, represent the latter.

The copper and bronze objects represented antimony rods, ear-cleaner and toothpick combined, and finger rings. There were ornaments of gold and silver. Iron objects included adzes, knife or chopper and chisels.

Terracotta figurines comprised nude-mother or Earth goddess of primitive-type, fragment of a votive plaque showing male and female deity side by side, two toy elephants, a medallion adorned with geometric devices, human masks or animals in the Hellenistic style; and a number of decorative beads of various shapes. There were stone household objects, such as stool-quern, mullers, carved ring-stone and cup-shaped mortar. Bone and ivory objects comprised dagger shaped amulets, a hairpin and antimony rod of ivory, a bone stylus, a spindle-whorl and an arrowhead. A large number of beads made of semi-precious stones, glass, shell, terracotta, bone, copper and iron were recovered. Carnelian and agate beads were predominately found along with that of amethyst, beryl, garnet, malachite and onyx. The beads of black and green glass were more in number than that of cobalt, opaque, orange, yellow, red and turquoise.

The coins included one of the most valuable herds (1167) of silver punch-marked coins of India. These mainly silver karshapanas, comprised long bar variety and circular types. In addition to these there were silver siglos of the Persian Empire and Greek coins-two of Alexander the Great and one of Philip Aridaeus. The previously found punch-marked coins were also present in this stratum.

5.1.46.a.iii. 300 BC to end of Maurya Empire

Recovery of only a few Greek Black ware fragments indicate Hellenic influence had not

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begun in full swing. A large number of Indian pottery of Red ware, Grey ware and Black-and-Red ware were obtained. The common shapes included storage jar, oil/wine jars, narrow-necked flasks, matkas, lotas, flat-bottomed pots and jars, spouted pots, cups, bowls with rounded and flat bases, lamps, lids, crucible and handled pot of Black-and-Red ware.

The gold, silver, copper and bronze objects were very rarely met with. They formed pendant, finger rings, bangles, bracelets of copper and two small bronze bells. However, iron objects were widely used, which comprised household vessels and utensils, weapons, tools and agricultural implements, such as shallow bowl, spoon, pan, double-edged dagger, javelin, arrowheads, hooks, axe, adze, chisel, knife, tangs, nails, hoes, etc.

The terracottas were exclusively Indian, which showed considerable imagination in spite of their rough workmanship. Many of them were of religious characters, such as nude mother or Earth goddess and a number of deities, male and female plaques showing Indian dress standing side-by-side and holding hands, pot-bellied dwarfs, grotesque figure of an old man and upper part of a Yakshi. Besides, skin rubber, stopper, lamps, toy carts and animals on wheels were found. People were pioneer in stone cutting, turning and polishing in this period. The stone objects obtained were shallow dishes of limestone and hornblende-gneiss, saucer of alabaster, a standard cup, bowl of highly polished banded agate, miniature trays of crystal quartz. This period was remarkable for beauty of its beads. Amethyst, carnelian and agate beads were favourites. Other materials were amber, coral and faience. Glass beads largely comprised of blue and green types; however, other colours, such as black, red, amber, yellow, orange, opaline and turquoise were represented by one or two specimens. The popular shapes were scarboid, faceted, tabular, collared, leech, triangular, hexagonal barrel, bud and pyramidal pendant. A large variety of eye-beads were also recovered.

Bone and ivory objects included antimony rod, ivory spindle whorls, arrowheads of both materials, a bone handle, a bangle and a child's doll; a ram head of ivory, etc. Shell bangles decorated with crosses, hooked triangles or cables, beads and finger rings were obtained.

Seals of stone, glass and copper were found in scarboid and pyramidal shapes. They had ram head and racing horse as portraits, which are definitely of Greek workmanship specimens of a black agate with figure of a lion and nandipada symbol and a chalcedony with two winged lions side by side are noteworthy. The coins under Mauryas comprised (a) punch-marked silver and copper issues of old 'long bar', round and concave, (b) punch-marked silver and copper issues of rectangular, round or oval shape and (c) coins of 'local Taxilan' class minted only in copper.

5.1.46.a.iv. Stratum I: End of Mauryan to Bactrian

The ceramics comprised two interesting pieces of Hellenic ware; one a fragmentary mixing bowl decorated with fluted leaf design around the body, bead-and-reel border and a head of Heracles or Alexander at the base of the handle; the second a shallow bowl embossed on the outside with an ivy scroll enclosing a medallion on the bottom. The other types of ceramics included a double pot of the Kernos type, a finial and miniature vessels.

The terracotta objects found in this level are a stamp with figures of spearman and horse in a circle of pendant drops, pot-bellied kumbhanda and toy ram. Other objects were a wheel-socket of grey gneiss, door-socket of red granite, two stool-querns of sandstone, a muller of Chunar sandstone, iron objects of tanged-spearhead, chisel and socketed-spod, a wheel of a toy cart of copper, etc. A lot of gold jewellery comprising bangles with ends terminating in lion's heads and papal leaf pendant and beads were obtained. Besides, lead finger ring with tiger, almond-shaped pendant, beads of semiprecious stones, pendants of shell, etc., are important findings.

The coins formed 166 silver and billon punch-marked types and a fine gold stater of Diodotus struck in the name of Antiochus II.

5.1.47. Stratum I: End of Mauryan to Bactrian Sirkap City

In the beginning of the second century BC the city of Taxila was transferred by Bactrian Greeks from Bhira to a new site, now called Sirkap, on the other side of the Tamra nala to the northeast. The Greeks, Sakas, Parthians and Kushan rulers to the time of Vima Kadphises successively occupied this new city for three centuries. The site was bounded by the Tamra nala on the north and partly on the east. The city partly embraced the western end of the Hathial spur together with a small sharply defined plateau on its northern side.

A stone fortification wall surrounded the city of Sirkap. It was approximately 5.6km in length with a thickness varying 4.5, to 6.45m. It is straight on the north and east and south-east corner, however, on the other sides it runs with highs and lows across the ridges and depressions. The height of the walls ranged from 6m to 9m. There were a series of rectangular solid bastions made to strengthen the wall. A cutting or section of the wall on the eastern side has revealed that the bastions are carried down for 2.7m or more below the bottom of the wall and both bastions and walls are strengthened on the outside by footings. The entire wall was composed of random rubble in mud. Hard limestones were used mixed with kankar collected from the alluvium of the valley. The excavations have brought to light only one gateway in the northern wall, however, two other gates one on the eastern wall and other on

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the western wall have been surmised. There were solidly built guardhouses attached with the gates. The gateway constituted a large hall and is suspected to be double or triple storied. There was an earthen rampart surrounding the city initially. Later, the stone fortification was built around the middle of the first century BC, which corresponded with the Saka Stratum IV.

5.1.48 The Excavations

The excavations were extensively conducted in the lower city area, north of Hathial spur. Starting from the northern wall the trench cut through the heart of city about 600m in length. A deposit of 5.4m to 6.9m comprising seven strata identified successively which spanned for three to four centuries. The earliest or stratum VII dated to pre-Greek Period, when Sirkap was a suburb of the Bhir city. The VI and V strata belonged to the Greek Period c. 190-90 BC. The IV, III and II strata dated back to Saka-Parthian times, c. 90 BC to AD 25. The last stratum (I) followed up the Kushan conquest in c. 60 AD.

The excavations in this city were by-and-large confined to the Saka-Parthian stratum. Only a very small area was dug down to the Greek strata to the west of the main street near the northern gateway.

Stratum-VII: Pre-Greek

The remains were very scanty in this stratum. A few rubble walls running eastwest were unearthed. A rubble pavement of still earlier time was found about 1.2m below the walls. Along the south side of the city wall a road paved with pebbles was encountered running from east to west. The deposit of this stratum was 1.2m.

Stratum VI & V: Greek

These strata were noted in more mutilated condition. The foundation of the city was started in this period. The Greek houses, like the earlier ones in the Bhir mound, were planned in the same principle. The chambers flanked the open courtyard. The walls were made of rubble masonry. The deposit of these strata was 1.5m.

The ceramics comprised both Greek and Indian wares. The former included specimens of Black Burnished ware, Greek Embossed ware represented by a vine, a horse in low relief decoration. A local imitation of Greek moulded ware was found decorated with bands of Indian dancers, warriors on horseback, etc. Other Greek shapes were a handled jug, and amphora. The indigenous vessels constituted a barrel-shaped storage jar with carinated bottom and shoulder and an elliptical body wider at the middle, narrow-necked oil-flask and

ghara decorated with incised crosshatched designs. Other shapes included handis, domical lids and miniature vessels.

The terracotta, like ceramics, displayed admixture of Hellenistic and Indian types and styles. Those of the former type comprised a number of heads with smiling face and are more ornate. The latter types were primitive figurines of the 'nude-mother' or 'Earth goddess'; a seated, cross-legged male figure; votive relief of a woman holding a child on her lap, etc. Other objects formed mostly toy animals, rattles, whistles or dice, doves attached on the wheels of a chariot, birds with wide spread wings but without wheels, quasi-human or animal form or shaped like vases or pomegranates and heads of toy horses. The domestic articles of Hellenistic type consisted dishes, trays, cups made of schist stone, slate or phyllite; agate vessels and roundels of Indian origin other than the toilet trays, no typical Greek articles noted in stone objects.

The Greeks were not very fascinated of bead ornaments like Indians. The beads, already in vogue, were continued in this stratum. A total of 69 specimens recovered those comprised of semiprecious stones- etched carnelian beads, jasper, agate, amethyst, chalcidony, lapis-lazuli, quartz, faience, coral, shell, glass and copper. The favourite shapes were spherical, gadrooned, disk, oblate barrel, hexagonal, bicone, scaraboid, etc.

Apart from the dice, two objects of bone and ivory came from the Greek strata, such as spoon with shallow bowl and ornamental ivory hairpin. The metal objects were scarcely found from Greek level. They comprised iron chisels, bull-handle, bangles and fingerings of copper-bronze and a flask of typical Hellenic style. Besides, a couple of gold beads were found.

A total of 89 coins recovered from the Greek level, less than half were actually brought out during the Greek supremacy at Taxila. The rest are mostly issues of the early Saka and Parthian Kings, Maues, Venones, Spalahores and Azes I. The New Greek coins mostly bore on their face a simple portrait of the ruling sovereign in whose name and under whose guarantee they were issued together with his name and title in Greek and Kharoshthi. The Greek rulers were careful of maintaining the metal and weight of their coins up to standard.

Stratum IV: Early Saka

The houses had rubble-masonry, limestone paving, brick flooring, large courts and entrance leading from the first street. The Graeco-Bacterian influence was manifested in the ceramics of this stratum. The oil-flasks, beakers with deep flared mouth, inkpots, amphorae, round water bottle with pierced lugs on each side, bell-shaped amphorae. Besides, there were indigenous types, such as storage jars, bowls, funnel, crucible and cup of Black-and-Red ware.

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The terracottas are found in less numbers. Apart from toys, a standing male figure in the round wearing a chiton and himation, mould of a male figure in relief typically Indian in dress and style. The toys comprised plum heads of horse, crudely fashioned monkey, a bird-rattle with stand and base, etc. The stone carvings and stone utensils are very interesting. Other than the toilet-tray with relief figures and a female statute, saucers, leaf-shaped lamp with three lug-ears of grey schists were important. The bone and ivory were used mainly for small articles of the toilet, such as bone hair comb, ornamental hairpins, ivory antimony red, a bone mirror handle decorated with a female relief figure and ivory dices.

A large number of beads made of glass, shell, semiprecious stones, faience, steatite and copper were recovered. The glass and shell beads predominated in the entire collection. The glass beads were found in opaque yellow, blue, multi-coloured or colourless types. The semiprecious stones preferred for beads were carnelian, agate, chalcedony (for eye-bead), onyx, malachite, lapis lazuli, aquamarine, jasper, garnet, quartz and crystal. The popular shapes were oblate, barrel, scaraboid, etc. There were bangles of glass and shell also obtained. The copper and bronze objects comprised ornaments-child's bangle, pendant, hair-pin with Aphrodite head, a bronze lamp, cylindrical casket of copper with domical lid, bronze bowl, reel-and-link pattern chain and a rosette of six petals were obtained. The iron objects were represented by spoon with pear-shaped bowl, a scale-pan, double-tanged arrowhead, etc.

Some Saka coins were found beneath the floor-levels, which included one lot of Maues-the 'Poseidon and Vine-goddess' type and another lot of 'Elephant head and Caduceus' type. Two other types of this king represented by 'Elephant and humped bull' and 'Artemis and humped bull' types were also found. The coins of Vonones with Spalahores were 'Heracles and Pallas' type. The Azes I, after the middle of 1st century BC, struck coins with 'mounted king and bull'. Azes I and Azes II minted pure silver coins of 'Zeus and Nike' and 'mounted king and Zeus standing' types. There were nine different types of Azilises copper coins.

Stratum III and II: Saka and Parthians

The excavations have proved beyond doubt that albeit the Sakas and Parthians were closely connected, their cultures were far from being identical. The Sakas copied many of their institutions and most of their art and crafts from the Bactrian Greeks who had preceded them in the northwest. They continued to cash on the local Graeco-Bactrian talent available to them, having knowing little about the Greek genius. On the contrary, the Parthians were, though not superior in artistic taste than the Sakas, they had the advantage of being in

close contact with the Graeco-Roman world. Therefore, they directly imported the objects as well as the artists and craftsmen from the west.

The Parthian city of Sirkap was laid out in the identical Hellenic pattern with streets at right angles to one another like the older cities of the Bactrian Greeks and early Sakas on the same site. The main streets ran from north to south and the side streets from east to west in regular intervals. The blocks of houses, having rows of shops in the front and private houses at the back, were built in between the side streets and the area covered about 36m. The buildings were constructed of stone-rubbles and coursed in mud. However, after the devastating earthquake in AD 20-30, a new and more stable type of diaper masonry was introduced. The foundations were deepened more and the number of stories were reduced. The walls were applied with lime and mud plaster and lime white wash was given on the surface of walls. Timber was employed for the upper floors, roofs, verandas, doors and smaller fittings. The roofs were flat and covered with thick layer of mud. There was no change in the planning of the house. The chambers encompassed the court and were repeated two to four times according to the requirements. There were covered drains down some side streets and small drains connecting with them from the adjacent houses. No soak-well or refuse shaft was used in this city. The drains were made of limestone blocks, sometimes plastered on the inside.

The royal palace was not luxurious in architectural plan than that of a common house other than large size, numbers of courts and absence of any basement rooms. The number of sacred buildings in all over the city indicate that the people were very religious minded. Most of them are Buddhist, a few Jain and one temple of Jandial dedicated to fire worship. However, one thing common in all of them was the influence of Hellenistic ideas and decorations. A typical example is the stupa of the double-headed-eagle in Block F, erected under the late Saka regime; the form of the monument is Buddhist though the square base may have been a foreign innovation, but the decoration is made of a combination of Greek and Indian elements. The apsidal temple with its subsidiary stupas in Block D, built after the Parthian conquest, showed similar characteristics. The decorative figures are purely Hellenistic in style than the remainder.

The ceramics of Greek origin comprised alabastron-shaped flasks, handled jugs, amphorae, beakers and bowls with deep-flared mouth, the mesomphaloi dishes, lamps, inkpots, etc. The shapes of Parthian type are the bell-shaped carinated vessels, goblets with flared mouth and horizontal ribbing. All other types of ceramics were also present for storing, cooking, dining, etc.

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The antiquities consisted personal ornaments of gold and silver, articles for the dress and toilet, household vessels and utensils, tools of carpenters and metal workers, stone weights, agricultural implements, surgical instruments, toys, dice, weapons and armours, sacred images and reliefs, seals and sealings, moulds and stamps and coins. The Greek and western Asiatic influence is prominent in the luxurious and expensive articles, such as the gold and silver jewellery, bronze and silver vessels, engraved and carved stones and glass. Indian influence is seen on kinds made of terracotta, iron, and bone and like. The personal ornaments of this period are striking, such as gold frequently encrusted with coloured stones and pastes. These comprised ornaments of ear-pendants, rings, plugs; necklaces, girdles, belts, hairpins, pendants, finger-rings, etc. The Graeco-Roman types were 'amphora' pendant of gold and turquoise, ear pendants of leech-and-pendant pattern, brooches composed of figures of Aphrodite and Eros with Psyche, barrel-shaped ear-pendants of gold and turquoise, necklaces, gold bangles with trumpet-ends, etc. The ornamental beads were quite popular. These were made of glass, shell, semiprecious stones, terracotta, faience and copper. Besides, the common stones of granite, limestone, marble and steatite were used for this purpose.

The seals were copied from Graeco-Roman proto-types and some were imported from the West. They are nicolo seal, carnelian seal in a gold setting. The Saka-Parthian seals are mostly made of stone, small rings at the back. Besides, seals of stone, glass, shell and terracotta were also in vogue. The Parthians introduced these types for the first time. About 90% of the coins recovered from Saka-Parthian remains included old punch-marked, local Taxila, Greek and early Saka issues as well as later Saka and Parthian issues. During the reign of Azes II the quality of coins deteriorated. The currency was depreciated by substituting billon or base silver of the pure metal. This practice increased during the reign of Gondophares. Afterwards, the silver coins were abolished completely. The coins of Parthian Gondophares were all copper. The name strategos Aspavarma and Sason are found on them. The former type is the usual 'mounted King and Zeus to right' and latter type included 'mounted King and Zeus to the left'. The nephew of Gondophares, Abdagases, is represented by coins with 'King mounted and Zeus to right', 'King mounted and Zeus to left', and 'King's bust and Nike'. Besides, there were a large number of Kushan coins found from this period.

Stratum I: Early Kushan

Not much is known about the early Kushan period at this city as soon after they occupied the city, they decided to build a new one. Some holed up and badly battered rubble-masonry walls witness to their occupation at this city. The deposit of this stratum is about 60cm. The digging at northern gateway revealed foundation of four rooms only.

5.1.49 Sirsukh City

The new city was built on the further side of the Lundi nala, about one-and-half kilometre north-northeast of the northern wall of Sirkap city. The city of Sirsukh is slightly irregular rectangle in layout, measuring 1371.6m along the north-south and 1006m along the east-west. The rampart surrounding the city could only be traced on the south and east sides. In the other sides it is completely disappeared. The wall was 5.6m in thickness and was made of rough rubble faced with neatly fitting limestone masonry of the heavy diaper type. There was a heavy roll of plinth added to the base of the wall on its outer face. There were semi-circular bastions at the corner of the outer wall, which were furnished with loopholes. The fortification is assumed to be built before Kanishka and more likely to have been built by Vima Kadphises.

The minor objects obtained from the excavation of fortification are, a bone mirror handle decorated with raised bands and hatchings, coins of Azes II, Kadphises I, debased Indo-Sasanian and a number of coins of Akbar the Great. All these are copper coins.

The excavations at Pindora mounds brought to light a large building. Two courts, one larger to the west and smaller to east, with attached rows chambers and a passage in between were found. The foundations of the wall were made of limestone rubble. Above the ground level the walls were faced with strong semi-ashlar masonry, which first came into fashion in second century AD. Foundation of a raised plinth probably supported by pillared veranda was found across the north side of court. The major objects recovered from this mound were ornaments made of stone, copper, shell, utensils and other articles of copper and iron. Bangles and finger-rings of shell, copper hairpin with knobbed head, writing styli of bone, oval intaglio of carnelian for finger-ring with engraving of Nike, beads of agate, glass and pearl are important. The popular shapes of beads were spherical, barrel, disc and gadrooned.

A large number of copper coins were recovered from relatively smaller excavated area. They are, local Taxilan-chaitya with crescent and taurine, Azes I-elephant and bull, Kadphises-bust of Hermaeus and Heracles, Kara Kadphises-bull and Bactrian camel, Kadphises II-King at altar and Siva with bull, Kanishka-metal god, moon god, Nanaia, four-armed Siva, Sun god, Huvishka King on elephant and Sun god, Vasudeva-Siva and bull, seated goddess, later Kushan King at altar and defaced, and Spalapati-Recumbent bull and king on horse back.

These objects were recovered from a deposit of 30cm to 1.8m from the surface. So the settlement can be bracketed within late 2nd-3rd century AD to 5th-6th century AD.

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Besides the above-discussed cities of Taxila, a number of temples, stupas and monasteries are present. Among them the temple at Jandial and Dharmrajika Samgharamas are very famous.

Standing a height of about 12m the temple of Jandial resembled to Greek Peripteral temple. It was built of coursed rubble masonry and the foundations were carried down over 6m below the temple floor, which was intended to carry heavy super structure. The height of the inner walls of temple was about three metres. The faces of walls had thick coating of stucco composed of small river gravel and lime. The temple had ionic pillars and pilasters composed of massive blocks of grey Taraki or Kambial sandstone; the bases, shafts and capitals were built up in separate drums fixed together with square dowels in the centre as was practiced in Greek buildings. This suggests that the temple was built during the rule of Bactrian Greeks in second century BC. However, the date of the temple is still open to question. The religious character of temple is also not certain. There was complete absence of any type of images either of Buddhist, Jain or Brahmanical. It could have been a Zoroastrian temple but has insufficient evidence to ascertain.

The great central stupa that dominated the group of ruins, situated at the foot of the Hathial spur, on its southern side, is the Dharmarajika Samgharamas. Asoka built this stupa. It is roughly circular in plan with a raised terrace around its base. It was ascended by four flights of steps at cardinal points. The diameter, excluding the pradakshina patha, is about 45m from east to west and 44m from north to south. It was built by rough rubble masonry. There is a lower part of Asokan Lion capital pillar to the left of the steps on the eastern side of the stupa. A series of small stupas were built in ring around the parent one. These were built of random rubble composed of limestone and kankar. These stupas belong to different periods. A large number of images and sculptures mainly of Gandhara School were found.

5.1.50 Summary

Taxila, which was also known as Taksasila, was the capital of Gandhara, a Mahajanapada of ancient India. It was the corridor of India and was connected with the major terrestrial trade routes. Now it is located at 32km northwest of modern city of Rawalpindi. Alexander, the Greek hero, first invaded the city in the last quarter of 4th century BC. This established a vigorous connection of northwestern India with Graeco-Roman world. A very well planned identical town planning, civic amenities, ceramics, ornaments, other equipments and objects, coins of those used in the Hellenic world. The cache of gold, silver, bronze ornaments and semiprecious stone objects obtained from this city assess the wealthy condition of the

citizens. The people were adroit in minting coins and art and crafts. The succeeding phase showed Mauryan subjugation of the city. The people were pioneer in stone cutting, carving and polishing in this period. Hellenic influence continued on the art objects. Subsequently the Bactrian Greeks ruled the city till the beginning of second century BC. During this time the city of Taxila was transferred to the Sirkap mound. Here a strongly fortified city was built. The excavation at this site has brought to light the Hellenic world of Sirkap city. The art, architecture, craft, ornaments, ceramics with Hellenic touch were superb, which unveiled the luxurious life of the citizen. A large number of Greek coins were recovered. The Greeks were very practical in maintaining the standard metal and weight of the coins. The minting and moulding of the icons on the coins were far superior to any dynastic coins of ancient India. The Sakas, Parthians and Early Kushans successively ruled the city. This was the Kushans' decision to transfer and build a new city at Sirsukh, very close to northeast of Sirsuk city. The city of Sirsukh was roughly rectangular in plan and was strongly fortified. The fortification wall was provided with semicircular bastions and loopholes for defences. The ruins of this city have been found in miserable condition due to present-day irrigation and cultivation. The excavations at Pindora mound brought to light large buildings made in the similar plans with that of Greeks and other dynasties having rows of chambers around courts and pillared veranda. However, the strong semi-ashlar masonry came to vogue in second century AD. The ceramics and art and crafts showed Kushan influence and a complete development of Gandhara School of Art. Lots of Kushan coins were recovered from this mound.

The sites of Taxila had a number of stupas, monasteries with viharas and temples. Among them the Dharmarajika Sangharamas and the Ionian temple of Jandial are famous for their architectural plan.

5.1.51 Ujjain

Literary Evidence and Historical Background

Ujjayini, as it was called in the ancient time, was the capital of Avanti or Western Malava. It is located on the eastern bank of river Sipra, a tributary of the river Chambal or Carmanavati. Mention of Ujjain is found in the Mahabhasya and Yoginitantra. It is also mentioned in the Minor Rock Edict II of Asoka. The Dhauri Separate Rock Edict I of Asoka describes that in 3rd century BC Ujjain was seat of a viceroy (Kumara) of the Mauryan Empire. According to the Chinese pilgrim Huiyen Tsang, the city was about 6000 li in circuit and there were several tons of convents mostly in ruins. There were about 300 priests who studied the doctrines of the Hinayanists and Mahayanists. In Periplus of Erythraean Sea this city is called Ozene and

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was an important trade centre that connected three main trade routes.

In 4th century BC Ujjayini became subject to Magadha. Asoka stationed here as viceroy in early 3rd century BC where Mahindra was born. Chandragupta II, identified as the celebrated king Vikramaditya (c. 375 AD), expelled the Scythians and established his power over almost all part of India. Ujjain soon became a great centre of Sanskrit learning under the royal patronage of Vikramaditya who is known for having nine gems in his court.

5.1.52. Objectives

Ujjain was capital of Avanti, which was one of the powerful Mahajanpadas. It played an important role as the hob of Buddhism and a major trade centre. It has a long literary and political history. With one of the rock edicts of Asoka at this place and having majestic ruins of a large city, the site developed considerable curiosity among the archaeologists and historians to unveil its cultures, development and planning of city, art and architecture, political, socio-economic and religious scenarios and lifestyle of the people.

5.1.53. The site

Ujjain (23° 12' N; 75° 48' E) is the head quarter of the district of same name in Madhya Pradesh. It is one of the seven holy cities of India. The modern township is away from the ancient spot known as Garh-Kalika. It is an impressive mound to the north of the township on the east bank of the river Sipra. A frequently renovated medieval temple of Kalika, believed to be the patron deity of Kalidasa, marks it. The mound is 10.7m in height, one kilometre in north-south length and 900m in northeast width. A mud rampart from the beginning protects it.

5.1.54. Excavations

M.B. Gardé undertook the first excavation at the site in 1938-39, which brought to light the archaeological potentiality of the site. The excavation branch of Archaeological Survey of India under N.R. Banerjee, therefore, extensively excavated the site from 1955-58. K.M. Srivastava further excavated it in 1964 on the behalf of Archaeological Survey of India. Trenches were taken on the Garh Kalika mound and on the mud-rampart. The excavations brought to light four cultural phases, I-IV, that is a continuity of occupation on the site from a date prior to 600 BC to the beginning of Muslim rule in Malwa in the 14th century as described below.

5.1.55. Period I

In the habitation area Period I was identified at the lowest level occupying a deposit of

1.8m of cultural debris. It is characterised by stone and burnt brick structures. The ceramics of the period consisted Black-and-Red ware, Black Slipped ware, fine Red Slipped ware with a secondary black slip, designated as double slipped ware, unslipped and slipped Red ware termed as Vesiculated ware by Sir Mortimer Wheeler. The Vesiculated ware is distinguished by minute grains or flakes embedded in the clay and is handmade. It constitutes jars with flanged rim and carinated waist mainly used for cooking. The rest of the ceramics are wheel made. The common shapes of Black-and-Red and Black Slipped wares are bowls and dishes. The only shape found in Double Slipped ware is convex-sided bowl with vertical or inclined rim and a pronounced cordon below. The unslipped Red ware comprised bowls with incurved beaded rim.

The period yielded a large number of terracotta, bone, stone, iron and copper implements, such as spindle whorls and beads of terracotta; arrowhead and styli of bone; arrowheads, spearheads, crowbars, spades, choppers, knives, and presumably saw of iron. The iron objects represented a fairly early stage of manufacturing technology, which may go back to 1000 BC. Some lumps of copper were present, which indicated indeterminate type of objects.

The rampart was built in Period I by dumping of dug-up yellow and black clays to form a thick wall with a gentle slope on the inner side and a less-pronounced one on the exterior. It enclosed an area approximately of 1.6 x 1.2 km. It had a basal width of about 60m and maximum extant height about 12.6m. It was built in a pentagon shape, wider at northwestern side than the southern side following the outlines of a convex bend in the course of river Sipra. It was surrounded on the west and distantly on the north by the river. It is 74 to 47m wide on the eastern side and 197m on the west. A moat was surrounding the fortification, which formed a circuit of water barrier by connecting with the river at both ends. It was 24m wide and 6.6m deep. The rampart had a brick platform over its toe towards the moat to prevent scouring by water. A unique contraption of a network of hollow rectangular chambers made of neatly cut logs of wood with 23 to 25 cm square cross-section was built alongside the river and following its curved outline in order to prevent the mud rampart from erosion resulting out of periodical floods of the river. The rampart survived as a city wall during the whole of Period III but ceased to be of utility during the last Period IV. The excavations exposed a 7 to 32m wide road running through an opening or gateway in the northeastern corner of the eastern wall. It was built of a veneer of gravel laid with a camber over a clay soling. Chronology: 750 to 500 BC

5.1.56. Period II

This is a prosperous period marked by the objects of diverse variety, varied structures in different materials, coins in large numbers and evolved ceramics.

The structures of the period were made variously of mud, mud-bricks, stone rubble and burnt bricks. The mud and burnt brick structures were usually built over a plinth of rubble and clay. The flooring too lay on a bed of rubble and was made either of clay, occasionally mixed with mud-bricks, or brick-jelly. The mortar and plaster, wherever available, were of a smooth paste of clay. The floors were renewed or raised periodically with clay. The use of lime bricks with a glazed surface was noticed, though no structure where they had been used was found. The houses appeared to have been roofed generally with oblong tiles with double perforations for being fixed in position. Several terracotta ring-wells were found in this and subsequent periods, which served as soakage pits.

The roads of this period were usually built of rubble of assorted size with clay soling; occasionally black sticky clay was also used, as the semblance of a road through one of the openings across the defences would suggest. A massive tank measuring 10.36m x 7.92m was built of burnt bricks measuring 76 x 76 x 18 cm presumably for storage of water. A long channel of trapezoidal cross-section was traced to a length of 25.9m. It had a right-angled bend possibly for use in conjunction with an industrial workshop, which needed a steady supply of water, such as the iron industry. The moat around the fort on the eastern side was reduced in width from 46.4m to 39.3m, owing to the shortage of water, by constructing a 1.14m wide revetment wall at its outer edge.

The pottery of the period was characterised by the Northern Black Polished ware and its associate ceramics, such as a thick unslipped Grey ware comprising carinated dish, bowl with incurved rim or occasionally with a bevelled rim and elongated vase with a chamfered rim; Plain Red ware with jars in various shapes and collared basin; and Vesiculated ware constituting carinated and flange-rimmed jars. The Black-and-Red ware and Black Slipped wares continued in limited quantities for a short time.

The Northern Black Polished ware was found in large number and in wide varieties ranging in colour from golden or silvery to various shades of black. The ware appears to have been locally manufactured, considering the find of large numbers of rather poor specimens, including those without slip on the interior. The occurrence of painted patterns in an orange or saffron-coloured pigment on sherds of the ware, including one bearing black-painted band on the exterior and interior as well, deserves mentioning. One broken frag-

ment was found riveted with copper wire. The shapes consisted of the plain Red, thick Grey and Vesiculated wares.

Other articles comprised the objects of games, ornaments, etc. They are gamesmen of terracotta, dice of terracotta and ivory, pottery discs with single or double perforations or with none, rounded balls of stone and terracotta, antimony rods of copper and ivory, combs of ivory, plain and decorated bangles of terracotta, stone, shell, glass and copper; beads of terracotta, ear ornaments of ivory, terracotta and copper; hair-pins of ivory. The terracotta skin rubbers, hollow punch-shaped hair-scratchers, animal and human figurines including mother goddess are some other important objects found in this period. Grinding stones, pestles and mortars, carinated cooking pots with soot deposits and simple clay-lined ovens indicated the kitchen equipments.

A collapsed tile-roofed mud house was found in this period with agate beads, arrowheads and knitting needles of bone. Large quantity of unfinished agate beads of various shapes and sizes and chunks of bone and several finished pieces of bone arrowheads, knitting needles and iron objects possibly served as tools, confirmed it as a workshop.

While a large number of iron objects comprising arrowheads, spearheads, axes, spades, points, chisels, knives, sickles, door-rings, hooks, blades, clamps, sockets, choppers, latches, pivots, bars, borers, rods, door-chains and pans with handle indicated the popularity of the metal, the find of lumps of limonite as iron ore, quantities of slag deposits of calcite and aragonite for use as a flux in the smelting of iron, the remain of an open-type heaped-up furnace for smelting the metal and a blacksmith's forge for the manufacture of finished goods, such as chisels, knives, axes, etc., is significant.

The seals of ivory, inscribed in early Brahmi script attributable to the third-decond century BC, provided the upper limit of the chronological range of the Period.

5.1.57. Period III

This period is represented by a thick deposit of 2.44m divided into three phases-A, B, and C-correspondingly dated to 200 BC-500 AD (Sunga, Satavahana, Kushan and Gupta), 500-900 AD (Late Gupta to Early Paramara) and 900-1300 AD (Paramara to Early Muslim).

The structures of the period followed the earlier tradition of brick constructions over rubble plinths. Terracotta soakage-wells, bottomless soakage-jars and terracotta pipe-drains laid underground and the brick-drains represented the sanitary arrangements of the period. The road through the northeastern gateway remained in use in two successive phases of repairs.

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The ceramic industry comprised Red ware, Vesiculated ware, Thick Grey ware and Black-Grey ware. All the potteries were wheel-made other than the large soakage or storage jars. The Red ware is made of a medium fabric treated mostly with a slip and limitedly with a wash or thin slip. The common shapes were the bowl with an incurved and internally ledged rim with its variants in an unslipped ware, the inkpot lid, the flange-rimmed lid-cum-bowl, the button-knobbed lid, the collared basin, the jar of various shapes and the sprinkler of rather poor finish. Some specimens were distinguished by stamped designs. One terracotta medalion or casket bore the moulded form of a bullock-cart or chariot, and a moulded bowl had on the exterior a series of sacred symbols, including the svastika, kalasa, etc.

Terracotta votive tanks in the shape of round dishes with lamps on the edges and oblong ones with a lamp in each corner and snakes and fish in the simulated waters of the tank, and terracotta figurines of mother-and-child, recalling a mother-goddess, pointed to the forms of popular worship.

The plastic art responding to the needs of religion, amusements or toiletry was represented by terracotta human and animal figurines, such as mother-and-child, elaborately-decorated female figures in the round, tortoises, fish, elephants and horses with or without riders, etc. The bas-relief carvings on the stone slabs showing Ganesh, Mahisasurmardini, Siva and Vishnu and fragments of sculpture in sandstone and soapstone caskets with lids are important findings. A coin mould of the coin of the Antonine (Roman) emperor Augustus Hadrianus (117-134 AD), vessels of copper and a tortoise manufactured of copper wire are some of the eloquent examples.

Other important objects recovered are beads of terracotta, carnelian, amethyst, garnet, chalcedony, jasper, glass, bone and ivory, bangles of terracotta, glass, shell and copper, ear ornaments of terracotta, glass and shell discs threaded by a copper wire, skin-rubbers of terracotta, antimony rods of copper or ivory, hairpin and combs of ivory, pendants of stone or terracotta, clay bullae moulded from Greek or Roman coins, dice of terracotta and ivory, gamesmen of terracotta, truncated at the top and hopscotches fashioned from potsherds.

The Phase A of the period has yielded excellent evidence for the stone bead manufacturing. Beds of different stages, especially of chalcedony are obtained. Heating inside a closed earthen pot to get the hue, sandbag polishing and drilling techniques were known to the craftsmen.

A sealing engraved on the flat and circular knob of a terracotta casket and reading Nagabdhisa pavajitasa in Prakrit and Brahmi letters of 1st century AD is noteworthy.

5.1.58. Period IV

This period is represented by a cultural deposit of 2.13m to 2.74m and is marked by the end of Paramara rule and the beginning of Muslim rule in Malwa. The site was obviously abandoned after a comparatively short-lived occupation during the Period, and the town shifted away from the confines of the fortified walls, which had ceased to be of any effective use. The upper strata were found disturbed by deep and large pits, dug presumably for the purpose of removing building materials for new constructions.

The period is characterised by Muslim coins of Aurangzeb, Shah Alam, Daulat Rao Scindia, which indicated periodical visits of the place. Other important findings are ornaments of gold, soapstone beads, terracotta animal figurines, copper rings and a typical pottery consisting of a dull-red to Red ware, which represented the unslipped mica-dusted vase and knife-edged bowl and the Red slipped finial-shaped lid, spouted vase, basin with a nail-head or obliquely cut rim, carinated cooking jar with flanged rim and cooking pan with a loop-handle marked with patches of soot. There were a few sherds of dull and coarse Grey ware and Glazed sherds of indeterminate shape.

5.1.59. Summary

Ujjain is one of the famous ancient cities of India finds place enormously in ancient literatures. It was a place for synthesis of a number of religions. The Periplus of Erythraean Sea mentions this city as Ozene, which was an important trade centre that connected three main trade routes of ancient India. Chandragupta II, identified as the celebrated king Vikramaditya, ruled over this city in c. 375 AD, in whose time Ujjain became a great centre for Sanskrit learning.

The city planning had begun in the Period I, marked by Black-and-Red ware, dated back to c. 750 to 600 BC. A strong rampart was built in pentagon shape. It was surrounded by a moat, which formed a circuit of water barrier by connecting with the river at both ends. The moat was 24m wide and 6.6m deep. The wide roads connected different parts within the city. The succeeding period (c.3rd-2nd century BC) was marked by the Northern Black Polished ware culture. A large-scale building activity has been noticed in this period. The structures of were made variously of mud, mud-bricks, and stone rubble and burnt bricks over a plinth of rubble and clay. The use of lime bricks with a glazed surface was noticed in this period. The roofs of the houses were generally built of oblong tiles with double perforations. The lifestyle of the people was radically transformed in this period. A number of sophisticated objects comprising objects of terracotta, shell, glass, ivory, bone, stone and metal were

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used in the households, for attire or adornments, entertainment, workshop, agriculture, masonry, weapons and art objects. A fully developed bead-manufacturing workshop was discovered in the excavations. The subsequent culture was marked by Sunga, Satavahana, Kushan and Gupta (200 BC-500 AD), Late Gupta to Early Paramara (500-900 AD) and Paramara to Early Muslim (900-1300 AD) Periods. In these periods the building activities further developed. The earlier tradition of brick constructions over rubble plinths continued. A large-scale civic amenities and sanitary arrangements were started with the use of terracotta soakage-wells, bottomless soakage-jars and terracotta underground pipe-drains and the brick-drains. The ceramic industry comprised Red ware, Vesiculated ware, Thick Grey ware and Black-Grey ware. The presence of mother-goddess pointed to the forms of popular worship. Besides, icons of Ganesh, Mahisasurmardini, Siva and Vishnu were carved on stone slabs in this period. After the end of Paramaras, the Muslim rule over Malwa marked the last period at the site.

5.1.60. Vaisali

Literary Evidence and Historical Background

Vaisali was the capital of the Lichchavi-gana, the republic of the Lichchavis, and a prosperous city during the age of the Buddha. It is mentioned in the Ramayana that the king Sumati, a descendant of Manu, ruled over it when Rama visited the place on his way to Mithila. The glory of Vaisali has been mentioned in the Buddhist and Jain texts. Buddha visited this place and second Buddhist council was held here. The Jain texts associate the place as the birthplace of Mahavira. Vaisali was annexed with the Magadhan empire only to lose its independence. Nevertheless, it remained as the administrative headquarter in the subsequent periods. Asoka had raised a pillar here.

Fahien visited the city in 5th century AD when it was still an important place. However, Huien Tsang found it as a ruin in first half of the 7th century AD. Abul Fazl mentioned the name of city as Basarh in his book 'Ain-i-Akbari'. So, sometime before this time the name of Vaisali changed to Basarh.

In 1961-62 A. Cunningham identified the site of Basarh as the ancient city of Vaisali on the accounts of Huien Tsang.

5.1.61. Objectives

The city of Vaisali is immensely important as a centre of Buddhism and Jainism. It was one of the great cities of ancient India. The excavations at the site were undertaken to understand the development of the city and the town planning during various periods and to reveal the significance of the associated cultures.

5.1.62. The site

The site of Vaisali or Basarh (25° 58' N: 80° 11' E) is situated in the Vaisali district about 35km southwest of Muzaffarpur and about 29km north of Hajipur. The main ruins are represented by over 500 x 240 m prominent fort known as Raja-Bisal-ka-Garh; the ruins are scattered outside the fort as well.

5.1.63. The Excavations

The fort was excavated first by T. Block in 1903-4 and D.B. Spooner in 1913-14; however, the Vaisali Sangha under the direction of Krishna Deva undertook controlled excavations in 1950. He excavated the Garh and Chak Ramdas sites. Later A.S. Altekar also excavated the site between 1958 and 1962 on behalf of the K.P. Jaiswal Research Institute. The excavated areas are Kharauna Pokhar, Raja-Bisal-ka-Garh, Chakramdas, Lalpura, Kolhua and Virpur.

5.1.63.a. Kharauna Pokhar

This is a tank with 426m length and 198m width. Locally it is believed that this is the ancient abhishek-pushkarini of the Lichchhavis, in which none other than the Lichchhavi chiefs were taking bath. The tank does not have any wall on the top of the embankment. However, a wall of 97.5cm wide was present along the slope. The foundation of this wall could not be traced all over, but the meeting points of the southern, eastern and western sides of the wall could be located. The bricks used were of uniform size, i.e., 37.5 x 22.5 x 5 cm. Cast coins and terracotta figurines of Sunga age were collected from the tank.

The excavations unearthed a Stupa to the northeast of the tanks, which is considered to be built by the Lichchhavis over the corporal relics of Buddha. The original Stupa was small structure about 7.5m in diameter and was enlarged four-times. It was built of layers of piled-up mud separated by thin layers of cloddy-clay which contained Northern Black Polished ware. A large quantity of Northern Black Polished ware was also obtained in the core of the Stupa. Burnt bricks of 37.5 x 22.5 x 5 cm size were used in the first enlargement. In the subsequent enlargements re-used burnt bricks and brickbats were used. The diameter of the Stupa was increased to 12m in the 3rd enlargement. The excavation in the core area brought to light a soapstone casket. It was filled by one-fourth with ashy-earth, a small piece of gold leaf and a copper punch-marked coin. It was evident that the Stupa was initially built during the currency of the Northern Black Polished ware between 600-200 BC. Perhaps, its first enlargement took place during the Mauryan time.

5.1.63.b. Raja-Bisal-ka-Garh

The excavations carried out in the fort area brought to light three periods of structural developments. In the beginning (Pd. I), bricks measuring 47.5 x 27 x 7.5 cm were used, which probably belonged to Mauryan age. In the next period (Pd. II) extensive brick buildings were noted along with sprinklers and deep bowls in Red ware dated to Kushan age. The last period (Pd. III) yielded substantial northsouth running brick walls and rooms of various dimensions. Tiles were used for making roofs in this period. The terracotta sealings brackets this period into Gupta age. A trench at the centre of fort yielded Northern Black Polished ware sherds and coarser variety of typical Painted Grey ware sherds with painted leaf designs. Besides, gold and silver objects found in small pots comprising amulets, ear-ornaments, humped bulls, a standing human figure in the Kushan-Mathura style, a hair clip or armlet and 121 beads of semiprecious stones.

The excavations in the defence area revealed three periods of constructions. In the first period the wall was made of baked bricks on a deposit associated with Northern Black Polished ware, probably belonged to Sunga age. In the second period the defences consisted of a massive rampart, 20.6m in width at the base, 6.4m width at the extant top and about 4m in extant height, made of earth, the digging of which left a moat around the fort. A sealing of Agnimitra with characters of 200 BC points to the date of the construction of rampart. In the succeeding period (Pd. III), which probably belonged to late Kushan and early Gupta age, a brick rampart, 2.7m wide, was constructed with military barracks. Some of them were built of bricks measuring 36.2 x 23.7 x 5 cm. A number of spearheads, arrowheads of iron and Kushan coins were unearthed from this place. Each period yielded terracotta seals and sealings with Brahmi legends.

5.1.63.c. Chakramdas

The site of Chakramdas is located about three kilometres to the northwest of the fort. The excavations at this site revealed two periods of occupation below a badly disturbed deposit with mixed up objects of diverse ages. Period I was represented by the dish, bowl, basin, lipped bowl and trough in coarse Black-and-Red ware and Red wares. In succeeding period Northern Black Polished ware appeared along with Grey and Red wares. A few bone points were obtained from this period.

5.1.63.d. Baniya

The excavations at the site of Baniya brought to light a single culture deposit represented by Northern Black Polished ware associated with Red ware. The antiquities collected

from this excavation included, terracotta human and animal figurines, nagas, balls, dabbers and toy cart-wheels; beads of terracotta, crystal, amethyst, agate and carnelian; bangles and a broken oblong object of soapstone having a crescent standard; cast and punch marked coins; antimony-rods of copper; iron objects like dagger; bone pendants and a copper standing female figurines showing fine workmanship.

The subsequent excavations at the pillar area, Chaturmukha-Mahadeva temple, Lalpura and Virpur have yielded deposits belonging to different periods starting with Northern Black Polished ware associated with coarser variety of Black-and-Red ware and Painted Grey ware, Sunga-Kushan, Gupta and pre-Mughal periods.

5.1.64. Ceramics

The ceramics of Vaisali can be divided into five distinct groups each represented by a particular period. The Black-and-Red ware is the earliest ceramic of the region belonging to Period I. It is found associated with the Grey and pale-Red wares. In the succeeding Period (II) Northern Black Polished ware was found as the main ceramic along with degenerated type of Painted Grey ware, only at the Garh area. It was also associated with Black-and-Red ware, Black, Grey, Buff and Red wares. In Period III all the associated wares of Northern Black Polished ware continued in the earlier deposits, however in the upper level sprinklers, deep bowls and straight-sided dishes of Grey ware were found. Red ware is the only pottery found in Period IV and is obtained with pre-Mughal Glazed ware in Period V. Apart from a few black painted sherds of Painted Grey ware most of the ceramics are plain and are wheel-made. Handmade potteries are very scarce. A few stamped designs of leaf, lozenge, srivatsa, purnaghata and solar discs are noted on the Red ware.

5.1.65. Terracotta Art Objects

The terracotta art objects of Vaisali find a special position. A large number of terracotta figurines belonging to different periods have been discovered from the excavations. These included both humane and animal figurines, which reflects contemporary artistic skill and know-how. This also throws lights on the dress and ornaments of the people of that time.

The humane figurines, both male and female, of different periods had the following characteristics. The Mauryan figurines showed archaic features and were hand-modelled. The Sunga figurines showed profuse ornamentations by appliqué techniques. The figurines of Kushan period are characteristics by non-Indian faces and are made by moulded and hand-modelled methods. The Gupta period figurines are proportionately made by moulds. Several figurines of Naigamesa, female with goat-like face, hooked nose, slit mouth, dan-

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gling pierced ears, upward protruded hair-crest with a hole and prominent breast are present in this period. A few Naigamesa couple are also found in this period. The gods and goddesses made of terracotta or depicted on clay seals included Vayu, Nrsimha, Durga, Lakshmi, etc.

The terracotta animal figurines comprised dog, ram, wolf, deer, horse, elephant, cat, rabbit, monkey, boar, crocodile, humped bull, lion, tiger, rhinoceros, etc. These are hand-modelled and some have holes in the neck. Several Naga figurines with raised hood are obtained. Besides, toy-carts and wheels, balls and skin rubbers are commonly found.

5.1.66. Coins

The excavations have yielded a number of punch-marked and copper cast coins. The punch-marked coins, out of 15 coins, three silver, one silver-coated copper and 10 copper specimens were found. All the three silver coins are from the Mauryan period (Pd. II) with caduceus on the reverse and five or four symbols on the obverse. The symbols are Sun, six-armed, crescent hill, caduceus, three-arched hill, etc. These are rectangular in shape. The round silver-coated copper coin is also found from Mauryan level. On the obverse two symbols, sun or wheel and caduceus are made. The copper punch-marked coins are found from different levels. These are square and rectangular in shape. Two square coins have blank reverse and one has four taurine symbols on the obverse belongs to Mauryan period. Another rectangular coin has only Sun symbol on the obverse, belonged to Period V.

The copper cast coins are found in large number from the excavations. Out of 68 coins, 62 were of rectangular types and rest are circular types. The symbols found on the obverse of coins are three-arched crescent hill, square cross, tree in railing with ovate lanceolate leaves taurine, lion or tiger facing a tree in railing with lanceolate leaves, snake symbol, svastika, Ujjain symbol, caduceus, etc., and on the reverse the symbols are elephant, triangular-headed symbol, Ujjain symbol, an animal with fish like thing in the mouth, ladder, tiger, svastika, taurine, etc. Out of 62 rectangular coin, 32 belonged to Period II (6th-2nd century BC), 10 from Period III (2nd century BC to AD 2nd century), nine from Period IV (2nd to 6th century AD), three from Period V (Post 6th century AD) and three from the tank and five from the surface.

5.1.67. Summary

In 1961-62 A. Cunningham identified the site of Basarh as the ancient city of Vaisali on the accounts of Huien Tsang. Vaisali has remained one of the major centres of Buddhism and Jainism. The Jain believes that Mahavir was born here. Though it was annexed with the

Magadhan empire, it did not lose its administrative prowess at any point of time. There are evidences probably during the Mauryan period the building of the city was started. It is believed that Asoka established a lion pillar here. The Lichchhavis built a Stupa on the corporeal relics of Buddha inside the city. The city flourished from Black-and-Red ware culture to the Mughal period through the late Painted Grey ware and Northern Black Polished ware cultures.

It has a well-planned city surrounded by a strongly built fortification and a moat. The buildings were expanded manifold during the Sunga-Kushan time and also during the Gupta period. There were barracks, watchtowers and bastions attached to the defence wall. The repertoire of iron objects, which includes a large number of weapons, such as daggers, swords, knives, arrowheads and spearheads, suggests the city was well protected by strong armed forces or soldiers. There were temples, stupas, viharas and tanks inside the city for different clans of people, such as the Brahmins, Buddhists and Jains. The terracotta deities beautifully adorned with appliqué dresses, headgears and ornaments reflect the religious faith and contemporary adornment style of the people. Vaisali was also connected with trade routes. The large number of silver and copper coins indicates its strong economy and opulence during that time. Various artistic workmanships have been noted at the site. Iron work or black-smithy was very popular along with bead manufacturing and terracotta industries including pottery manufacturing. The terracotta art of the city has a special position in the contemporary world.

Fahien and Huien Tsang visited the city in fifth and seventh century AD respectively. They have described it as a strong religious hub and one of the powerful and affluent cities in the contemporary India. The city lost its name and glory some time before the Abul Fazl's Ain-i-Akbari, who mentions its name in the book as Basarh.

5.1.68. Check Your Progress

1. Describe the importance of excavations at Atranjikhhera?
2. What is the significance of Black-and-Red ware culture at Atranjikhhera?
3. Give an elaborate picture of socio-economic and subsistence pattern of the Painted Greyware culture at Atranjikhhera?
4. Emphasize the development that took place in the societies with the introduction of iron in the light of the excavations carried out at Atranjikhhera?
5. Write a short note on the first settlers of the Atranjikhhera?

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6. Describe the importance of Painted Grey ware culture at Hastinapura and throw substantial light on the socio-economic life of the people in this period?
7. Narrate the Archaeological significance of excavations at Hastinapura?
8. Write a short note on the Painted Grey ware culture and Mahabharata?
9. How do the excavations at Hastinapura illuminate the dark period between the end of Harappan civilization and Beginning of Mauryan period?
10. Write a brief note on the excavations at Kausambi?
11. Give glimpses of town planning in the Northern Black Polished ware culture at Kausambi?
12. Write a short note on the Ghositrama monastery?
13. Describe succinctly the defence strategy or fortification at Kausambi?
14. Write about the numismatics evidences of Kausambi?
15. Give a brief note on the terracotta art of Kausambi?
16. Describe the architectural planning of the Palace area?
17. Write a short note on the Ghositrama monastery?
18. Describe succinctly the defence strategy or fortification at Kausambi?
19. Write about the numismatics evidences of Kausambi?
20. Give a brief note on the terracotta art of Kausambi?
21. Describe the architectural planning of the Palace area?
22. Give a picture of town planning and socio-economic condition of the people during the Greek period at Taxila in the light of evidences found from the excavations?
22. Write a short note on the art and architecture of Greeks at Taxila?
23. Discuss the evidences of Saka-Parthian rule over Taxila?
24. Describe the town planning and social life during Kushan rule over Taxila on the basis of evidences from the excavations?

Write short notes on the following-

- (a) Bhir city
- (b) Sircap city

- (c) Sirsukh city
- (d) Ionian temple of Jandial
- 26. Describe the development of city of Ujjain in the light of evidences found from the excavations?
- 27. Write a short note on the town planning of the Ujjain city?
- 28. Give an account of the socio-economic and religious condition of the people at Ujjain on the basis of the excavated materials?
- 29. Write a short note on the town planning of Vaisali?
- 30. Describe the socio-economic and religious condition of people during the Maurya, Sunga-Kushan and Gupta periods as reflected by the excavations at Vaisali?
- 31. Throw substantial light on the development of the city at Vaisali during various periods as revealed by the excavations?
- 32. Give a brief description on the numismatic evidence of Vaisali?
- 33. Write a short note on the terracotta art of Vaisali?
- 34. Describe the urbanization of Mathura in the light of evidences from the excavations?
- 35. Write a short note on the excavations at Mathura?
- 36. "Mathura School of Art"—define its nature, characteristics and development?
- 37. Write a note on the Mathura coins?

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यूनिट -2 मध्य प्रदेश की शैलचित्रकला एवं विकास

भूमिका

शैल चित्रकला का इतिहास

शैलचित्रों के प्रमुख केन्द्र

शैलचित्रों का वर्गीकरण

शैलचित्रों का काल निर्धारण

भूमिका

शैल चित्रकला को पुरातत्व की विभिन्न विधाओं के अन्तर्गत अब महत्वपूर्ण अंग माना गया है। यद्यपि इस कला का प्रारंभिक प्रचार-प्रसार विदेशों में ही हुआ, परन्तु हमारे देश के पुरातत्ववेत्ताओं के अथक प्रयास से सामान्यजन की इनके प्रति जागरूकता पैदा की। कार्लाइल, काकबर्न द्वारा इस कला पर शोध का प्रारम्भ, डी.एच. गार्डन, एण्डरसन द्वारा इनकी महत्ता पर विस्तृत प्रचार-प्रसार एवं पुरातात्विक उत्खनन का प्रारंभ तथा आजादी के पश्चात् डॉ. वाकणकर, एस.के. पाण्डे, मठपाल, शंकर तिवारी इत्यादि विद्वानों द्वारा इस कला का चरमोत्कर्ष पर पहुँचाना शैलकला की सफलता का प्रतीक है। सम्पूर्ण भारत में शैलकला के दर्शन होते हैं परन्तु मध्य प्रदेश सभी प्रदेशों में अग्रणीय है। मध्य प्रदेश में जिला रायसेन एवं जिला मन्दसौर के अन्तर्गत सर्वाधिक शैलचित्र प्राप्त होते हैं। डॉ. वाकणकर द्वारा शैलचित्र पर सर्वाधिक कार्य किया गया है। उनके द्वारा भीमबैठका की खोज ने विश्व में अपना सर्वोच्च स्थान प्राप्त किया है। महत्वपूर्ण विशेषताओं के कारण ही भीमबैठका के शैलचित्रों को विश्व धरोहर की श्रृंखला में लिया गया है।

टाल्सटाय के शब्दों में - " कला अपने हृदय में उठी हुई भावनाओं की अनुभूति को क्रिया, रेखा, वर्ण, ध्वनि, शब्द आदि के सहारे दूसरों के हृदय में पहुँचा देती है । "कला का प्रदर्शन कलाकार के मन की अभिव्यक्ति है। उसे चाहे वह किसी भी माध्यम से प्रदर्शित करें। चित्रकार अपने विचारों को चित्र बनाकर, कवि कविता लिखकर, लेखक अपने लेख से, नाट्यकार अपने अभिनय से अभिव्यक्ति प्रकट करता है। रवीन्द्रनाथ टैगोर के अनुसार "व्यक्तित्व की अभिव्यक्ति करने को ही कला कहते हैं"। इस प्रकार हम आदिमानव की अभिव्यक्ति तथा मानस की भावना शैलाश्रयों में उनके द्वारा बनाये गये चित्रों में देखते हैं, जिनके उदाहरण सर्वत्र देखे जा सकते हैं। उसने अपने विचार या अभिव्यक्ति तत्कालीन जन-जीवन, पशु, पक्षी, आखेट, युद्ध दृश्य इत्यादि नाना प्रकार के चित्रों से की। इस अभिव्यक्ति का समूहिक प्रचार-प्रसार प्राचीन विश्व में था। शैलचित्रकला लगभग विश्व में समता लिये हुए है। हम पृथ्वी के किसी भी भू-भाग में शैलचित्रकला या उत्कीर्णन, का अध्ययन करें तो विषय वस्तु समानता लिये मिलेगी। प्राचीन समय में शैलचित्रकला के साथ-साथ उत्कीर्णन कार्य भी चलता रहा। यूरोप, अमेरिका, अफ्रीका, भारत इत्यादि देशों में इस प्रकार के अवशेष पाये जाते हैं। इस कारण ही पुरातत्व के क्षेत्र में शैलचित्रकला का अपना एक विशिष्ट महत्व हो गया है।

शैलचित्रकला की महत्ता को पूर्व में कुछ ही पुरातत्ववेत्ताओं ने समझा। विदेशी पुरातत्ववेत्ताओं ने प्रारंभ में इस कला का अध्ययन प्रारम्भ किया, परन्तु भारत में इसकी महत्ता को समझने में अधिक विलम्ब हुआ। सन् 1883 में कार्लाइल, काकबर्न द्वारा भारत में शैल चित्रकला की खोज का श्रीगणेश माना जाता है, परन्तु धीरे-धीरे खोज के साथ-साथ उत्खनन भी प्रारम्भ किया गया, ताकि इनका समय निर्धारण किया जा सके। वास्तविक रूप से वे हमारे देश में आजादी के पश्चात् ही इस कला पर कार्य प्रारंभ किया गया तथा पुरातत्ववेत्ताओं के अथक प्रयास के पश्चात् ही इस ओर सामान्य जन का ध्यान आकर्षित हुआ।

DEVELOPMENT AND SALIENT FEATURES OF THE ROCK ART OF CENTRAL INDIA (267)

सामान्य रूप से पुरातत्ववेत्ता या कलाविद् मूलतः स्थापत्य एवं मूर्तिकला, चित्रकला, अभिलेख शास्त्र, ताम्राश्रययुगीन सभ्यताओं के अध्ययन में ही लगा रहता था, परन्तु डॉ. वाकणकर एवं अन्य पुरातत्ववेत्ताओं द्वारा शैल चित्रकला के क्षेत्र में गहन अध्ययन, प्रचार-प्रसार किये जाने पर इसके अध्ययन को महत्व दिया जाने लगा। भीमबैठका की खोज ने विश्व का ध्यान भारतीय शैलचित्रकला की ओर आकर्षित करवाया। इस तारतम्य में देश-विदेश के विश्वविद्यालयों के विद्वान मध्य प्रदेश के विभिन्न शैल कला केन्द्रों पर आकर संशोधन कार्य प्रारंभ करने लगे। भारतीय शैलचित्रों की महत्ता के कारण ही मध्य प्रदेश में चित्रित शैलाश्रय भीमबैठका, अल्तामिरा, लासको, (फ्रांस), डोरडोगने, अफीका की श्रेणी में आ गये। अस्तु भारत में रायसेन क्षेत्र एवं भानपुरा, जिला मन्दसौर के शैल चित्र चित्रकला केन्द्र सर्वोपरि माने जाने लगे।

भारत में सर्वाधिक शैलकला केन्द्र विन्ध्याचल एवं सतपुड़ा पर्वतमाला की प्राकृतिक बनावट ही है, जिसमें हजारों शैलाश्रय प्राकृतिक रूप से बनते रहें। पर्वत मालाएँ आदिमानव के रहने के लिए वरदान सिद्ध हुईं। जितनी प्रदेश में नदी घाटियों की सभ्यताएँ दिखाई नहीं देती, उतनी शैलाश्रयिनकला पर्वत मालाओं में दृष्टव्य होती है। ताम्राश्रययुगीन सभ्यताओं की चित्रकला तथा शैलाश्रयों की चित्रकला में साम्यता होना अत्यंत ही आश्चर्य का विषय है, जो काल निर्धारण में सहयोग प्रदान करती हैं। ऐसा ही एक स्थल " पिपलिया लोरका " भीमबैठका के निकट स्थित है, जहाँ राज्य पुरातत्व विभाग, भोपाल द्वारा किये गये उत्खनन के अन्तर्गत चित्रित मृदभाण्ड प्राप्त हुए हैं, जिनकी तुलना शैलाश्रयिन चित्रकला से की जा सकती है।

मध्य प्रदेश में शैलचित्रों के रंगों में साम्यता अवश्य दिखाई देती है परन्तु, विषय वस्तु का अन्तर व विषयांतर हो जाता है। भीमबैठका में अश्वमेध विषयक चित्र, हाथी-घोड़ों की सुसज्जित सेना, कात्पनिक पशु चित्रण, युद्ध-दृश्य, मानवाकृतियों के अंकन में अन्य क्षेत्रों की अपेक्षा यहाँ विकास देखने को मिलता है। इन सभी के आधार पर विश्व की शैल चित्रकला के क्षेत्र में मध्यप्रदेश की चित्रकला अपना महत्वपूर्ण स्थान रखती है। कई शैलाश्रयों में किये गये उत्खनन तथा अनुसंधान से शैलचित्रकला के काल निर्धारण में उल्लेखनीय सहयोग मिला, वहीं दूसरी ओर उपलब्धियों तथा उत्खनन से प्राप्त अवशेषों से शैलचित्रों की साम्यता किये जाने के महत्वपूर्ण परिणाम निकले। ताम्राश्रयकाल या उससे पूर्व घोड़ों के चित्र नहीं मिलते हैं। परन्तु इतिहास युगीन शैलचित्रों में घोड़ों का अंकन मिलता है, जिससे यह अनुमान लगाया गया कि भारत में घोड़े ताम्राश्रयकाल के पश्चात् ही आये। कई हिंसक पशुओं के चित्र भी यहाँ शैलाश्रयों में मिलते हैं, जिनका वर्तमान में कहीं भी इस क्षेत्र में अस्तित्व नहीं है। इन पशुओं में जंगली भैंसा तथा दो सिंगों वाला गैंडा प्रमुख है।

भारतीय संस्कृति व कला के इतिहास में अब शैलचित्रकला महत्वपूर्ण मान ली गई है तथा इसकी महत्ता को देखते हुए प्रसिद्ध विद्वान पर्सी ब्राउन ने "इण्डियन पेंटिंग्स" के अन्तर्गत चित्रकला से जोड़कर इसे प्राथमिकता दी।

डॉ. एस. के. पाण्डे द्वारा भारत के सभी शैलकला केन्द्रों को पाँच क्षेत्रों में बांटा है। जिनमें ये उत्तर क्षेत्र, पूर्व क्षेत्र, पश्चिम क्षेत्र, मध्य क्षेत्र, तथा दक्षिण क्षेत्र हैं। इनमें सबसे महत्वपूर्ण मध्य क्षेत्र को मानकर बताया कि चित्रित शैलाश्रय विन्ध्य, सतपुड़ा तथा अरावली पर्वतमाला में फेले हैं, तथा विन्ध्य क्षेत्र के अन्तर्गत रायसेन, सीहोर, भोपाल, विदिशा का क्षेत्र माना जाता है। क्षेत्रों के अन्तर्गत निम्न महत्वपूर्ण शैलकला केन्द्र आते हैं—

1. पुतली करार, 2. हाथी टोल, 3. खरवाई, 4. सतकुड़ा, 5. बरेली, 6. चिकलोद, 7. तेलन्दी, 8. भोजपुर, 9. भीमबैठका, 10. लाखाजुआर, (जैसे यह भीमबैठका क्षेत्र में ही आता है) 11. जावरा, 12. उरदेन, 13. साँची, 14. नागौरी, 15. माची, 16. घाट पिपलिया, 17. दीवानगंज, 18. शहदकराड़, 19. भदमदा, 20. नीमखेरिया, 21. बरहट, 22. भानपुरा क्षेत्र इत्यादि हैं।

ग्राम से ग्राम सर्वेक्षण के अन्तर्गत सैकड़ों शैलाश्रय देखे गये हैं, जिनका विशेष अध्ययन प्रगति पर है। कुछ शैलाश्रयों में ऐसे भी चित्र मिले हैं जो विदेशी शैलचित्रों से साम्यता रखते हैं। इस प्रकार से उनकी तुलना करना भी उचित होगा। ताम्राश्रयकालीन पुरास्थलों पर किये गये उत्खनन से प्राप्त मिट्टी के पात्रों पर मानवाकृति, पशु, इत्यादि का चित्रण है। साथ ही द्वितीय या प्रथम श० ई. पू. के सिक्कों पर बने चिन्ह भी शैलचित्रों में बने चिन्हों से साम्यता रखते हैं। इस प्रकार से इन चित्रों की तुलना किया जाना अत्यंत आवश्यक है, जिनसे काल निर्धारण में सहयोग प्राप्त होगा।

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विन्ध्याचल पर्वतमाला क्षेत्र में बलुआ पत्थर की परतदार चट्टाने होने से शैलाश्रय उत्तम श्रेणी के माने जाते हैं, इस वजह से आदिमानव को इनकी प्राकृतिक दीवारों पर चित्र बनाना अत्यन्त सरल था। इसके अतिरिक्त शैलाश्रय घने जंगलों में होने से सुरक्षित रहे।

वैसे भी देखा जाये तो चित्रों की परम्परा आज भी गांवों में प्रचलित है। मध्यकाल तथा 15 वीं-16 वीं शताब्दी के पश्चात् गुहा मानव धीरे-धीरे गांव बनाकर शैलाश्रयों के निकटस्थ मैदानों में रहने लगा। परन्तु चित्रकला की परम्परा बराबर चलती रही। फर्क इतना ही था कि वे शैलाश्रयों की दीवारें थी, अब मकानों की कच्ची दीवारें केनवास बन गईं। विषय वस्तु तथा रंग वही प्रयोग में आते रहे जो शैलाश्रयों में प्रयोग किये गये थे।

शैलचित्रों के अध्ययन की सुविधा के लिये उन्हें क्षेत्रीयता देकर सुविधा की दृष्टि से विभाजित करना आवश्यक है ताकि उनका उचित प्रकार से वर्गीकरण किया जा सके। सामान्य रूप से यदि चित्रों का वर्गीकरण किया जाता है तो विषय वस्तु में सामान्ता मिलेगी, जैसी अन्य क्षेत्रों में है। सामूहिक-नृत्य, आखेट, पशुपालन, युद्ध इत्यादि चित्र शैली के विपरित हो सकते हैं, परन्तु साम्यता लिये होंगे। कुछ चित्रों में पौराणिक विषय वस्तु हो सकती हैं, जिनसे काल निर्धारण किया जा सकता है। उदाहरणार्थ अश्वमेध यज्ञ की प्रथा शुंग व गुप्त काल में प्रचलित थी, वही धारणा चित्रों में भी प्राप्त हो सकती है। इस प्रकार के चित्र काल-निर्धारण के लिये सहयोगी हो सकते हैं।

प्रदेश में शैलचित्रों का प्रकाशन तथा अन्य विषयक जानकारी कुछ पुस्तकों, शोध पत्रिकाओं तथा शोध पत्रों में विभिन्न विद्वानों द्वारा दी गई है, परन्तु एकत्रित जानकारी का फिर भी अभाव ही है। डॉ० वाकणकर तथा ब्रुक्स ने "स्टोन एज पेंटिंग्स आफ इण्डिया" डॉ० एस.के. पाण्डे ने "इण्डियन रॉक आर्ट", बिड़ला संग्रहालय से "प्राच्य प्रतिभा", भारतीय पुरातत्व सर्वेक्षण से "इण्डियन आर्क्योलॉजी ए रिव्यू" इत्यादि विद्वानों एवं संस्थाओं द्वारा जानकारी प्रकाशित की है। खोजकर्ताओं के अतिरिक्त स्थानीय शोध जिज्ञासुओं ने भी नई खोज के प्रयास किये हैं, जिसमें उन्हें आंशिक सफलता मिली है।

भारत में शैलचित्रों तथा उनकी खोज काकबर्न तथा कर्लाइल द्वारा प्रारंभ की गई। उसी परम्परा को निभाते तथा गति प्रदान करते हुए, शैलचित्रों के अध्ययन का प्रारंभ डॉ० वाकणकर तथा डॉ० एस.के. पाण्डे इत्यादि विद्वानों द्वारा माना जाता है। इनके द्वारा शैलचित्रों पर प्रभावी प्रकाश डाला गया है। तत्पश्चात् प्रो. शंकर तिवारी तथा उनके द्वारा निर्मित "एस बेल्ट" के अन्तर्गत रायसेन, सीहोर तथा भोपाल क्षेत्र में बेतवा नदी के किनारे शैलचित्रों पर अनुसंधान किया गया। भारतीय पुरातत्व सर्वेक्षण की ग्राम से ग्राम पुरातत्वीय सर्वेक्षण योजना के अन्तर्गत सैकड़ों ग्रामों का सर्वेक्षण किया गया जिनमें कई ग्रामों के आस-पास चित्रित शैलाश्रय प्रकाश में लाये गये। इसके साथ ही पुतली करार, खरवाई तथा भीमबैठका इत्यादि स्थलों पर पुरातत्वीय उत्खनन भी किये गये जिनसे प्राप्त सामग्री काल निर्धारण में सहायक सिद्ध हुई। यहाँ शोध के अतिरिक्त उत्खनन कार्य तथा तुलनात्मक अध्ययन के पश्चात् प्रो. पाण्डे का कथन है कि शैलचित्रकला का प्रारंभ उत्तर पुरापाषाण काल से प्रारंभ होता है। उन्हें पहचानने में कठिनाई अवश्य होती है, क्योंकि उन पर वातावरण के परिवर्तन को "पेटिना" के रूप में देखा जा सकता है। कई जगहों पर—"सुपर इम्पोजिशन" होने से भी चित्रों को पहचानने में कठिनाई होती है। वैसे भी उस युग में लकड़ी की पतली काड़ियों या सलाईयों जैसे चित्र बनाये जाते थे। डॉ० वाकणकर ने भीमबैठका में हरे रंग के चित्रों को उत्तर पुरापाषाणकालीन माना है। उत्खनन में उन्हें "हेमेटाईट" स्टोन के टुकड़े मिले, जिनसे लाल रंग के चित्र बनाये जाते थे। मेसोलिथिक काल में लघु अश्मोपकरण का प्रयोग किया जाता था, उस प्रकार के चित्र हथियार लिये शिकारियों के धनुष-बाण में प्रयोग किये मिलते हैं, जोकि डॉ० वाकणकर द्वारा की गई महत्वपूर्ण तुलनात्मक अध्ययन द्वारा खोज है। ग्राम-ग्राम से सर्वेक्षण के अन्तर्गत दीवानगंज क्षेत्र में ऐसे शैलचित्र मिले हैं, वैसे अब तक नहीं मिले। उनकी बनावट तथा आकृतियों का तुलनात्मक अध्ययन किया जाने पर मध्याश्म (मेसोलिथिक) तथा ताम्राश्मकालीन निर्धारित किया गया है। भारतीय पुरातत्व सर्वेक्षण की प्रागैतिहासिक शाखा, नागपुर के तथा मध्यप्रदेश पुरातत्व विभाग के पुरातत्ववेत्ताओं ने भी प्रदेश के शैलचित्रों का पुरातत्वीय सर्वेक्षण किया है।

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विदेशी विद्वानों में जापान के प्रो. केमूरा ने शैलचित्रों का वर्णन जापानी भाषा में प्रकाशित पुस्तक में किया है। आस्ट्रेलिया के पुरातत्ववेत्ता इरविन न्यूमियार ने भोपाल तथा रायसेन क्षेत्र के 22 पुरास्थलों पर शोध कार्य किया जिसका प्रकाशन उन्होंने "लाईन ऑन स्टोन" में किया है।

शैलचित्रों के विषय में स्थानीय तथा धार्मिक धारणाएँ —

चित्रित शैलाश्रयों के विषय में स्थानीय धारणाएँ, कहावते इत्यादि महत्वपूर्ण सामग्री मानी जाती है जोकि शैलाश्रयों के क्षेत्र में वहाँ के ग्रामवासियों, आदिवासियों के मध्य रहकर सुनने या जानने को मिलती है। ग्रामवासियों एवं आदिवासियों में शैलचित्रों के विषय में बड़ी ही विचित्र धारणाएँ हैं। वे शैलाश्रयों को दाँते कहते हैं, तथा कहीं-कहीं टोल भी कहते हैं। धारणाओं के अनुसार ये सभी शैलचित्र मनुष्यों द्वारा नहीं वरन् चुड़ैलों द्वारा बनाये गये हैं। अतः शैलाश्रयों को चुड़ैलन की दाँते या दाँत से भी संबोधित करते हैं। कई ग्रामवासियों को करार या कराड़ भी कहते सुना है। जैसे भोपाल के निकट शहद कराड़ तथा रायसेन के निकट पुतली करार है। भीमबैठका में एक शैलाश्रय का नाम पिशाच गुफा भी है। लोगों की धारणा है कि इसमें पिशाच रहते हैं तथा उनके द्वारा ही चित्र बनाये गये हैं, जो कि सिक्कों से साम्यता रखते हैं।

डॉ० वाकणकर का मानना था कि शैलचित्रों में स्त्री चित्रण बहुत कम है। इससे अनुमान लगाया जा सकता है कि इनको बनाने वालों में स्त्रियाँ ही होती होंगी। आज ग्रामों में महिलाएँ ही चित्रों द्वारा घर को सजाती हैं। शैलचित्रों से तत्कालीन समय की राजनैतिक, आर्थिक, सामाजिक, धार्मिक जीवन की जानकारी मिलती है। इनमें खान-पान, रहन-सहन, पहनावा, पशुपालन तथा आखेट विषय महत्वपूर्ण हैं।

उदाहरण के रूप में भीमबैठका के विषय में ही हम विचार करें तथा वहाँ धारण है कि यह स्थल महाभारत युग से संबंधित रहा होगा। सर्व प्रथम भीमबैठका का नाम से ही ऐसा लगता है कि ये सभी विशाल चट्टाने भीम की बैठक रही होंगी। इस क्षेत्र के निकट रेल्वे लाईन पार करते ही भीर्योपुरा ग्राम है, जो सम्भवतः भीमपुर का अपभ्रंश है। भीर्योपुरा के निकट पण्डापुर नामक उजाड़ ग्राम है, जो कभी बसा होगा। लोगों का कहना है कि यह पाण्डवपुर था। पंचवटी के निकट ही बाणगंगा व गुप्त गंगा है। धार्मिक उद्घरणों से ज्ञात होता है कि भीष्म जब बाण शैया पर थे, तब अर्जुन ने जमीन पर बाण मारकर गंगा को अवतरित किया था। भीमबैठका के निकट एक अन्य शैलचित्र समूह है जो "लाखा जुहार" के नाम से विख्यात है। ऐसी किवदन्ति है कि पाण्डव यहाँ लाख के महल में रहते थे, जिसे दुर्योधन ने षडयंत्र द्वारा जलवाया था। यहाँ विशाल शैलाश्रयों में "प्रस्तर खण्डों" के मकान बने हैं। जिनमें कहीं-कहीं प्रवेश द्वार भी देखे जा सकते हैं। यहाँ प्राचीन समय में बहुत बड़ी बस्ती रही होगी। जिसकी लोग महाभारत युग से तुलना करते हैं। रायसेन दुर्ग के निकट एक शैलाश्रय समूह के एक बड़े शैलाश्रय को राम छज्जा भी कहते हैं यहाँ चित्रित शैलाश्रय चित्रण से परिपूर्ण है तथा इसमें पाद चिन्ह है। ऐसा कहते हैं, यहाँ राम आये थे। अतः उस शैलाश्रय को राम छज्जा कहते हैं।

शैलचित्रकला का इतिहास

शैलचित्रकला की खोज तथा इस विषय में सर्वप्रथम जानकारी इटली के प्रो. अनोती ने अपनी शोध पत्रिका में प्रकाशित कर बताया कि स्वीडन के नार्वेयन के अध्यापक ने 1627 ई० में वहाँ के शैलचित्रों की ट्रेसिंग अथवा नकल की तत्पश्चात् 1837 में सरजार्ज ग्रे ने सिडनी (आस्ट्रेलिया) की शैलकलाओं की खोज की। इनके साथ ही समकालीन यूरोप में प्रागैतिहासिक चित्रों की खोज का श्रेय एल.हार्ट को है। इनके पश्चात् हरबर्ट कुंट ने शैलचित्रों पर शोध किया। वर्ष 1840 में ही यूरोप में उत्कीर्णन प्रकाश में लाये गये। 1870-80 के मध्य उत्तरी स्पेन में स्थित अल्तामिरा की खोज ने दुनिया का ध्यान शैलचित्रों की ओर आकृष्ट किया जो कि विश्व में महानतम उपलब्धि मानी जाती है।

19 वीं शताब्दी तक शैलचित्रकला के क्षेत्र में फिर भी विशेष कार्य नहीं किया गया। अमेरिका के जी. मेलोरी की पुस्तक "पिक्चर रायटिंग आफ अमेरिकन इण्डियन" का प्रकाशन 1893 में किया गया। 20 वीं शताब्दी के प्रारम्भ में दक्षिण अफ्रीका तथा

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आस्ट्रेलिया के शैलचित्रों पर शोध कार्य, संग्रह तथा विस्तृत अध्ययन प्रारंभ किया गया। स्वीडन की शैलचित्रकला के पायनियर ओ. अलमाग्रीन तथा आल्प्स के अग्रेज विद्वान विलियरेंस ब्रिकलेव को चुना गया है। फ्रांस की डोरडोगने की गुफाएँ भी अपना महत्वपूर्ण स्थान रखती हैं।

सन् 1627 से अब तक विश्व के अनेक देशों में शैलचित्रकला की खोज की गई है, जिसमें भारत सहित कई देश स्पेन, फ्रांस, आस्ट्रेलिया, अफ्रीका, अमेरिका, इटली इत्यादि हैं। इन सभी देशों में भारत में सर्वाधिक शैलचित्र लगभग प्रत्येक प्रदेशों में प्रकाश में लाये गये हैं।

विश्व के महत्वपूर्ण देश जहाँ शैलचित्र खोज में लाये गये हैं :-

(1) स्पेन :-

उत्तरी स्पेन में लगभग 100 से अधिक गुफाएँ अथवा शैलाश्रयों की खोज की गई थी जोकि पेरिगार्ड तथा वेजरे नदी के तट पर स्थित थे। बेडरिक द्वारा कुछ महत्वपूर्ण स्थलों की गुफाएँ (शैलाश्रय) वर्गीकृत की गई हैं।

- 1 अल्तामिरा
- 2 बसोंडो
- 3 कुवडेल कोस्टलो
- 4 लो-पसियेगा
- 5 पिंडल

उपरोक्त स्थलों में अल्तामिरा की गुफाएँ प्रागैतिहासिक चित्रकला के क्षेत्र में विश्व में महत्वपूर्ण मानी जाती हैं। इसकी खोज 1879 में एक स्पेनिश मकेलिनो-डे-सोटुला द्वारा की गई थी। 1935 में अल्तामिरा के चित्रों का विस्तृत अध्ययन अबे-एच बुईल तथा एचओ ओबेरमोनी द्वारा किया गया। 1929 में एम.सी.बर्किट ने दक्षिण स्पेन में स्थित अमाहुलुसिया के चित्रों का अध्ययन किया। स्पेन में स्थित शैलचित्रों को 5 क्षेत्रों में विभाजित किया गया है।

- 1 बासक
- 2 सोन्ता डेरे
- 3 आस्टुरियस
- 4 ओल्ड केसल
- 5 अण्डालुसिया

स्पेन में खोजे गये शैलाश्रयों में विशेष रूप से धनुर्धारी, यौद्धा, मानवाकृतियों, पशु चित्रण पाया जाता है।

(2) फ्रांस :

फ्रांस की शैलचित्रकला के इतिहास में 1895 में इनकी खोज तथा अध्ययन के विषय में जानकारी मिलती है। सर्वप्रथम दक्षिण फ्रांस में स्थित डोरडोगने क्षेत्र में स्थित "ला-माउथे केवर्न" नामक स्थल पर चित्रित गुफाओं की खोज की गई। इसके पश्चात् 1896 में डेलेयु द्वारा पेयर-नान पेयर नामक गुफा की खोज की गई। वर्ष 1901 में कैपिटान तथा पेरिनो द्वारा फोनट-डे-गाउमें नामक गुफा की खोज की गई। फ्रांस में लगभग 77 से अधिक शैलकला केन्द्रों की खोज हो चुकी है।

(3) आस्ट्रेलिया :

आस्ट्रेलिया में भारत के समान ही सर्वाधिक शैलचित्रों की खोज की गई शैलचित्रों के साथ आदिमानव द्वारा निर्मित उत्कीर्णन भी प्रकाश में लाये गये, जिनकी शैली भी चित्रों के समान ही थी। आस्ट्रेलिया महाद्वीप के ये चित्र किम्बेरेलिस कसे विक्टोरिया तक पाये जाते हैं, जोकि विभिन्न चरणों तथा समय में बनाये गये थे। इन चित्रों में प्रागैतिहासिक चित्रों के साथ-साथ उसकी परम्परा बाद के कालों में भी चलती रही, जैसा कि इनके "सुपरइंपोजिशन" से ज्ञात होता है। ऐसा भी माना जाता है कि इनमें कई ऐसे भी

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चित्र है जो संभवतः यूरोप के लोगों के आस्ट्रेलिया में आने से पूर्व निर्मित किये जाते थे। इस प्रकार के शैलाश्रय अथवा गुफाएँ उत्तरी किंवरले के पश्चिमी भाग में स्थित हैं, जो कि यह परम्परा आज भी वहाँ देखी जा सकती हैं। आस्ट्रेलिया में हम कहीं भी इन्हें देखें तो उनमें प्राकृतिकता के दर्शन होते हैं तथा उत्कीर्णन में आकृतियों की उत्कृष्टता नजर आती है। इनमें मनुष्य, पशु, कंगारू, पक्षी, मछली इत्यादि हैं, जोकि सिडनी क्षेत्र में बहुतायात से देखने को मिलती हैं। एनड्रियस के अनुसार :-

"From geographical point of view the rock pictures of Australia can be divided into two groups. One group comprises the rock pictures of the north western and northern coastal regions. There are naturalistic in style and derive from external influences that cannot be identified with any accuracy. To these may added a stylistic group in the east and south-eastern part of Australia, which probably also traces its origin to external influences. In the case of the second major group, extending across the continent from the south west to the south-east the rock pictures are linear, some times even geometric, in style. In the mid west and in several regions of the south-east both styles occur side by side or fused together".

उपरोक्त देशों के अतिरिक्त सायबेरिया, मध्य एशिया, रूस, अमेरिका इत्यादि देशों में भी विभिन्न युगों के शैलचित्रों की खोज की गई है। ऐसा माना गया है कि साइबेरिया में किये गये उत्खनन से उत्तर पुरापाषाण के कलावशेष प्राप्त हुए थे।

भारत में शैलचित्रों की खोज

फेंको कोटिलिन पेननसूला तथा फेंको कोटिलिन पेननसूला तथा उरल पर्वत की चित्रित गुफाएँ, इटली, आस्ट्रेलिया की अल्पाइन पर्वतमालाओं में स्थित बोल्डर्स पर उत्कीर्णन कला, अमेरिका में खोजी गई आदि मानव की कला को सभी इतिहासकार, कला मर्मज्ञ तथा पुरातत्ववेत्ता सभी जानते हैं। इन सभी की खोज के आलावा भारत में खोजे गये शैलकला केन्द्र भी इन सभी में अपना महत्वपूर्ण स्थान रखते हैं, तथा विश्व में अपना नाम अग्रणीय किया है।

भारत में शैलचित्र एक बड़े भू-भाग में पाये गये हैं। इनमें सर्वाधिक मध्यप्रदेश में खोजे गये हैं। भारत में शैलचित्रों का इतिहास वर्ष 1880 से माना जाता है। शैलचित्रों की सर्व प्रथम खोज का श्रेय कार्लाइन् तथा काकबर्न को है जिन्होंने मिर्जापुर क्षेत्र में अनुसंधान कर प्रकाश में लाये गये हैं। इसका प्रकाशन "जर्नल ऑफ एशियाटिक सोसायटी" बंगाल में 1883 में किया गया। इस क्षेत्र में खोजे गये चित्रों में गेंडे का शिकार करते याने चारों ओर से घेरे छः व्यक्ति बनाये गये हैं, जो कि मस्तक पर मुकुट या मुखौटा लगाये हैं। काकबर्न तथा कार्लाइन् की इस प्रथम खोज ने पुरातत्व तथा शैलचित्र कला शोध के क्षेत्र में महत्वपूर्ण प्रारंभ माना जाता है, जिन्होंने गेरू के प्रयोग की बात कही तथा पुरातत्व का विषय न होने पर भी महत्वपूर्ण माना।

पुरातत्ववेत्ता ईरविन का कथन है कि उन्हें शैलाश्रयों के चित्रों के अतिरिक्त लघु अश्मोपकरण भी प्राप्त हुए। उनके द्वारा भल्डारिया के शैलचित्रों की प्रतिकृतियाँ भी तैयार की गई हैं। ऐसा माना जाता है कि शैलचित्रों की खोज से पहले दक्षिण भारत के कर्नाटक प्रदेश में सन् 1840 में बैल्लारी के निकट एक इंजिनियर टी.जे. न्यूबोल्ड द्वारा उत्कीर्णन प्रकाश में लाये गये जो अब अग्राप्त हैं अथवा लुप्तप्राय हैं।

भारतीय पुरातत्व सर्वेक्षण के प्रथम महानिदेशक, मेजर जनरल कनिंघम ने अपनी वार्षिक रिपोर्ट में वर्णन किया है कि जिंजा पहाड़ी में एक शैलाश्रय में लाल रंग से चित्रित ब्राह्मी का गुप्त कालीन लेख है, उसके निकट ही चित्रित पशु, हिरण, मानवाकृतियों इत्यादि बने हुए हैं। गुप्तकालीन ब्राह्मी के साथ चित्र बने होने के कारण इन चित्रों का समय भी गुप्त कालीन माना गया है। कनिंघम ने एक अन्य स्थान अपनी रिपोर्ट में ही गुप्त कालीन ब्राह्मी के निकट उत्कीर्णन बताया है, जिसमें हाथी के उपर ओहदा रखा है। कनिंघम के इस उल्लेख की जानकारी अन्यत्र नहीं मिलती है।

वर्ष 1892 के पश्चात् फ्रेड फासेट द्वारा दक्षिण भारत में कोप्पगल्लु के निकट शैल चित्रों को प्रकाश में लाया गया। इसके साथ

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ही उनके ही द्वारा 1901 में उत्कीर्णन प्रकाश में लाये गये हैं। केरल में भी एडकल की गुफाएँ महत्वपूर्ण कला केन्द्र मानी गई हैं।

प्रख्यात स्थापत्य कला के विद्वान तथा तत्कालीन कलकत्ता कला महाविद्यालय के प्राचार्य पर्सी ब्राउन ने शैल कला पर महत्व देते हुए इसे महत्वपूर्ण कड़ी माना।

सन् 1910 में रेलवे अधिकारी एण्डरसन द्वारा रायगढ़ से 17 कि० मी० पश्चिम में भूपदेवपुर रेलवे स्टेशन के उत्तर की ओर स्थित सिंधनपुर पर्वत की गुफाओं में शैलचित्रों की जानकारी दी। 1921 में पटना संग्रहालय के क्यूरेटर रायबहादुर मनोरंजन घोष ने मिर्जापुर क्षेत्र के उन शैलाश्रयों के चित्रों का अध्ययन किया जो कभी वर्षों पूर्व काकबर्न द्वारा खोज में लाये गये थे। उनके द्वारा सिंधनपुर के निकट शैलचित्र खोज में लाये गये। मनोरंजन घोष द्वारा होशंगाबाद के निकट आदमगढ़ की पहाड़ी के शैलचित्रों की खोज तथा गहन अध्ययन किया गया, जिसका प्रकाशन भारतीय पुरातत्व सर्वेक्षण द्वारा प्रकाशित मेमायर में किया (1932) गया।

1930 के पश्चात् ब्रिटिश अधिकारी डी.एच.गार्डन ने होशंगाबाद एवं पचमढी क्षेत्र के शैलचित्रों पर वैज्ञानिक पद्धति का सहारा लेकर अध्ययन प्रारंभ कर शैलचित्रों की खोज में महत्वपूर्ण योगदान दिया। उन्होंने शैलचित्रों की खोज के पश्चात् ताम्राश्रमयुगीन तथा इतिहासकालीन समय निर्धारण कर इन चित्रों को निर्धारित किया। जिसका प्रमुख आधार उनका अध्ययन तथा शैलचित्रों में पुरातात्विक उत्खनन किया जाना था। जबलपुर महाविद्यालय के प्राध्यापक जी.आर.हण्टर द्वारा पचमढी की महादेव पहाड़ियों का सर्वेक्षण किया तथा गार्डन द्वारा खोजे गये चित्रों का भी मूल्यांकन किया। इस प्रकार हण्टर द्वारा भी 50 शैलाश्रयों की नवीन खोज की। उन्होंने जंबूदीप, डोरथी दीप तथा मोंटारोजा के शैलाश्रयों में पुरातात्विक उत्खनन कर लघु अश्मोपकरणों की जानकारी अपनी रिपोर्ट में 1935-36 में प्रकाशित की।

दक्षिण भारत में कई शैलकला केन्द्र हैं। जिनमें कई पुरातत्वीय उत्खनन किये गये। पिकलीहल नामक स्थान की उत्खनन रिपोर्ट से इनकी जानकारी मिलती है। प्रो. नागराजराव की टेक्कलकोटा उत्खनन रिपोर्ट से निकटस्थ क्षेत्र के कला केन्द्रों की जानकारी प्राप्त होती है। 1960-70 के दशक में प्रो. ए. सौन्दरो ने कृष्णा तथा तुंगभद्रा क्षेत्र में स्थित महापाषाणकालीन सभ्यताओं के निकट उत्खनन किया जहाँ शैलकला देखने को मिलती है।

भीमबैठका की खोज के पहले, वर्ष 1953-54 में डॉ० वाकणकर ने अपने विद्यार्थियों के साथ चंबल घाटी में नीमच के निकट गांधी सागर बांध के बनने से पूर्व डूब में आने वाले क्षेत्र का पुरातत्वीय सर्वेक्षण कर सैकड़ों शैलचित्रों की खोज की तथा मोड़ी नामक स्थल पर उत्खनन भी किया। डॉ० वाकणकर द्वारा भीमबैठका की खोज से विश्व का सबसे बड़ा शैल चित्रकला केन्द्र प्रकाश में लाया गया जो कि उनके द्वारा भोपाल से नागपुर जाते समय अचानक खोज हो गई। पिछले 40-50 वर्षों से डॉ० वाकणकर के अतिरिक्त प्रो. के.डी. वाजपेयी, एस.के. पाण्डे, मठपाल, गिरिराज कुमार, शंकर तिवारी, ईरविन, जगदीश गुप्त, आर. के. वर्मा द्वारा मध्यप्रदेश तथा उसके बाहर भी सैकड़ों शैलचित्र कला केन्द्र प्रकाश में लाये गये।

डॉ० वाकणकर इस क्षेत्र के पायनियर माने जाते हैं। 1957-58 में भीमबैठका की खोज ने सिद्ध कर दिया कि वह विश्व का विशालतम शैलकला केन्द्र है। डॉ० जगदीश गुप्त ने 1967 में अपनी खोज का प्रकाशन सर्वप्रथम हिन्दी में किया। उनके द्वारा लिखी गई "प्रागैतिहासिक भारतीय चित्रकला" में भोपाल, रायसेन, होशंगाबाद इत्यादि क्षेत्रों में किये गये अनुसंधान प्रकाश में लाये गये। भारतीय पुरातत्व सर्वेक्षण की प्रागैतिहासिक शाखा के पुरातत्ववेत्ताओं ने 1957-58 के पश्चात् अब तक देश, प्रदेश में सैकड़ों शैलकला केन्द्र प्रकाश में लाये जिनमें प्रमुख पुरातत्ववेत्ता आर.बी. जोशी, के.डी. बैनर्जी, एस.एस.गुप्ता, एस.के. मित्रा इत्यादि हैं।

भारत के प्रमुख कला केन्द्रों पर किये गये उत्खनन के परिणाम स्वरूप भारत में शैलचित्रों की प्राचीनता उत्तर पूर्वपाषाणकाल याने आज से लगभग 25 हजार वर्ष पूर्व आंकी है। डी.एच. गार्डन ने पचमढी में उत्खनन कर सर्वप्रथम शैलचित्रों के काल निर्धारण का प्रयास किया। विद्वानों द्वारा पचमढी, होशंगाबाद, मोड़ी, मिर्जापुर तथा भीमबैठका में किये गये उत्खनन से शैलचित्रों की प्राचीनता के पर्याप्त प्रमाण प्राप्त किये। साथ ही साथ विभिन्न जगहों पर शर्तुमुर्ग के अलंकृत अण्डों पर बनी चित्रकारी पाटने, भोपाल, भीमबैठका में प्राप्त हुई है। शैलचित्रों से साम्यता किये जाने पर इनका समय उत्तर-पूर्व पाषाण काल या मध्याश्रम काल आंका गया

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है। डॉ० वाकणकर को भीमबैठका उत्खनन के अन्तर्गत शैलाश्रय—पृ. 128 में मिले मानव जिवाश्म की प्राचीनता के कारण विश्व में भारत का नाम हो गया तथा डॉ० वाकणकर ने "होमो सेपियन—भीमबेटकियन" की संज्ञा देते हैं।

वर्ष 1867 से अब तक की गई खोज के विषय में डॉ० मठपाल ने भारत के प्रारम्भिक विद्वानों तथा पुरातत्ववेत्ताओं के आधार पर काल विभाजन किया है, जिन्होंने शैलचित्रों की खोज में महत्वपूर्ण योगदान दिया है।

1. प्रथम काल (ई. 1867 से 1931)

ए. कार्लाइल, जे. काकबर्न,
एफ. फासेट, सी.ए. सिलबर्ड,
सी.डब्ल्यू. एण्डरसन,
पर्सी ब्राउन, आर.बी. फूटे,
पी.मित्रा, ए.एन. दत्ता,
एम. घोष

2. द्वितीय काल (ई. 1932 से 1972)

मनोरंजन घोष, डी.एच. गार्डन,
व्ही.एस. वाकणकर, अलचीन,
जगदीश गुप्त, आर.के. वर्मा,
एस.के. पाण्डे, जे. जेकबसन,
एस.सौन्दरा, शंकर तिवारी

3. तृतीय काल (ई. 1973 के पश्चात्)

व्ही.एस. वाकणकर, वाय. मठपाल,
एच.डी. संकालिया, व्ही.एन. मिश्रा,
इरविन न्यूमियर, लोथार वांके,

एम.डी. खरे, जी.एस. त्यागी, गिरिराज कुमार, इत्यादि।

अध्याय —3

—: शैलचित्रों के प्रमुख केन्द्र :-

पुरातत्वीय सर्वेक्षण से ज्ञात होता है कि मध्यप्रदेश के 34 जिले ऐसे हैं जिनमें शैलचित्रों की खोज की गई है। इनमें 25 जिले विन्ध्याचल पर्वत माला में आते हैं, तथा 9 जिले सतपुड़ा पर्वतमाला में आते हैं। इनमें प्रमुख जिले रायसेन, भोपाल, विदिशा, सीहोर, कटनी, रीवा, मन्दसौर, होशंगाबाद इत्यादि हैं। इन जिलों में प्रमुख स्थल भीमबैठका, रायसेन, साँची, सतकुण्डा, आदमगढ़, पचमढ़ी, तालपुरा, पानगुराड़िया, भानपुरा, का क्षेत्र चतुर्भुज नाला, छिब्डनाला इत्यादि हैं। सबसे अधिक चित्र रायसेन जिले में भीमबैठका क्षेत्र में हैं जोकि वर्तमान में विश्व धरोहर स्थल यूनेस्को द्वारा घोषित किया गया है।

मध्य प्रदेश के महत्वपूर्ण जिले जहाँ सर्वाधिक शैलचित्र हैं

1. जिला भोपाल

1. भदभदा, 2. बैरागढ़, 3. धरमपुरी, 4. गोंदरमऊ, 5. हासिपटल हिल, 6. लालधाटी (गुफा मंदिर), 7. मनुआभान की टेकरी,
8. शहदकराड़, 9. श्यामलाहिल

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2. जिला सीहोर

1. बाधराज, 2. बकिया, 3. भगवानी, 4. डिगडिगा, 5. फिरंगी, 6. गणेश घाटी, 7. कठोटिया, 8 राजाबंधा, 9. बंजारीमाता, 10. बुधनी, 11. तालपुरा, 12. पान गुराडिया

3. छतरपुर

1. देवरी, 2. नवगाँव

4. छिन्दवाडा

- 1.तामिया

5. दमोह

1. फतेहपुर

6. दतिया

1. बाबोनी, 2. धरबा

7. ग्वालियर

1. गुप्तेश्वर, 2. ग्वालियर, 3. कंकाली माता पहाड़ी, 4. टिकला

8. होशंगाबाद

1. आदमगढ़, 2. अप्सरा फाल, 3. बादाम गुफा, 4 बड़ा महादेव, 5. बनिया बेरी, 6. बरोनी, 7. बाजार गुफा, 8. छोटा महादेव, 9. दारोथी दीप, 10. इमलीखो, 11. जम्बूदीप, 12. झालिया, 13. कजारी, 14. महादेव, 15. मोन्टी रोज, 16. निम्बू भोज, 17. रिही, 18. सोनभद्रा।

9. जबलपुर

1. गढ़ाखेड़ी

10. कटनी

1. झिंझरी

11. मन्दसौर

1. चतुर्भुजनाला, 2. चिब्वड़ नाला, 3. गांधीसागर बांध का क्षेत्र, 4. मैंगजीन, 5. हिंगलाजगढ़, 6. इन्दरगढ़, 7 कनारिया कुण्ड, 8. केवाली, 9. केवला, 10. केदारेश्वर, 11. मोड़ी, 12. नयागाँव, 13. रेवाकी 14. सीताखर्डी, 15. सुजानपुरा, 16. ताखाजी।

12. मुरैना

1. पहाड़गढ़

13. नरसिंहपुर

1. बिजोरी, 2. बीजागढ़, 3. चंडीगढ़, 4 घटाक

14. पन्ना

1. बृजपुर

15. रायसेन

1. आमरवो, 2. बरखेड़ा, 3. भीमबैठका, 4. भोजपुर, 5. चित्तौंग, 6. चूनापानी, 7. चिड़ियारोल, 8. चमरिया, 9. चिकलोद, 10. धोकरा महादेव, 11. दोनावाला, 12. गड़रिया नाला, 13. घाटला, 14. भगवानपुरा कालोनी, 15. हीरापुर, 16. हाथीटोल, 17. इमलाना, 18. जावरा, 19. कारीतलाई, 20. खरवाई, 21. लाडी, 22. लोहारपुरा, 23. लालझीरी, 24. महादेव की गुफा, 25. मुनीबाबा की पहाड़ी, 26. पांडुनगर, 27. पुतली करार, 28. रामगढ़, 29. रामछज्जा (रायसेन), 30. सॉची, 31. नागोरी, 32. सतकुण्डा, 33. तेलंदी, 34. उरदेन, 35. कुलहाडिया, 36. वरजोरपुर, 37. दीवानगंज, 38. महुआखेड़ा, 39. अंबाड़ी, 40. घाटला, 41. बरेली।

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16. राजगढ़

1. कोटरा विहार, 2. नरसिंहगढ़

17. रीवा

1. सलाया, 2. केवटी, 3. बिल्ली घाट, 4. इतर पहाड़, 5. खसेरघाट की पहाड़ी, 6. बरहट (देऊर कुठार)।

18. सागर

1. आबचंद, 2. बड़ौदा, 3. भापेल, 4. गढ़पेहरा, 5. गन्धेरी नाला, 6. हिरापुर 7. नरियावली

19. सतना

1. करपातिया

20. शिवपुरी

1. चोरपुरा, 2. तुन्दा, बरखा खो

21. विदिशा

1. अहमदपुर, 2. नीमखेरिया, 3. उदयगिरि, 4. गुफामासेर

महत्वपूर्ण शैलाश्रयों एवं चित्रों का वर्णन

1. सांची—कानाखेडा (जिला रायसेन)

सांची विश्व प्रसिद्ध बौद्ध स्मारकों का स्थल है। यहाँ पहाड़ी के पृष्ठ भाग में कई शैलाश्रय हैं, परन्तु कुछ शैलाश्रयों में ही चित्र विद्यमान हैं। यहाँ समान्यतः लाल रंग के चित्र पाये गये हैं, तथा सफेद रंग के चित्रों की संख्या नगण्य है। यहाँ पशु समूह युद्ध दृश्य, घुड़सवार, मानवाकृतियों, आखेट पूजा के दृश्य इत्यादी चित्र हैं। इनके अतिरिक्त शंखलिपि के चित्रित लेख भी हैं जो काल निर्धारण में बहुत ही सहयोग प्रदान करते हैं। यह लिपि गुप्तकाल की मानी जाती है। कुछ शैलाश्रयों में प्राचीन चित्रों पर इस प्रकार के लेख होने के कारण गुप्तकाल के पूर्व के माने गये हैं।

शैलाश्रय क्रमांक 1

इस शैलाश्रय में कोई किसी भी प्रकार का चित्र नहीं है।

शैलाश्रय क्रमांक 2

इसमें लाल रंग के अस्पष्ट चित्र हैं, जिनमें युद्ध दृश्य, पशुपक्षी बने हैं। इसमें मोर का चित्र सबसे सुन्दर है।

शैलाश्रय क्रमांक 3

इसमें एक गेंडे का अस्पष्ट चित्र है। इसके अतिरिक्त चितल एवं उसके आसपास मानवाकृतियों हैं, संभवतः आखेट दृश्य होना चाहिये। इस शैलाश्रय की छत पर लाल रंग का बहुत ही सुन्दर एवं अलंकृत घुड़सवार का भाला लिए हुए चित्र है।

शैलाश्रय क्रमांक 4 व 5

इसमें किसी भी प्रकार का चित्र नहीं है।

शैलाश्रय क्रमांक 6

यह इस क्षेत्र का सबसे बड़ा शैलाश्रय है। इसमें लाल रंग के बने पूजा से संबंधित विभिन्न दृश्य हैं। इसी प्रकार के चित्र सांची के निकट नागोरी के शैलाश्रयों में भी मिलते हैं। एक चित्र में त्रिकोणी आकृतियों हैं। इनके आसपास विचित्र प्रकार की मानवाकृतियों तथा चक्र बना है। दो मानवाकृतियों के आसपास यौद्धागण बने हैं। संभवतः बलि देने वाले चित्र हो सकते हैं। इस चित्र के निकट पशु का शिकार करते एक अस्पष्ट आकृति है।

PRE AND PROTO HISTORY OF INDIA (276)

2. सतकुण्डा :-

सतकुण्डा के शैलाश्रय भोपाल-रायसेन मार्ग पर बिलखेरिया ग्राम से लगभग 6 कि.मी. की दूरी पर स्थित है। यहाँ के शैलाश्रयों की खोज का श्रेय प्रो. एस.के.पाण्डे को है। तत्पश्चात् डॉ० वाकणकर द्वारा भी कई शैलाश्रयों की खोज की गई है। चित्रों के अतिरिक्त शैलाश्रयों के आसपास पाषाणयुगीन उपकरण भी प्राप्त हुए हैं। यहाँ पर कई बड़े आकार के भी चित्र हैं, जिस प्रकार यूरोप में बनाये जाते थे। यहाँ चित्रों में पशु समूह, आखेट दृश्य, समूह नृत्य, युद्ध दृश्य, धुनधारी, यौद्धागण, घुड़सवार आदि का अंकन किया गया है। यहाँ पर चित्रों के चार सुपरइंपोजिशन हैं जहाँ सभी युगों के चित्र देखे जा सकते हैं। यहाँ पर सामान्य शैलाश्रयों के अतिरिक्त दो तलों वाले शैलाश्रय भी हैं।

प्रमुख शैलचित्र

- (1) कछुए के आकार वाले एक विशाल जानवर का शिकार करते हुए लोग जिन्हें हाथी घोड़ों पर सवार बताया गया है।
- (2) मानवाकृतियों को समूह नृत्य के रूप में चित्रित किया गया है, जिनके आसपास पक्षी बनाये गये हैं।
- (3) पशुओं की खाल के समान चित्र मिले हैं, जो खरबई के चित्रों से साम्यता रखते हैं।
- (4) मोर पक्षियों के चित्र समूह, जो शर्तुमुर्ग समान दिखाई देते हैं।
- (5) हाथी का शिकार करते धुनधारी का बड़े आकार का चित्र।
- (6) यहाँ लाल व सफेद रंगों के चित्र हैं, जिनमें गेंडा, भैसा, सांभर, चीतल, हिरन, हाथी, प्रमुख हैं, जो रायसेन के निकट स्थित हाथी टोल के चित्रों से साम्यता रखते हैं।
- (7) एक शैलाश्रय में अतिसुन्दर धुनधारी का चित्र है जिसके हाथ में धनुष-बाण दिखाये गये हैं।
- (8) तीन लाल रंग से चित्रित सियार जो गोलाकार रूप में पहियों के समान लुढ़कते बताये गये हैं।
- (9) बैलों की लड़ाई देखते हुए वानर समूह है, यह चित्र उत्तम श्रेणी का बनाया हुआ है।
- (10) यहाँ के शैलचित्रों में सर्वाधिक सुन्दर युद्ध का एक दृश्य है जिसमें कुछ यौद्धा आपस में एक हाथ में तलवार लिये तथा दूसरे हाथ से एक दूसरे के बाल पकड़े हुए दिखये गये हैं। उनके पास ही चारपाई जैसी वस्तु पर दो घायल यौद्धाओं को उठाते हुए तथा हाथ में तलवार लिए यौद्धागण बनाये गये हैं।

3. रायसेन के शैलचित्र

रायसेन किले के पिछले भाग की पहाड़ी की तलहटी में तथा दरगाह शरीफ के सामने वाली पहाड़ी पर कई चित्रित शैलाश्रय हैं, जिनमें हाथीटोल तथा रामछज्जा शैलाश्रय प्रसिद्ध हैं। परन्तु इस क्षेत्र के चित्रों में हाथी टोल के ही चित्र सर्वाधिक सुन्दर हैं जिसमें चित्रों का स्तरीकरण (सुपरइंपोजिशन) देखा जा सकता है। डॉ० एस.के.पाण्डे का मत है कि उन्होंने 1961 में सर्वप्रथम इन शैलाश्रयों की खोज की थी। परन्तु डॉ० वाकणकर द्वारा भी इस क्षेत्र के कई चित्रित शैलाश्रय प्रकाश में लाये। हाथी टोल शैलाश्रय में दो मंजील वाले शैलाश्रय हैं, जैसे नागोरी तथा सतकुण्डा में भी पाये गये हैं, इनमें सैकड़ों विभिन्न विषय वस्तु तथा कई कालों के चित्र हैं। यहाँ पर भी अन्य स्थलों के समान गहरे लाल, गेरुआ तथा सफेद रंगों से बने चित्र हैं। यहाँ चित्रों का स्तरीकरण (सुपरइंपोजिशन) स्पष्ट देखा जा सकता है। मध्याश्रमयुगीन स्तर के चित्र लकड़ी की काड़ियों के समान हैं, जोकि गहरे लाल रंग के बने हैं। इनमें धुनधारियों के चित्र प्रभावात्मक प्रतीत होते हैं। हिरण का समूह भी प्राचीन माना गया है। यहाँ पशुचित्रण सर्वाधिक है ऐसा माना जाता है कि नवपाषाण तथा ताम्राश्रम युग में मानव एक जगह बसने लगा तथा कृषि का विकास प्रारंभ हुआ। यहाँ कुछ खेती वाले अथवा बैलगाड़ी के समान चित्र मिले हैं, जिनमें एक व्यक्ति बैलों की रास पकड़े उन्हें चला रहा है हाथी टोल शैलाश्रय में ही एक साथ एक दिशा में जाते हुए कई विभिन्न प्रकार के मुंह खोले, साधारण रूप से चलते हुए पशुओं को चित्रित किया गया है। जिनमें सांभर, चीतल, हिरण, गेंडा, भैसा तथा अन्य कई पशु हैं। जानवरों का शरीर रेखाओं तथा ज्यामितिक आलेखन से अलंकृत बताया गया है। यहाँ एक विचित्र जानवर (हिरण जैसा) का भी चित्र है, जिसके दो मुंह बताये गये हैं।

4. पुतली करार

रायसेन जनपद के शैलचित्रों में पुतली करार के शैलाश्रय भी महत्वपूर्ण माने गये हैं। इस स्थल की सर्वप्रथम खोज का श्रेय एस.के.पाण्डे को है, जिन्होंने 1961 में इस स्थल को देखा था। यह स्थल रायसेन मार्ग पर टिकोडा ग्राम के निकट स्थित है। यहाँ खोज के अन्तर्गत लगभग 75 शैलाश्रय प्रकाश में लाये गये तथा पाण्डे द्वारा कुछ शैलाश्रयों में उत्खनन भी करवाया गया। यहाँ कई शैलाश्रयों में चित्रों का सुरपड़पोजिशन है। चित्रों को बनाने के लिए गहरा लाल (कथई रंग जैसा), गेरुआ लाल, हल्का गुलाबी तथा सफेद रंगों का प्रयोग किया गया है। इनके अतिरिक्त पीले, हरे तथा काले रंगों के भी कुछ चित्र मिले हैं। यहाँ शैलाश्रय क्रमांक 1, 2, 4, 5, 6, 8 तथा 10 में महत्वपूर्ण चित्र प्राप्त हुए हैं, जिनमें चित्रों का सुरपड़पोजिशन भी देखा जा सकता है। कंधों पर बेहंगी ले जाते मानव, कुत्ता सहित धनुर्धारी जो सिंह के सामने खड़े हैं, भैसा हाथी, हिरण, पक्षी, बैल, अश्व, पशुसमूह, आखेट दृश्य, मानवाकृतियों, चिन्ह इत्यादि महत्वपूर्ण हैं। कुछ चित्र उबल आउट लाईन में भी बनाये गये हैं। इनके अतिरिक्त मध्याश्मयुगीन शैली की मानवाकृतियों आकर्षक हैं। कई चित्र रायसेन की हाथी टोल के समान भी प्राप्त हुए हैं।

5. खरवाई

इस स्थल का शैलाश्रय समूह रायसेन-भोपाल मार्ग पर खरवाई ग्राम के पिछले भाग में स्थित पर्वतमाला में है। यहाँ एक विशाल शैलाश्रय समूह है। इस क्षेत्र के शैलाश्रयों की सर्वप्रथम खोज का श्रेय वाकणकर को है। सुविधा की दृष्टि से यहाँ के शैलाश्रयों को पांच समूहों में विभाजित किया गया है। यहाँ सभी रंगों के चित्र मिले हैं, परन्तु सफेद रंग का सर्वाधिक प्रयोग किया गया है। यहाँ सामान्य रूप से शैलाश्रयों के अतिरिक्त शंखलिपि के भी चित्रित लेख प्राप्त हुए हैं। सर्वेक्षण के अन्तर्गत पहाड़ी के ऊपरी भाग में दो पाषाण निर्मित स्तूप भी खोजे गये हैं। स्थापत्य शैली के आधार पर इनका समय शुंगकाल निर्धारित किया गया है। यहाँ शैलाश्रयों में चित्रों का स्तरीकरण (सुरपड़पोजिशन) सर्वत्र देखा जा सकता है—जिनमें मध्याश्म, ताम्राश्म, इतिहास एवं मध्यकालीन चित्र देखे जा सकते हैं। लकड़ी की कड़ियों के समान मानवाकृतियों जिनके हाथों में धनुष हैं, के उत्तम श्रेणी के चित्र हैं। इनके अतिरिक्त सांभर, चितल, बैल, हिरण, भैसा, के चित्र यहाँ प्राप्त हुए हैं, जिनकी शैली आपस में साम्यता रखती है। शैलाश्रय क्रमांक 40 में इतिहासयुगीन शैली का लाल रंग से बने एक घुड़सवार का चित्र है, जिस पर सफेद रंग से आउटलाईन की हुई है। शैलाश्रय क्रमांक 7 में एक लंबी गर्दन वाला सफेद रंग से चित्रित चितल का सुन्दर चित्र है। अन्य चित्रों में परशु लिए घुड़सवार, भागते पशु, हाथी तथा तीन हिरणों के सामने नृत्य करती दो मानवाकृतियों महत्वपूर्ण मानी जाती हैं। इस शैलाश्रय में ही एक लंबा धनुष लिए धनुर्धारी हैं, जिसके एक हाथ में धनुष तथा दूसरे हाथ में तीन तीर हैं। संभवतः यह चित्र कुषाण युग का हो सकता है। इसके अतिरिक्त लाल रंग से चित्रित जंगली सुअर का भागते हुए का चित्र आकर्षक है, जिसकी पीठ पर बाल बनाये गये हैं। शैलाश्रय क्रमांक 8 में एक लाल रंग के चित्रित पशु समूह है जिसमें बैलों को एक दिशा में भागते हुए बताया गया है, जिनकी संख्या छः है। बनावट के आधार पर इनका समय ताम्राश्मकाल रखा गया है। एक अन्य चित्र में हिरण का शिकार करते हुए दो शिकारी बताये गये हैं, उनमें एक सामने की ओर से उसे भाले से मार रहा है तथा एक अन्य को धनुष बाण लिये बताया गया है। एक शैलाश्रय में सफेद रंग से चित्रित मुह घुमाये भागते हुए हिरण को बताया गया है। इस चित्र के निकट ही एक अन्य पशु समूह में बैलों के मध्य मानवाकृतियों बनाई गई हैं, संभवतः कोई पूजा विशेष के लिए बनायी गयी हो। इसी शैलाश्रय में एक घोड़े के समान विचित्र पशु का शिकार बताया गया है। कुछ यहाँ मध्यकालीन सफेद रंग के चित्र भी अत्यन्त आकर्षक हैं, जिसमें उछलता वानर, मातृदेवी तथा दो अन्य खड़ी मानवाकृतियों हैं। इस प्रकार के चित्र अन्यत्र कहीं नहीं मिलते हैं।

6. कुल्हाड़िया

यह ग्राम दीवानगंज के निकट स्थित है। यहाँ ग्राम के पिछले भाग में एक लंबी पहाड़ी पर कुछ शैलाश्रय हैं, जिनमें केवल एक शैलाश्रय में ही कुछ चित्र हैं, जो कि लाल रंग से बनाये हुए हैं। इस शैलाश्रय में केवल मध्याश्म तथा ताम्राश्म युग के ही चित्र हैं एक चित्र में एक धनुर्धारी को धनुष बाण लिए दौड़ता बताया गया है। उसका बाण 'हारपून' के समान है। इसके निकट एक पशु का चित्र है जिसमें केवल उसका पृष्ठ भाग ही शेष है। इस शैलाश्रय के अन्य महत्वपूर्ण चित्र में एक मानव को दण्ड हाथ में लिये

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का प्रयोग कम किया गया है। प्रमुख रूप से यहाँ मानवाकृतियों तथा पशु समूह ही है। इस क्षेत्र में खोज किये गये चित्रों में केवल छः चित्र समूह महत्वपूर्ण है, जो निम्न है :-

चित्र समूह क्रमांक 1 : इस समूह में मध्याश्म शैली में बनी मानवाकृतियों तथा पशुसमूह है। इसमें ऊपर की ओर दो मानव हाथ उठाये नृत्य कर रहे हैं, जिनके शरीर पर ज्यामितिक आलेखन है। द्वितीय मानव के निकट हिरणी समान पशु है तथा अन्य अस्पष्ट आकृतियों है। दीवानगंज के निकट अंबाडी में भी ऐसे चित्र मिले हैं, परन्तु मस्तक पर कुछ नहीं है। मानवाकृतियों के पीछे भागता पशु तथा उसके पीछे कुत्ते जैसी एक आकृति है, जिसमें ज्यामितिक अलंकरण है। कुत्ते के निचले भाग में हिरण समान पशु तथा सिंह की धुंधली आकृति है। अन्य पशुओं के समान भी इसमें ज्यामितिक अलंकरण किया हुआ है। चित्र समूह क्रमांक 2 : इस चित्र समूह में ताम्राश्म शैली के पशु तथा कुछ नृत्य करती मानवाकृतियों है। इसमें मस्तक (गर्दन) घुमाए हिरण या चितल का चित्र प्रमुख है। एक पशु चित्र ऐसा प्रतीत हो रहा है कि मानों वानर चल रहा हो। चितल के पृष्ठ भाग पर एक आकर्षक हिरण का अस्पष्ट चित्र है जिसमें उसकी गर्दन पर उभरा बिन्दियों वाला आलेखन है। चित्र समूह क्रमांक 3 : यह चित्र एक हिरण समान आकृति का है जिसे अत्यन्त तीव्र गति से भागते बताया गया है शरीर में वर्तुलाकार रूप में अथवा अण्डाकार रेखाओं का आलेखन है। यह चित्र लाल गेरू रंग का बना है। चित्र समूह क्रमांक 4 : इस समूह में लाल रंग से बनाई गई लकड़ी की काड़ियों समान नृत्य करती मानवाकृतियों तथा सफेद रंग से बना अस्पष्ट पशु चित्रण है। मानवाकृतियों हाथ उठाये नृत्य कर रही है तथा शरीर का धड़ भाग गोल है। पशु के साथ एक मोर जैसा चित्र है जिसका केवल शरीर ही स्पष्ट है। चित्र समूह क्रमांक 5 : इस समूह में कुछ मध्याश्म तथा ताम्राश्मयुगीन चित्रों का सुपरइंपोजिशन देखने को मिलता है। चित्रण में आकृतियों पर ज्यामितिक आलेखन किया हुआ है। समूह के पिछले भाग में बड़े सींगों वाला भैंसे समान दिखाई देने वाला पशु अथवा हिरण है, जो मस्तक उठाये खड़ा है। इस चित्र के निचले भाग में केवल एक लाल रंग से चित्रित अस्पष्ट मानवाकृति है। चित्र समूह क्रमांक 6 : एक शैलाश्रय जोकि इस क्षेत्र का सबसे बड़ा शैलाश्रय है, में गहरे लाल रंग के कई चित्र बने हैं, जो कि पूर्ण रूप से मध्याश्मयुगीन है। इनमें जंगली सुअर, हिरण, गाय, एक दूसरे का हाथ पकड़े कई मानवाकृतियों, युग्म, एकल मानवाकृति इत्यादि है। चित्रों में चाहे पशु हो या मानवाकृति सभी के शरीर में ज्यामितिक आलेखन है। इस क्षेत्र में इस प्रकार के चित्र दुर्लभ है तथा इस समूह की सबसे अलग शैली है। सभी मानवाकृतियों भिन्न भिन्न रूप से तथा एक दूसरे का हाथ पकड़े हैं। कुछ के हाथ में आयुध भी है। यहाँ युग्म के साथ प्रथम बार किसी स्त्री की आकृति देखी गई है। इस समूह में एक अस्पष्ट आकृति है संभवतः बालों वाला सुअर अथवा हाथी है।

12. महुआ खेड़ा :

महुआ खेड़ा के चित्रित शैलाश्रय दीवानगंज के निकट ग्राम के पिछले भाग वाली पहाड़ी पर स्थित है। यहाँ कुछ ही चित्रित शैलाश्रय है, जहाँ गहरे लाल रंग के चित्र हैं तथा सफेद चित्रों की मात्रा कम है। यहाँ सभी चित्र मध्याश्म तथा ताम्राश्मयुगीन है। यहाँ कई चित्रों के समूह है, जिनमें केवल एक लाल रंग से चित्रित छोटा शंख लिपि का लेख प्राप्त हुआ है। यहाँ के शैलाश्रय अत्यन्त दुर्गम स्थल पर स्थित हैं। महत्वपूर्ण चित्र एवं समूह :-

चित्र समूह क्रमांक 1 : इस चित्र में केवल दो आकृतियों है। प्रथम हाथ ऊपर उठाये मानवाकृति है, जिसका शरीर त्रिकोणात्मक है, संभवतः नृत्य करते चित्र हैं। यह चित्र संभवतः ताम्रयुगीन है, क्योंकि अन्य ज्यामितिक शैली के चित्रों से यह भिन्न है। इस प्रकार की साम्यता रखती त्रिकोणात्मक आकृति नागदा उत्खनन तथा महेश्वर-नावडाटोली से प्राप्त मृदभाण्ड पर प्राप्त हुई है जोकि ताम्राश्म स्तर की है। शैलचित्र के निकट ही एक अन्य त्रिकोणात्मक आकार की आकृति है, संभवतः नृत्यरत मानव के मस्तक पर मुखौटा लगाया है। इनकी बनावट मध्ययुगीन ज्यामितिक शैली की आकृतियों से भिन्न है। चित्र समूह क्रमांक 2 : समूह मध्याश्मयुगीन है। इसमें एक धनुर्धारी मध्य में खड़ा है इसका मुख पशु समान है, संभवतः मुखौटा लगा रखा है। मानव के हाथ में धनुषबाण है, आश्चर्य तो यह है कि उसके हाथ में हारपून बाण है, जिस पर त्रिकोणात्मक औजार लगे हैं, संभवतः ट्रेगल्स (त्रिकोणात्मक लघु अश्मोपकरण) उस पर लगे है। चित्र लाल रंग का है। मानव के पीछे भी आकृति है, केवल हारपून स्पष्ट दिखाई देता है। मानवाकृति के ऊपर

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तीन ओर पशुओं का अंकन है, सम्भवतः मानव उनके साथ जा रहा है। पशुओं का शरीर ज्यामितिक आलेखन से परिपूर्ण है। इसी चित्र समूह में एक पशु समान मानवाकृति है, जो इतनी स्पष्ट नहीं है। चित्र के निकट ही एक शंखलिपि का लाल रंग से चित्रित लेख है। चित्र समूह क्रमांक 3 : यह सफेद रंग से चित्रित समूह है, जिसमें पशुओं को चराते मानव है। चित्र में वृषभ बनाया गया है, जिसका मस्तक मिट चुका है। उसके ऊपर की ओर दण्ड लिये मानव है। इस समूह में सफेद, लाल बिन्दियों से एक पशु का चित्रण है जोकि अस्पष्ट है। चित्र समूह क्रमांक 4 : यह समूह लाल रंग से चित्रित आकृतियों वाला है। इसके मध्य में एक ढोल वादक है तथा ऊपर वाले भाग के निकट नृत्यरत मानवाकृति है। इसके साथ ही दो पशु बनाये गये हैं। जिनमें एक जंगली वराह (सुअर) तथा एक ज्यामितिक आलेखन से अलंकृत मस्तक झुकाये पशु है। सम्भवतः जंगली सुअर ही हो। शैली से ये चित्र मध्याश्मयुगीन प्रतीत होते हैं। चित्र समूह क्रमांक 5 : इस समूह में मानवाकृतियों नृत्य करते तथा आयुध लिये बतायी गई है, साथ ही पशु चित्रण है, जिनमें गाय, बारासिंगा, हिरण तथा अन्य पशुओं का सुंदर चित्रण है। बारासिंगा को ज्यामितिक तथा साधारण रूप से अलंकृत बनाया गया है। ऐसा भी प्रतीत होता है कि वह मस्तक उठाकर भाग रहा है। इस पशु पर बनी पट्टियाँ, रेखाएँ, बिंदू अत्यंत आकर्षक है। चित्र समूह क्रमांक 6 : इस समूह में लाल रंग से चित्रित मानवाकृतियाँ तथा पशु है। चित्र देखने से ऐसा प्रतीत होता है कि धनुर्धारी आयुध लिये जानवरों को हॉक कर ले जा रहा है। पशुओं में गाय, बैल, हिरण, इत्यादि है। एक पशु जो वानर के समाने दिखाई देता है, पेड़ की शाखा पर चल रहा दिखाया गया है। इस चित्र समूह में एक मानव को भार वाहक के रूप में बताया गया है जो बेंगी लिये चल रहा है। एक वृषभ के चित्र में उसके आकार से भी अधिक लंबी पूँछ बनायी गई है। कुछ पशुओं के शरीर पर ज्यामितिक आलेखन भी है। चित्र समूह क्रमांक 7 : इस चित्र समूह में केवल पशुओं के ही चित्र हैं। प्रमुख रूप से भागते वानर, हिरण, बड़े अस्पष्ट पशु तथा एक खरगोश के समान दिखाई देने वाला पशु है। इन्हें ऐसा बनाया गया है, जैसे वे विपरीत दिशा में भय (डर) के कारण भाग रहे हों। ये सभी चित्र लाल रंग से चित्रित ताम्राश्मयुगीन शैली के बने हैं। इनके अतिरिक्त यहां कई आकृतियाँ भी बनी हैं। यहां इस तरह के चित्र सामान्य (साधारण) तथा सुंदर बनाये हुए हैं।

13. सगोना :

सगोना के शैलाश्रय दीवानगंज की पहाड़ी के निकट स्थित है। यहाँ केवल तीन छोटे शैलाश्रय हैं। यहां पहाड़ी की तलहट में एक उजाड़ ग्राम के अवशेष हैं, जो सगोना के नाम से जाने जाते हैं। यहां पर ही एक परमारकालीन मंदिर के अवशेष ग्राम से ग्राम सर्वेक्षण के अंतर्गत प्रकाश में लाये गये हैं। यहाँ के केवल लाल रंग से चित्रित ताम्राश्म युगीन चित्र है। अन्य किसी कालों के प्राप्त नहीं हुए हैं। यहां केवल दो चित्र समूह हैं जिनके अंतर्गत पशु, मानवाकृतियाँ, वानर इत्यादि देखे जा सकते हैं। चित्रों में पशुओं के आकार से ज्यादा उनकी लंबी पूँछ बनाई गयी है।

चित्र समूह क्रमांक 1 : समूह के मध्य में एक धनुर्धारी मानव जिसने मुखौटे के अतिरिक्त लहरिया रेखाओं के आलेखन युक्त वस्त्र पहने वृषभ के सामने खड़ा है। मानवाकृति ऐसी लग रही है मानों कि वह अकड़कर खड़ी हो। वह धनुष ऊपर को से पकड़े है। उसके पृष्ठ भाग पर उछलता वानर चित्रित है उसके ही नीचे की ओर गोलाकार या वृत्त का आलेखन बना है। उपर की ओर दो हिरण चलते हुये बताये गये हैं। वृषभ के नीचे की ओर एक अन्य वृषभ की आकृति है, जिसकी लंबी पूँछ व मस्तक झुकाये बताया गया है, यानी किसी से लड़ने को तैयार हो। यह आकृति यहां की श्रेष्ठतम आकृति है। समूह के निचले भाग में एक व्यक्ति को वृषभ समान पशु, सम्भवतः नील गाय हो सकती है, पर नृत्य मुद्रा में खड़ा है, तथा पशु मस्तक उठाये सम्भवतः उसे गिरा रहा है। चित्र के निचले भाग में एक अन्य वृषभ की धुंधली आकृति है। चित्र समूह के आस पास और भी अन्य अस्पष्ट आकृतियाँ हैं, जो ताम्राश्मकालीन हो सकती हैं। चित्र समूह क्रमांक 2 : इस समूह में केवल नीलगाय का शिकार करते मानवाकृति है, जो उसके उपर की ओर बनाई है। मानव को एक दण्ड से उसे मारते बताया गया है। उसकी कमर में कुछ आयुध भी है। मस्तक पर मुखौटा है। शरीर पर ज्यामितिक रेखाओं का अलंकरण है। नीलगाय ऐसी लग रही है जैसे वह चल रही हो तथा मानव उसका शिकार कर रहा है। पृष्ठ भाग में एक अन्य मानवाकृति है, जिसका केवल शरीर का उपरी भाग ही स्पष्ट है। यह चित्र भी ताम्राश्मयुगीन है तथा लाल रंग से चित्रित किया हुआ है।

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14. सण्डोरा :

यह पर्वतीय ग्राम भोपाल-रायसेन मार्ग पर सदालतपुर से अन्दर की ओर सण्डोरा पहाड़ी के निकट स्थित है। यह पहाड़ी अर्धचन्द्राकार है तथा इसमें कई शैलाश्रय हैं, परन्तु कुछ में ही शैलचित्र विद्यमान हैं। इनमें बने सभी चित्र मध्याश्मयुगीन प्रतीत होते हैं। इस पहाड़ी क्षेत्र में नाग (रुनेक) बड़ी संख्या में हैं, इनसे बचकर ही यह कार्य किया गया है। यहाँ केवल एक बड़े शैलाश्रय में दो चित्र समूह हैं जहाँ मध्याश्मयुग की प्रारंभ तथा बाद की शैली (ताम्राश्म काल के पूर्व) के चित्र देखे जा सकते हैं। ये सभी चित्र गहरे लाल रंग (हल्के कथई) के हैं। शैलाश्रयों के सामने खुला क्षेत्र होने से चित्र धुंधले हो गये हैं।

चित्र समूह क्रमांक 1 : इसमें एक अत्यंत सुन्दर हिरण का चित्र है, इसमें पीछे की ओर उसको पकड़ने का प्रयास करते मानवाकृति बनाई हुई है। हिरण पलट कर पीछे शिकारी की ओर देख रहा है। हिरण का शरीर लहरिया तथा ज्यामितिक शैली की रेखाओं से अलंकृत है। चित्र के निकट ही प्रारंभिक शैली में बना 'हनिकोब' आलेखन है। इस प्रकार का आलेखन भीमबैठका में भी देखा जा सकता है। आलेखन हल्का है तथा उस पर पशु बने हैं जो भागते से प्रतीत होते हैं। इनमें प्रमुख रूप से ज्यामितिक शैली से अलंकृत जंगली भैंसा या महिष है जो कि बनावट में गतिमान लगते हैं। चित्र समूह क्रमांक 2 : इसी बड़े शैलाश्रय में ही लाल रंग से चित्रित एक दृश्य है, जिसमें मस्तक पर मुखौटा पहने, हारपून लिए भागती मानवाकृतियाँ हैं, जिसके शरीर पर ज्यामितिक शैली का अलंकरण है। आकृति में पीछे की ओर उड़ते समान प्रतीत होता मयुर है। इस प्रकार के चित्र बहुत ही कम प्राप्त होते हैं। मानव जो हारपून लिये है, ऐसा लगता है कि दण्ड में लघु अश्मोपकरण लगा रखे हैं। आसपास और भी कई आकृतियाँ हैं जो अस्पष्ट हैं।

15. सतधारा :

सतधारा के शैलाश्रय सलामतपुर से लगभग 7 कि.मी. पश्चिम में हलाली नदी के तट पर स्थित है। यह एक प्राचीन मौर्य तथा शुंगकालीन बौद्ध स्थल है, जहाँ कई स्तूप तथा विहार प्रकाश में लाये गये हैं। बौद्ध स्मारकों के अतिरिक्त यहाँ कई प्राकृतिक शैलाश्रय हैं, जिनमें केवल ताम्रयुग तथा गुप्त कालीन चित्र हैं।

चित्र समूह क्रमांक 1 : इसमें लाल तथा सफेद रंग के चित्र जिसमें मानव तथा पशु चित्रण है, प्रकाश में लाये गये हैं। केवल पशु आकृतियाँ वृषभ (बैल) मुख्य हैं जो स्पष्ट दिखाई देते हैं। इनमें पशुओं के अतिरिक्त नृत्य करती मानवाकृतियाँ भी हैं, जो अस्पष्ट हैं। चित्र समूह क्रमांक 2 : यह चित्र समूह सतधारा में ही हलाली नदी के तट पर जाने वाले मार्ग पर स्थित शैलाश्रय में है। चित्रों को देखने से ऐसा प्रतीत होता है कि ताम्रयुगीन पशु चित्रण के ऊपर गुप्त कालीन चित्र बनाये गये हैं। जिसके स्पष्ट प्रमाण यहाँ देखे जा सकते हैं। प्रथमतः चित्रों पर पीले रंग का शैलाश्रय में लेपन किया गया है। तत्पश्चात् गहरे पीले तथा सफेद मिश्रण से गोले बनाये गये हैं। इन गोले में से एक में गुप्तकालीन शैली का बुद्ध का व्यक्ति चित्र है, जो सर्वप्रथम संपूर्ण रायसेन क्षेत्र के शैलाश्रयों में खोजा गया है। बुद्ध के बाल उष्णीश सहित घुंघराले हैं मस्तक के पीछे प्रभामंडल है। वस्त्र में लहरे बताई गई हैं एवं आंखे अधखुली हैं। चेहरा हल्का तथा आकर्षक है। चित्र के निकट ही अन्य गोले में छत्र सहित स्तूप की लाल रंग से बनी आकृति है। छत्र में झण्डियाँ तथा घंटी बंधी है। स्तूप में अस्पष्ट लाल रंग से चित्रित लेख है, कुछ शब्द देखने से ऐसा लगता है कि "ये धम्म हेतु प्रभवः" लेख हो सकता है। इसके निकट ही एक अन्य शैलाश्रय में स्तूप की आकृतियाँ बनी हैं जोकि शैलाश्रय में पानी के बहाव से नष्टप्राय हो गई हैं। केवल अवशेष देखे जा सकते हैं।

16. भीमबैठका :

भीमबैठका के शैलाश्रय भोपाल से लगभग 55 कि.मी. दक्षिण-पूर्व में भोपाल-होशंगाबाद मार्ग पर भीर्योपुरा ग्राम के निकट स्थित है। भीमबैठका का क्षेत्र विन्ध्याचल की उपत्यकाओं में स्थित है तथा घने जंगलों से आच्छादित है। यहाँ के विषय में ऐसी धारणा है कि अज्ञातवास के समय पाण्डव गुफाओं में रहा करते थे। यहाँ कई स्थल पाण्डवों के नाम से जुड़े हुए थे, जैसे निकटस्थ ग्राम पाण्डापुर (पाण्डवपुर), भीर्योपुरा (भीमपुर), बाणगंगा, गुप्त गंगा इत्यादि हैं। भीमबैठका के लाख जुहार जंगल के विषय में ऐसा कहा जाता है। कौरवों ने लाख के महल को पाण्डवों को उसमें रहते जलाया था, क्योंकि उक्त स्थल पर शैलाश्रयों में विशाल शिलाखण्डों

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के मकान बने हुए मिले हैं। भीम बैठका की सर्वप्रथम खोज का श्रेय विक्रम विश्वविद्यालय, उज्जैन के पुरातत्ववेत्ता विष्णु श्रीधर वाकणकर को है। यह महत्वपूर्ण स्थल उनके द्वारा सन् 1957-58 में प्रकाश में लाया गया। कालान्तर में पुरातत्वीय उत्खनन में पूर्व पाषाणकाल से मध्यकाल तक कमबद्ध पुरावशेष पाये गये हैं। चित्रों के अध्ययन किये जाने पर तत्कालीन समाज की झांकी देखने को मिलती है। यहाँ सबसे प्राचीन चित्र मध्याश्म युग के हैं। चित्रकला से संबंधित गुहामानव की गतिविधियों मध्यकाल तक चलती रही शैलाश्रयों व पुरावशेषों के अतिरिक्त गुफाकालीन शंख लिपि के लेख भी प्रकाश में लाये गये। सर्वेक्षण के अन्तर्गत लगभग 750 शैलाश्रयों की खोज की गई, जिनमें लगभग 500 शैलाश्रयों में विभिन्न युगों के चित्र हैं। वाकणकर ने सात शैलचित्र समूहों को इस क्षेत्र की लघु पर्वत मालाओं के आधार पर विभाजित किया है। जिनमें पांच समूह भीमबैठका क्षेत्र के अन्तर्गत आते हैं, जिन्हें महत्वपूर्ण मानकर भारतीय पुरातत्व सर्वेक्षण (भारत सरकार) द्वारा संरक्षित व सुरक्षित घोषित किया है।

आदिमानव यहाँ हजारों-लाखों वर्ष तक रहा। मध्याश्म युग से मध्यकाल तक उसने किस प्रकार चित्र बनाये, यह एक आश्चर्य का विषय है। शैलाश्रयों की ऊंचाईयों तक जहाँ पहुंचना कठीन है, वहाँ उनकी छत प्राकृतिक रूप से बनी होने तथा जंगलो, पेड़-पौधों से शैलाश्रयों के ढके होने से आज भी वे चित्र सुरक्षित रूप से देखे जा सकते हैं। प्रमुख रूप से ये चित्र हेमेटाईट (गहरे लाल), लाल-गेरू, सफेद खडिया एवं हरे रंग के बनाये गये थे। यह सामग्री पुरातत्वीय उत्खनन में भी कहीं-कहीं प्राप्त हुई है। शैलाश्रयों में चित्रों की कई परतें देखी जा सकती हैं। जो विभिन्न युगों की कला को प्रदर्शित करती हैं। ये चित्र उत्तरपाषाण काल (?), मध्याश्म, ताम्राश्म, इतिहास युग के प्रत्येक चरण तथा मध्य युगीन माने गये हैं।

शैली व चित्रकला के आधार पर इन चित्रों का वर्गीकरण किया गया है। इन चित्रों में शिकार-दृश्य, नृत्य करती आकृतियों, पशु-पक्षी, जानवरों को चराते मानव, सामाजिक चित्र इत्यादि देखने को मिलते हैं। चित्रों के अध्ययन से तत्कालीन मानव, इनका पहनावा तथा पशुओं के विषय में विशेष जानकारी प्राप्त होती है। समूह क्रमांक तीन के शैलाश्रय में द्वितीय शताब्दी ईसा पूर्व के ब्राह्मी लिपि के उत्कीर्ण लेख से 'सिंहक' नामक व्यक्ति की जानकारी मिलती है, जिसने गुफा बनवाई थी। वह लेख "सिंहकसलेणे" है।

भीमबैठका में प्रमुख रूप से डॉ. वाकणकर, (विक्रम विश्वविद्यालय, उज्जैन), डॉ. व्ही. एन. मिश्रा (डेक्कन कॉलेज, पूना), प्रो. के. डी. वाजपेयी एवं एस. के. पाण्डे (सागर विश्वविद्यालय, सागर), ने समय-समय पर पुरातत्वीय उत्खनन करवाये थे। उत्खनन के अन्तर्गत सबसे महत्वपूर्ण उपलब्धियाँ सभागृह शैलाश्रय (आडिटोरियम) से हुईं/थीं जहाँ गोलाश्म संस्कृति के पाषाणकालीन उपकरण, ताम्रयुगीन मिट्टी के पात्र तथा पंचमार्क सिक्का था। इसके अतिरिक्त हेमेटाईट क टुकड़े भी मिले थे, जिनसे गहरे लाल रंग के चित्र बनाये जाते थे।

17. नागोरी :

नागोरी के शैलाश्रय साँची के निकट स्थित है। पवाया (पद्मावती) के भारशिव नागवंश के क्षेत्र में होने से तथा उनके ही समय की नाग प्रतिमाओं के यहाँ होने से यह स्थल नागोरी कहलाता है। नागोरी ग्राम के पीछे एक शैलचित्रों का समूह है जिनमें मध्याश्म, ताम्राश्म तथा इतिहास युगीन चित्र पाये जाते हैं। यहाँ एक मंजील वाले तथा दो मंजिलों वाले शैलाश्रय हैं। यहाँ गहरे लाल, गेरू लाल तथा सफेद रंग के चित्र पाये गये हैं। इसके अतिरिक्त एक शैलाश्रय में हरे रंग के समान भी चित्र हैं। प्रमुख रूप से यहाँ के शैलाश्रय को दो श्रेणी में विभाजित किया गया है। प्रथम शैलाश्रय समूह के अन्तर्गत गांव के प्रारंभ में कुछ शैलाश्रय हैं तथा द्वितीय समूह में पहाड़ी के अन्त में दो शैलाश्रय का एक समूह है।

प्रथम शैलाश्रय समूह

चित्र समूह क्रमांक 1 : इस समूह में कई मानवाकृतियाँ हैं, जोकि लकड़ी की काड़ियों के समान हैं, जिन्हें ऊपर हाथ उठाते नृत्यरत बताया गया है। कुछ समूह के मध्य में दो बड़ी आकृति कुत्ते के साथ हैं। इस प्रकार के चित्र विदेशों में विशेष रूप से इटली में पाये जाते हैं। शैली से मध्याश्मयुगीन है। इसमें कुल दस मानवाकृतियाँ तथा एक पशु (कुत्ता) बनाये गये हैं, इनके निकट ही कई अस्पष्ट आकृतियाँ हैं, जोकि सभी प्रकार की हैं।

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चित्र समूह क्रमांक 2 : इस समूह में मानवाकृतियों तथा पशु-समूह है, जोकि उन्हे चरा रहे है या शिकार कर रहे है। शरीर पर ज्यामितिक आलेखन है। एक मानवाकृति के नीचे "हनिकॉब" का आलेखन है। संभवतः कोई विशाल पशु रहा होगा, जिसके शरीर पर यह आलेखन है।

चित्र समूह क्रमांक 3 : इस चित्र में एक नृत्यरत नग्न मानव है तथा ऊपर एक मानवाकृति समान स्त्री आकृति है। उसके नीचे तथा पास में रेखाएं बनी हुई है, जोकि आलेखन समान है। समूह के निचले भाग में भैंसा तथा अन्य पशु हैं जो नग्न मानव को देख रहे हैं। इसके अतिरिक्त ऊपर हाथ उठाये एक मानवाकृति भी है। शैली से ये चित्र मध्याश्म युगीन प्रतीत होते है।

चित्र समूह क्रमांक 4 : यह समूह इतिहास युगीन है। इसमें लाल-सफेद रंग से चित्रित मानवाकृति हाथ फैलाये प्रतीत होती है, जोकि तिरछी-तिरछी एक पंक्ति में बनी है, तथा चार पंक्तियों में है। प्रत्येक पंक्ति में बनी आकृति के मध्य में बिन्दियों की रेखाएं बनी है। इस प्रकार के चित्र सांची में भी है। यहाँ चित्रों का सुपरइंपोजिशन भी देखा जा सकता है। इन चित्रों के नीचे पशु चित्रण है जो ताम्राश्मयुगीन शैली में है। यहाँ बनी आकृतियों संभवतः पूजा से विषयक रही होगी।

चित्र समूह क्रमांक 5 : इस समूह में ऊपर की ओर युद्ध दृश्य है, जिसमें हाथियों पर बैठ योद्धा बनाये गये है। समूह के मध्य में क्रमांक 4 के समान आकृतियों है जो मातृदेवियों के समान लगती है। इस शैलाश्रय में चित्रों का सुपरइंपोजिशन भी हैं, जिसमें निचले स्तर पर मध्याश्मयुगीन धनुर्धारियों की आकृतियों हैं तथा निकट ही पशु इत्यादि का चित्रण है। समूह के निचले भाग में घुड़सवार तथा लकड़ी की काड़ियों के समान मानवाकृतियों है। इस समूह में बने हाथी पर सवार योद्धाओं का युद्ध दृश्य उल्लेखनीय है।

द्वितीय शैलाश्रय समूह :

इस समूह में दो शैलाश्रय है, जिनमें प्रथम शैलाश्रय दो मंजिल का तथा दूसरा शैलाश्रय सामान्य हैं।

प्रथम शैलाश्रय - (प्रथम मंजिल) :

इसमें कई चित्र समूह हैं, जिनमें मध्याश्म तथा ताम्राश्मयुगीन पशुओं का सुपर इंपोजिशन है। पशुओं के समूह में एक गहरे लाल (कथई) रंग का बड़ा जानवर है। जो नीलगाय के समान दिखाई देता है। शरीर पर ज्यामितिक आलेखन तथा रेखाएं बनाई हुई है। जानवर चलता सा प्रतीत होता है। इस मध्याश्म युगीन चित्र के ऊपर ताम्राश्म युगीन कई पशु एक दिशा में चलते बताये गये है, जिनमें प्रमुख भैंसा तथा बैल समान पशु है। शरीर का भाग "झीग-झेग" रेखाओं से अलंकृत है। इस प्रकार के एक साथ चलते पशु सतकुड़ा तथा रायसेन की हाथी टोल में भी बताये गये है। इस चित्र के कुछ ऊपर की ओर शैलाश्रय में बाण चलाते बहुत ही सुन्दर धनुर्धारी है, जो बाण-धनुष पर चढ़ाकर मारने के लिए तत्पर या तैयार है। शैली से यह इतिहासयुगीन प्रतीत होता है। निचली मंजिल में और भी कई सफेद तथा लाल रंग के चित्र है जो अस्पष्ट है।

प्रथम शैलाश्रय - (द्वितीय मंजिल) :

इस मंजिल में दो चित्र समूह हैं। प्रथम समूह में मध्याश्म युगीन कई लकड़ी की काड़ियों समान वाली नृत्यरत मानवाकृतियों है। मस्तक पर मुखौटा पहने है। सुपरइंपोजिशन में इस मंजिल में मध्याश्म तथा इतिहास युगीन आकृतियों है। इस युग की यहाँ महत्वपूर्ण कृति यह है की एक धनुर्धारी ऊपर हाथ उठाये तीर-कमान चला रहा है। वह ऐसा लग रहा है कि मानो किसी पशु या मानव को मार रहा हो। एक अन्य चित्र में "स्प्रे" द्वारा चित्र बनाये गये है। जिसमें आकृतियों अन्दर से खाली है तथा बाजू की ओर लाल रंग का "स्प्रे" है मानों आकृतियों काटकर लगाई होगी तथा ऊपर से "स्प्रे" किया है। चित्र अद्भूत है। चित्र में राजा आसन पर बैठा है तथा हाथ उठाये आशीर्वाद दे रहा है। आगे मानवाकृतियों है तथा पीछे छत्र लिए एक आकृति है। अन्य आकृतियों अस्पष्ट है। कुछ आकृतियों सभासद जैसी लगती है। यह चित्र कोई कहानी से संबंधित होगा जोकि चित्र समाप्त प्राय होने से स्पष्ट नहीं है।

द्वितीय शैलाश्रय :

इस समूह के द्वितीय शैलाश्रय में जानवरों के जाते हुए दो समूह है। कई चित्र तो अस्पष्ट है। प्रथम समूह में एक मुंह खोले

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या दहाड़ता सिंह है, जिसका शरीर बलिष्ठ बनाया हुआ है, तथा शरीर पर ज्यामितिक आलेखन है। उसके पीछे हिरण जाते हुए बताये गये हैं, जोकि पानी (वर्षा) के प्रभाव से हल्के हो गये हैं। द्वितीय चित्र में दो वृषभ तथा एक भैंसा है। भैंसा को वृषभ मस्तक उठाये चलते बताया गया है। ये सभी चित्र लाल रंग के हैं, जोकि हल्का/गहरापन लिये हैं। यहाँ शैलाश्रयों में कई चित्र रहे होंगे, परन्तु सभी मिट चुके हैं। यहाँ सभी चित्रों में मस्तक उठाये भैंसा तथा मुंह खोले अथवा दहाड़ते सिंह महत्वपूर्ण हैं।

18. उरदेन :

यह ग्राम सदालतपुर (रायसेन मार्ग) के निकट पर्वतमाला में स्थित है। यहाँ पहाड़ियों में कई शैलाश्रय हैं जहाँ ये चित्र प्रकाश में लाये गये हैं। इनमें कुछ महत्वपूर्ण चित्र हैं जिनमें धनुर्धारियों का सुन्दर अंकन देखा जा सकता है। उरदेन शैलाश्रयों के महत्वपूर्ण चित्र—

1. जंगली भैंसे का शिकार करते धनुर्धारी है। भैंसे का शरीर ज्यामितिक आलेखन से अलंकृत किया गया है जोकि मध्याश्म युग का प्रतीक है।
2. धनुष बाण लिये धनुर्धारी, जिसने कंधे पर बाण रखा है।
3. इरविन ने यहाँ एक स्त्री आकृति की खोज की है। इस प्रकार की आकृति बहुत कम मिलती है। वह मस्तक पर मुखौटा पहने है, तथा ऐसा प्रतीत हो रहा है कि मानों वह भाग रही हो।
4. यहाँ एक भागते हुए नीलगाय का चित्र है जिसमें एकस—रे के समान आलेखन किया हुआ है।
5. यहाँ शैलाश्रयों में चित्रों का सुपरइंपाजिशन (स्तरीकरण) है, जिनमें पशुओं की बाहुल्यता है। मध्याश्म युग के स्तर पर भैंसा तथा दो सिंगों वाला गेंडा देखा जा सकता है। चित्र देखने से ऐसा लगता है कि गेंडा किसी मुखौटा लगे व्यक्ति के पीछे भाग रहा है। एक अन्य चित्र में गेंडे का शिकार भी बताया गया है। यहाँ जंगली सुअर के भी शिकार दृश्य है।
6. एक जानवरों के समूह का आखेट—दृश्य है जिसमें भैंसा तथा हिरण है, जो भागते बताया गया है। इनके साथ भाला लिये शिकारी भी है, जो उन्हें मार रहे हैं। इनके साथ ही, एक अन्य चित्र में भालू, जैसे पशु को बताया है, जो मुंह खोले भाग रहा है।
7. मध्याश्मयुगीन स्तर पर कई दौड़ती मानवाकृतियों हैं जिनके आसपास हिरण, सिंह इत्यादि पशु चित्रित किये गये हैं। पशुओं के शरीर को ज्यामितिक आलेखन से अलंकृत किया गया है।
8. यहाँ एक शैलाश्रय में कई पशु हैं जिनमें गाय, भैंस, जंगली सुअर बनाये गये हैं, जिनका शिकारियों, धनुर्धारियों द्वारा आखेट किया जा रहा है। जानवरों के साथ इनमें दो सिंग वाला गेंडा भी है। मध्याश्म युग में यह चित्र उन्नत रहा होगा तभी इतने सुन्दर चित्र यहाँ मिले हैं।
9. एक चित्र में एक शिकारी भाला लिये किसी पशु को रस्सी से बांधे रखा है। इसके निकट ही शिकारियों, धनुर्धारियों द्वारा हाथी को घेर रखा है तथा उसका सामुहिक रूप से आखेट किया जा रहा है। यहाँ पर ही पशुओं के निकट एक नृत्यरत आकृति बनी हुई है।
10. एक शैलाश्रय में दो बैलगाड़ियों का भी अंकन है जिसमें प्रत्येक गाड़ी में दो-दो बैल लगे हुए हैं।
11. मध्याश्मयुगीन तो यहाँ कई चित्र बने परन्तु इतिहासयुगीन एवं मध्यकालीन चित्र भी यहाँ बनाये गये हैं, जिनमें घुड़सवार आकर्षक है। घोड़ों को अलंकृत दिखाया गया है। घुड़सवारों के हाथों में आयुध जैसा दण्ड या भाला है। एक घुड़सवार के अलंकरण से वह राजा या शासक प्रतीत होता है।

19. भोजपुर :

भोजपुर ऐतिहासिक शिव मंदिर के लिए प्रसिद्ध है। यह स्थल भोपाल से लगभग 30 कि.मी. दूरी पर स्थित है। यहाँ बेतवा के तट या निकटस्थ क्षेत्र में कई शैलाश्रय कई युगों के चित्र हैं।

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भोजपुर के महत्वपूर्ण चित्र :

1. यहाँ हाथी के शिकार का आकर्षक दृश्य है। हाथी के सामने शिकारी है, जिसके हाथ में हारपून के समान शस्त्र है। हाथी के शरीर को ज्यामितिक आलेखन से अलंकृत किया गया है।
2. एक अन्य चित्र में एक स्त्री के समान आकृति है जो अपने हाथ ऊपर उठाये है। पास ही दो नृत्य करती प्रतीत होती मानवाकृतियों भी है।
3. भैंसे के शिकार का सुन्दर दृश्य है जिसमें भैंसे को मस्तक झुकाये बताया गया है तथा एक अन्य भैंसा मस्तक उठाकर भाग रहा है। भैंसों का शरीर ज्यामितिक आलेखन से अलंकृत है। इनके आसपास कई आयुध तथा धनुष बाण लिये शिकारी (धनुर्धारी) है, जिनके मस्तक पर मुखौटा है।
4. मध्याश्मयुगीन जंगली सुअर के शिकार का आकर्षक चित्र है। शरीर पर बाल बताये गये है तथा गर्दन व पेट पर ज्यामितिक आलेखन है। इस समूह में धनुर्धारी स्पष्ट नहीं है।

(2) जिला होशंगाबाद :

(1) आदमगढ़

आदमगढ़ के शैलाश्रय होशंगाबाद जिला मुख्यालय से लगभग तीन किलोमीटर की दूरी पर इटारसी मार्ग पर स्थित है। इन शैलाश्रयों की खोज 1921 में तत्कालीन जिलाध्यक्ष ने की थी। तत्पश्चात् 1922 में पटना संग्रहालय के मनोरंजन घोष द्वारा विस्तृत अध्ययन किया गया। इन शैलाश्रयों को भारतीय पुरातत्व सर्वेक्षण द्वारा राष्ट्रीय महत्व का पुरातत्वीय स्थल घोषित कर संरक्षित किया गया है। इनकी प्राचीनता ज्ञात किये जाने के लिये आर. बी. जोशी तथा एम. डी. खरे द्वारा पुरातात्विक उत्खनन कर पूर्व पुरापाषाण काल से उत्तर पुरापाषाण तक एवं मध्याश्मयुगीन संस्कृति को उजागर किया। आदमगढ़ में प्रमुख रूप से 18 शैलाश्रय हैं जिनमें कई शैलाश्रयों के चित्र समय के प्रभाव से मिट गये हैं।

शैलाश्रयों का विवरण:

शैलाश्रय क्रमांक 1 : यह एक छोटा शैलाश्रय है, इसमें कई चित्र थे। वर्तमान में केवल लाल रंग के अस्पष्ट निशान ही दिखाई देते हैं।

शैलाश्रय क्रमांक 2 : इस शैलाश्रय में कई चित्र रहे होंगे। वर्तमान में वर्षा या अन्य प्राकृतिक कारणों से ये चित्र नष्ट हो गये। कुछ लाल रंग के चित्र अवश्य है उनमें केवल एक धारियों से अलंकृत वृषभ का चित्र है।

शैलाश्रय क्रमांक 3 : इस शैलाश्रय में मानवाकृतिया, पशुचित्रण तथा यौद्धाओं के चित्र देखे जा सकते है, जोकि लाल रंग के बनाये गये थे। एक मानवाकृति (यौद्धा) के हाथ में ढाल-तलवार है, खुली केशराशी है। शरीर को ज्यामितिक आलेखन से अलंकृत किया गया है। एक अन्य चित्र में एक हाथी पर तीन सवार व्यक्तियों का अंकन कलात्मक है। हाथी के पीछे यौद्धागण चलते बताये गये है।

शैलाश्रय क्रमांक 4 : यह एक विशाल शैलाश्रय है, जिसमें गहरे लाल या कथई रंग से कई चित्र बने है। इसमें युद्ध के दृश्य, नृत्य करते मानव समूह, आखेट, धनुर्धर, यौद्धागण, घुड़सवार, पशु चित्रण इत्यादि चित्र प्रमुख है। इन चित्रों में एक चित्र यौद्धाओं के आपसी युद्ध का है। इसमें दो यौद्धा अलग-अलग प्रकार की तलवार ढाल लिये बताये गये है एवं एक दूसरे पर वार कर रहे है। यहाँ एक अन्य महत्वपूर्ण लाल रंग का मयूर का चित्र है जिसका स्वाभाविक प्रकार का अंकन किया गया है। अन्य चित्रों में गाय, वानर, नृत्य करते मानवाकृतियों, उल्लेखनीय है।

शैलाश्रय क्रमांक 5 : इस शैलाश्रय में कई लाल रंग के चित्र बने थे जो काल के प्रभाव अथवा प्राकृतिक कारणों से समाप्त हो गये हैं।

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शैलाश्रय क्रमांक 6 : इस शैलाश्रय में कई लाल तथा सफेद रंग के चित्र बनाये गये थे। सामान्य रूप से अब ये अस्पष्ट हो गये हैं। इनमें भागते हुए हिरण, भागते हुए धनुर्धर तथा ढाल तलवार लिये योद्धा प्रमुख हैं।

शैलाश्रय क्रमांक 7 : इस शैलाश्रय में लाल तथा सफेद रंग के चित्र हैं, जिसमें पशु चित्रण तथा पक्षी प्रमुख हैं। इनके अतिरिक्त एक विचित्र रूप से बना वृषभ का चित्र है। एक अन्य चित्र जोकि एक पक्षी है, वह मयूर तथा वृषभ समान दिखाई देता है। पूंछ मयूर जैसी तथा शरीर बत्तख जैसा है।

शैलाश्रय क्रमांक 8 : इस शैलाश्रय में लगभग नौ चित्र समूह हैं, जिन्हें बनाने में लाल तथा सफेद रंगों का प्रयोग किया गया है। इसमें बोझा उठाते मानव, वाद्य बजाती हुई तीन मानवाकृतियों प्रमुख हैं। इनमें दो आकृतियों के हाथ मृदंग तथा एक अन्य बॉसुरी समान बजाने वाले मुख वाद्य यंत्र हैं।

शैलाश्रय क्रमांक 9 : शैलाश्रय में चित्रों के अवशेषों के आधार पर ऐसा प्रतीत होता है कि यह शैलाश्रय पूर्ण रूप से सफेद तथा लाल रंगों के चित्रों से चित्रित रहा होगा। परन्तु अधिकतर चित्र समाप्तप्राय हैं। शैलाश्रय के प्रमुख चित्रों में दौड़ता हुआ योद्धा साधारण, मानवाकृति, नृत्य के दृश्य, घुड़सवार, धनुषबाण लिए योद्धा, ऊपर की ओर देखते हुए हिरण या मोर प्रमुख हैं।

शैलाश्रय क्रमांक 10 : अन्य शैलाश्रयों की अपेक्षा इसमें अत्यधिक चित्र निर्मित किये गये थे, जो हरे कथई या लाल सफेद रंगों से बनाये गये थे। इसमें प्रमुख चित्रों में हाथ में भाला या धनुष लिये धनुर्धर, घुड़सवार, भैसा, सुअर, आखेट दृश्य, तलवार लिये योद्धा, एक साथ तीन घुड़सवार, हिरण समूह इत्यादि हैं। इस शैलाश्रय में एक भैसे का विशाल चित्र जो लगभग तीन मीटर लम्बा तथा दो मीटर चौड़ा है। यह अत्यंत सुन्दर चित्र है, इसमें भैसा ऐसा लग रहा है मानों झुक कर वार कर रहा हो। एक अन्य भैसे के चित्र में उसे झुका हुआ बताया है, तथा टांगे अनुपातिक रूप से पतली बनाई गई हैं।

शैलाश्रय क्रमांक 11: यह एक विशाल शैलाश्रय है जिसमें सामान्य रूप से लाल या गहरे कथई रंग के चित्र बने हैं। इसमें धनुर्धर, आखेट-दृश्य तथा पशु चित्रण हैं। प्रमुख चित्र में एक अश्व को धनुर्धारी द्वारा मारते बताया गया है। घोड़े को अलंकृत रूप से बनाया गया है तथा पेट में धारिया, अथवा लाईनें बनाई गई हैं।

शैलाश्रय क्रमांक 12 : यह एक विशाल तथा ऊँचा शैलाश्रय है, जिसमें लाल रंग के चित्र थे, जो वर्षा या अन्य प्राकृतिक कारणों से समाप्त हो गये हैं। इसमें कुछ ही चित्र शेष हैं, जिसमें पशु, नृत्य के दृश्य, घुड़सवार, हाथी, हिरण, वृषभ इत्यादि हैं। कुछ पशुओं के शरीर को ज्यामितिक आलेखन से या रेखाओं से अलंकृत किया है।

शैलाश्रय क्रमांक - 13, 14 तथा 15 : इन शैलाश्रयों के सभी चित्र समाप्त हो गये हैं।

शैलाश्रय क्रमांक - 16 : इस शैलाश्रय में केवल एक ही लाल रंग का चित्र है। संभवतः आलेखन या किसी वृक्ष का हो सकता है।

शैलाश्रय क्रमांक - 17: यह एक विशाल तथा ऊँचा शैलाश्रय है, जिसमें केवल कुछ ही चित्र शेष हैं, जो गहरे लाल रंग या कथई रंग से बने हैं। इनमें कुछ धनुष बाण लिये तथा चलाते हुए मानवाकृतियों अत्यंत ही आकर्षक हैं। अन्य चित्रों में वानर, हिरण, श्वान (कुत्ता) इत्यादि हैं। चित्र अत्यंत ही अलंकृत तथा पूर्णता लिये हैं जो कि लोक चित्रकला के परिचायक हैं।

शैलाश्रय क्रमांक - 18 : इस शैलाश्रय में कई लाल या कथई रंग के चित्र बने थे, जो कि नष्टप्राय हैं। केवल ज्यामितिक शैली से बना पशु चित्रण प्रमुख है। चित्र संभवतः वानर का हो सकता है।

आदमगढ़ में शैलाश्रय क्रमांक - 10, महत्वपूर्ण शैलाश्रय माना जाता है, जिसमें विभिन्न युगों के चित्रों का "सुपरइंफोजिशन" प्राप्त हुआ है। यहाँ के शैलाश्रय अत्यंत विशाल तथा सर्पनुमा छत्र जैसे हैं। शैलाश्रय क्रमांक - 9 में सफेद रंग के कई चित्र हैं।

डॉ० एस. के. पाण्डे के द्वारा गहन अध्ययन करने के पश्चात् दस सुपरइंफोजिशन पहचाने गये हैं। जोकि विभिन्न कला शैलियों को प्रदर्शित करते हैं। आदमगढ़ शैलाश्रयों में हाथी के एक चित्र को प्राचीनतम बताया गया है जिसमें गहरे कथई या काले रंग से बनाया गया था। इसके अतिरिक्त एक भैसे का चित्र है जो कि भारत का सबसे बड़ा चित्र है। इसे दो आउट लाइनों में बनाया हुआ है। इसमें सुपरइंफोजिशन में भागते हुए गोल सिंगों वाले भैसे का चित्र है, जो गहरे लाल या कथई रंग से बनाया हुआ है।

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सुपरइंपोजिशन के एक अन्य चित्र समूह में पॉच अलंकृत आकृतियों, है, जिसमें भैंसा, हाथी तथा घुड़सवार है, ये चित्र ताम्राश्म व पूर्व इतिहासकाल के द्योतक है। इन चित्रों के ऊपर भागती हुई मानवाकृतियों बनाई गई है। सामान्य रूप से कहा जावे तो यहाँ शैलाश्रयों में बनाये गये चित्रों में घुड़सवार, घोड़ों की आकृतियों, भाला तथा तलवार लिये योद्धा, अत्यंत सुन्दर है। कहीं-कहीं हाथियों के चित्रों पर जिराफ के चित्र भी देखने को मिलते हैं। डॉ० एस. के. पाण्डे का मानना है कि वे न तो जिराफ है, और न ही कोई अन्य जानवर के है।

2. डोरोथी दीप, पचमढ़ी :

डोरोथी दीप का यह एक विशालतम चित्रित शैलाश्रय है, जो पचमढ़ी में सतपुड़ा पर्वतमाला के मध्य स्थित है। पचमढ़ी तथा इसके आसपास शैलाश्रयों की खोज का श्रेय प्रसिद्ध विद्वान डी० एच० गार्डन को है, जिसमें यह डोरोथी दीप भी सम्मिलित है। यह द्रौपदी दीप का ही अपभ्रंश है। इस शैलाश्रय में आदिमानव द्वारा गेरुआ लाल तथा सफेद (खड़िया) रंगों से चित्र बनाए हुए हैं, जिनसे तत्कालीन जनजीवन से संबंधित विभिन्न अवस्थाओं की जानकारी मिलती है। यहाँ चित्रों में मानवाकृति, पशुचित्रण, आलेखन इत्यादि है। महत्वपूर्ण चित्रों में एक इतिहासयुगीन रथ का चित्र है, जिसमें एक सारथी को रथ चलाते बताया गया है। वर्तमान में इस शैलाश्रय का महत्व देखते हुए भारतीय पुरातत्व सर्वेक्षण द्वारा अभिरक्षित किया गया है।

3. जिला-सहोर :

1. पानगुराड़िया के शैलाश्रय

पानगुराड़िया के चित्रित शैलाश्रय बुधनी-रेहटी मार्ग के मध्य सलकनपुर माता पर्वत श्रृंखल में नकटी तलाई के निकट स्थित है। इस स्थल की खोज का श्रेय भारतीय पुरातत्व सर्वेक्षण की प्रागैतिहासिक शाखा (प्रि-हिस्ट्री ब्रांच) नागपुर को है, जिनके द्वारा वर्ष 1975-76 में की गई थी। यहाँ दो प्रमुख शैलाश्रय है, जिसमें एक बड़े शैलाश्रय को सारुमारु की कोठड़ी कहते हैं। इसमें सम्राट अशोक के समय के दो ब्राह्मी अभिलेख प्रकाश में लाये गये थे, जिसमें इस स्थल को "उपनिथुमहाविहार" कहा है। एक अन्य अभिलेख में बताया गया है कि देवानाम प्रिय (अशोक) जब महाराज कुमार थे, जब यहाँ आये थे। इस शैलाश्रय में तथा आसपास विशाल चबूतरे, स्तूप तथा कई विहार निर्मित किये गये थे, जिनके अवशेष आज भी विद्यमान है तथा संरक्षित किये गये हैं।

यहाँ शैलाश्रयों में लाल, सफेद तथा पीले रंगों का प्रयोग किया गया है, जिनसे चित्रों को बनाया गया था। वर्षा तथा वातावरण के प्रभाव से कई चित्र नष्ट हो गये हैं।

प्रमुख चित्रों में बौद्ध चिन्ह, स्वास्तिक, त्रिरत्न एवं कलश है। इनके अतिरिक्त शिकार-दृश्य, नृत्य समूह, भैंसा, हिंसक पशु, मानवाकृतियों, भागते वानर समूह जिनके पीछे धनुष बाण लेकर धनुर्धर के चित्र है। सफेद रंग से चित्रित चार घुड़सवार हाथ में भाला लिये एक घोड़े का संभवतः शिकार करने हेतु पिछा कर रहे हैं, जोकि अत्यंत आकर्षक है। एक अन्य महत्वपूर्ण चित्र में एक घुड़सवार तथा तीन योद्धा बताये हैं। इनके हाथों में ढाल-तलवार बताई है तथा ऊपर हाथ किये चल रहे है। इनका रंग हल्का हो जाने से प्रतीत होता है, संभवतः इसे बनाने के लिए काले रंग का प्रयोग किया हुआ है। एक अन्य सफेद चित्र में ज्यामितिक शैली में एक घुड़सवार को अत्यंत गतिमय या दौड़ते हुए अश्व पर बताया गया है। घुड़सवार एक हाथ में भाला लिये है, जो ऐसा लगता है कि मानों भाला तेजी से फेंक रहा हो। यहाँ इतिहासयुगीन चित्र ही है।

2. तालपुरा के चित्रित शैलाश्रय :

तालपुरा के शैलाश्रय, जिला सीहोर में बुधनी पानगुराड़िया मार्ग के मध्य में स्थित है। यहाँ के शैलाश्रयों की खोज वर्ष 1975-76 में भारतीय पुरातत्व सर्वेक्षण की प्रागैतिहासिक शाखा ने की थी। यहाँ प्रमुख रूप से एक विशाल शैलाश्रय तथा कई बौद्ध स्मारक है, जिनमें दो बड़े स्तूप, संधाराम तथा बड़े पाषाणों से निर्मित सोपान, विशाल चबूतरे इत्यादि है। ये शैलाश्रय जमीन से लगभग 92 मी. की ऊँचाई पर स्थित है।

शैलचित्र :

यहां प्रमुख रूप से एक ही विशाल शैलाश्रय है, जिसमें पाषाण निर्मित विशाल चबूतरा है। शैलाश्रय का कुछ भाग दबा होने से ऐसा प्रतीत होता है कि शुंगकाल के पूर्व के कुछ चित्र दब गये हैं, तथा कुछ ऊपर की ओर छत में बने हैं। यहाँ पर ताम्राश्रम, इतिहास तथा मध्यकालीन चित्र है। यदि इनका वर्गीकरण करें तो निम्न होंगे :- आखेट-दृश्य, दो दलों में युद्ध जिसमें एक दल ढाल तलवार लिये है तो अन्य के हाथों में तीर कमान (धनुष) है। इनके अतिरिक्त पशु चित्रण, घुड़सवार, एकल-पशु जिनमें हिरण, बारासिंगा, हिरणी भी है। अश्व के ऊपर भाला लिये सवार है तथा आगे-पीछे योद्धा है। यहाँ चित्रों में ताम्राश्रमयुगीन मुँह ऊपर उठाये हिरणी का चित्रण अत्यंत ही उल्लेखनीय है जिसमें रेखाओं का अलंकरण भरा है। बारासिंगा या हिरण का चित्र ताम्राश्रमयुगीन मृदभाण्डों के चित्रों से मिलता जुलता है। इस शैलाश्रय में अन्य प्रकार के भी कई चित्र हैं जो काल के प्रभाव से नष्ट हो गये हैं।

यहाँ लाल रंग के चित्र तो हैं ही, परन्तु सफेद चित्रों की मात्रा कम है। कुछ जानवरों के सफेद चित्र भीमबैठका की "जूँ रॉक" के चित्रों से साम्यता रखते हैं, जिनमें जंगली सुअर, भैंसा इत्यादि हैं।

3. कठोतिया :

यह स्थल भोपाल - कोलार मार्ग पर स्थित है। यहाँ लगभग 60 से अधिक शैलाश्रय हैं जहाँ प्रत्येक युग के शैलचित्र देखे जा सकते हैं। प्रमुख रूप से मध्याश्रम तथा ताम्राश्रम युगीन चित्र उल्लेखनीय हैं। मानवाकृतियों, पशु चित्रण तथा आखेट प्रमुख विषय हैं। पशुओं में विशेष रूप से जंगली भैंसों के शरीर को ज्यामितिक शैली से अलंकृत किया जाना मध्याश्रमयुगीन कलाकारों की प्रमुख विशेषता है। एक शैलाश्रय में सारस तथा उसके बच्चों के मध्याश्रमकालीन चित्र बने हुए हैं। इसके साथ ही मध्यकालीन सफेद रंग से बने चित्र भी प्राप्त हुए हैं जिनमें घुड़सवार तथा युद्ध दृश्य प्रमुख हैं। यहाँ के शैलाचित्रों का विशेष अध्ययन प्रो. शंकर तिवारी तथा पुरातत्ववेत्ता इरविन ने किया है। आदिमानव द्वारा निर्मित यहाँ कुछ "कपमार्क्स" एक शैलाश्रय में पड़ी चट्टानों पर पाये गये हैं। जोकि संभवतः किसी धार्मिक अनुष्ठान के लिये बनाये गये होंगे।

4 जिला-विदिशा :-

1. अहमदपुर के शैलाश्रय :

अहमदपुर के शैलाश्रय साँची के निकट तथा विदिशा जिला मुख्यालय से लगभग 20 किलोमीटर की दूरी पर बेतवा की सहायक नदी सहारा के तट पर स्थित है। अहमदपुर की पहाड़ी पूर्व-पश्चिम में लगभग 1200 मीटर लंबी तथा 550 मीटर चौड़ी हैं। पहाड़ी के दक्षिण भाग में कई चित्रित शैलाश्रय हैं, जिनमें कुछ दो मंजिलों वाले भी हैं। यहां प्रकाश में लाये गये चित्र वैसे ही हैं, जैसे भीमबैठका अथवा अन्य निकटस्थ क्षेत्रों से प्राप्त होते हैं। यहां बने पशुओं का चित्रण, युद्ध-दृश्य, शिकार, मानवाकृतियाँ, अत्यंत आकर्षक हैं। इनके बनाने में सफेद, हरा, गहरा लाल, तथा हल्का लाल रंगों का प्रयोग किया गया है। यहाँ प्राप्त चित्रों के सुपरइम्पोजिशन में मध्याश्रमकालीन चित्र निचली परतों में प्राप्त होते हैं, जैसे की लकड़ी की काड़ियों के समान अन्यत्र स्थलों पर पाये गये हैं। अहमदपुर के महत्वपूर्ण चित्रों में एक ही दिशा में जाते हुए हिरण समूह है तथा शैली से ताम्राश्रमयुगीन प्रतीत होते हैं। इसके अतिरिक्त हिरणों का एक अन्य समूह है जिन पर इतिहासयुगीन धनुषबाण ढाल लिए योद्धा बनाये गये हैं। यहाँ पर प्राप्त एक शैलाश्रय में लगभग दो मीटर लम्बा हाथी का चित्र मिला है जिसका समय शैली के आधार पर गुप्तकाल निर्धारित किया गया है। इसके निकट ही एक शंख लिपि का लेख भी प्राप्त हुआ। इसके अतिरिक्त यहाँ पर शुंगकालीन ब्राह्मी का लाल रंग से चित्रित एक लेख प्राप्त हुआ है जिसमें भवदत्त राजा कोन मठ का (विहार) वर्णन आया है तथा अन्य नामों में रेवा (नर्मदा) तथा यवन शब्द आया है। मध्यकालीन चित्रों में पूजा के दृश्य देखने को मिलते हैं। शैलाश्रयों में पशु चित्रण भी प्राप्त हुए हैं। शैलाश्रयीन क्षेत्रों में किसी भी प्रकार के पूर्व पाषाण कालीन उपकरण प्राप्त नहीं हुए हैं। केवल लघु अश्मोपकरण ही देखे जा सकते हैं जो प्रचुर मात्रा में प्राप्त होते हैं। अहमदपुर के ऊपर परमारकालीन मंदिरों के अवशेष भी हैं जहाँ कई देवी-देवताओं की प्रतिमाएँ बिखरी पड़ी हैं।

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2. नीमखेरिया के शैलाश्रय :

विदिशा से लगभग 12 किलोमीटर की दूरी पर उदयगिरि पर्वतमाला के पीछे बेस नदी के तट से लगी विंध्याचल की उपत्यकाओं में लगभग 25 शैलाश्रय हैं जिनमें केवल आठ शैलाश्रयों में ही चित्र देखे गये हैं। इनमें बने चित्र लाल, सफेद तथा पीले रंग के हैं, जिन्हें गेरु तथा खड़िया से बनाया गया था। ये शैलाश्रय एक से अधिक किलोमीटर के क्षेत्रफल में फैले हैं। नीमखेरिया शैलचित्र समूह की खोज 1975 में की गई थी।

नीमखेरिया के शैलचित्रों व इनकी विशेषताओं के आधार पर इन्हें ताम्राश्मकाल व इतिहासकाल के समतुल्य माना गया है। इन चित्र समूहों में मुख्य रूप से जानवरों के चित्र व मानवाकृतियाँ हैं। पशुओं में मुख्य रूप से बैलों का अंकन है जो कुबड़ वाले हैं। जैसा कि ताम्राश्मकालीन सभ्यताओं के स्थल पर हुए उत्खनन से प्राप्त बैलों की मृण्मूर्तियाँ (मिट्टी के खिलौने) प्राप्त हुई हैं। यहाँ के चित्र भी उनसे साम्यता रखते हैं। रंगई रेलवे पुल के निकट किये उत्खनन के समय भी इस प्रकार के बैलों की जो कि कुबड़ वाले हैं, मिट्टी की मृण्मूर्तियाँ प्राप्त हुई हैं।

शैलाश्रयों के आसपास जंगलों तथा पेड़ पौधों के कट जोड़ों के कारण चित्र धुंधले हो गये हैं। घने जंगलों के शैलाश्रयों में बने चित्र प्राकृतिक वातावरण में सुरक्षित रहते हैं। यहाँ के महत्वपूर्ण शैलाश्रयों का विवरण इस प्रकार है :-

शैलाश्रय क्रमांक 10 : इस शैलाश्रय में लाल रंग के चित्र बने हैं जिनमें जानवरों का समूह तथा शिकार दृश्य है। 11 जानवरों के समूह में कुबड़ वाले बैल है जो इधर-उधर भागते हुए चित्रित हैं। जानवरों के समूह के पास ही एक योद्धा ढाल तलवार लिये खड़ा है जो कि इतिहासकालीन शैली का प्रतीक होता है। अन्य चित्रों में यहाँ कहीं-कहीं फूल पत्तियों का आलेखन भी देखने को मिलता है।

शैलाश्रय क्रमांक 11 : इस शैलाश्रय के चित्र अस्पष्ट से हैं। केवल एक घुड़सवार अलंकृत घोड़े पर देखा जा सकता है इसी चित्र के पीछे एक जानवर है जो गाय जैसा है। इन चित्रों के पास ही एक अन्य मानवाकृति है।

शैलाश्रय क्रमांक 15 : एक बैल गाड़ी जैसी आकृति इस शैलाश्रय में बनी है। जिसमें पीछे की ओर पहिये बने हैं।

शैलाश्रय क्रमांक 16 : इस शैलाश्रय में बहुत ही सुन्दर भागते हुए बैल का चित्र है जिसमें पीछे एक मानवाकृति बनी है, संभवतः उसे बैल के पीछे भागते बताया गया है। चित्र की बनावट में आकर्षकता दिखाई पड़ती है।

शैलाश्रय क्रमांक 17 : इस शैलाश्रय की छत में कई दृश्य बने हैं। जिसमें केवल तीन समूह ही स्पष्ट हैं जोकि सफेद रंग में सुन्दर तरीके से चित्रित हैं। प्रथम दृश्य में एक झुके हुए बारासिंगे का शिकार करते हुए एक घुड़सवार बताया गया है जोकि घोड़े पर बैठा पलटकर भाले या किसी डंडे से उसे मार रहा है। घुड़सवार के एक हाथ में लगाम है, दूसरे दृश्य में एक योद्धा दण्ड लिये खड़ा है और कमर में तलवार लटकी है। मस्तक पर सींगोवाला मुखौटा पहना है। यह चित्र इतिहासकालीन शैली का लगता है, क्योंकि इस प्रकार का दंडा लिये मानवाकृति तृतीय या द्वितीय शताब्दी ई० पूर्व के सिक्कों पर पाई जाती है। इस शैलाश्रय का तीसरा चित्र भी बहुत सुन्दर बना है। जिसमें जानवरों का झुंड बताया गया है। इसमें गाय, बैलों को विभिन्न दिशाओं में जाते बताया गया है। इस चित्र की विशेषता यह है कि जानवरों के सींग छोटे बनाये गये हैं जबकि अन्य शैलाश्रयों में जानवरों के बड़े-बड़े सींग बनाये गये हैं। इनमें कुछ जानवर तथा बैल पूँछ उठाये तथा मस्तक नीचे किये कोध प्रदर्शित करते हुए दिखाये गये हैं।

शैलाश्रय क्रमांक 18 : इस शैलाश्रय में कई दृश्य बने हैं जो अस्पष्ट हैं। दृश्यों में गाय, बैल, हिरण इत्यादि हैं। मध्य में एक मुखौटा लगाये तथा बिना मुखौटा वाले कई मानव हैं। इन सभी चित्रों में एक हिरण को भागने के पश्चात् एक जगह खड़े तथा गर्दन घुमाये चित्रित किया गया है।

शैलाश्रय क्रमांक 19 : इस शैलाश्रय में बनी आकृतियाँ जानवरों की हैं जो स्पष्ट हैं। केवल भागते हुये जानवर तथा कुछ जालियों जैसा अलंकरण बना है।

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शैलाश्रय क्रमांक 20 : इसमें केवल एक बड़ी मानवाकृति बनी है जिसके पीछे एक जानवर जा रहा है। संभवतः वह चरवाहा है। मानवाकृति के हाथ में दण्ड जैसा आयुध है।

5. जिला - मन्दसौर

1. चतुर्भुजनाथ नाला

शैलचित्रों से घिरा यह स्थल भानपुरा से लगभग 26 किलोमीटर दूर गाँधीसागर मार्ग स्थित है। मुख्य मार्ग से लगभग 05 किलोमीटर अंदर जंगल में कच्चा मार्ग है, वही यह नाला स्थित है। नाले के किनारे एक आधुनिक मंदिर है जिसके गर्भगृह में शेषयात्री विष्णु को प्रतिमा रखी हुई है जिसे प्रतिहारकाल में निर्मित किया गया। नाले के दोनों ओर सैकड़ों चित्रित शैलाश्रय जिनकी खोज स्थानीय पुरातत्ववेत्ता श्री पंचौली तथा श्री आबिद अहमद चौधरी ने की थी। इस स्थल पर प्रसिद्ध पुरातत्ववेत्ता डा० वाकणकर भी आये थे जिन्होंने यहाँ के शैलचित्रों को महत्वपूर्ण बताया। शैलचित्रों के अध्ययन से ज्ञात होता है कि यहाँ आदिमानव द्वारा युद्ध के दृश्य, शिकार के दृश्य, पशु चित्रण, सामूहिक नृत्य, सामाजिक जनजीवन विषयक चित्र बनाये गये थे। यह सभी चित्र लाल रंग के हैं जिसे हेमेटाइट स्टोन तथा लाल गेरु से बनाये गये हैं।

शैलचित्रों का काल-

उत्तर-पूर्व पाषाणकाल-

यहाँ कुछ ऐसे चित्र मिले हैं संभवतः 10 से 15 हजार वर्ष पूर्व के हैं। कुछ चित्र शतरुर्ग के हैं जो केवल इसी काल में ही होते थे।

मध्याशम काल -

इस युग के आखेट दृश्य एवं मानवाकृतियाँ महत्वपूर्ण हैं। जंगली सुअर, गेंडा इस युग में बहुतायत से होते थे, उनके चित्र यहां प्राप्त हुए हैं। ये चित्र लगभग 10 से 05 हजार वर्ष पूर्व के हैं।

ताम्राशमकाल -

इस युग के यहां सर्वाधिक चित्र हैं। जिसमें पशुपालन, कृषि तथा आखेट के सर्वाधिक चित्र हैं। इनका समय लगभग 5 हजार वर्ष माना जाता है।

इतिहासयुगीन चित्र -

इस युग के यहां बहुत ही कम चित्र हैं केवल एक युद्ध दृश्य महत्वपूर्ण हैं जिसमें हाथियों की सेना, यौद्धा इत्यादि बताए गए हैं। उपरोक्त चित्रों के अतिरिक्त पाषाणकालीन उपकरण भी यहां जगह-जगह पाये जाते हैं।

2 छिबड़ नाला -

यह पुरातत्वीय स्थल भानपुरा से 26 किलोमीटर की दूरी पर स्थित है। यहां आने के लिये भानपुरा-गाँधीनगर मार्ग की पक्की सड़क से कच्चे मार्ग से होकर जाना पड़ता है। यह जंगलों से भरा निर्जन क्षेत्र विभिन्न प्रकार के चित्रित शैलाश्रय से परिपूर्ण है। यहां तो चित्र कम मिलते हैं परन्तु उनकी प्राचीनता अत्यंत है जिनका समय मध्याशमयुग से मध्यकाल तक माना गया। इस क्षेत्र के सबसे सुंदर व सुरक्षित मध्याशमयुगीन चित्र केवल छिबड़ नाला के शैलाश्रयों में ही हैं। पुरावशेषों को देखने से ऐसा प्रतीत होता है कि द्वितीय शताब्दी ई०पू० में इस क्षेत्र में बौद्ध धर्म का अत्यंत प्रभाव था। कुछ शैलाश्रयों में शृंगकालीन ब्राह्मी में लाल रंग के कई चित्रित अभिलेख हैं जिनमें बौद्ध अनुयायियों की जानकारी मिलती है।

प्रमुख चित्र :

छिबड़ नाला के प्रारम्भ में एक विशाल शैलाश्रय है जो स्थानीय धारणाओं के अनुसार चोरोवाली देवी का है। ऐसी मान्यता है कि जो कोई भी चोरी करता है, प्रारम्भ में यहाँ आता है। इसकी विशाल छत पर सैकड़ों चित्र हैं जिनमें एक व्यक्ति को परशु लिये तथा बैल को पकड़े हुये बताया है। एक अन्य चित्र दो व्यक्तियों के आपसी युद्ध का है। इसमें एक व्यक्ति दूसरे व्यक्ति के सिर पर मस्तक

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पर प्रहार कर रहा है। यूरोपिय शैलचित्रों की भाँति तीन विशाल पशुओं के भी चित्र है। जिनमें मस्तक झुकाएँ भैसा तथा नील गाय है। वैसे यह दो मंजिला वाला शैलाश्रय है। जिसकी ऊपरी मंजिल पर मध्यकालीन लाल रंग से चित्रित पूजा के चिन्ह है। इस विशाल शैलाश्रय के पिछले भाग में कुछ लघु शैलाश्रय के पिछले भाग में कुछ शैलाश्रय भी है जिनमें प्राप्त चित्र मध्याश्मयुगीन माने गये हैं। इन चित्रों में सिंहों का शिकार करते हुए यौद्धा है जो आयुध लिये उससे युद्ध कर रहा है। एक अन्य चित्र में गर्भणी गाय को घेर कर शिकार बताया है। शिकारी के हाथ में धनुष तथा बज्र जैसा आयुध है। गाय के पेट में छोटा बच्चा बताया गया है। गर्भणी गाय के पीछे भागती हुई गायों का झुण्ड है। एक शैलाश्रय में पशु को घेरे नृत्य करते हुए मानव समूह मध्याश्मयुगीन मानव में हाथियों के भी चित्र यहाँ बनाये है जो वर्तमान हाथियों की आकृति से भिन्नता लिये हुए है। कुछ चित्र जंगली भैसे के भी है जिन्हें मस्तक झुकाएँ भागते हुए बताया गया है।

पुरातत्वीय सर्वेक्षण के अन्तर्गत यहाँ आदिमानव द्वारा निर्मित पाषाण उपकरण भी प्राप्त हुए हैं

6. भोपाल जिला :

भोपाल जिला पूर्ण रूप से शैलचित्रों से परिपूर्ण है जिनमें निम्नलिखित स्थल महत्वपूर्ण है :-

1. मनुआभान की टेकरी : यह स्थल भोपाल से विमान स्थल पर जाने वाले मार्ग पर स्थित है। यहाँ लगभग 20 चित्रित शैलाश्रय है, जिनमें प्रमुख रूप से लाल रंग के चित्र देखे जा सकते हैं। शैलाश्रय में मध्याश्म एवं ताम्राश्मयुगीन चित्रों के ऊपर शंखलिपि के लेख हैं, जिनका समय गुप्तकाल निर्धारित किया गया है।

2. लालघाटी : लाल घाटी क्षेत्र में लगाया 17 चित्रित शैलाश्रय है, जिनमें प्रमुख रूप से लाल रंग के चित्र देखे जा सकते हैं। इनका समय मध्याश्म काल निर्धारित किया गया है। चित्रित शैलाश्रयों में क्रमांक 3, 9 तथा 14 के चित्र प्रमुख हैं। क्रमांक 14 में बनी गाड़ी तथा धनुर्धर उल्लेखनीय हैं।

3. श्यामला पहाड़ी तथा रिजनल कॉलेज का क्षेत्र : यहाँ लगाया 25 चित्रित शैलाश्रय है, जिनमें से कुछ राष्ट्रीय मानव संग्रहालय के क्षेत्र में आते हैं। शैलाश्रय क्रमांक 14, 18 तथा 23 प्रमुख हैं। प्रमुख रूप से चित्र लाल रंग के बने हैं, जिनमें आखेट, पशुचित्रण, मानवाकृतियों इत्यादि हैं। यहाँ एक शैलाश्रय में पुरातत्वीय उत्खनन भी किया गया जिसमें लघु अश्मोपकरण प्राप्त हुए हैं।

4. धरमपुरी : यह स्थल भोपाल के दक्षिण में भदभदा मार्ग पर पुलिस मार्ग में स्थित है। यहाँ कई चित्रित शैलाश्रय हैं। यहाँ के प्रसिद्ध चित्रों में एक सामुहिक शिकार का चित्र है। जिसमें पशु को चारों ओर से घेर का मारा जा रहा है। एक शैलाश्रय में प्राचीन मंदिर के अवशेष हैं, जोकि संभवतः उत्तर गुप्तकालीन हो सकते हैं।

5. भदभदा तथा शहदकराड़ : यह भी महत्वपूर्ण शैलाश्रय समूह है। जिसमें कई चित्रित शैलाश्रय हैं यह स्थल भदभदा तथा शहदकराड़ क्षेत्र में आता है।

6. झींझरी, जिला-कटनी : झींझरी का पहाड़ी क्षेत्र कटनी बिलहरी मार्ग पर स्थित हैं। वर्तमान में म.प्र. शासन द्वारा अभिरक्षित किये गये हैं। यहाँ लगभग 25 चित्रित शैलाश्रय हैं जिनमें लाल तथा सफेद रंगों के विभिन्न विषयों के चित्र हैं।

7. जिला रीवा :

1. इतर पहाड़ : यहाँ लगभग 10 चित्रित शैलाश्रय हैं जिनमें क्र. 1, 2 तथा 10 के चित्र प्रमुख हैं। प्रो० राधाकान्त वर्मा ने यहाँ के शैलचित्रों का विस्तृत अध्ययन किया है। यहाँ पर मध्याश्म तथा ताम्राश्मयुगीन चित्र प्रमुख हैं जिन्हें लाल तथा सफेद रंगों से बनाया गया है। प्रमुख चित्रों में नृत्य, युद्ध तथा आखेट दृश्य प्रमुख हैं।

2. बरहट (देऊरकोटार) : यह प्रसिद्ध बौद्ध स्मारकों से परिपूर्ण स्थल हैं। यहाँ कई मौर्य कालीन स्तूप, विहार तथा अन्य कई पुरावशेष हैं। यहाँ कई चित्रित शैलाश्रय हैं, यहाँ प्रमुख रूप से इतिहास तथा मध्यकालीन चित्र हैं। शैलाश्रयों के निकट बौद्ध स्मारक होने से शैलाश्रयों में बौद्ध धर्म से विषयक शैलचित्र हैं। चित्रित ब्राह्मी के लेख, स्तूप भी शैलाश्रयों की दिवारों पर देखे जा सकते हैं। ज्यामितिक शैली में बने पशु तथा मानवाकृतियों कई शैलाश्रयों में देखी जा सकती हैं।

9. जिला— ग्वालियर :

ग्वालियर क्षेत्र में सर्वप्रथम शैलचित्रों की खोज डॉ० वाकणकर द्वारा वर्ष 1954 में की गई। ग्वालियर के निकट मोहना ग्राम क्षेत्र में स्थित पहाड़ी पर कंकाली माता के शैलाश्रयों में चित्र प्रकाश में लाये गये हैं। चित्र गेरुआ लाल रंगों के हैं, जिनमें मानवाकृतियों प्रमुख हैं। मानवाकृतियों के निकट शुंगकालीन ब्राह्मी (द्वितीय शताब्दी ई०पू०) में एक चित्रित लेख प्राप्त हुआ है। जिसमें "दंबूकेन कारितम्" लिखा है। संभवतः बौद्ध लेख हो सकता है। डॉ० वाकणकर ने यहाँ के शैलचित्रों को पांच युगों में विभाजित किया है जो मध्याश्म, ताम्राश्म, इतिहास, मध्यकालीन है। ग्वालियर के निकट ही गुप्तेश्वर नामक शैलाश्रय में भी कई शैलचित्र प्रकाश में लाये गये हैं। जीवाजी विश्व विद्यालय द्वारा भी यहाँ पुरातत्वीय उत्खनन किया गया है।

10. जिला—मुरैना :

1. पहाड़गढ़ : पहाड़गढ़ क्षेत्र में कई चित्रित शैलाश्रय हैं, जिनमें प्रमुख रूपसे मध्याश्म तथा ताम्राश्मकालीन चित्र हैं। लाल तथा सफेद रंगों में बने नृत्य दृश्य, पशु तथा आखेट दृश्य उल्लेखनीय हैं।

11. जिला—शिवपुरी :

1. टुण्डा : टुण्डा का शैलाश्रयीय क्षेत्र ग्वालियर शिवपुरी मार्ग पर स्थित है। यहाँ प्रमुख एक चित्रित शैलाश्रय में कई चित्र पशु, शिकार, युद्ध दृश्य, मानवाकृतियों इत्यादि विषयक हैं। इस शैलाश्रय में द्वितीय शताब्दी ई०पू० का चित्रित ब्राह्मी लेख है।
3. भरकाखोह : यहाँ प्रमुख एक विशाल शैलाश्रय है। इस शैलाश्रय में लाल गेरुआ रंग से चित्रित कई इतिहास युगीन आखेट, युद्ध, पशु, मानवाकृतियों एवं पूजा के दृश्य हैं। शिवपुरी के निकट चोरपुरा की पहाड़ियों में भी कई शैलचित्र प्रकाश में लाये गये हैं। जो वर्तमान में स्पष्ट दिखाई नहीं देते हैं।

12. जिला—सागर :

1. नरियावली : यह पहाड़ी क्षेत्र सागर—बीना मार्ग पर स्थित है, यहाँ कई छोटे—बड़े शैलाश्रय हैं। इन क्षेत्र के शैलचित्रों का प्रो. एस. के. पाण्डे ने विशेष अध्ययन किया है। यहाँ रंगों में प्रमुख रूप से लाल रंगों का प्रयोग किया गया है। चित्रों में घुड़सवार, पक्षी, मानवाकृतियों इत्यादि हैं।
2. आबचंद : यह चित्रित शैलाश्रयों से परिपूर्ण स्थल सागर—जबलपुर मार्ग पर स्थित है। यहाँ लगभग 22 चित्रित शैलाश्रय हैं, जिनमें सैकड़ों चित्र बने हैं। चित्रों को बनाने में गेरुआ लाल, सफेद, हरे रंगों का प्रयोग किया गया है। यहाँ पर आखेट, मानवाकृतियों, पशु—पक्षी, युद्ध, नृत्य इत्यादि विषयक चित्र हैं। शैली के आधार पर ये मध्याश्म, ताम्राश्म, इतिहास तथा मध्यकालीन निर्धारित किये गये हैं।

13. जिला—राजगढ़ :-

इस जिले में प्रमुख दो ही स्थल हैं जहाँ प्रचुर मात्रा में चित्रित शैलाश्रय हैं। प्रथम नरसिंहगढ़ तथा द्वितीय कोटरा विहार क्षेत्र हैं। नरसिंहगढ़ में शैलाश्रयों में सिंधुबाई माता शैलाश्रय समूह में कई चित्र हैं। इसके साथ ही ब्राह्मी लिपि का उत्तीर्ण पांचवी शताब्दी का लेख है। द्वितीय कोटरा विहार समूह भोपाल नरसिंहगढ़ मार्ग के मध्य कोटरा ग्राम के निकट हैं यहाँ कई चित्रित शैलाश्रय, बौद्ध पुरावशेष तथा विशाल पाषाणों से निर्मित कई खिची शासकों के भवनो के अवशेष हैं। अन्य स्थलों के समान ही यहाँ विभिन्न रंगों तथा युगों के शैलचित्र हैं। परन्तु बौद्ध धर्म के विषयक शैलचित्र महत्वपूर्ण हैं। एक शैलाश्रय को हरे, लाल रंगों से चित्रित किया गया है जिसकी छत पर ज्यामितिक आलेखन है। इसी में ही बौद्ध स्तूप तथा चित्रित लेख हैं। शैली से प्रथम द्वितीय शताब्दी के निर्धारित किये गये हैं। संभवतः इसमें बौद्ध भिक्षु के रहने का स्थान रहा होगा।

शैलचित्रों का वर्गीकरण

मध्यप्रदेश के शैलचित्रों के अध्ययन से ज्ञात होता है। कि अब तक सैकड़ों स्थलों से भी अधिक की खोज विभिन्न विद्वानों द्वारा की गई है। सामान्य रूप से देखा गया है कि यहाँ पाये जाने वाले उत्तर पुरापाषाण अथवा मध्याश्मयुगीन चित्रों में एकरूपता पाई जाती है। इस युग के चित्र लकड़ी की काड़ियों तथा अंग्रेजी के "एस" से साम्यता रखते हैं, फिर भी साम्यता होने के अतिरिक्त विषय वस्तु इत्यादि का ध्यान रखकर वर्गीकृत किया जावे तो निम्न रूप से वर्गीकरण किया जा सकता है।

1. आखेट-दृश्य
2. पशु-चित्रण
3. युद्ध-दृश्य, घुड़सवार तथा अन्य यौद्धा
4. पक्षी व जानवर
5. विभिन्न प्रकार के नृत्य
6. भोजन इत्यादि विषयक चित्र
7. रोग चिकित्सा
8. एकल व सामुहिक व्यक्ति चित्रण
9. बैलगाड़ियों
10. अलंकरण
11. एक्स-रे विषयक चित्र
12. धार्मिक चित्रण
13. विभिन्न प्रकार के लेख
1. आखेट (शिकार) दृश्य :

सामान्य रूप से शैलाश्रयों में पशुओं तथा जलचर, नमचर प्राणियों के चित्र पाये जाते हैं, परन्तु अधिक चित्र पशुओं के शिकार के प्राप्त होते हैं। प्रारंभिक समय में भोजन का मुख्य आधार ओखट ही था। मनुष्य जंगली पशुओं का शिकार भोजन के रूप में किया करता था तथा उनकी खालों के वस्त्र पहनता था। सतकुण्डा के चित्र में हाथियों के शिकार के दृश्य हैं। यही एक शैलाश्रय में शिकारियों (धनुर्धारियों) द्वारा सिंह तथा जंगली सुअर के शिकार दृश्य बनाये हुए हैं। एक चित्र में शिकारी के हाथ में धनुष तथा दूसरे हाथ में छः बाण बताये हैं। पुतली करार में मध्याश्म युगीन शैली में एक हिरण का शिकार करते दो शिकारी हैं, उनमें एक के हाथ में धनुष-बाण तथा दूसरे के हाथ में दण्ड बताया गया है। वैसे ही नीलगाय जैसे पशु का शिकार करते धनुर्धारी हैं। पुतली करार के ही एक अन्य चित्र में एक व्यक्ति हिरण की गर्दन पकड़ कर ले जा रहा है, तथा हिरण पलट कर देख रहा है। हिरण की पीठ पर कुत्ते जैसा जानवर है, वैसे ही पॉच जानवर उसके पीछे आते बताये गये हैं।

हाथीटोल - रामछज्जा (रायसेन) में भी कई आखेट दृश्य हैं। भोजपुर के शैलाश्रय में भी सतकुण्डा के समान ही हाथी के शिकार का दृश्य है। इसके अतिरिक्त एक अन्य चित्र में ज्यामितिक आलेखन से अलंकृत जंगली सुअर का एक धनुर्धारी द्वारा शिकार का दृश्य है। इसके अतिरिक्त एक अन्य चित्र में ज्यामितिक आलेखन से अलंकृत जंगली सुअर का एक धनुर्धारी द्वारा शिकार करने का दृश्य उल्लेखनीय है। लाखाजुहार (भीमबैठका) में एक पेड़ पर बैठे मोर को धनुर्धारी द्वारा मारते बताया गया है। यह चित्र शैली के आधार पर मध्याश्म युगीन है। इसके अतिरिक्त इस युग के ही दो अन्य लाल रंग से बने चित्र हैं, जिसमें एक वृषभ का शिकार करते शिकारी को बताया गया है। जिसके हाथों में धनुषबाण है। बाणों के ऊपरी भाग में त्रिकोणात्मक शैली के लघु अश्मोपकरण बताये गये हैं। वृषभ के आसपास नृत्य करती आकृतियाँ हैं। एक अन्य चित्र में एक हिरण को चरते बताया गया है। उसके पीछे एक

शिकारी को "हारपून" द्वारा उसे मारते बताया गया है। चित्र देखने से ऐसा लगता है कि हिरण चरते हुए अनभिज्ञ है। रायसेन के निकट बनगवों में हिरण को घेरकर शिकारियों द्वारा धनुषबाण तथा भाले से मारता बताया गया है। भीमबैठका के तृतीय समूह में शिकारियों द्वारा भैसे को घेरकर शिकार करते शैलाश्रय में चित्रित बताया गया है। उसके निकट के शैलाश्रय में धनुर्धारी शिकारी द्वारा कुत्तों का सहयोग लेकर शिकार करते बताया गया है। "समूह तीन-सी" के एक शैलाश्रय में दो शिकारियों द्वारा एक सुअर को मार कर उसे लकड़ी में बांधा गया है। तत्पश्चात् उसे कंधे पर उठाकर ले जा रहे हैं, जो कि अद्भूत चित्र है, जिसमें ज्यामितिक आलेखन है। यहाँ की झू-रॉक में ताम्रयुगीन शैली में नीलगाय का धनुर्धारी द्वारा शिकार करते हुए आकर्षक चित्र है। लाखाजुहार में मछली का आखेट दृश्य है, जिसमें शिकारी मछली हाथ में लेकर बैठा है सगोना (दीवानगंज के निकट) में एक शैलाश्रय में नीलगाय अथवा बड़े पशु का शिकार करते शिकारी को बताया गया है, जिसमें वह जानवर पर आयुध लिये उछलते बताया गया है। घाटला के एक शैलाश्रय में एक धनुर्धारी को धनुषबाण लिये बताया गया है तथा उसका मुँह खुला है, मस्तक पर हल्के लाल बाल हैं। उसके सामने ही एक हिरण खड़ा है जिसके शरीर पर बाण लगा बताया गया है। शिकार दृश्य के अन्तर्गत सौंची, नागोरी, खरवाई, महुआखेड़ा, अंबाड़ी चतुर्भुज नाला (भानपुरा), चिबड़नाला, भानपुरा, भोपाल, विदिशा, पचमढी, होशंगाबाद इत्यादि कई स्थलों पर चित्र पाये गये हैं।

2. पशुचित्रण :

पशुओं का चित्रण एक ऐसा विषय है जोकि प्रत्येक शैलाश्रय में देखा जा सकता है। ऐसे बहुत ही कम शैलाश्रय होंगे जहाँ पशुओं का चित्रण नहीं है। उदाहरण के रूप में देखा जावे तो सतकुण्डा व चतुर्भुज नाला में जितने शिकार दृश्य हैं, उससे कहीं अधिक विभिन्न प्रकार के पशुओं का एकल तथा झुण्ड के रूप में चित्रण है। यहाँ पशुओं को विचरण करते, एक दिशा में चलते, विपरीत दिशा में चलते बताया गया है। सिंह के समूह को एक दिशा में चलते बताना तत्कालीन समय की स्थिति का प्रतीक है। इस समूह में एक जंगली सुअर को चलते बताना किसी घटना का ही सूचक ज्ञात होता है। सतकुण्डा के चित्रों को देखने से यह भी ज्ञात होता है। कि यहाँ कई शैलाश्रयों में पशुओं के कई झुण्ड हैं। यही एक शैलाश्रय में लुढ़कते सियारों का आकर्षक चित्र है। यहाँ इनके चित्र तो कई हैं, परन्तु इनसे अधिक अच्छे पशुओं के चित्र रायसेन की हाथी टोल में हैं। वहाँ एक साथ जाते हुए हिरण, भैंसा, गेंडा, इत्यादि हैं, जोकि ज्यामितिक आलेखन से अलंकृत हैं तथा चल रहे हैं। कई पशुओं भैंसे इत्यादि का मुँह खुला है, इनके झुण्ड में केवल एक ही हिरण है जो पलट कर इनसे अलग चल रहा है। पशुओं के चित्रण के लिए भीमबैठका की झू-रॉक भी प्रसिद्ध है, जहाँ भैंसा, हिरण, वृषभ, गाय, गेंडा, सुअर इत्यादि के सैकड़ों सफेद रंग के चित्र हैं। सबसे आश्चर्यजनक दो सिंगों वाले गेंडे का चित्र है। खरवाई तथा सतकुण्डा में जानवरों की खालों के समान कई चित्र हैं। खरवाई में पलटकर देखकर भागता हिरण, वानर, बैलों के समूह के सुन्दर चित्र हैं एवं कई पशुओं के समूह शैलाश्रयों में हैं। इनके अतिरिक्त लम्बी गर्दन वाला चीतल तथा भागता चीता उल्लेखनीय हैं। उरदेन में भागते हुए मानव के पीछे दो सिंग वाले गेंडे को बताया गया है। उरदेन में ही हिरण, सिंह, गेंडा, जंगली भैंसा, सुअर इत्यादि के चित्र हैं। चिकलोद के एक शैलाश्रय में मध्याश्मयुगीन हिरण का अपूर्ण चित्र है जिसे ज्यामितिक तथा "हनिकोंब" आलेखन से अलंकृत किया गया है। पुतली करार तथा महुआखेड़ा के शैलाश्रयों में भागते उछलते वानरों का चित्रण है। पुतली करार में उन्हें वृक्ष पर उछलते बताया गया है। वैसे ही भीमबैठका में तृतीय "सी" समूह में वृक्ष पर वानर बताया गया है। पुतली करार में और भी कई आकर्षक हिरणों के चित्र हैं। शैलाश्रय में मध्याश्मयुगीन लाल रंग से चित्रित आक्रमक मुद्रा में भागते तथा मस्तक झुकाये सांभर का चित्र है, जो इस क्षेत्र का सर्वश्रेष्ठ चित्र माना गया है। जावरा के ही एक अन्य शैलाश्रय में लगभग 12 फीट लंबा लाल-सफेद रंग से बना भैंसा है जिस पर आकर्षक अलंकरण किया हुआ है। भगवानीकराड़ में एक सफेद रंग से चित्रित दहाड़ते सिंह का साधारण चित्र प्रकाश में लाया गया है। रायसेन-भोपाल मार्ग पर स्थित सण्डोरा में कुछ लाल रंग से चित्रित अति सुन्दर मुँह को घुमाकर बारासिंगा का चित्र है, जोकि डरकर भाग रहा है। इस प्रकार के पशुओं की सामान्य स्थिति के चित्र हैं, जो कि युरोप में भी उत्कीर्णन के रूप में देखे गये हैं। डॉ० वाकणकर के वर्गीकरण के अन्तर्गत "देवस्त आरोपित पशु" की श्रेणी

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बताई है। उनके अनुसार अधिकतर यह पाया गया है कि शैलाश्रयों में विशाल आकृति के पशु अंकित है। इनके साथ मनुष्य शिकार खेलते हुए नहीं पाया गया है, विष्णु को मत्स्य, कूर्म, वराह माना गया है। यह मान्यताएँ सम्भवतः प्रागैतिहासिक काल के पशु चित्रणों से आयी हो तो कोई आश्चर्य नहीं है, जिन पशुओं को विशालकाय रूप में आंका गया है, वे निम्न हैं—

1	सिंह	—	भीमबैठका शैलाश्रय, तृतीय एफ - 24
2.	वृषभ (बैल)	—	भीमबैठकाके शैलाश्रय तृतीय फ-24,सी-18,सी-19, ई-12, जावरा डी/ए-19, आदमगढ़-10 तथा द्वितीय ए-19 भीमबैठका)
3	महिष	—	आदमगढ़-शैलाश्रय
4	वराह (जंगली सुअर)	—	भीमबैठका -तृतीय एफ-13, द्वितीय एफ-9 तृतीय सी-50, सी-19
5	मत्स्य	—	जावरा ए-1, भीमबैठका चतुर्थ-बी चतुर्थ ए-2
6	हिरण	—	रायसेन 1, जावरा ए/1
7	सांभर	—	चिकलोद
8	कूर्म	—	भीमबैठका तृतीय ई- 12
9	संयुक्त प्राणी	—	भीमबैठका तृतीय सी- 19
10	हाथी	—	भीमबैठका तृतीय ई- 12

इन प्राणियों को बनाते समय इन्हें अलंकृत करने का इतना प्रयास किया है कि इनके देवत्व में शंका नहीं की जा सकती है। इनके बनाने की दो विशेषताएँ हैं, प्रथम— इनका शरीर रेखाओं से अत्यधिक अलंकृत किया है। द्वितीय—पूर्ण तथा सामान्य आकारों में है। महुआखेड़ा, साँची, नागोरी, सगोना, दीवानगंज, अंबांडी कठोटिया, भानपुरा क्षेत्र, पचमढ़ी, विदिशा इत्यादि स्थानों के भी आकर्षक चित्र हैं।

3. युद्ध दृश्य, घुड़सवार तथा यौद्धा :

प्राचीन समय में परिस्थिति के अनुसार ही युद्ध हुआ करते थे, परन्तु भारत में ऐसा माना जाता है कि सम्भवतः लोहयुग के पश्चात् घोड़े का आगमन हुआ है। शैलाश्रयों में पाये जाने वाले चित्रों के स्तरीकरण (सुपरइंपोजिशन) में मध्याश्म, ताम्राश्म स्तर के पश्चात् युद्ध दृश्य बने पाये गये हैं। इसका सर्वश्रेष्ठ उदाहरण भीमबैठका की झूँ-राँक शैलाश्रय तथा रंगमहल शैलाश्रय में स्पष्ट रूप से देखे जा सकते हैं। मध्याश्म, अथवा इससे प्राचीन समय के चित्रों में पैदल युद्ध के चित्र प्राप्त हुए हैं। भीमबैठका के तृतीय समूह के एक शैलाश्रय में दो पैदल सेनाओं का युद्ध के चित्र प्राप्त हुए हैं। एक समूह के पास गदा है तो अन्य के पास परशु है। यह चित्र मध्याश्म युग का है। इतिहासयुगीन जिनमें प्रमुख रूप से कुषाण तथा गुप्तकालीन शैली अथवा विषयों के युद्ध दृश्य पाये जाते हैं। जिनमें घोड़ों के चित्रांकन का भरपुर प्रयोग किया गया है। वैसे ही मध्यकालीन (6ठी 7वीं शताब्दी के पश्चात्) शैली में विषयवस्तु वही है, परन्तु आकृतियों त्रिकोणात्मक रूप से बनाई गई हैं। चाहे वह अश्व हो या मानवाकृति सभी पर ज्यामितिक प्रभाव है। जावरा पहाड़ी के एक शैलाश्रय "एस जे डी 6" में कुषाण शैली में बना भाला लिये आक्रमक मुद्रा में घुड़सवार यौद्धा का दृश्य है। यह लाल रंग से बना चित्र है, जिसमें एक धनुर्धारी सुंड उठाये हाथी की पीठ पर बैठा आक्रमण करते बताया गया है। उरदेन तथा जावरा में दण्ड अथवा भाला लिये घुड़सवार है। गेलपुर में एक घोड़े की सेना है। घुड़सवार सेना उरदेन में भी है। सतकुण्डा में भी युद्ध के कई दृश्य हैं। एक अलंकृत अश्व पर राजा बैठा है। घोड़े का परिधान भी बनाया गया है। उनके आस पास हाथ उठाये तथा आयुध लिये यौद्धागण हैं, जोकि प्रसन्न मुद्रा में लगते हैं याने उनकी सफलता के प्रतीक हैं। सतकुण्डा में ही एक भागते हुए घुड़सवार का सुन्दर चित्र है। एक अन्य चित्रण युद्ध दृश्य का है। इतना सुन्दर युद्ध चित्रण सम्पूर्ण रायसेन क्षेत्र में कहीं नहीं है। चित्र में दो घायल व्यक्तियों (यौद्धाओं) को चार यौद्धागण पलंग पर डालकर कंधे पर रख ले जा रहे हैं। इनके निकट ही आयुध लिये दो यौद्धा एक दूसरे के बाल पकड़ कर लड़ रहे हैं। भीमबैठका तथा लाखाजुहार में भी कई युद्ध दृश्य हैं। इस प्रकार के सर्वाधिक चित्र साँची,

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भानपुरा, रीवा, कटनी, पचमढी, होशंगाबाद (आदमगढ़) इत्यादि क्षेत्रों में भी पाये जाते हैं ।

4. पक्षी व जलचर :

मध्य प्रदेश के कई शैलाश्रयों में कहीं-कहीं पक्षियों तथा जलचर प्राणियों (मत्स्य) के चित्र प्राप्त हुए हैं। रायसेन की हाथी टोल में एक व्यक्ति द्वारा दण्ड से पक्षी को मारते या उड़ाते बताया गया है। बनगवों में मध्यकालीन शैली में पक्षियों के झुण्ड का चित्र है। वैसे ही गिद्ध के समान दिखने वाले पक्षियों का अंकन मध्याश्म कालीन शैली में पनगवों (रायसेन) के निकट प्राप्त हुआ है। जावरा तथा लाखाजुहार में भी कई चित्र पाये गये हैं। लाखाजुहार के समूह चार-ई-9 में पेड़ पर बैठे मोर का चित्र है, जिसे शिकारी पेड़ के नीचे खड़ा रहकर भगा रहा है। यहीं कई एक्स-रे शैली की मछलियों के चित्र हैं तथा एक व्यक्ति के हाथ में मछली भी बनी है।

5. विभिन्न प्रकार के नृत्य :

डॉ० वाकणकर का कथन है कि "नृत्य मानव मन की स्वाभाविक प्रक्रिया है" नृत्य के सर्वाधिक चित्र भीमबैठका क्षेत्र में पाये गये हैं, नृत्यों का आयोजन शिकार से पूर्व या पश्चात् विभिन्न प्रकार के सामाजिक आयोजन के समय या किसी मान्यता के लिए होते थे। नृत्य चित्रों में वेशभूषा तथा मुखौटों के भी जगह-जगह प्रयोग बताये गये हैं। इसके साथ ही नृत्य के साथ मानवाकृतियों को अस्त्र तथा आभूषण से अलंकृत किया जाता था। नृत्य चित्र कई प्रकार के पाये जाते हैं। जिनमें एकल के अतिरिक्त पक्तिबद्ध चित्रों की प्रधानता है। कमर पर हाथ रखकर पंक्तिबद्ध नृत्य, हाथ में हाथ मिलाकर नृत्य तथा बगल में हाथ डालकर नृत्य करते भी चित्र कई शैलाश्रयों में प्राप्त हुए हैं। जावरा के शैलाश्रय ए-15 में गरुड़ नृत्य की जानकारी प्राप्त हुई है। जिसमें गरुड़ का मुखौटा तथा पंख लगाकर मानव नृत्य करती सामुहिक आकृतियों है। जावरा के एक शैलाश्रय में लकड़ी की काड़ियों समान आकृति है। डॉ० वाकणकर शिव के ताण्डव से तुलना करते हैं। भीमबैठका के द्वितीय ई-19 तथा तृतीय बी-6 में नृत्य के चित्र प्राप्त हुए हैं। जावरा तथा खरवई के शैलाश्रय में धनुष लिए नृत्यरत मानवाकृतियों है। खरवई के ही एक शैलाश्रय में मस्तक पर कलंगी लगाये तथा एक दूसरे का हाथ पकड़े बाईस नृत्य करती मानवाकृतियों, जिनके मस्तक चौकोर हैं। अंबाड़ी के एक शैलाश्रय में कई मानवाकृतियों है जो उपर हाथ उठाये नृत्य कर रही हैं। उनके उपर गोल चक्र भी बनाया गया है। रायसेन की हाथी टोल में मस्तक पर मुखौटा पहने नृत्य मुद्रा में मानवाकृतियों है। दीवानगंज के शैलाश्रय में मध्याश्मयुगीन शैली के लाल रंग के युग्म चित्र है जो कि नृत्य मुद्रा में है।

6. भोजन इत्यादि विषयक चित्र :

इस विषय के चित्रों के अन्तर्गत पशु पकड़ना, शिकार करना, पानी पीना, फल तोड़ना, हल चलाना, मछली पकड़ना इत्यादि आते हैं। शिकार, पशु इत्यादि तो अलग से दिये गये हैं। परन्तु शेष चित्रों की मात्रा कम है। शहद तोड़ने के चित्र पचमढी तथा विदेशों में भी पाये गये हैं। पुतली करार के एक शैलाश्रय में एक व्यक्ति को पेड़ पर चढ़कर मधुमख्खी का छत्ता तोड़ते बताया गया है। भीमबैठका की झू-रॉक (3-सी/55) में एक व्यक्ति को खजूर के समान पेड़ पर चढ़ते बताया गया है, जिसमें वह फल तोड़ते चित्रित है। वैसे ही रंगमहल शैलाश्रय में मध्याश्म चित्रों के स्तर पर पीठ पर टोकरी बांध कर व्यक्ति पेड़ पर चढ़ते बताया गया है। शैलाश्रय समूह तीन-एफ/15 में एक व्यक्ति बैठा है, तथा तूबा या जल के टोंटीदार पात्र से पानी पी रहा है। लाखाजुहार के एक चित्र में छोटे पशुओं को व्यक्ति द्वारा पकड़े बताया गया है जिनमें चूहे, गिलहरी, खरगोश है। जावरा शैलाश्रय 3 में पशु मारकर ले जाते प्रदर्शित किया गया है। डॉ० वाकणकर का मानना है कि उत्खनन में पशु अस्थियों का प्रमाण कम है, अर्थात् में जंगल कंद-मूल, फल, पर्याप्त मात्रा में प्राप्त होते होंगे।

7. रोग चिकित्सा:

रोग चिकित्सा विषयक चित्र भीमबैठका में केवल दो स्थानों पर प्राप्त हुए हैं। अन्य कहीं देखने को कम ही मिलते हैं। प्रथम चित्र शैलाश्रय समूह क्रमांक-तीन ए-19 में है, जिसमें दो सेनाओं के चल रहे युद्ध के निकट कोई घायल व्यक्ति जमीन पर लेटा

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है, तथा एक अन्य व्यक्ति खड़े हुए उसे पंखों से हवा कर रहा है। द्वितीय चित्र शैलाश्रय क्रमांक-3/सी/21 में है, जिसमें एक लेटे व्यक्ति की अन्य व्यक्ति द्वारा गर्दन उठाते बताया गया है तथा द्वितीय हाथ से वह मुँह में दवा या पानी डाल रहा है। सतकुण्डा में भी एक चित्र युद्ध दृश्य के साथ है, जिसमें चार योद्धा, दो घायल योद्धाओं को पलंग पर डाले कंधे पर उठाकर ले जा रहे हैं प्रदर्शित किया गया है।

8. एकल व सामुहिक व्यक्ति चित्रण :

एकल व्यक्ति चित्रण प्रदेश में जगह-जगह शैलाश्रयों में पाये गये हैं। भगवानी कराड़ शैलाश्रय क्रमांक-19 में कमर पर हाथ रखे घुटने तक जूते पहने चलते हुए मानव को बताया गया है। उसके दाहिने हाथ में आयुध समान वस्तु है। मस्तक पर बालों की टोपी अथवा मुखौटा है। मूलरूप से यह सफेद रंग का चित्र है। सम्भवतः बाद में सफेद रंग भरकर बाहरी रेखाएँ (आउट लाईन) बनाई हुई है, अथवा अलंकरण किया गया है। जावरा के शैलाश्रयों में एकल लकड़ी की काड़ियों के समान चित्र है। एक शैलाश्रय में भैंसे का मुखौटा लगाये जैसे मानवाकृति है जिसका मस्तक उठा हुआ है तथा भागता हुआ सा प्रतीत होता है। उसके निकट ही एक अन्य एकल मानवाकृति है। मध्याश्म तथा मध्यकालीन मानवाकृतियाँ उरदेन, मुनि का पहाड़, नागोरी, सॉंची, सगोना, अंबाड़ी, कुल्हाड़ियाँ, महुआखेड़ा, सुंजोरा, कठोटिया, विदिशा इत्यादि सीनों पर देखी जा सकती है।

9. बैलगाड़ियाँ :

बैलगाड़ियाँ, बैल को हल में जोते हुए कृषक, इस प्रकार के चित्र मिलना कृषि के विकास का प्रतीक है, जोकि ताम्रशम अथवा नवाश्म युग की देन है। उस समय के मानव के मन में इस प्रकार की इच्छा चित्र के रूप में व्यक्त करना मानव की सफलता व एकता का प्रतीक है। हाथी टोल (रायसेन) में बैलगाड़ी के लालरंग से बने कई चित्र मिले हैं, जिसमें गाड़ी पर सवार चालक द्वारा (रस्सी) पकड़ी हुई है। हाथी टोल में ही एक व्यक्ति को हल चलाते बताया गया है, जिसमें बैल जूते हैं। यूरोप में भी इस प्रकार के उत्कीर्णन मिले हैं। जावरा के एक शैलाश्रय में ताम्रयुगीन चित्रों के ऊपर सफेद रंग के रथ जो बैलगाड़ियों के समान दिखाई देता है, का चित्र है। उसमें तीन घोड़े या बैल हैं, जो स्पष्ट नहीं हैं उसके आसपास सेना बनी हुई है। उरदेन में दो बैलगाड़ियों के चित्र हैं। इनमें बने बैलों की आकृतियाँ ताम्रयुगीन कला से साम्यता रखती हैं। रायसेन के निकट बनगवों में एक शैलाश्रय में दो मानवाकृति को बैठे चित्रित किया गया है। मानपुरा क्षेत्र के शैलाश्रयों में विशेष रूप से चतुर्भूजनाला के शैलाश्रयों में हल चलाती कई मानवाकृतियाँ हैं।

10. एकरे शैली के चित्र :

प्राचीन समय के मानव को शारीरिक ज्ञान था तभी उसने कल्पना से इस प्रकार के चित्र बनाये। क्योंकि देश-विदेशों के कई शैलाश्रयों के चित्रों में इस प्रकार के चित्र हैं जैसे ही इलाहाबाद संग्रहालय में प्रदर्शित एक मानव मृणमूर्ति के पेट के विभिन्न प्रकार के हिस्से बताये गये हैं जोकि प्राचीन समय की सर्जरी के ज्ञान का द्योतक है। शैलाश्रयों में चित्रों के प्रारंभिक (मध्याश्म) स्तर पर इस प्रकार के चित्र देखने को मिलते हैं। रायसेन की हाथी टोल में एक्स-रे शैली के लाल रंग से चित्रित तीन पशु बने हैं, प्रथम चित्र में पशु के पेट में छोटा जानवर बताया गया है। द्वितीय पशु सम्भवतः नीलगाय है, उसके पेट में हाथी का बच्चा बताया गया है। पनगवों के कई शैलाश्रयों के पशु चित्रण में एक्स-रे समान रेखाएँ बताई गई हैं। लाखाजुहार में मछलियों के कई चित्र हैं जिसमें उसकी हड्डियाँ बनाई हुई हैं। भीमबैठका के तृतीय समूह में एक व्यक्ति को तूबे से पानी बताया गया है। तथा पेट में पानी की बूंदें जाते हुए बताई गई हैं। एक अन्य शैलाश्रय में मस्तक झुकाये तथा मुँह खोले भैंसा है, जिसके शरीर पर एक्स-रे जैसा आलेखन है। चीलदांत, जावरा इत्यादि शैलाश्रयों में एकरे-रे शैली के कई चित्र देखे जा सकते हैं।

11. अलंकरण :

शैलाश्रयों में पशुओं व मानवाकृतियों के विभिन्न प्रकार के चित्रों में ज्यामितिक तथा अन्य प्रकार के अलंकरण प्रदेश के शैलाश्रयों में कही भी देखे जा सकते हैं। परन्तु शैलाश्रयों की छत को या दीवार को अलंकृत किये जाने के कम ही दृश्य पाये जाते

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है। ज्यामितिक आलेखन, हनिकोंब (मधुमख्खी के छत्ते समान) आलेखन कम ही पाया जाता है। प्रमुख रूप से इस प्रकार का आलेखन मध्याश्म युग की ही देन है। भीमबैठका के समूह तीन-सी-19, एफ-23, समूह दो-ई-19 में इस प्रकार के अलंकरणों के अवशेष आज भी विद्यमान हैं।

12. धार्मिक चित्रण :

शैलाश्रयों में चित्रण के रूप में धार्मिक परम्परा अत्यंत प्राचीन है। प्रारम्भ में ये जादू-टोने के रूप में थे। समय के अनुसार परिवर्तन आता गया। धार्मिक चित्रण की परम्परा वर्तमान में गांवों में भी प्रचलित है। मानव द्वारा शैलाश्रयों को मध्यकाल के पश्चात् छोड़ दिया गया तथा निकटस्थ क्षेत्रों में गांव बनाकर रहने लगे। जिस प्रकार मध्यकाल याने बारहवीं शताब्दी के पश्चात् गांवों में रहने वाले लोग वैसे ही चित्र बनाते रहे हैं, जैसे कि शैलाश्रयों में है। सूर्य पूजा, प्रतीक पूजा, हाथ के छापे, विभिन्न प्रकार के पशु पूजा के चित्रों आने लगे। ताम्राश्म युग में जादूटोना होता था तथा कल्पना की जाकर पशुओं को पकड़ा जाता था क्योंकि चित्रण भी ऐसा मिलता है। भीमबैठका के तीन/एफ-24 शैलाश्रय में ताम्रयुगीन शैली के कई बैल हैं, उनके पैरों में टोकरी उलड़ी हुई है। वहीं की पिशाच गुफा में कई तरह के तांत्रिक चिन्ह हैं। तृतीय-सी शैलाश्रय में चार हाथों वाले आयुध लिये शिव जोकि राक्षस से लड़ रहे हैं, तथा नृत्यरत गणेश है। द्वितीय समूह के शैलाश्रय में यक्ष का चित्र है जिसमें द्वितीय शताब्दी ई. पूर्व के सिक्कों पर पाये जाने वाले त्रिकूट चिन्ह (क्रिसेंट-ऑन-हिल) समान आकृतियाँ हैं। द्वितीय समूह शैलाश्रय में विशाल वराह के चित्र के नीचे घुटने के बल बैठे तथा हाथ उपर उठाये मानवाकृति है, जोकि धार्मिक प्रयोजन के लिए बनाई होगी। खरवई के शैलाश्रय में अलंकृत स्वस्तिक तथा सिक्कों पर पाये जाने वाले चिन्ह भी हैं, जिनमें त्रिकूट चिन्ह प्रमुख हैं। साँची, नागौरी, सतकुण्डा, दीवानगंज, अंबाड़ी, पचमढी, भानपुरा, विदिशा, रीवा इत्यादि स्थलों पर धार्मिक चित्र मिले हैं।

13. विभिन्न प्रकार के लेख :

रायसेन जिला, विदिशा इत्यादि जिलों के शैलाश्रयों में कोई ऐसा शैलाश्रय न होगा जिसमें की कोई लेख न हो, चाहे वह ब्राही या देवनगरी का क्यों न हो ब्राही तथा देवानागरी लेखों की संख्या कम है। परन्तु लगभग 80 प्रतिशत से 90 प्रतिशत लेख सफेद तथा लाल रंग से चित्रित शंखलिपि के लेख पाये जाते हैं। कहीं कहीं केवल ब्राही अक्षरों के चिन्ह मिले हैं। ऐसे उदाहरण खरवई में प्राप्त हुए हैं। भीमबैठका में ब्राह्मी लिपि का उत्कीर्ण बौद्ध लेख "सिंहकस लेणे" है, जो कि शैलाश्रय में किसी बौद्ध भिक्षु के रहने का प्रतीक है।

अध्याय -5

शैलचित्रों का काल निर्धारण

यह तो सर्वविदित है कि हमारे देश में सर्वाधिक शैलचित्र मध्यप्रदेश में स्थित शैलाश्रयों में बनाये गये। इन चित्रों में युगों-युगों की तत्कालीन जन-जीवन की जानकारी होती है। हमारे सामने यह स्थिति है। कि शैलचित्रों की खोज तो होती रही परन्तु उनका काल निर्धारण निश्चित नहीं हो पाया है, जो एक आज भी समस्या है। फिर भी कई विद्वानों द्वारा भारत में शैलचित्रों का समय उत्तर पुरापाषाण काल से प्रारंभ होना बताया गया है, जोकि 10 हजार वर्ष से पूर्व बनाये गये होंगे। इसके अतिरिक्त विदेशों में पाये जाने वाले चित्रों के समय में तथा भारतीय चित्रों के समय में अत्यधिक अन्तर आता है। उदाहरण के रूप में यूरोप के शैलचित्रों में घोड़ों के चित्र लगभग 25 हजार वर्ष प्राचीन माने गये हैं, जबकि भारत में घोड़ों के चित्र लोहयुग के चित्रों में अर्थात् ताम्राश्मयुगीन चित्रों के पश्चात् मिलते हैं। एस.के. पाण्डे का भी मानना है कि घोड़ों के चित्र ताम्राश्म या मध्याश्म युग के चित्रों के साथ नहीं मिलते हैं।

काल निर्धारण के लिये कई पद्धतियों का सहारा लेना पड़ता है। जिनमें प्रमुख निम्न हैं

1. शैलचित्रों का सुपरइंपोजिशन अथवा स्तरीकरण
2. विषय वस्तु

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3. तुलनात्मक अध्ययन
4. पद्धति एवं विभिन्न कला शैलियों
5. पुरातात्विक उत्खनन, अनुसंधान एवं उनमें प्राप्त पुरावशेष

1. शैलचित्रों का सुपरइंपोजिशन अथवा स्तरीकरण :-

एस. के. पाण्डे के अनुसार " The term superimposition is applied to that collection of rock paintings which are drawn one upon the other on the same canvas".

काल निर्धारण के लिए शैलचित्रों का स्तरीकरण या सुपरइंपोजिशन प्रमुख माना गया है। एस.के. पाण्डे का मत है कि मध्याश्मयुगीन चित्रों पर सुपरइंपोजिशन कम मिलता है तथा ये सुदूर घने जंगलों में तथा ऊंचाईयों पर स्थित शैलाश्रयों में मिलते हैं, जहाँ कठिनाईयों से पहुँचा जाता है। भीमबैठका इत्यादि क्षेत्रों में कई शैलाश्रय ऐसे प्रकाश में लाये गये हैं, जिनमें सुपरइंपोजिशन (चित्रों का स्तरीकरण) देखा गया है। इस पद्धति में काल निर्धारण का प्रमुख आधार ताम्राश्मयुगीन चित्र माने गये हैं। उससे पहले के चित्र मध्याश्म अथवा उत्तर पुरापाषाण युग के माने गये हैं। उनके उपर बने चित्र इतिहास तथा मध्ययुगीन माने गये हैं। कई चित्रों पर गुप्तयुगीन ब्राह्मी के लेख या अक्षर होने से उनके नीचे बने चित्र स्वाभाविक रूप से पहले के ही रहे होंगे। इसका प्रत्यक्ष प्रमाण भीमबैठका के जन्तु शैलाश्रय (जू-रॉक) है। ताम्राश्मयुगीन चित्रों के नीचे अंग्रजी के "एस" के समान कई चित्र हैं। जोकि लकड़ी की काड़ियों जैसे अथवा "ट्रिसेटड" है। संभवतः ये चित्र किसी धार्मिक दृष्टिकोण से एक दूसरे के ऊपर बनाये जाते थे। सुपरइंपोजिशन के महत्वपूर्ण उदाहरण भीमबैठका के अतिरिक्त हाथीटोल, रायसेन, खरवाई, सतकुण्डा इत्यादि स्थलों पर स्पष्ट रूप से देखे जा सकते हैं। सुपरइंपोजिशन के चित्रों के साथ बनाये गये हथियार या अन्य आकृतियों से समय का ज्ञान होता है। तीरों में लगे लघु अश्मोपकरण के चित्र मध्याश्मयुगीन माने जाते हैं। ताम्राश्मयुग में "हारपून्स" के बनाये गये चित्रों से भी समय का बोध होता है। वही इतिहास युग में तीर, धनुष, गोलाई लिये तलवार के चित्र बनाये जाते थे, जिनसे कुषाण या गुप्तकाल के समय की जानकारी होती है।

सुपरइंपोजिशन के अन्तर्गत चित्रों में जो रंग प्रयोग किये जाते हैं, उनसे भी काल निर्धारण करने के अत्यन्त सहायता मिलती है। जैसे पुरातात्विक उत्खनन में हेमेटाइट पत्थर के टुकड़े प्राप्त होते हैं, जिनसे गहरा लाल रंग बनाया जाता है। इस प्रकार के चित्र सबसे नीचे तहों में प्राप्त होते हैं। भीमबैठका के रंगमहल नामक शैलाश्रय में सबसे अच्छे नीचले स्तर पर मध्याश्मयुगीन चित्र प्राप्त हुए हैं। हरे रंग के चित्रों का समय डॉ० वाकणकर उत्तर पुरापाषाण युग मानते हैं। मध्याश्म स्तर पर गेरु के रंग कम दिखाई देते हैं। गेरु का हल्का रंग होने पर अथवा सफेद रंग के प्रयोग के कारण इनका प्रयोग ताम्राश्मयुग में माना जाता है। मठपाल का मत है कि सामान्य रूप से चित्रों का सुपरइंपोजिशन या ओव्हरलेपिंग में पन्द्रह परते मिलती है, जिन्हें दस कालों में बांटा गया है। इनमें प्रथम पांच परतों में चित्र मध्याश्म माने गये हैं।

डॉ० वाकणकर ने शैलचित्रों में सुपरइंपोजिशन के अध्ययन से सात स्तर बताये हैं। उन्होंने आदमगढ़ शैलाश्रय में हाथी के धुंधले चित्र को सबसे प्राचीन माना है। द्वितीय स्तर में महिष क विशाल चित्र को माना है। तृतीय स्तर में मानवाकृतियों तथा शिकार दृश्य को माना है। चतुर्थ स्तर में भी तृतीय के समान चित्र मिलते हैं। पांचवे तथा छठे स्तर पर शंखलिपि के लेख तथा त्रिकोणात्मक मानवाकृतियों हैं। यही क्रम सातवें स्तर में भी देखा गया है जबकि मठपाल पन्द्रह स्तर मानते हैं। गार्डन, कार्लाइल तथा काकबर्न चित्रों को अधिक प्राचीन नहीं मानते हैं।

डॉ० वाकणकर का मत

1. That the rockshelter had habitational deposit of pre- chalcolithic in India it is mesolithic period.
2. That the mesolithic paintings are totally different in style than later paintings.

3. Scenes of bison, boar, deer, antelope, hunting, dancing and other rituals dominate the subject matter.
4. No scene of animal husbandry occurs in earlier paintings.
5. That they show a variety of subjects connected with hunting life.
6. The excavations have revealed evidence of colour and drawing activity.
7. That most of such paintings are superimposed by chalcolithic and historic drawings.
8. That mesolithic C14 dater at Bhim Bethika go beyond 7000 B.P.

डॉ० जगदीश गुप्त का कथन है कि जिन पशुओं को उपलब्धि होती होगी उनका ही चित्रण किया जाता था, जिनको सजीव रूप से मानव ने देखा होगा, तभी उनका चित्रण किया गया। उदाहरण के रूप में हाथी तो परिचित हैं, परन्तु गेंडा काफी पहले समाप्त हो गया था। इसका अर्थ यह है कि मध्याश्म तथा ताम्रयुग में तो ये जानवर पाये जाते थे, तभी उनके चित्र हैं। परन्तु ये जानवर इतिहास युग में इस क्षेत्र से लुप्त हो गये होंगे। तभी उनके चित्र शैलाश्रयों में बाद के चित्रों में नहीं पाये जाते हैं या देखे जाते हैं। इस प्रकार का अंकन काल निर्धारण के लिए अत्यंत सहायक होता है। इतिहास युग के चित्रों के साथ कई जगह पर चित्रित लेख अथवा शंख लिपि के लेख देखे गये हैं, जो चित्रों को गुप्त युग का होना निश्चित करते हैं।

2. विषय वस्तु :-

शैलचित्रों के काल निर्धारण के लिए विषयवस्तु का महत्वपूर्ण योगदान माना जाता है। प्रत्येक युग के चित्रों में विषय वस्तु भिन्न-भिन्न होती थी। मध्याश्म तथा ताम्रयुग के चित्रों में मूल रूप से आखेट, समूह नृत्य, जानवरों के साथ मनुष्य देखने को मिलते हैं। जोकि सम्भवतः चरवाहे ही होते थे। कुछ ऐसे भी दृश्य प्रकाश में लाये गये हैं जो टोने-टोटके माने गये हैं भीमबैठका के सभागृह शैलाश्रय में ताम्रयुगीन स्तर पर कुछ वृषभ के चित्र हैं। उनका पैरों में टोकरीयों बंधी है, जोकि संभवतः जादू टोना या टोना-टोटका विषयक है। इतिहास एवं मध्यकालीन चित्रों में युद्ध दृश्य प्रमुख हैं। जिनमें घोड़ों का प्रयोग तथा घुड़सवार बताये गये हैं। गुप्तकाल में अश्वमेध यज्ञ होते थे, के चित्र भीमबैठका की झूँ-रॉक में देखने को मिलते हैं।

3. तुलनात्मक अध्ययन :-

शैलचित्रों के काल निर्धारण के लिए तुलनात्मक अध्ययन किया जाना अत्यन्त आवश्यक है। कई स्थलों पर सुपरइंपोजिशन के आधार पर काल निर्धारण किया जाता है, परन्तु कुछ ऐसे भी स्थल होते हैं। वहाँ सुपरइंपोजिशन नहीं मिलता है, वहाँ के चित्रों का तुलनात्मक अध्ययन के आधार पर समय निर्धारित किया जाता है। इस प्रकार के उदाहरण कई स्थलों पर देखे जा सकते हैं। ताम्रयुगीन शैलचित्रों की तुलना पुरातत्वीय उत्खनन से प्राप्त मिट्टी के पात्रों के ऊपर चित्रों से की जाती है। बैलों, पशु-पक्षियों व मानवाकृतियों समानता लिये होती है। भीमबैठका के शैलाश्रय में उत्खनन से भी मिट्टी के पात्र प्राप्त हुए हैं जिन पर जानवरों के चित्र शैलचित्रों से मिलते-जुलते हैं। दीवानगज तथा भीमबैठका के शैलाश्रयों में नृत्य करती मानवाकृतियों नावडाटोली के पात्रों से मिलती-जुलती हैं तथा उनका समय ताम्रयुग का निश्चित किया गया है। ई.पू. द्वितीय या प्रथम शदी में मिलने वाले तांबे के सिक्कों पर त्रिकूट एवं कई प्रकार के चिन्ह मिलते हैं, वैसे ही चिन्ह भीमबैठका में यक्ष के चित्र के साथ तथा पिशाच शैलाश्रय में प्राप्त हुए हैं। नव पाषाण तथा ताम्रयुग में "हारपून" का प्रयोग किया जाता था, उनके चित्र शैलाश्रयों शिकार के दृश्यों के साथ मिलते हैं।

कई शैलाश्रयों के आसपास बौद्ध स्मारक प्रकाश में लाये गये हैं जहाँ भौर्य, शृंग तथा गुप्तकालीन स्तूप, विहार इत्यादि निर्मित किये गये थे। वहाँ तत्कालीन समय के बौद्धों ने भी शैलाश्रयों में चित्र बनाये। इसके प्रमुख उदाहरण सतधारा (सांची के निकट) के शैलाश्रयों में देखने को मिलते हैं। एक शैलाश्रय में बुद्ध का लाल रंग से बनाया हुआ व्यक्तिचित्र तथा स्तूप की आकृतियाँ हैं। स्तूप के अंदर गुप्तकालीन लिपि में लाल रंग से ही चित्रित अस्पष्ट लेख हैं। कई शैलाश्रयों में गुप्तकालीन शंखलिपि मिलती है, जो खरवई

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के शैलाश्रयों में कई स्थानों पर देखी जा सकती हैं। उसी प्रकार के उत्कीर्ण शंख लिपि के लेख उदयगिरी गुफाओं के आसपास तथा साँची के अशोक स्तंभ पर तथा भोपाल में भी बौद्ध स्थल से लाये गये स्तंभ पर उत्कीर्ण देखने को मिलते हैं जिससे स्पष्ट होता है कि यह लिपि मौर्यकाल के पश्चात् आई तथा शैलचित्रों में उनके साथ होने से या तुलनात्मक अध्ययन से ज्ञात होता है कि गुप्तकाल के चित्र हैं जोकि लिपि के निकट या उसके नीचे बने थे।

4. पद्धति एवं विभिन्न कला शैलियों :-

शैलचित्रों के समय निर्धारण के लिए रंगों की पहचान किया जाना अत्यन्त आवश्यक है। जैसा कि ऊपर बताया जा चुका है की सुपरइंफोजिशन की तर्हों में विभिन्न शैलियों के चित्र हैं, जिनमें भिन्न-भिन्न रंगों का प्रयोग किया गया है। सामान्य रूप से लाल तथा सफेद रंगों की प्रधानता है। एस.के. पाण्डे ने दस प्रकार के शेड्स की पहचान बताई हैं जो संभवतः खनिजों के बनाये जाते थे। कई शैलचित्रों पर "पेटिनेशन" होने से रंग स्पष्ट नहीं हो पाये हैं। भारतीय पुरातत्व सर्वेक्षण की रसायन शाखा द्वारा भीमबैठका के कुछ शैलाश्रयों के शैलचित्रों से पेटिनेशन हटाया है, उनमें नीचे लाल रंग से चित्रित अश्व इत्यादि के चित्र मिले हैं। डॉ० वाकणकर हरे रंग के चित्रों को उत्तर पुरापाषाण काल का मानते हैं। मध्याश्म युग की एक अलग पहचान है, उनमें चित्रों के साथ "हनिर्कोब" आलेखन प्रमुखता से प्रयोग में लाया जाता था, क्योंकि इससे बड़े-बड़े आलेखन कई स्थलों पर पाये गये हैं। इनके साथ अंग्रेजी "एस" के प्रकार की आकृतियाँ मिलती हैं। इसके अतिरिक्त पशुओं तथा मानवाकृतियों में ज्यामितिक आलेखन का प्रयोग किया जाता था। मध्याश्मयुग के चित्रों के पश्चात् सफेद रंग तथा गेरुए रंग का प्रयोग किया गया था। कही-कही काले तथा पीले रंगों का प्रयोग भी मिलता है।

एस. के. पाण्डे ने निम्न पांच श्रेणी में शैलचित्रों को विभाजित किया है।

- | | | |
|-----------------------------|-------|---|
| a. Naturalistic | - | Upper palaeolithic |
| b. Stylized | - | Mesolithic |
| c. Schematic and decoration | - | Mesolithic |
| d. Conventionalized | - | Neolithic/Chalcolithic |
| e. Historical | | |
| | (i) | Early historical (7th Cen.B.C. to 1st Cen.A.D.) |
| | (ii) | Historical (1st Cen. A.D. to 7th Cen.A.D.) |
| | (iii) | Late Historical (7th Cen. to 13th Cen.A.D.) |

शैलचित्रों की विभिन्न शैलियों में निम्न विषय प्रमुख आते हैं-

- | | | |
|--|---|---------------------------------------|
| अ. शिकार दृश्य | - | मध्याश्म युग |
| ब. पशुपालन व शिकार | - | ताम्राश्मयुग/नूतन पाषाणकाल |
| स. पशुपालन, शिकार, युद्ध दृश्य | - | इतिहास काल |
| द. उपरोक्त सभी विषयों के अतिरिक्त धार्मिक तथा मनोरंजन के चित्र | | मध्यकाल तथा आधुनिक काल में मिलते हैं। |

5. उत्खनन व अनुसंधान :

मध्यप्रदेश के कई शैलाश्रयों में पुरातत्वीय उत्खनन किये गये हैं, जिनमें भीमबैठका प्रमुख है। उत्खनन की तर्हों में कई प्रकार के लघु अश्मोपकरण पाये गये हैं। लाखाजुहार (भीमबैठका) के कई शैलाश्रयों में आखेट करते धनुंधारी हैं, उनके हाथों में रखे बाण के अग्रभाग में लघु अश्मोपकरण के प्रयोग बताये गये हैं। कई शिकारियों को "हारपून" लिये भी बताया गया है। जिनसे समय का निर्धारण किया जा सकता है। लाखाजुहार के एक मध्याश्मकालीन चित्र पशु को अनभिज्ञ रूप से चरते बताया है, उसके पीछे से एक शिकारी उसे मार रहा है जिसके हाथ में "हारपून" है। इस प्रकार के चित्र कुल्हाड़िया, संडोरा तथा महुआखेड़ा ग्राम के निकट

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स्थित शैलाश्रयों में भी देखे जा सकते हैं। भीमबैठका उत्खनन से "हेमेटाइट" पत्थर के टुकड़े मिले हैं, जिनसे ज्ञात होता है कि गहरे लाल रंग के चित्रों को बनाने में इस पाषाण के टुकड़ों का प्रयोग किया था। महेश्वर-नावडाटोली, दंगवाड़ा, पिपलियालोरका इत्यादि पुरास्थलों पर किये गये उत्खनन से प्राप्त मिट्टी के पात्रों पर शैलाश्रयों में बने चित्रों समान चित्र प्राप्त हुए जो ताम्रयुग का समय निर्धारित करते हैं। भीमबैठका उत्खनन में डॉ० वाकणकर को इस प्रकार के पात्र मिले हैं। रंगाई, विदिशा के निकट ताम्रयुगीन स्थल पर प्राप्त बेलों के मिट्टी के खिलौने ताम्रयुग के स्तर पर प्राप्त हुए हैं, जिनकी आकृतियों शैलाश्रयों में भी देखी जा सकती हैं। नागदा उत्खनन में ताम्रयुग के स्तर पर एक ताम्रयुगीन पात्र पर मानवाकृति का त्रिकोणात्मक शैली में अंकन है जोकि दीवानगंज क्षेत्र के निकट शैलाश्रय के एक चित्र से मिलती-जुलती है। भीमबैठका उत्खनन में ही कुछ हड्डियों पर ज्यामितिक शैली का उत्कीर्णन है, जिसका समय मध्याश्म युग निर्धारित किया गया है, के समान आलेखन शैलाश्रयों में भी मिलता है, जोकि मध्याश्म युग के है। विभिन्न प्रकार की कला शैलियों के आधार पर शैलचित्रों का समय :-

क्र० समय/काल विषय वस्तु

- 01 उत्तर पुरापाषाण काल लगभग 10 हजार वर्ष धनुष का अभाव, मानवाकृतियों, उत्खनन से प्राप्त हरा एवं गहरा लाल रंग तथा चित्रित शर्तुर्मुर्गा के अण्डों के कारण यह काल स्वतः ही एक शैली के रूप में है। इस समय के चित्रों पर विशेष अध्ययन होना है।
- 02 मध्याश्म काल, लगभग 10 हजार से 2500 ई. पूर्व. आखेट, नृत्य, मानवाकृतियों, ज्यामितिक अलंकरण इत्यादि
- 03 ताम्राश्म/नवाश्म युग ई.पू. 2500 वर्ष (अ) मालव ताम्राश्म, सिंधु संस्कृति के पात्रों पर बने चित्रों के आधार पर वर्गीकृत(ब) नवाश्म स्थलों-टेक्कल कोटा के पात्रों के समान शैलचित्र
- 04 इतिहास युग अ. मौर्य-शुंग काल, ई.पू. 300 से 100 ई. पू.ब. कुषण काल, प्रथमशती ई. से तीसरी शताब्दीस. गुप्त काल ई. 300 से 650 ई मौर्य, शुंगसातवाहन वेशभूषा तथा लिपि के आधार पर शैलचित्रों का काल निर्धारण। कुषाण वस्त्रों, खड्गों व ढाल की समानता। गुप्त मुद्राओं पर अंकित अश्व अविश्व, फूलदान, लिपि, अश्वमेध यज्ञ
- 05 मध्यकाल ई. 650 से ई. 1300 ज्यामितिक शैली के चित्रों की प्रधानता।
- 06 मध्यकाल के पश्चात् के चित्र ई. 1300 के पश्चात मध्यकाल के समान ही विषय वस्तु है। चित्रों की बनावट से पूर्व के चित्रों से भिन्नता पाई जाती है।

उपरोक्त काल विभाजन के आधार पर विभिन्न युगों के शैलचित्रों का वर्णन यहाँ किया जा रहा है :

1 - उत्तर पुरापाषाणयुगीन शैलचित्र -

इस युग के चित्र बहुत ही कम मिलते हैं। भीमबैठका की "बोर रॉक" (2 एफ) में लकड़ी की काड़ियों के समान हरे रंग की नृत्य करती मानवाकृतियों चित्रित की गई हैं, जोकि मध्याश्म युग के चित्रों से भिन्न हैं। डॉ० वाकणकर तथा अन्य विद्वान उसे उत्तर पुरापाषाण युगीन मानते हैं।

2 - मध्याश्मयुगीन शैलचित्र -

डॉ० वाकणकर का मानना है कि मध्याश्मयुगीन चित्रकला, शैलचित्र कला के क्षेत्र में स्वर्णयुग के समान है। मध्यप्रदेश में जहाँ जहाँ भी इस युग के चित्र मिलते हैं, उनमें एक प्रकार की साम्यता होती है जिनमें तत्कालीन समाज के दैनिक क्रियाकलापों की जानकारी मिलती है। जैसा कि ऊपर कहा गया है कि इस युग का प्रमुख आलेखन "हनिकोब" तथा लहरिया अथवा लहरदार रेखाएँ हैं, सर्वत्र देखने को मिलते हैं। मानवाकृतियों के अतिरिक्त पशुओं की आकृतियों वास्तविकता लिये होती हैं। विषय वस्तु में प्रमुख तो आखेट है, इसके अतिरिक्त डॉ० वाकणकर द्वारा मध्याश्म युग की विषय वस्तु का अध्ययन कर निम्न वर्गीकरण किया गया-

1. आखेट, तीर-धनुष अथवा वज्र की सहायता से शिकार
2. फंदों द्वारा पशु पकड़ना या आखेट करना।

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3. उत्सव नृत्यों के चित्र
4. देवत्व आरोपित पशुओं के चित्र
5. महत्वपूर्ण घटना को लाक्षणिक या सांकेतिक चित्र
6. भोजन पानादी विषयक चित्र
7. रोग चिकित्सा
8. अलंकारिक चित्र
9. कौटुम्बिक जीवन के चित्र
10. वृक्षा रोहण
11. भारवाहन
12. शोक संवेदना

इस युग के चित्रों में चाहे मानवाकृति हो या पशु आकृति वैसी भी बनाते थे, परन्तु उसमें ज्यामितिक शैली में रेखाओं का भराव अवश्य करते थे। कुछ चित्रों में "एक्स-रे" प्रणाली भी देखी जा सकती हैं। लाखाजुहार (भीमबैठका) में एक विशाल मछली की हड्डियों (डॉचा) बनाई गई है। एक अन्य शैलाश्रय में एक व्यक्ति को तूंबी से पानी पीते बनाया गया है, जिसके पेट में पानी की बूंदे गीरते या जाते चित्रित किया गया है जोकि तत्कालीन कलाकार की कलाप्रियता का द्योतक है। इसके अतिरिक्त बीमार व्यक्ति की सेवा करते हुए दो चित्र हैं, प्रथम चित्र में एक रोगी को लेटा हुआ है उसे सर के नीचे सहारा देकर दुसरे हाथ से दवा पीला रहा है। एक अन्य द्वितीय चित्र में दो दलों में युद्ध हो रहा है, उसमें एक जमीन पर गिरे या घायल व्यक्ति जो लेटा है, पंखे से हवा कर रहा है। लाखाजुहार के एक महत्वपूर्ण चित्र में एक वृषभ का आखेट करते कई मानवाकृति बताई गई है, उसके पीछे एक बड़ा व्यक्ति धनुष-बाण लिये हैं। धनुष के अग्र भाग में लघु अश्मोपकरण लगे हैं। वही अन्य चित्र में एक अनभिज्ञ हिरण चर रहा है। उसके पिछे एक शिकारी "हारपून" से उसे मारने को तैयार है। भीमबैठका में १९२२ शैलाश्रय में एक धनुर्धारी का अत्यन्त आकर्षक चित्र है, उसका सिरोभूषण इतना अलंकृत है कि साधारणतः अन्य जगहों पर इतना अलंकरण नहीं मिलता है। मस्तक पर हिरण का मुखौटा लगा है। सम्भवतः कोई देवीय रूप है।

3. ताम्राश्मयुगीन चित्र :-

ताम्राश्मयुगीन (चालकोलिथिक) अथवा नूतन पाषाण काल (नियोलिथिक) में कृषि विकास का प्रारंभ होता है। मनुष्य छोटे-छोटे समूहों में सामुहिक रूप से रहने लगा जैसा कि उस स्थान की उपलब्धता रही होगी। मानव चाहे शैलाश्रय में रहा हो अथवा नदियों के किनारे परन्तु क्रियाकलापों में साम्यता रही, जिसके उदाहरण चित्रकला में साम्यता होना है। इसका प्रमुख उदाहरण शैलाश्रयों में बनाये गये चित्र है। केवल अंतर इतना ही है कि शैलाश्रयों में लाल तथा सफेद रंगों का प्रयोग किया गया है। चित्रों की विषय वस्तु में आखेट, पशुपालन, नृत्य, पशुपक्षी, प्रमुख है। इस युग में पशुओं का पालना भी प्रमुख माना गया है। शिकार के समय शिकारी कुत्ते ने जानवरों को पकड़ रखा है। यह चित्र शैलाश्रय क्रमांक- 17 में है। ताम्राश्म युग में बैलगाड़ियों के अंकन का भी प्रारंभ माना जाता है।

इस युग में लिपि का विकास प्रारंभ हो जाता है, तथा शैलचित्रों के साथ लेख प्राप्त होने लगते हैं। कई शैलाश्रयों के बाहर तथा अंदर मौर्य, शुंगकालीन मकानों के अवशेष मिलते हैं। विषयवस्तु तो पूर्व कालों की तरह लगातार प्रचलन में रही। परन्तु इस युग के चित्रों की प्रमुख विशेषता अश्व के चित्रों, शैलाश्रयीन चित्रों में घुड़सवार, युद्ध अश्वमेघ यज्ञ के चित्र मिलते हैं। कई शैलाश्रयों के निकट बौद्ध धर्म के बड़े केन्द्र हो गये, जहाँ बौद्धों द्वारा शैलचित्र बनाये जाने लगे, जिनमें सतधारा, सौंदी, इत्यादि हैं। सतधारा के एक शैलाश्रय में बुद्ध का व्यक्तिचित्र, गुप्तकालीन लेख तथा स्तूप की आकृतियाँ प्रकाश में लाई गई हैं। सर्वप्रथम शैलाश्रय में ताम्राश्मयुगीन चित्रों पर पीले रंग का लेपन लगाया गया। तत्पश्चात् इसके ऊपर बुद्ध, स्तूप का चित्र तथा स्तूप के अंदर लाल रंग

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से चित्रित गुप्तकालीन लेख लिखे गये जो काफी मिटे हुए हैं। भीमबैठका में कई चित्र गुप्तकालीन लिपियाँ अथवा कुछ अक्षरों के साथ हैं।

अ. मौर्यकालीन तथा शुंगकालीन लिपि तथा चिन्ह, काल निर्धारण का प्रमुख आधार हैं।

ब. कुषाण वेशभूषा, हथियार, घोड़ों की आकृतियाँ समय निर्धारित करती हैं।

स. भीमबैठका के तृतीय समूह में अश्वमेघ शैली के गुप्तकालीन सिक्के समान अश्व का चित्र है, तथा पात्र में पुष्प का चित्र है (योंने लावर पॉट)। यह चित्र लोककला से भिन्न लगता है।

मध्यकालीन चित्र :-

शैलाश्रयों में चित्रों के सुपरइंपोजिशन में मध्यकालीन शैली के चित्र सबसे ऊपर मिलते हैं। विषय वस्तु तो इतिहास युगीन चित्रों के समान ही हैं, परन्तु ज्यामितिक शैली का प्रयोग प्रारंभ हो गया। हल्के लाल तथा सफेद चित्र बनाये जाने लगे। राजकीय यात्रा, पूजा के दृश्य प्रमुखता से बनाये जाते थे।

पुरातात्विक उत्खनन

मध्यप्रदेश में विभिन्न विद्वानों तथा पुरातत्ववेत्ताओं द्वारा अन्वेषण कार्यों के अतिरिक्त उत्खनन भी किया गया है, जिनके अन्तर्गत उनके अध्ययन से शैलचित्रों विषयक महत्वपूर्ण तथ्य प्रकाश में आये हैं, जिनसे ज्ञात होता है कि आदिमानव की शैलचित्रों की परम्परा कैसे प्रारम्भ हुई तथा कैसे उसका विकास हुआ है।

जैसा की सर्वविदित है कि प्राचीन समय में मानव तत्कालीन समय की उपलब्धता के आधार पर नदियों के किनारे अथवा शैलाश्रयों में रहता था तथा पानी-भोजन को प्रमुख मानकर अपना निवास निश्चित करता था। इसके अतिरिक्त प्रारंभिक अवस्था में अपने घुमक्कड़ जीवन में भी निरन्तर चलने पर भी उसने शैलाश्रयों का सहारा लिया। परन्तु उस युग के उसके द्वारा निर्मित चित्र नहीं मिले या अभिव्यक्ति करने का ज्ञान न हुआ हो। इसलिये प्रारंभिक आदिम अवस्था के चित्र नहीं मिलते हैं। अपितु उसके द्वारा निर्मित विभिन्न प्रकार के साधारण एवं उत्तम श्रेणी के पाषाण उपकरण प्राप्त होते हैं। जो जमीन की सतह पर तथा उत्खनन में निचले स्तरों पर प्राप्त हुए हैं। नदियों के तट पर विभिन्न युगों की बस्तियों के टीले सर्वेक्षण के अन्तर्गत मिलें वहीं दूसरी ओर शैलाश्रयों में विभिन्न कालों की मिट्टी की तहें जमा हो गईं जिनमें कई "फ्लोरलेवल्स" प्राप्त हुए हैं। जिन पर प्रारंभिक शैली के पाषाण उपकरण प्राप्त हुए हैं। उस तह के काल में मानव सामुहिक रूप से एक जगह पाषाण उपकरण बनाता होगा। जहाँ एक साथ बने उपकरण, बेकार की फ्लेक्स, आधा-अधुरे उपकरण मिलते हैं। अन्तर केवल यही होता है कि शैलाश्रय की ऊँचाईयों तथा घने जंगलों में घिरा होने से जमाव (क्वचवेपज) कम होता था, जबकि नदियों के तटों पर बाढ़ या आग लग जाने से "हेबिटेसनल टीलो" पर प्रभाव अधिक होता था याने लेयर्स (तहें) मोटी होती थी जबकि शैलाश्रयों में लेयर्स (तहें) की मोटाई अथवा जमाव कम होता था, फिर भी पुरावशेषों में साम्यता होती थी। उदाहरण के तौर पर भीमबैठका में ताम्राश्म युग के स्तर पर मालव पात्र (BLACK PAINTED ON RED WARE) मिलते हैं, उसी प्रकार भीमबैठका के निकटस्थ ताम्रयुगीन स्थल "पिपलिया लोरका" में भी ताम्रयुग की तह के साथ वही मालव पात्र मिलते हैं। इन पात्रों से भी शैलचित्रों के काल निर्धारण में सहयोग प्राप्त होता है।

देश के कई विद्वानों तथा पुरातत्ववेत्ताओं ने सर्वेक्षण के अन्तर्गत कई स्थलों की खोज की तथा महत्वपूर्ण स्थलों पर आजादी के पूर्व तथा पश्चात उत्खनन कार्य भी किया जिनमें डी.एच.गार्डन, आर.वी. जोशी, वाकणकर, एस.के. पाण्डे प्रमुख थे। जिन्होंने बनियाबेरी(पचमढी), आदमगढ़ (होशंगाबाद), पुतली करार (रायसेन), भीमबैठका (रायसेन) के शैलाश्रयों में उत्खनन कर महत्वपूर्ण कार्य किया।

पुरातात्विक उत्खनन

1. डोरोथी दीप तथा जंबू दीप (पचमढी), जिला होशंगाबाद :-

इन शैलाश्रयों में प्रसिद्ध विद्वान जी.आर. हण्टर ने वर्ष 1936 तथा 1955 में उत्खनन करवाया। उनका कथन है कि सर्वप्रथम

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यहाँ शैलाश्रयों में मध्याश्म युगीन (मसोलिथिक) लोग रहे जो लघु अश्मोपकरण (माइक्रोलिथ्स) का प्रयोग करते थे। यहाँ पर किसी भी प्रकार के पूर्व पाषाणकालीन उपकरण और न ही नूतन पाषाण कालीन उपकरण प्राप्त हुए हैं। जबू द्वीप शैलाश्रय में किये गये उत्खनन में भी दो तहों (लेयर्स) के अन्तर्गत निचली तह में लघुअश्मोपकरण (मायक्रोलिथि) तथा ऊपरी तह में मृदभाण्ड (पोट्री) प्राप्त हुए हैं। इस स्तर पर उन्हें एक मानव कंकाल भी प्राप्त हुआ था।

बनिया बेरी, पचमदी

यहाँ ए. घोष द्वारा वर्ष 1950 में उत्खनन करवाया था। उन्होंने 22" x 39" की एक छोटी निखात (ट्रेंच) ली थी। निचली तह में किसी भी प्रकार की उपलब्धि नहीं हुई। तह क्रमांक 3 में पिली मिट्टी व पत्थर के टुकड़ों (चिप्स) के साथ मिट्टी के पात्र (मृदभाण्ड) प्रयोग में किये जाने के पूर्व के लघुअश्मोपकरण प्राप्त हुए। द्वितीय तह में ज्यामीतिक शैली के लघुअश्मोपकरण प्राप्त हुए। जिसके आधार पर निष्कर्ष निकाला गया कि मध्याश्म युगीन मानव यहाँ रहता था। इस प्रकार अप्सरा बाजार विहार, निंबू भोज शैलाश्रय में भी उत्खनन किये गये जिनमें लघुअश्मोपकरण प्राप्त हुए।

2. मोड़ी, जिला मन्दसौर

मोड़ी के शैलाश्रयों में डा० वाकणकर तथा एच. व्ही. त्रिवेदी द्वारा वर्ष 1959 में उत्खनन किया गया। इस क्षेत्र में एम.जी. दीक्षित द्वारा 30 शैलाश्रय समूहों की खोज की गई थी। यह स्थल रामपुरा-भानपुरा मार्ग पर लगभग 10 किलोमीटर उत्तर-पश्चिम में स्थित है। उत्खनन हेतु डॉ. वाकणकर द्वारा एक विशाल चित्रित शैलाश्रय का चयन किया गया तथा उसमें एक निखात (ट्रेंच) लगाई गई जिसमें विभिन्न युगों की आठ तहें (लेयर्स) मिलीं। तहों में पाषाण कालीन उपकरण, जिनमें त्रिकोणाकृतियाँ (ट्रेंगल्स), चन्द्राकृतियाँ (ल्यूनेट्स), ब्लेड्स इत्यादि प्राप्त हुए हैं जोकि अर्ध किमती पत्थरों के निर्मित किये गये थे। उत्खनन में ही हेमेटाईट्स के टुकड़े भी मिले जिनसे रंग तैयार किये जाते थे। तह क्रमांक 1, 2 तथा 3 से मिट्टी के पात्रों के टुकड़े भी मिले जिनका समय 11वीं-12वीं शताब्दी निर्धारित किया गया है।

3. आदमगढ़, जिला होशंगाबाद :-

होशंगाबाद के निकट पहाड़ी पर भारतीय पुरातत्व सर्वेक्षण द्वारा डॉ. एम. डी. खरे के मार्गदर्शन में 1960-61 में उत्खनन किया गया था। शैलाश्रयों के अन्दर तथा बाहर 18 निखाते (ट्रेंचेंस) ली गई जिसमें कई कालों के प्राप्त पुरावशेषों के आधार पर समय निर्धारित किये गये हैं।

काल प्रथम :-

इस काल में पूर्व पुरापाषाणकालीन उपकरण प्राप्त हुए जिनमें हेण्ड एक्स, क्लिवर्स, डिसकोर्डेड कोर, लेक्स, कोर इत्यादि प्राप्त हुए हैं। कुछ कोर तथा लेक्स ऐसी भी मिली जो पाषाण काल की प्रारम्भिक अवस्था की मानी जाती हैं। ये सभी उपकरण स्थानीय बलुआ पत्थर के निर्मित किये गये थे। कुछ ये लेटराईट के साथ भी प्राप्त हुए हैं।

काल द्वितीय (अ) :-

इस काल में प्रमुख रूप से लघुअश्मोपकरण प्राप्त हुए हैं जोकि चर्ट, चालसी डोनी, अगेट पर निर्मित किये गये थे। यहाँ उत्खनन में प्रयोग में लाये गये नोड्यूलस तथा रॉमटेरियल इस क्षेत्र में बहुतायत से प्राप्त होते हैं। उन पाषाणों द्वारा निर्मित प्रकारों में प्रमुख ब्लेड्स, ल्यूनेट्स, पाईट्स, ब्यूरीन इत्यादि प्रचुर मात्रा में मिलते हैं।

काल द्वितीय (बी) :-

इस काल की ऊपरी तह जो कि काली मिट्टी के जमाव की थी, के साथ चालसी डोनी के निर्मित लघु अश्मोपकरण तथा मिट्टी के पात्र (मृदभाण्ड) प्राप्त हुये हैं।

यहाँ की कुछ निखातों में पूर्व पाषाणकालीन उपकरण तथा लघुअश्मोपकरण साथ में भी प्राप्त हुये हैं। उत्खनन की विभिन्न तहों के साथ कई प्रकार के पशुओं की हड्डियाँ भी मिलीं जिनकी जाँच के पश्चात पाया गया कि वे जंगली सुअर, सांभर, दरियाई

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घोड़ा इत्यादि की थी। इस प्रकार ज्ञात होता है कि इस प्रकार के जानवर इस क्षेत्र में थे जिनके चित्र भी इस क्षेत्र के शैलाश्रयों में मिलते हैं।

4. शहदकराड, जिला भोपाल :-

यह शैलाश्रय भोपाल में भदभदा के निकट स्थित है। यहाँ डॉ. एस. के. पाण्डे एवं डॉ. वाकणकर ने 1967 में साथ-साथ उत्खनन किया था। यहाँ पर कुछ महत्वपूर्ण चित्रित शैलाश्रय हैं जिनमें बने हुए चित्रों को मेसोलिथिक युग से मध्यकाल का सुपर इंपोजिशन के आधार पर काल निर्धारित किया गया है। यहाँ एक शैलाश्रय में 1.00 ग 1.00 मीटर की एक छोटी निखात ली गई है जिनमें 5 तहें प्राप्त हुईं तथा 5 वीं तह दो श्रेणी में विभाजित की गई।

तह 1 :- इसमें कुछ मिट्टी के पात्र मिले जिनका समय गुप्तकाल निर्धारित किया गया है। पात्रों के साथ लघु अश्मोपकरण भी प्राप्त हुए हैं।

तह 2 :- इस तह में सातवाहनयुगीन (इतिहास कालीन) मिट्टी के पात्र लोह धातु का टुकड़ा तथा लघु अश्मोपकरण प्राप्त हुए हैं।

तह 3 :- इस तह में अर्ध किमती पत्थरों-चालसीडोनी के लघु अश्मोपकरण जैसे ल्यूनेट्स, कोर, बेकार की लेक्स प्राप्त हुई हैं। इस तह में कुछ ताम्रयुगीन पात्र जिन्हें मालवा पात्र भी कहते हैं, प्राप्त हुए हैं।

तह 4 :- इस तह में लघु अश्मोपकरण, ल्यूनेट्स, ट्रेंगल्स प्राप्त हुए परन्तु मिट्टी के पात्रों का अभाव है।

तह 5 :- इस तह में ज्यामितिक शैली के विभिन्न प्रकार के लघु अश्मोपकरण यथा ट्रेंगल्स, ल्यूनेट्स, ट्रेपेज मिले हैं। साथ ही ब्लेड्स, स्क्रैपर्स भी प्राप्त हुए हैं। शहदकराड तथा रायसेन क्षेत्र के खरवाई काकाल एवं स्तरीकरण लगभग समान ही हैं।

5. खरवाई के शैलाश्रय-जिला रायसेन :-

खरवाई चित्रित शैलाश्रय समूह भोपाल-रायसेन मार्ग पर भोपाल में लगभग 30 किलोमीटर की दूरी पर खरवाई ग्राम के निकट स्थित है। यहाँ डॉ. वाकणकर एवं डॉ. एस. के. पाण्डे द्वारा सन् 1967 में उत्खनन किया गया था। यहाँ सैकड़ों छोटे तथा बड़े शैलाश्रय हैं जिनमें चार शैलाश्रय क्रमशः के.एच.आर. 1, के.एच.आर. 2, के.एच.आर. 3, के.एच.आर. 4, के.एच.आर. 5 शैलाश्रयों में उत्खनन किया गया था। उत्खनन के अन्तर्गत के.एच.आर. 1 तथा के.एच.आर. 2 में महत्वपूर्ण परिणाम निकले हैं।

1. के.एच.आर. 1 :- इस शैलाश्रय में लगभग 12" का जमाव (डिपाजिट) था, जिसमें चार तहें थीं। प्रथम तह में पूर्णरूप से लघु अश्मोपकरण तथा कुछ मिट्टी के पात्र प्राप्त हुए हैं। अन्य शेष तहों में लघु अश्मोपकरण तथा नोड्यूल्स प्राप्त हुये हैं। ये सभी चालसीडीनी, चर्ट्स इत्यादि के निर्मित थे। तहों से ज्ञात होता है कि यहाँ शैलाश्रय में प्रथमतः लघु अश्मोपकरण का प्रयोग करने वाले निवासी रहते थे। उसके पश्चात् लघु अश्मोपकरण तथा मिट्टी के पात्रों का प्रयोग करने वाले निवासी मानव रहे।

2. के.एच.आर. 2 :- इस शैलाश्रय में 32" ग 32" की एक निखात ली गई जिसमें लगभग नौ इंच का जमाव (डिपाजिट) था। इसकी मिट्टी में कड़ापन तथा तीन तहें प्राप्त हुईं। निचली तह में लघु अश्मोपकरण मिले, प्रमुख लेक्स तथा ट्रेंगल्स थे, केवल एक पाईट्स मिला था। ऊपरी शेष तहों में लोहे के टुकड़े, गोल चपटा पत्थर प्राप्त हुआ। उत्खनन से प्राप्त अवशेषों से ज्ञात होता है कि के. एच. आर. 1 के समान ही यहाँ प्रारंभ में लघु अश्मोपकरण का प्रयोग करने वाले तथा बाद में लघु अश्मोपकरण का मृदभाण्ड सहित प्रयोग करने वाले निवासी रहे। इस क्षेत्र में लोहे का प्रयोग करने वाले निवासी अधिक समय तक रहें। यहाँ शैलाश्रयों में मध्याश्म से मध्यकाल तक के चित्र देखने को मिलते हैं।

6. पुतली करार, जिला रायसेन

पुतली करार के शैलाश्रय रायसेन के निकट स्थित है। इन शैलाश्रयों में एस.के. पाण्डे द्वारा उत्खनन किया गया था। प्राकृतिक रूप से ये अर्धचन्द्राकार पहाड़ियों से घिरे ये शैलाश्रय आदि मानव के निवास का महत्वपूर्ण केन्द्र था।

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इन चित्रित शैलाश्रयों में मेसोलिथिक समय से मध्यकाल तक लगातार मानव के रहने से चित्र बराबर बनते रहे, जैसा कि सुपरइम्पोजिशन से ज्ञात होता है। इन शैलाश्रयों में पीटीके 1, पीटीके 2, पीटीके 3, पीटीके 4, हैं जिनमें निखातों (ट्रेनचेस) लगाकर उत्खनन किया गया। ऊपरी सतह पर कुछ मृद्भाण्ड पाये गये हैं, उसके नीचे लगभग तीन इंच उत्खनन किये जाने पर मिट्टी की भूरे रंग की तह थी, इसमें मिट्टी के पात्रों के साथ लघु अश्मोपकरण प्राप्त हुये। इसके पश्चात द्वितीय तह साढ़े पांच इंच की गहराई से प्राप्त होती है। इसमें 90 प्रतिशत बेकार की लेक्स, टुकड़े तथा 10 प्रतिशत पूर्ण अश्मोपकरण प्राप्त हुये हैं। जो चालसीडोनी के निर्मित थे। इनमें ट्रेंगल्स, ल्यूनेट्स तथा ब्लेड्स प्रमुख हैं। पीटीके 4 शैलाश्रय में उत्खनन के अर्न्तगत ऊपरी सतह पर मध्यकालीन पात्रों की अधिकता थी, तथा निचली दो तहों में काले लाल पात्र, एन.बी.पी., सात वाहन तथा गुप्तकालीन पात्र प्राप्त हुए हैं। तृतीय तह में ताम्राश्मयुगीन पात्र तथा ज्यामितिक शैली के अश्मोपकरण पात्र प्राप्त हुए हैं। निचली शेष तहों में मृद्भाण्ड पूर्व के लघुअश्मोपकरण की प्रधानता थी।

पीटीके 4 निखात की तहें :-

तह 1 :- मध्यकालीन पात्र

तह 2 :- इतिहासकालीन पात्र (सातवाहन, गुप्तकाल)

तह 3 :- एन.बी.पी. तथा काले-लाल रंग के पात्र, कुछ लघुअश्मोपकरण भी प्राप्त हुए हैं।

तह 4 :- ज्यामितिक शैली के अश्मोपकरण, काले लाल पात्र, ताम्राश्मयुगीन पात्र

तह 5 :- लघु अश्मोपकरण (प्रि-पौट्री मायक्रोलिथ्स)

तह 6 :- पाईट्स, स्क्रैपर्स तथा कई अश्मोपकरण ऐसे भी मिले हैं, जिन पर पेटिनेशन तथा कई प्रकार का प्राकृतिक रासायनिक जमाव था। पुतली करार में किये गये उत्खनन से ज्ञात होता है कि इन शैलाश्रयों में सर्वप्रथम मेसोलिथिक युग के लोगों ने आकर निवास किया। जिन्होंने प्रारम्भिक रूप से रहकर चित्र बनाये। उसके पश्चात इतिहासयुग, मध्यकाल तक रहने के पश्चात संभवतः वह यहाँ तेरहवीं-चौदहवीं शताब्दी तक रहे होंगे, क्योंकि जो चित्र यहाँ शैलाश्रयों में हैं, उनके सुपरइम्पोजिशन में सभी काल आ जाते हैं। इनकी विभिन्न कला शैलियों के आधार पर ही इनका कालनिर्धारण किया गया है।

7. भीमबैठका, जिला रायसेन

यह स्थल भोपाल से लगभग 55 कि.मी. दक्षिण में ओबेदुल्लागंज तथा बरखेड़ा रेल्वे स्टेशन के मध्य भियांपुर गांव के निकट स्थित है। डॉ. वाकणकर ने इस स्थल की खोज वर्ष 1957-58 में की तथा सैकड़ों शैलाश्रय प्रकाश में लाये गये। 1972 में उन्होंने इस स्थल पर उत्खनन का कार्य प्रारम्भ किया। जनवरी 1972 में डॉ. संकालिया भीमबैठका आये थे, उन्होंने बताया कि यही एक ऐसा स्थल है जहाँ पूर्व पाषाणकाल से चौदहवीं-पन्द्रहवीं शताब्दी तक के पुरावशेष क्रमबद्ध रूप से प्राप्त होते हैं। भीमबैठका में विभिन्न संस्थानों द्वारा समय-समय पर उत्खनन किये गये:-

1. डॉ. वाकणकर, विक्रम विश्वविद्यालय, उज्जैन ने 1972-1975 के मध्य 10 शैलाश्रयों की 16 निखातों (ट्रेंच) में उत्खनन कार्य किया।
2. प्रो. के.डी. वाजपेयी तथा डॉ. एस.के. पाण्डे, सागर विश्वविद्यालय सागर ने 1971 में दो शैलाश्रयों में उत्खनन किया।
3. प्रो. व्ही. एन. मिश्रा डेक्कन कालेज पूना ने 1973 में तीन शैलाश्रयों में उत्खनन कार्य किया।
2. डॉ. सुसन हॉस, ब्रासिल विश्वविद्यालय स्विट्जरलैण्ड ने तीन शैलाश्रयों में उत्खनन कार्य किया।

निखान प्रथम (3/एफ/24)

DEVELOPMENT AND SALIENT FEATURES OF THE ROCK ART OF CENTRAL INDIA (309)

निखान प्रथम के उत्खनन से निम्नलिखित स्तर प्रकाश में आये—

तह	काल	प्राप्त पुरासामग्री
1.	पूर्वऐतिहासिक काल	मृदभाण्ड कांच की चूड़िया
2.	मध्याश्म काल	लघुअश्मोपकरण
3.	पूर्व मध्य पाषाण काल	इस युग के विभिन्न प्रकार के अश्मोकरण प्राप्त हुए हैं, जो 'ब्रेसिया' में जकड़े थे।

निखात द्वितीय (3/एफ/24)

यह बहुत ही महत्वपूर्ण निखात है, जिसमें से विभिन्न युगों की क्रमिक तहे (सांस्कृतिक स्तर) प्राप्त हुई थी। यह निखात सभागृह के अंतिम (छोर) प्रवेश द्वार के निकट स्थित है।

तह	काल	प्राप्त प्रमुख पुरासामग्री
1.	मौर्यकाल	मृदभाण्ड व पंचमार्क सिक्का
2.	ताम्राश्मकाल	मृदभाण्ड व लघुअश्मोपकरण
3.	मध्याश्म काल	लघुअश्मोपकरण
4.	उत्तर पूर्वपाषाण काल	लघुअश्मोपकरण व बलुआ पत्थर के निर्मित उपकरण
5.	अश्युलियन द्वितीय स्तर	स्क्रेपर्स, क्लिवर्स, हेण्डएक्स
6.	अश्युलियन प्रथम स्तर	स्क्रेपर्स, क्लिवर्स, हेण्डएक्स
7.	60 सेमी. का अन्तराल	कोई उपकरण नहीं
8.	गोलाश्म उपकरण	स्थानीय पत्थर के गोलाश्म
9.	प्रारम्भिक लेटराईट

मूल चट्टान

(बेड रॉक)

उत्खनन में पूर्व पाषाणकालीन स्तर (6) के पश्चात स्तर (7) में 60 सेमी. का अन्तर है जिससे ज्ञात होता है कि सैकड़ों वर्षों तक यहाँ बसाहट नहीं रही होगी। संभवतः उस समय हिमयुग रहा होगा। इस कारण पहाड़िया हिमाच्छादित रही होगी। इसलिए सभागृह शैलाश्रय में तह क्रमांक (7) में 60 सेमी का गेप (अन्तर) पाया गया है। अन्य जगहों पर भीमबैठका में किये गये उत्खनन में मिट्टी हटाने के पश्चात चट्टानों पर "ग्लेसियर्स मार्क्स" देखने को मिलते हैं, जोकि एक निश्चित दिशा में जाते हुए ज्ञात होते हैं। छोटी जामन झिरी पहाड़ी के निकट सर्वेक्षण के अन्तर्गत एक बड़ी हेण्डएक्स (पूर्व पाषाणकाल) प्राप्त हुई जो दो चट्टानों के मध्य फसी थी, पर ग्लेसियर्स मार्क्स डॉ. वाकणकर द्वारा देखे गये थे। भीम बैठका के पण्डापुर क्षेत्र में ये निशान ढलान पर देखे गये हैं।

2. शैलाश्रय क्रमांक 3/एफ/23

सभागृह शैलाश्रय के निकट यह एक विशाल ऊँचा शैलाश्रय है, यहाँ प्रो.वी.एन. मिश्रा, डेक्कन कालेज पूना द्वारा उत्खनन करवाया गया था। जिसमें मिट्टी के तहे सभागृह के समान ही हैं, परन्तु यहाँ केवल छः तहे ही देखी गई हैं:

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तह	काल	प्राप्त प्रमुख पुरा सामग्री
1.	वर्तमान	वर्तमान युग के ऊपर सतह पर मृदभाण्ड इत्यादि प्राप्त हुए हैं ।
2.	मध्याश्म	विभिन्न प्रकार के लघुअश्मोपकरण
3.	उत्तरपुरापाषाणकाल	यहाँ लोर लेवल प्राप्त हुए हैं, जहाँ प्रचुर मात्रा में इस युग के उपकरण प्राप्त हुए हैं।
4.	मध्यपुरापाषाणकाल	विभिन्न प्रकार के अश्मोपकरण
5.	पूर्व पुरापाषाणकाल	पूर्व पुरापाषाण के अन्तर्गत अश्युलियन उपकरण प्राप्त हुए हैं।
6.	मूल चट्टा (बेडरॉक)	

उत्खनन से प्राप्त पाषाण उपकरण —

भीमबैठका में किये गये उत्खनन से विभिन्न कालों में प्रयोग में लाये गये पाषाण उपकरण प्राप्त हुए जो निम्नानुसार हैं :-

(1) पाषाण काल :-

(अ) पूर्व पाषाणकाल :-

पूर्व पाषाणकालीन उपकरण दो भागों में विभक्त किये गये हैं। प्रथम भाग में गोलाश्म आते हैं जिनकी आगे व पीछे से लेक्स निकालकर धार बनाई जाती थी। द्वितीय प्रकार के उपकरण बड़े पत्थर से लेक्स निकालकर बनाये जाते थे, जिन्हें लेक टूल्स कहा जाता है। ये उपकरण सबसे नीचे वाली तह से प्राप्त हुए हैं। इस प्रकार से प्राप्त लेक्स टूल्स को अश्युलियन टूल्स कहा जाता है। सर्व प्रथम फ्रांस के "मास द अश्यूल" नामक स्थल पर प्राप्त उपकरणों को अश्युलियन प्रकार के टूल्स कहा जाने लगा।

(अ) मध्य पूर्वपाषाण काल :-

बलुआ पत्थर से निर्मित उपकरण मध्य पूर्वपाषाणकालीन स्तर से प्राप्त हुए जोकि अश्युलियन प्रकार के विकसित शैली के अन्तर्गत आते हैं। इस स्तर पर प्रमुख रूप से स्क्रैपर्स एवं हेण्डएक्स प्राप्त हुए हैं।

(अ) उत्तर पूर्व पाषाणकाल :-

इस स्तर पर ज्यामितिक शैली सहित लघु अश्मोपकरण प्राप्त हुए हैं। इस काल के स्तर पर किसी भी प्रकार के मिट्टी के पात्रों के टुकड़े (मृदभाण्ड) प्राप्त नहीं हुए।

(2) मध्याश्म युग (मेसोलिथिक)

भीम बैठका में पूर्वपाषाण काल के पश्चात् मध्याश्म युग प्रारम्भ होता है, जिसमें उच्च श्रेणी के पाषाण उपकरण प्राप्त हुए हैं, जिन्हें माईक्रोलिथ्स या लघु अश्मोपकरण कहा जाता है। इस स्तर के उपकरण उत्तर पूर्वपाषाण कालीन उपकरण से कुछ साम्यता रखते हैं। प्रमुख उपकरणों में त्रिकोणाकृतियाँ (ट्रैंगलस), चन्द्राकृति (ल्यूनेट्स), चतुष्कोणाकृति (ट्रेपेज) इत्यादि हैं। इनके साथ ही छेदक (बोरर) नामक उपकरण भी मिला है जो छिद्र करने के काम आता था। कुछ नुकीले उपकरण भी मिले जिन्हें तीर या बाण में प्रयोग में लाया जाता था।

(3) ताम्राश्म/नूतन पाषाण काल :-

मध्याश्म युग के समान ही इस स्तर पर लघु अश्मोपकरण प्राप्त हुए हैं, परन्तु आकार में कुछ बड़े हैं। इनके साथ ताम्राश्मयुगीन मालवा पात्र (काले चित्रित लाल पात्र), ताबे का आभूषण, कंठहार, कान में पहनने के आभूषण प्राप्त हुए हैं।

सामग्री :-

पूर्व पाषाण युग के उपकरण निर्माण के लिये स्थानीय बलुआ पत्थर का प्रयोग किया गया था, जबकि मध्याश्म तथा ताम्रयुग में अर्ध किमती पत्थर जैसे चालसी डोनी, चर्ट, कार्नेलियन का प्रयोग लघु अश्मोपकरण के निर्माण के लिये किया गया था।

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शवाधान क्रिया :-

विभिन्न संस्थाओं के द्वारा किये गये उत्खनन कार्य से यहाँ शवाधान क्रिया की जानकारी मिलती है शवों का दफनाया भी जाता था तथा आधा जलाने के पश्चात भी दफनाया जाता था। यहाँ एकल तथा समूहों में नर कंकाल प्राप्त हुए हैं। कुछ कंकालों के पास (मस्तक के निकट) मिट्टी के पात्र भी मिले हैं, संभवतः इनमें अन्य या कोई वस्तु रखी जाती होगी। कुछ कंकालों पर अलंकृत मोती तथा कानों के निकट कुछ आभूषण जैसी वस्तु भी प्राप्त हुई हैं।

शैलाश्रयों क्रमांक, 3 एफ/13 व 14 :-

1. सागर विश्वविद्यालय द्वारा किये उत्खनन में दो कंकाल ताम्रशमयुगीन प्राप्त हुए हैं।
2. डेक्कन कालेज पूना द्वारा किये गये उत्खनन कार्य में ताम्रशमयुगीन कंकाल प्राप्त हुआ है।
3. विक्रम विश्वविद्यालय उज्जैन को मध्यकालीन कंकाल मिले तथा उसके मस्तक के निकट मिट्टी का पात्र या मटका प्राप्त हुआ है। यहाँ से प्राप्त एक अन्य कंकाल की लंबाई 4 फुट 6 इंच है। उत्खनन के प्रथम काल में मिलने से समय लगभग एक हजार वर्ष पूर्व माना गया है। कंकाल के निकट मिट्टी का एक मनका मिला था।

शैलाश्रय क्रमांक, 3 एफ/16 :-

इस शैलाश्रय में विक्रम विश्वविद्यालय उज्जैन द्वारा एक मानव कंकाल उत्खनित किया गया था जिसके मस्तक के निकट मृदभाण्ड रखा हुआ था।

शैलाश्रयों क्रमांक, 3 एफ/27 :-

इस शैलाश्रय में ताम्रशमयुगीन मानव कंकाल के अवशेष प्राप्त हुए थे। जिसके निकट पक्षी की हड्डी से निर्मित पुरावशेष मिले हैं।

शैलाश्रयों क्रमांक, 3 एफ/26 :-

1. चारों ओर पत्थर के मध्य बालक की अस्थियां मिली जिसके गले पर सांभर, सींग व पत्थर रखा हुआ था।
2. प्रौढ़ व्यक्ति के मस्तक की कतिपय हड्डियों व गले में संभवतः दो मनके प्राप्त हुए थे, जिसके विषय में निश्चित रूप से कुछ नहीं कहा जा सकता है। मानव अस्थि के विषय में डॉ० वाकणकर के अनुसार उनका समय लगभग 15 से 20 हजार वर्ष होना चाहिए। उसे होमोसेपियन भीम बेटकियन कहा है। यहाँ पर उत्खनित स्तर पर जहाँ हड्डियाँ प्राप्त हुई हैं वहाँ पर इनसे निर्मित पुरा सामग्री प्राप्त हुई जिनमें हड्डियों पर किया गया अलंकरण अदभुत है। इनके साथ ही हड्डियों के मनके, हड्डियों के औजार (बोन पाईट्स) सांभर का सींग प्राप्त हुआ है। सांभर के सींग से संभवतः लघुअश्मोपकरण बनाये जाते थे। उत्खनन के अन्तर्गत ही यहाँ शर्तुमुर्ग के अण्डों के छिलके के मनके भी मिले हैं।

उपरोक्त अस्थि अवशेषों के अतिरिक्त शैलाश्रय क्रमांक 2बी/33 अस्थि अवशेषों की प्राप्ति हुई है।

पुरातत्वीय उत्खनन किये जाने से शैलचित्रकला का समयकाल निर्धारित किये जाने में सहयोग प्राप्त हुआ है। विभिन्न विश्वविद्यालयों तथा व्यक्तिगत रूप से संस्थाओं के द्वारा किये गये उत्खनन के अन्तर्गत महत्वपूर्ण परिणाम निकले हैं। उत्खनन कार्यों के लिये वाकणकर, पाण्डे, हण्टर, मिश्रा, संकालिया आदि ने अभूतपूर्व सहयोग दिया है। उपरोक्त विभिन्न स्थलों पर स्थित चित्रित शैलाश्रयों में किये गये उत्खनन में शैलचित्रकला विषयक कई तथ्य सामने आये हैं :-

1. प्राप्त अवशेषों के आधार पर चित्रों का कालनिर्धारण करने में सफलता प्राप्त हुई है। उदाहरणार्थ ताम्रशमयुगीन पात्रों की चित्रों से तुलना इत्यादि।
2. उत्खनन में कई हेमेटाइट स्टोन के टुकड़े मेसोलिथिक स्तर में मिले हैं, जिनसे लाल रंग बनाया जाता था।
3. सिक्कों पर अंकित चिन्ह शैलचित्रों से साम्यता रखते हैं।

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4. शर्तुमुर्ग के अण्डों पर उत्कीर्णन तथा भीमबैठका में बालक के शव के निकट अलंकृत हड्डियों से शैल चित्रकला से तुलना की जा सकती है।
5. भीमबैठका में लाखजुहार के एक धनुंधारी के हाथ में तीन बाण हैं तथा उसमें लगे लघु अश्मोपकरण की उत्खनन से प्राप्त उपकरणों से तुलना की जा सकती है।

पुरातत्वीय उत्खनन, भीमबैठका, जिला रायसेन (द्वितीय चरण)–

भारतीय पुरातत्व सर्वेक्षण द्वारा वर्ष 2002 में भीमबैठका के शैलाश्रय क्रमांक ८५१४ में पुरातत्वीय उत्खनन प्रारंभ किया गया है। इस उत्खनन का प्रमुख उद्देश्य यह है कि पूर्व में विभिन्न संस्थाओं द्वारा किये गये उत्खनन को प्रामाणिकता प्रदान करना है। कई उत्खनन के विषय में विद्वानों में मत-मतान्तर था जो ठीक किया जा सकता है।

शैलाश्रय क्रमांक ८५१४ में लगभग 1.00 मी० उत्खनन किया गया है जिसमें कुछ लघु अश्मोपकरण प्राप्त हुए हैं जो उत्तर पाषाण काल के माने गये हैं। प्रत्येक एक से०मी० से विभिन्न प्रकार के मिट्टी के नमूने लिये गये हैं जिन्हें परीक्षण हेतु भेजा जावेगा ताकि प्राचीन समय की वनस्पतियों की जानकारी मिलेगी। ऊपरी स्तर से कुछ मध्यकालीन मिट्टी के पात्र अवश्य मिले हैं, जिनकी मात्रा न्यून है ऐसी संभावना भी की जा रही है कि इस शैलाश्रय में पाषाण कालीन सभी संस्कृतियों के उपकरण मिलेंगे।

8. पुरातत्वीय उत्खनन, इन्द्रगढ़, जिला मन्दासौर

इन्द्रगढ़, तहसील भानपुरा, जिला मन्दासौर (मध्यप्रदेश) में स्थित दर की चट्टान गुफा एक पुरापाषाण कालीन कला स्थल है, इसमें बने 503 'कप मार्क्स' को वैज्ञानिक रूप से काल निर्धारण हेतु यहाँ पुरातात्विक उत्खनन एवं वैज्ञानिक पद्धति से अध्ययन किया जा रहा है। भानपुरा के चारों ओर पाषाण कालीन संस्कृति एवं गुहा मानव की शैल चित्रकला के दर्शन होते हैं। उनमें प्रमुख इन्द्रगढ़, चतुर्भुज नाला, चिबड़नाला, सीता खर्डी प्रमुख हैं।

यह उत्खनन एवं अध्ययन राक आर्ट सोसाइटी आफ इण्डिया (रासी) के अध्यक्ष एवं दयालबाग शिक्षण संस्थान डीम्ड यूनीवर्सिटी आगरा के भारतीय संस्कृति के रीडर डॉ० गिरिराज कुमार, डॉ० नारायण व्यास, उप अधीक्षण पुरातत्वविद्, भारतीय पुरातत्व सर्वेक्षण, जीवाश्मविद् डॉ० जी.एल. बादाम, भानपुरा के श्री रमेश कुमार पंचोली, डॉ० प्रद्युम्न कुमार भट्ट एवं श्री अनिरुद्ध भट्ट उत्खनन दल के अन्य सदस्य हैं।

यह महत्वपूर्ण अध्ययन रॉक आर्ट सोसाइटी ऑफ इण्डिया (रासी) एवं आस्ट्रेलियन रॉक आर्ट रिसर्च एसोशिएशन (ओरा) के संयुक्त मल्टीडिसिप्लिनरी प्रोजेक्ट –अर्ली इण्डियन पेट्रोग्लिफ्स : साइन्टिफिक इन्वेस्टिगेशन्स एण्ड डेटिंग बाय इन्टरनेशनल कमीशन 2001-2004 के अन्तर्गत भारतीय पुरातत्व सर्वेक्षण एवं भारतीय इतिहास अनुसंधान परिषद के सहयोग से इन्टरनेशनल फेडरेशन ऑफ रॉक आर्ट आर्गेनाइजेशन्स (इफराओ) की छत्र छाया में किया जा रहा है। इसमें भारतीय एवं आस्ट्रेलिया के वैज्ञानिक भाग ले रहे हैं।

गत शताब्दी के नब्बे के दशक में की गई पुरापाषाण कालीन कला स्थलों की खोज विश्व के पुरातत्व जगत के लिए अत्यधिक महत्व की है। यह कला पेट्रोग्लिफ्स, मुख्यतः कपमार्क्स (क्यूप्पूल्स) के रूप में मध्यप्रदेश में भोपाल के समीप स्थित भीमबैठका के सभागृह शैलाश्रय में, इन्द्रगढ़-भानपुरा के समीप स्थित 'दर की चट्टान' में तथा राजस्थान में अलवर जिला, तह. बानसूर की ग्रेनाइट पहाड़ी में स्थित बाजणी भाट में तथा अजमेर जिले कि तहसील नसीराबाद के ग्राम मोरासरी के समीप स्थित ग्रेनाइट क्यूप्पूल्स रॉक में बनी है।

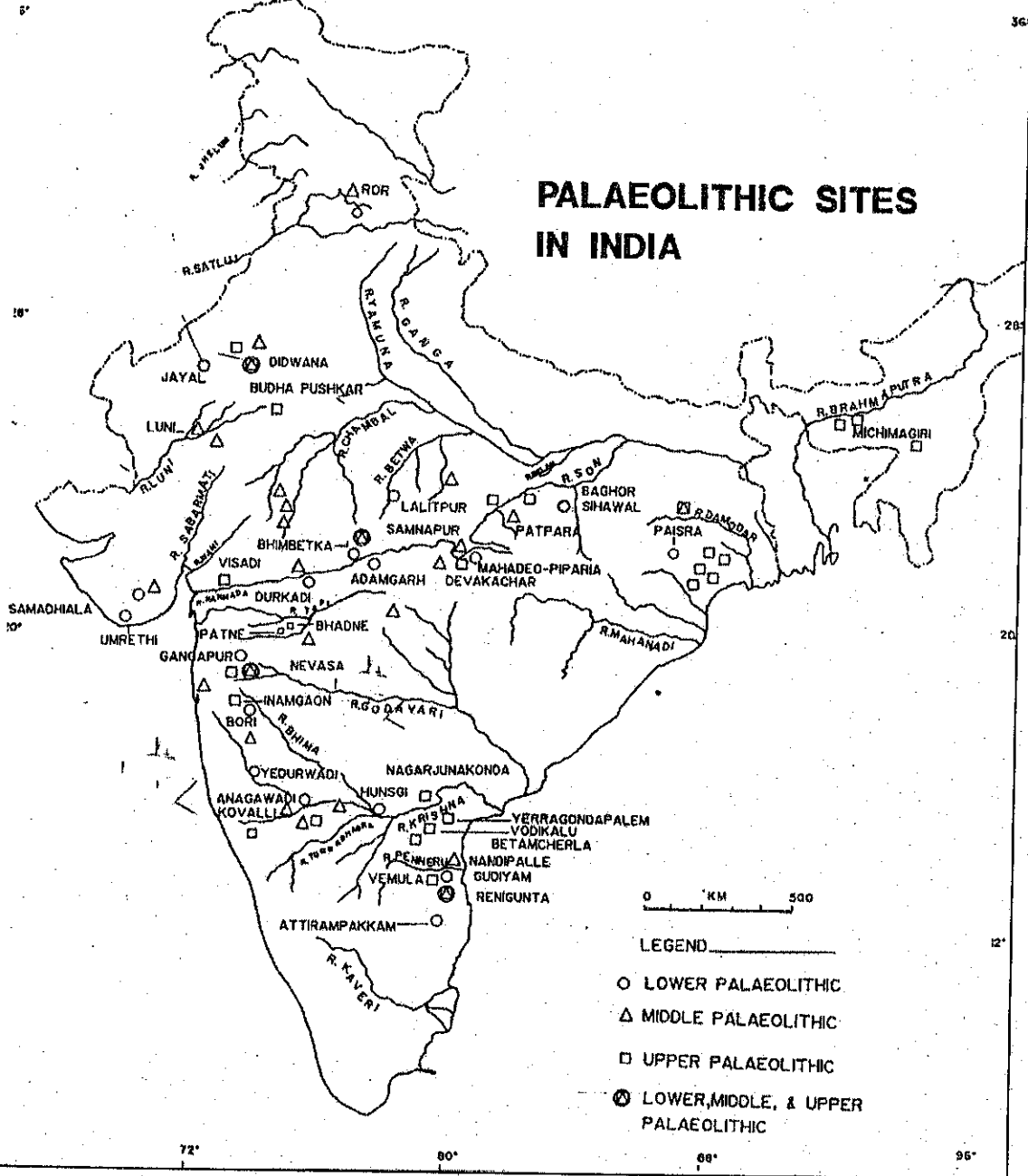
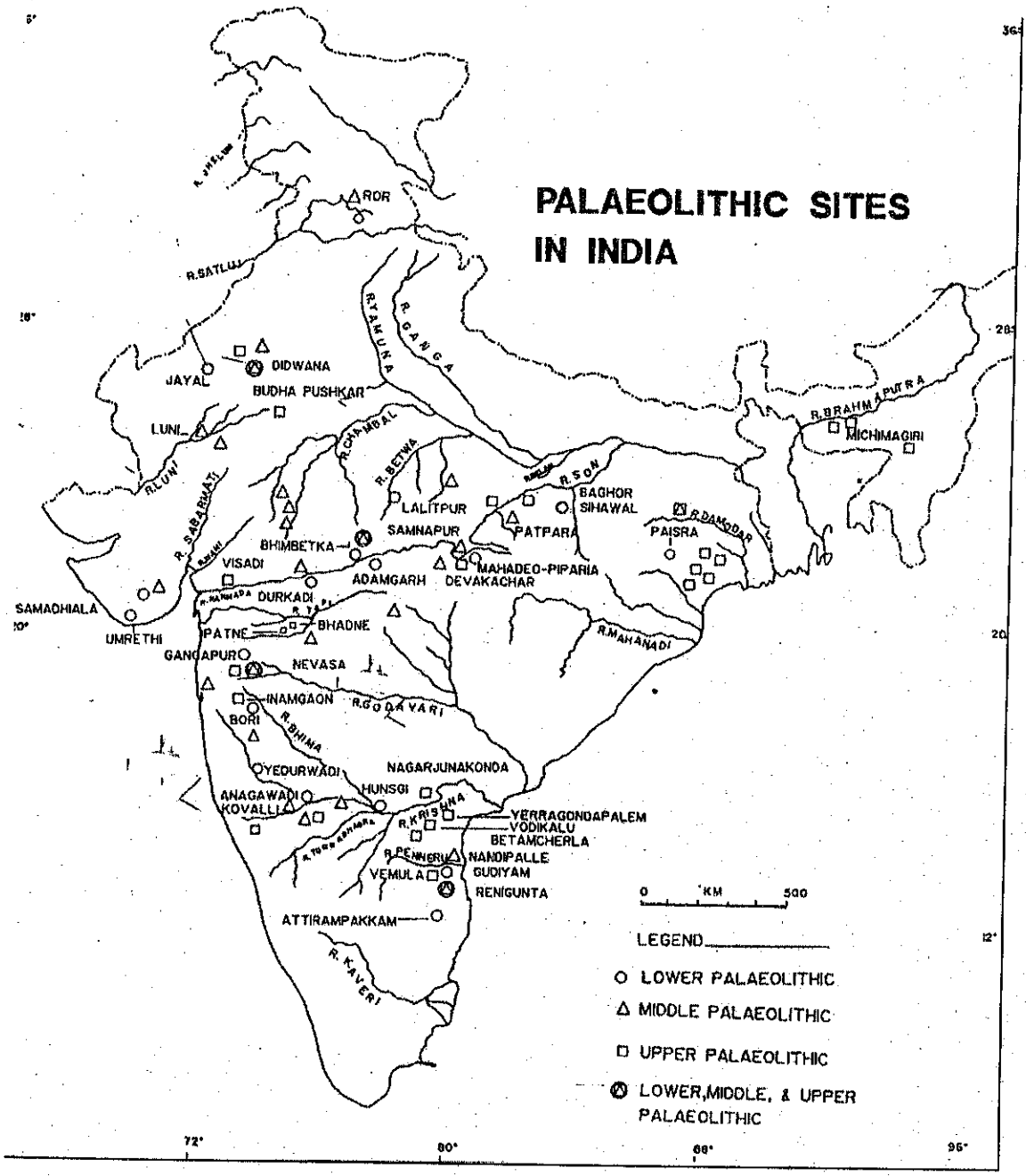
इनमें से इन्द्रगढ़ की दर की चट्टान गुफा में 503 कप मार्क्स बने हैं एवं इसके फर्श से पुरापाषाण कालीन अश्मोपकरण भी मिले हैं। इस महत्वपूर्ण पुरापाषाण कालीन कला स्थल की खोज श्री रमेश कुमार पंचोली ने 1993 में की। डॉ० गिरिराजकुमार ने 1995 में इस गुफा के क्यूप्पूल्स एवं पुरावशेषों के अध्ययन के बाद इस पुरापाषाण कालीन कला केन्द्र बतलाया। विश्व के पाषाण कालीन कला अध्येताओं के लिए यह एक महत्वपूर्ण उपलब्धि है। क्योंकि इतने प्राचीन कलावशेषों के भी प्रचुर मात्रा में भारत के अतिरिक्त विश्व के किसी भी देश में नहीं मिले थे।

DEVELOPMENT AND SALIENT FEATURES OF THE ROCK ART OF CENTRAL INDIA (313)

इनकी प्राचीनता के वैज्ञानिक काल निर्धारण से मानव कला के विकास (कोगनिशिव डेवलपमेंट), संस्कृति एवं कलात्मक प्रवृत्तियों के उदगम पर नवीन प्रकाश पड़ेगा। अतः विश्व के सबसे बड़े शैलचित्र संस्थाओं के संगठन इन्टरनेशनल फेडरेशन ऑफ रॉक आर्ट आर्गेनाइजेशन्स (इफराओ) के वैज्ञानिक समूह द्वारा भारतीय पुरापाषाण कालीन कला एवं कला स्थलों का वैज्ञानिक अध्ययन एवं काल निर्धारण सुनिश्चित करने का निर्णय आस्ट्रेलिया के एलिस स्प्रिंग में आयोजित और तृतीय कान्फेंस में सन् 2000 में लिया गया है। इन्द्रगढ़ स्थित 'दर की चट्टान' गुफा में पुरातात्विक उत्खनन इसी महत्वपूर्ण प्रोजेक्ट की एक कड़ी है। वर्ष 2002 में इन्द्रगढ़ की 'दर की चट्टान' में उत्खनन प्रारंभ किया गया जो क्रांति पर हैं। यहाँ शैलाश्रय में लगभग 60 सें.मी. उत्खनन पाषाण कालीन स्तर पर किया गया जिसमें पूर्व पाषाण कालीन उपकरण के साथ एक पाषाण पर 'कप मार्क्स' मिले हैं। जिसमें मानव की कला का विकास एक लाख वर्ष से पूर्व माना जा सकता है जो कि महत्वपूर्ण उपलब्धि हैं। इसके अतिरिक्त लघु अश्मोपकरण भी प्राप्त हुए हैं।

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PALAEOLITHIC SITES IN INDIA



10°
20°
30°

36°
28°
20°
12°

72° 80° 88° 95°

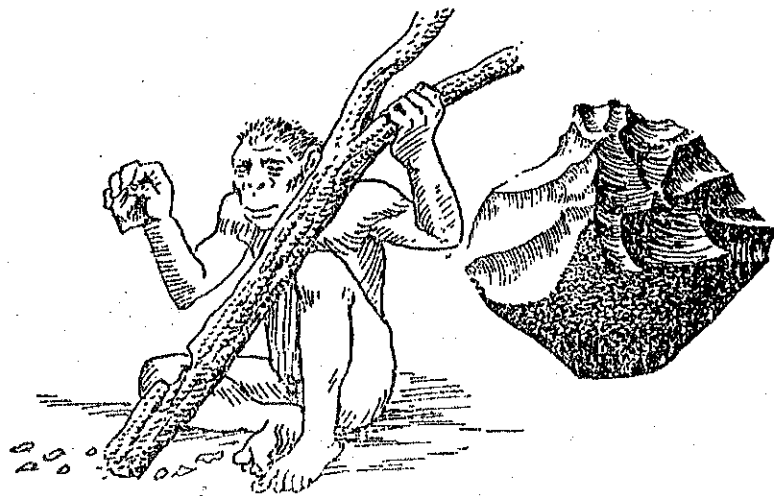


Fig. 8. Use of chopper for cutting wood.



Fig. 9. Use of chopper for splitting bone.

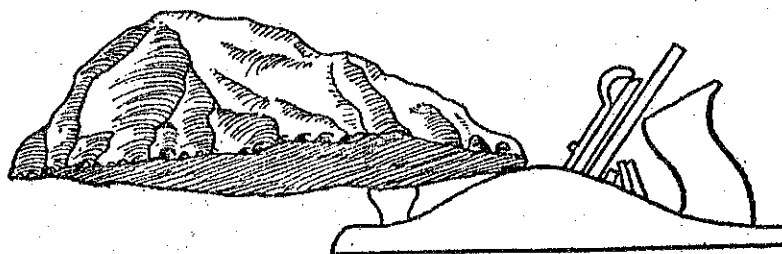
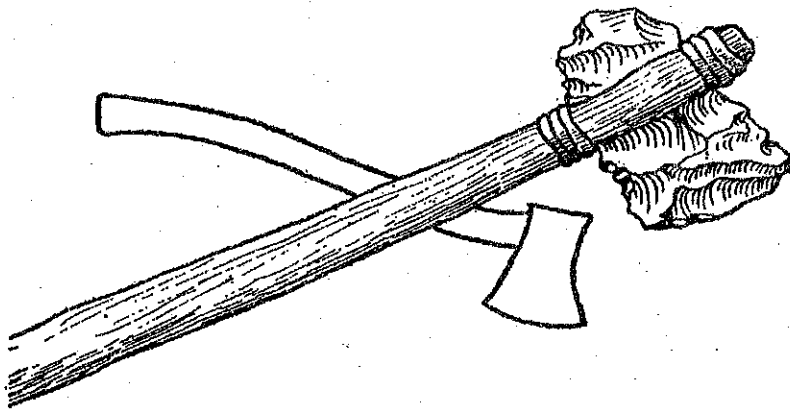


Figure 2

Use of an end scraper for smoothing wood etc.



~~Fig. 27.~~ Cleaver hafted (used) and for wood working e.g. felling trees etc.

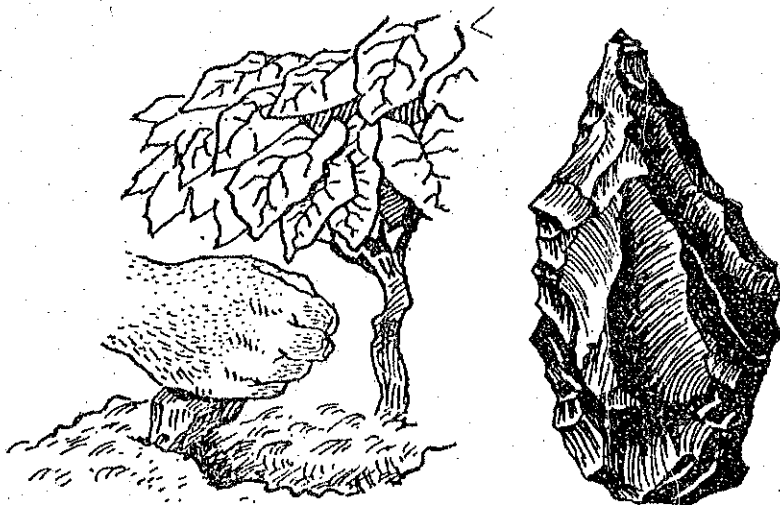


Figure 3 Use of handaxe for digging roots, tubers etc.

COMPOSITE TRANSVERSE SECTION THROUGH THE SOHAN VALLEY, SHOWING STONE AGE SEQUENCE IN RELATION TO ITS PLEISTOCENE TERRACES UNDERLYING LATE CENOZOIC SIWALIK STRATA (AFTER DE TERRA AND PATERSON)

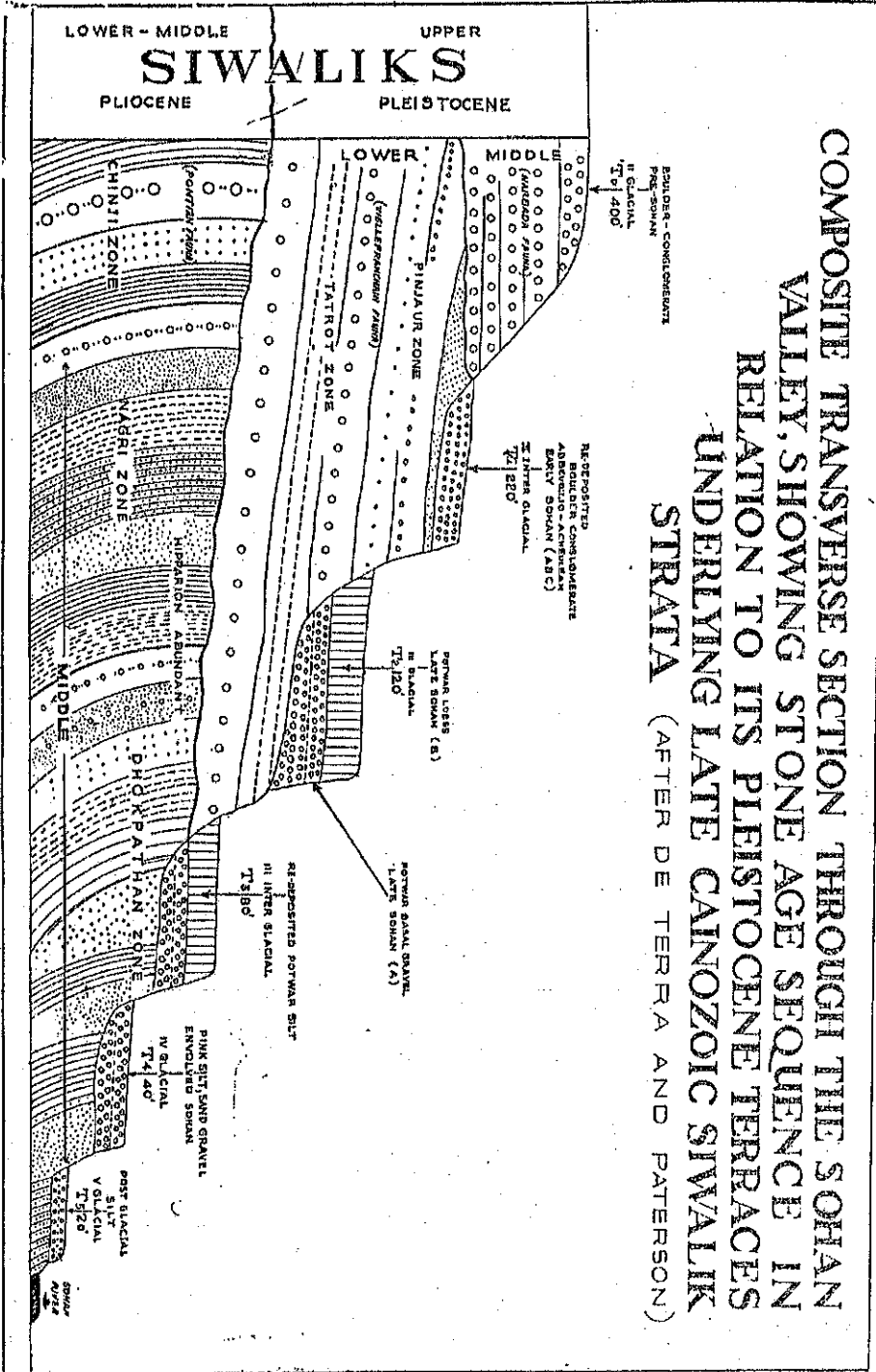


Figure 4 Transverse section through the Sohan Valley.

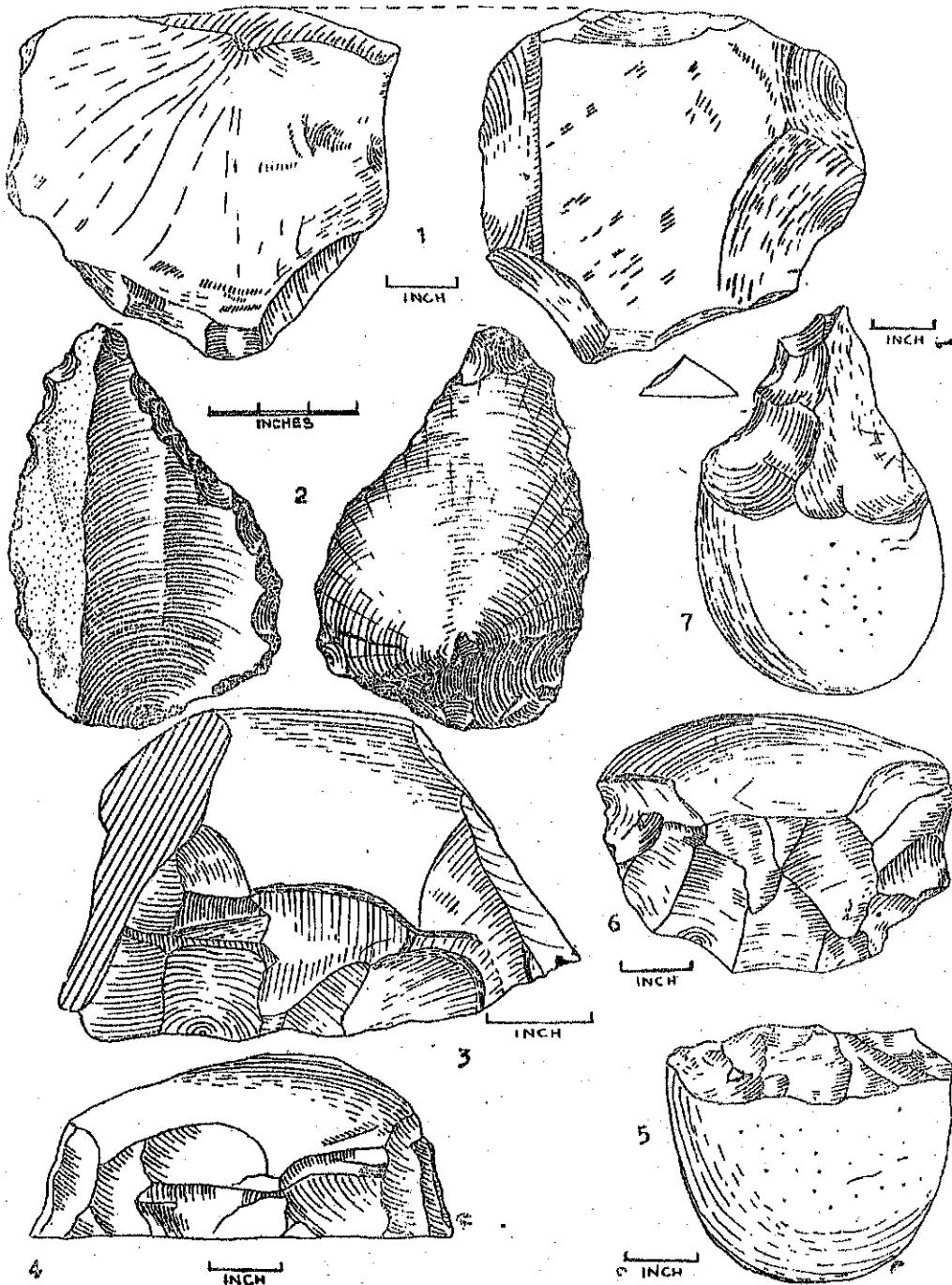
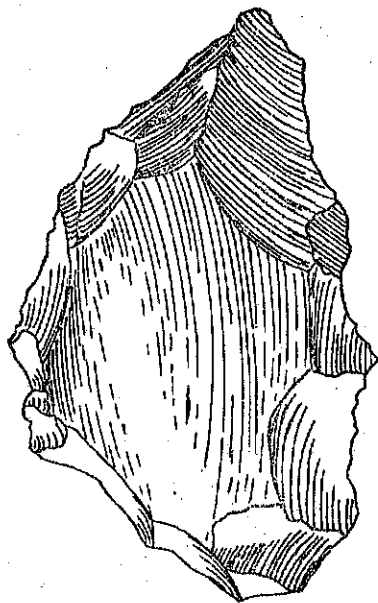


Figure 5

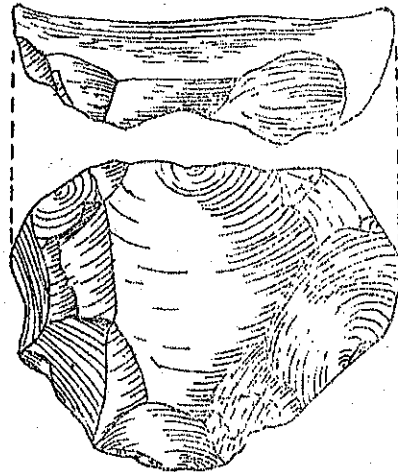
Pre-Sohan and Early Sohan type of tools.



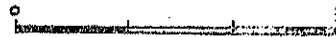
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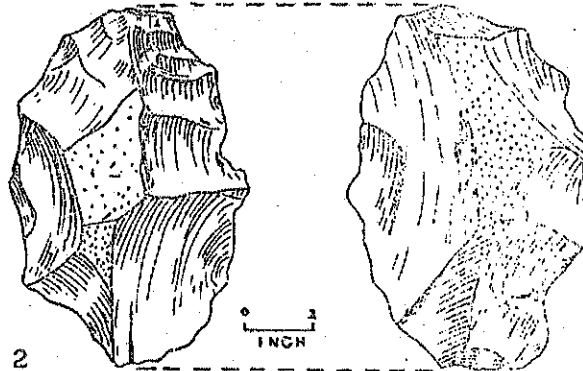
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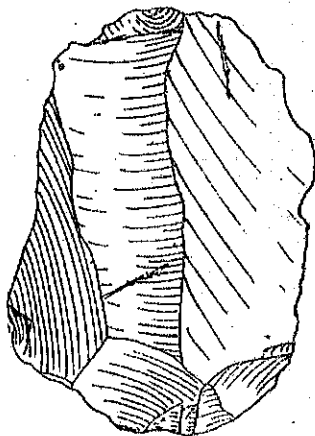
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2



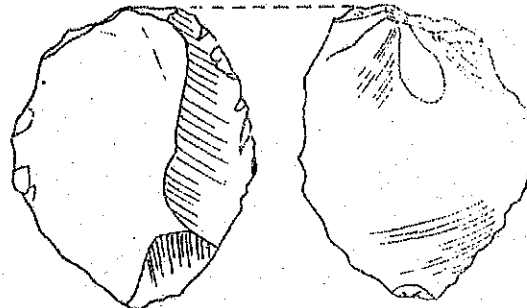
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3



IN



5



INCH

Figure 6

Early Sohan Flakes and Cores.

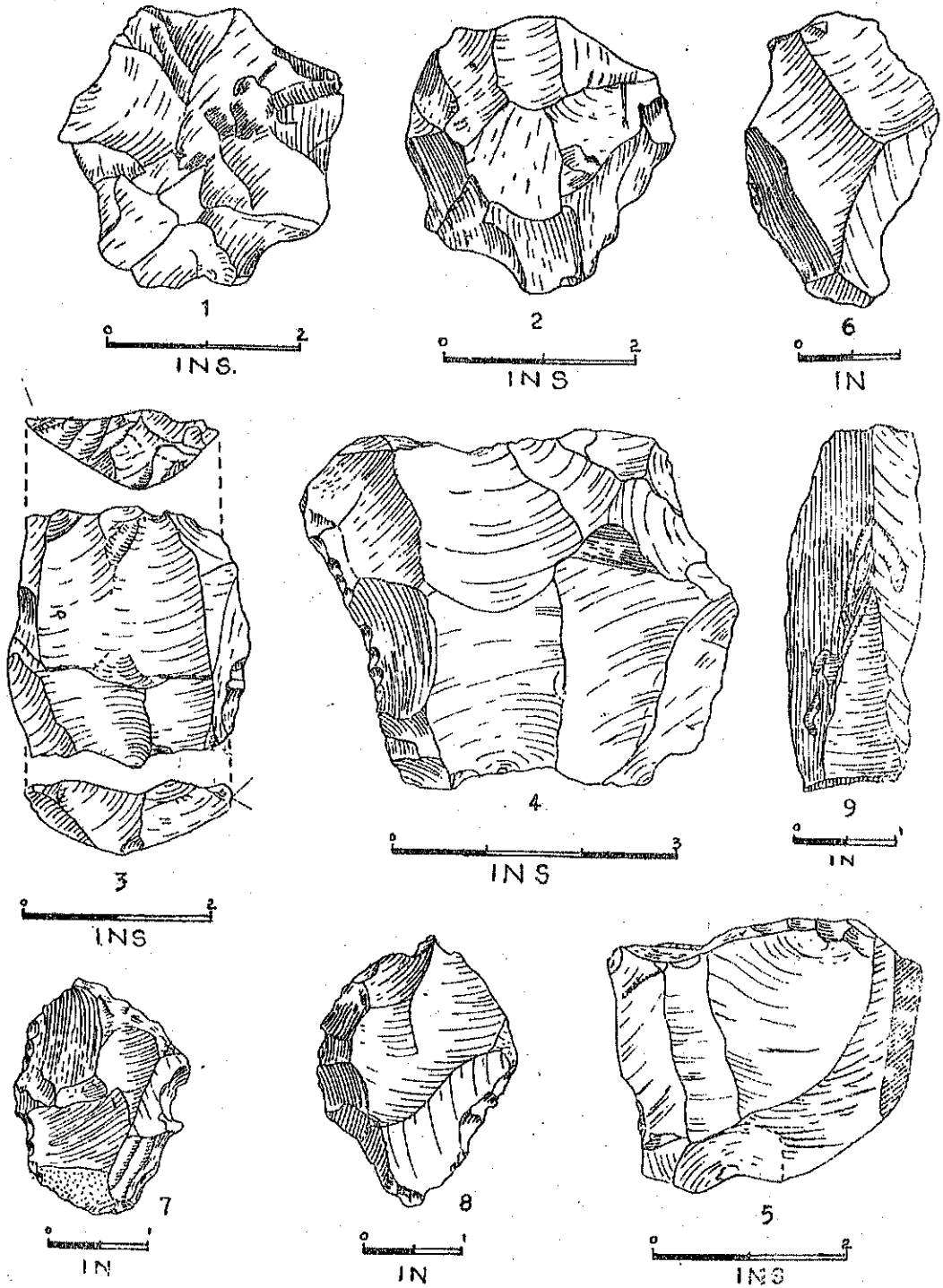


Figure 7

Late Sohan Cores and Flakes.

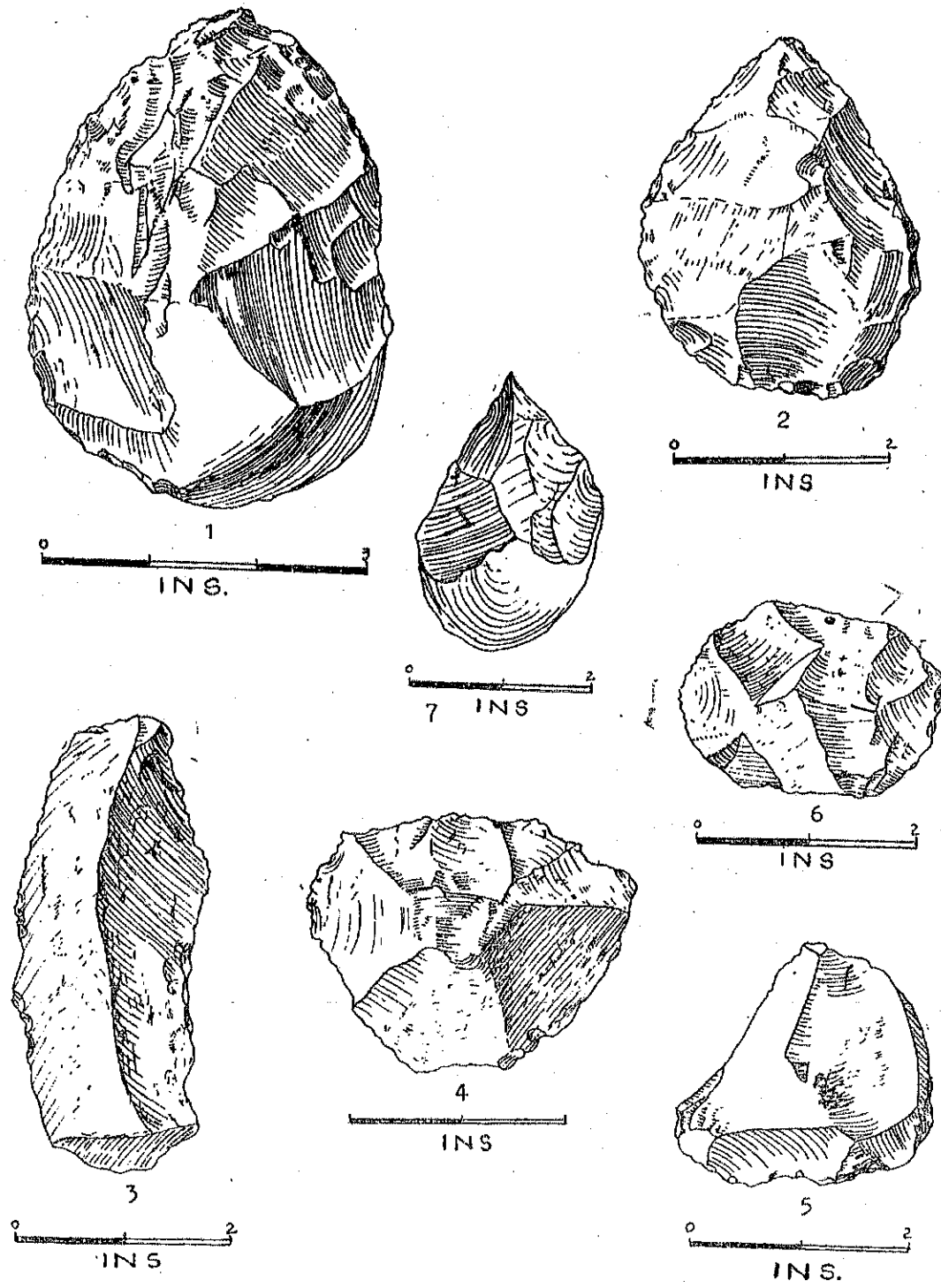


Figure 8

Chauutra and Evolved Sohan tools.

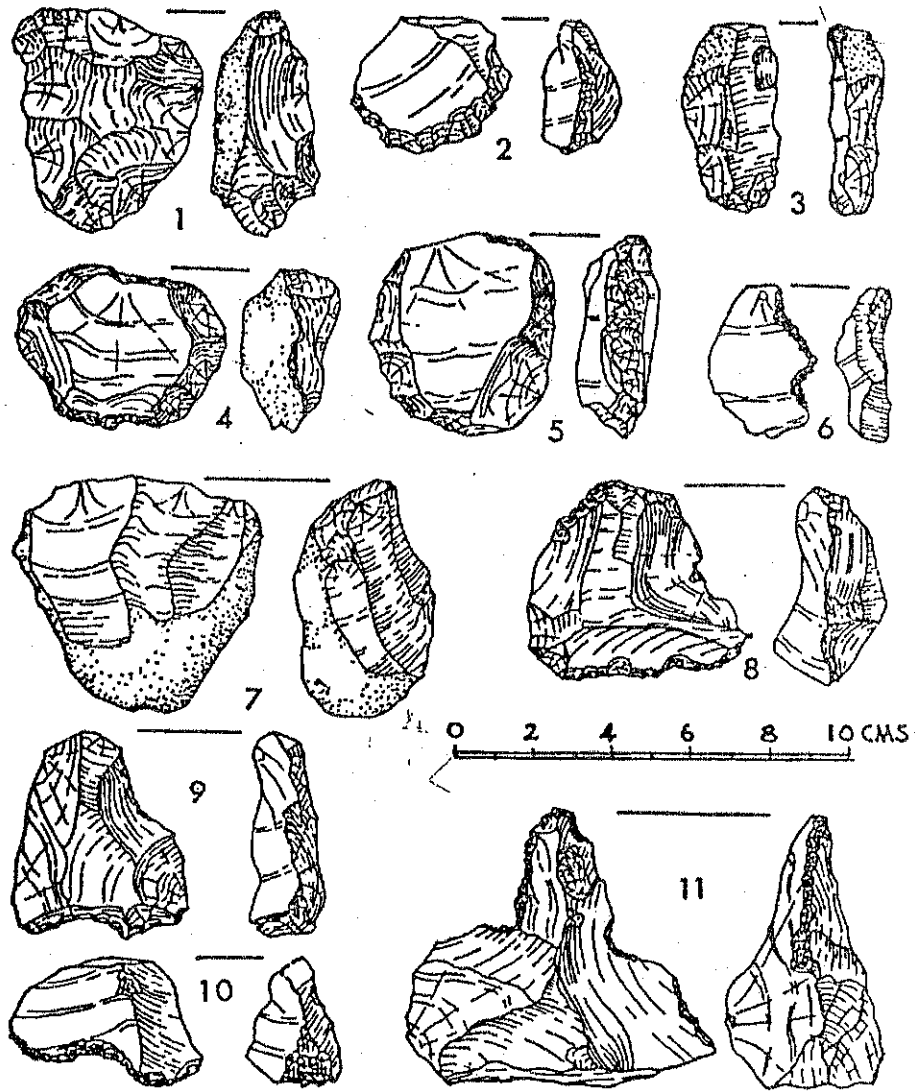


Figure 9 Middle Palaeolithic tools from central India and the Deccan: 1 core, 3, 8, 9, 10, and 11 scrapers, 3 blade flake, 4, 5, and 7 struck cores

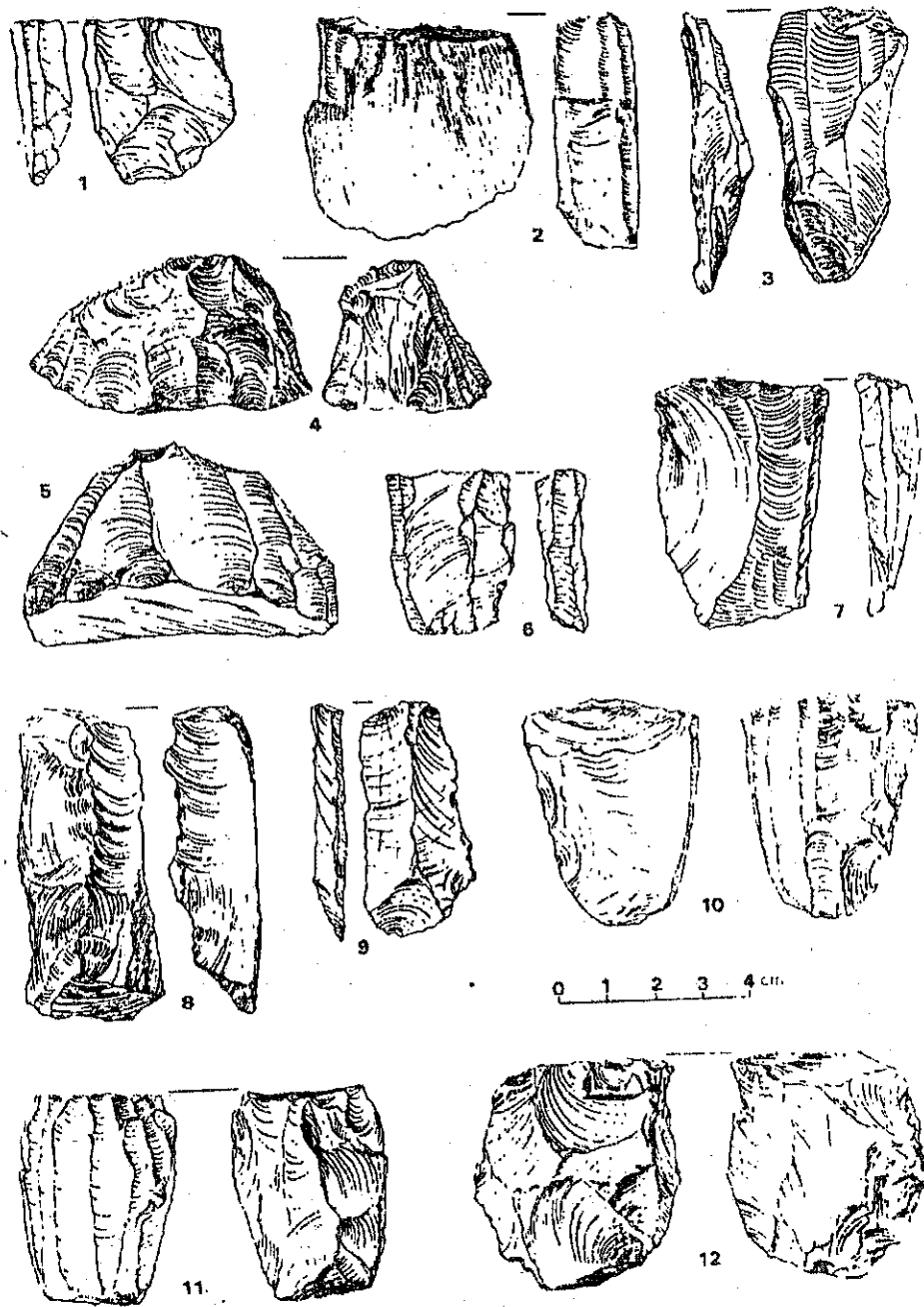


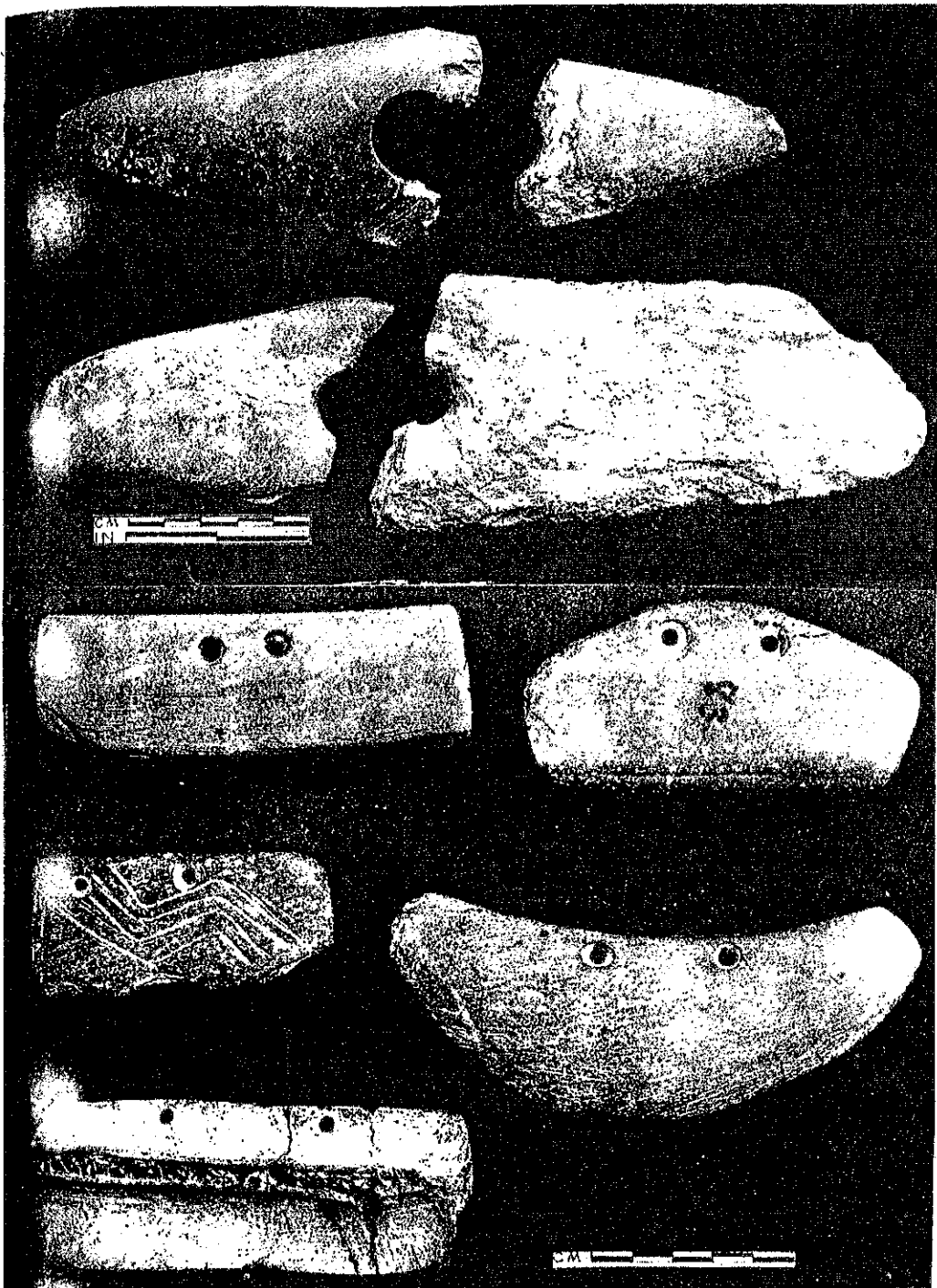
Figure 10 4 Upper Palaeolithic tools from Pushkar: 1, 2, 6, and 7 burins, 3, 8, and 9 blades, 4 and 5 scrapers, 10, 11, and 12 cores



1. Burzalom: interconnected pit-dwellings, Period IB

2 Burzahom: hammers and handaxes, Periods IA and IB





B. Stone tools from Burzahom: (upper two rows) double-edged pick-axes, Period IC; (lower three rows) different types of harvesters, including one in bone from Gufkral (bottom), Period IC

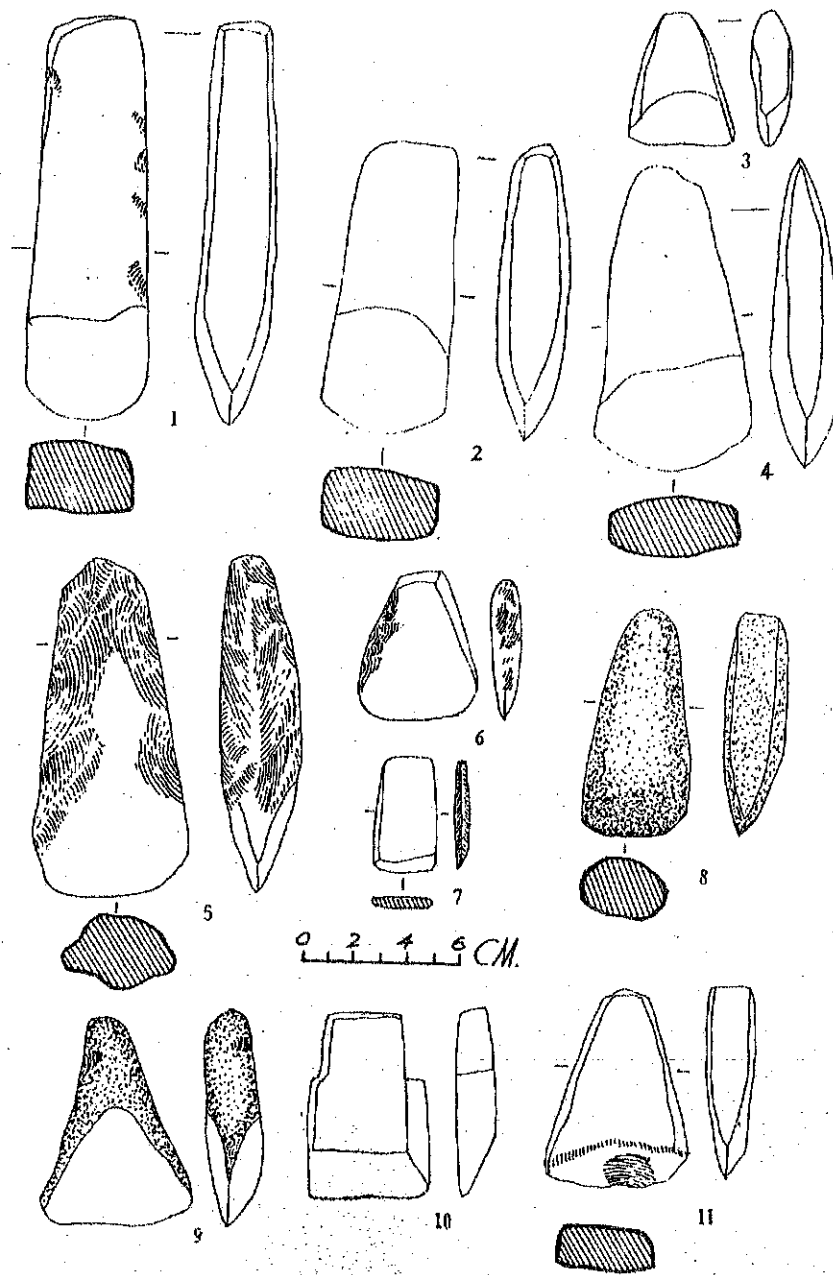


Fig. 16. Manipur, Palaeolithic Stone Tools

1-2, Quadrangular axes; 4-5, Triangular axes; 3 & 6-Triangular hoe-blades; 7 Small chisel;
 9-Triangular hoe-blade; 10-Shoulder celt; 8 & 11-Triangular adzes

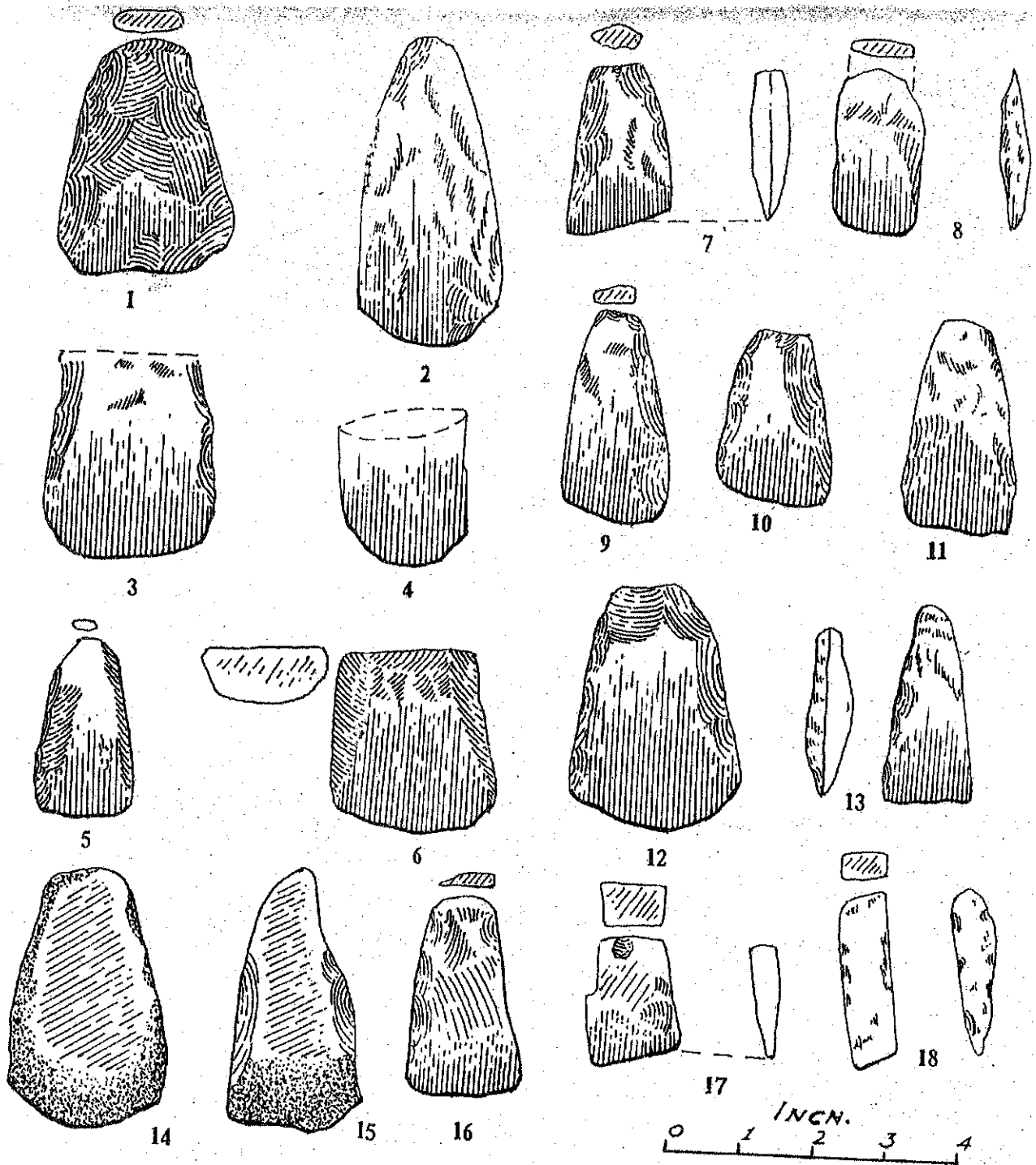
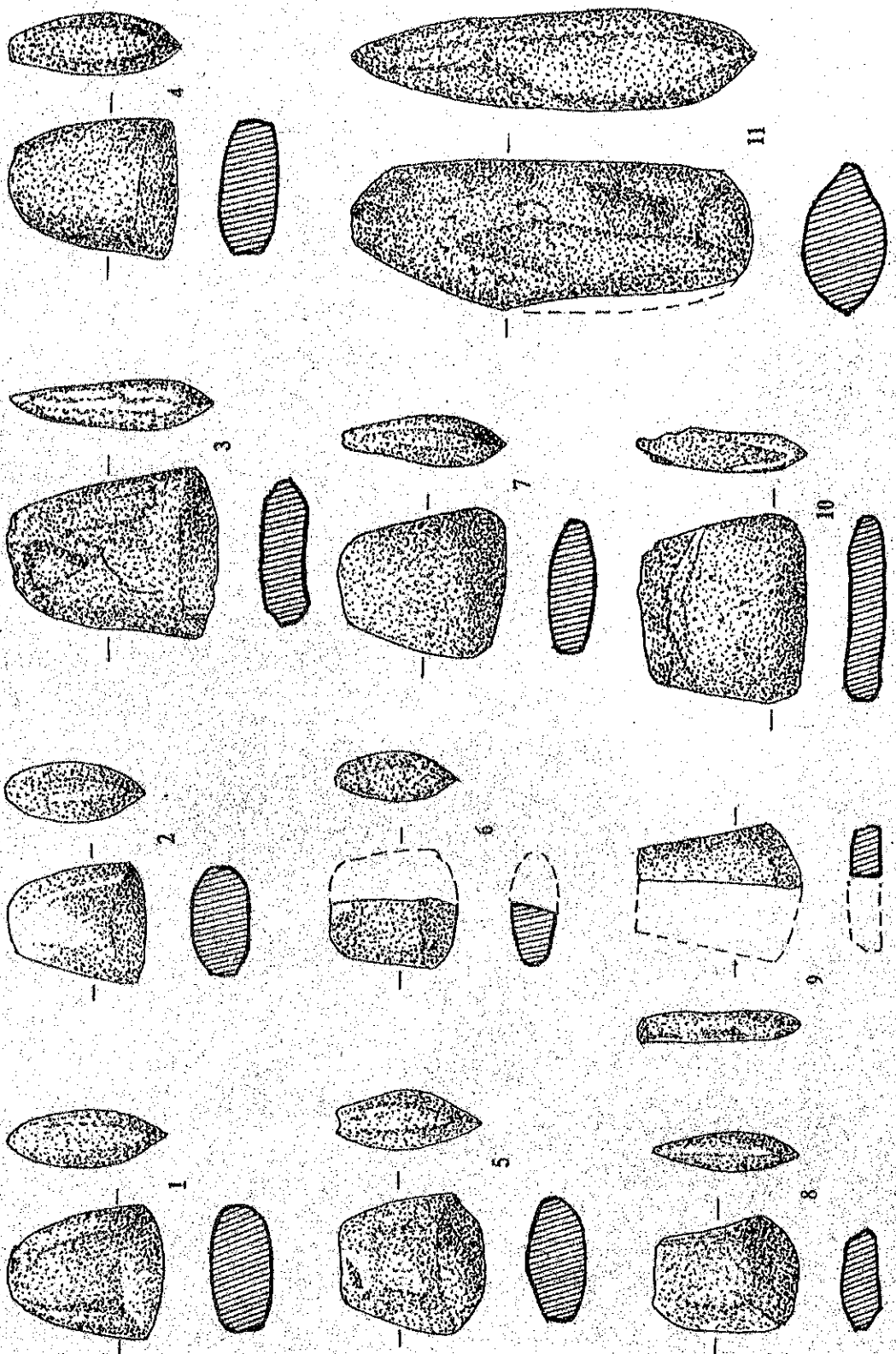
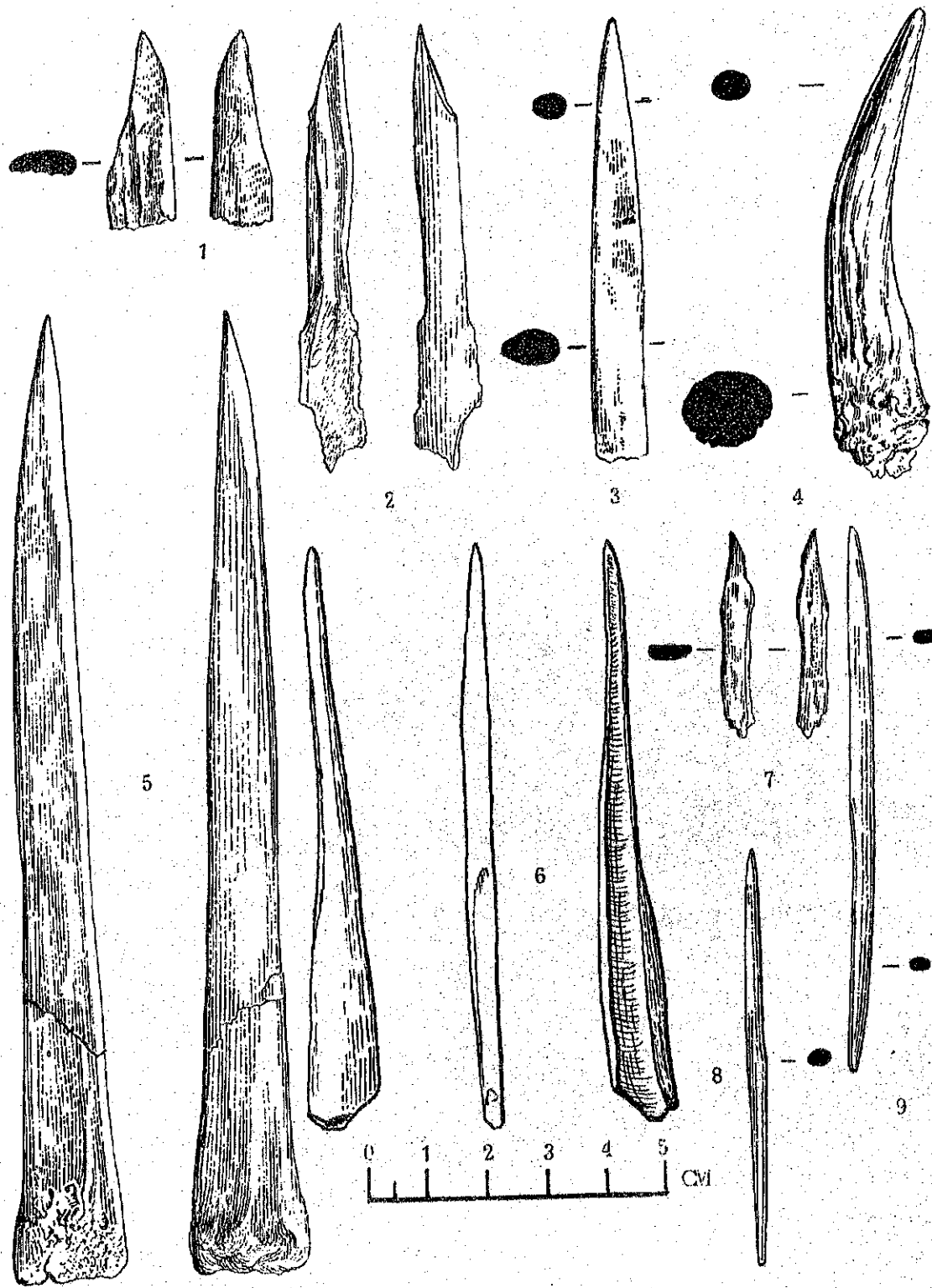


Fig. 24. Neolithic Tools from Singbhum, South Bihar.

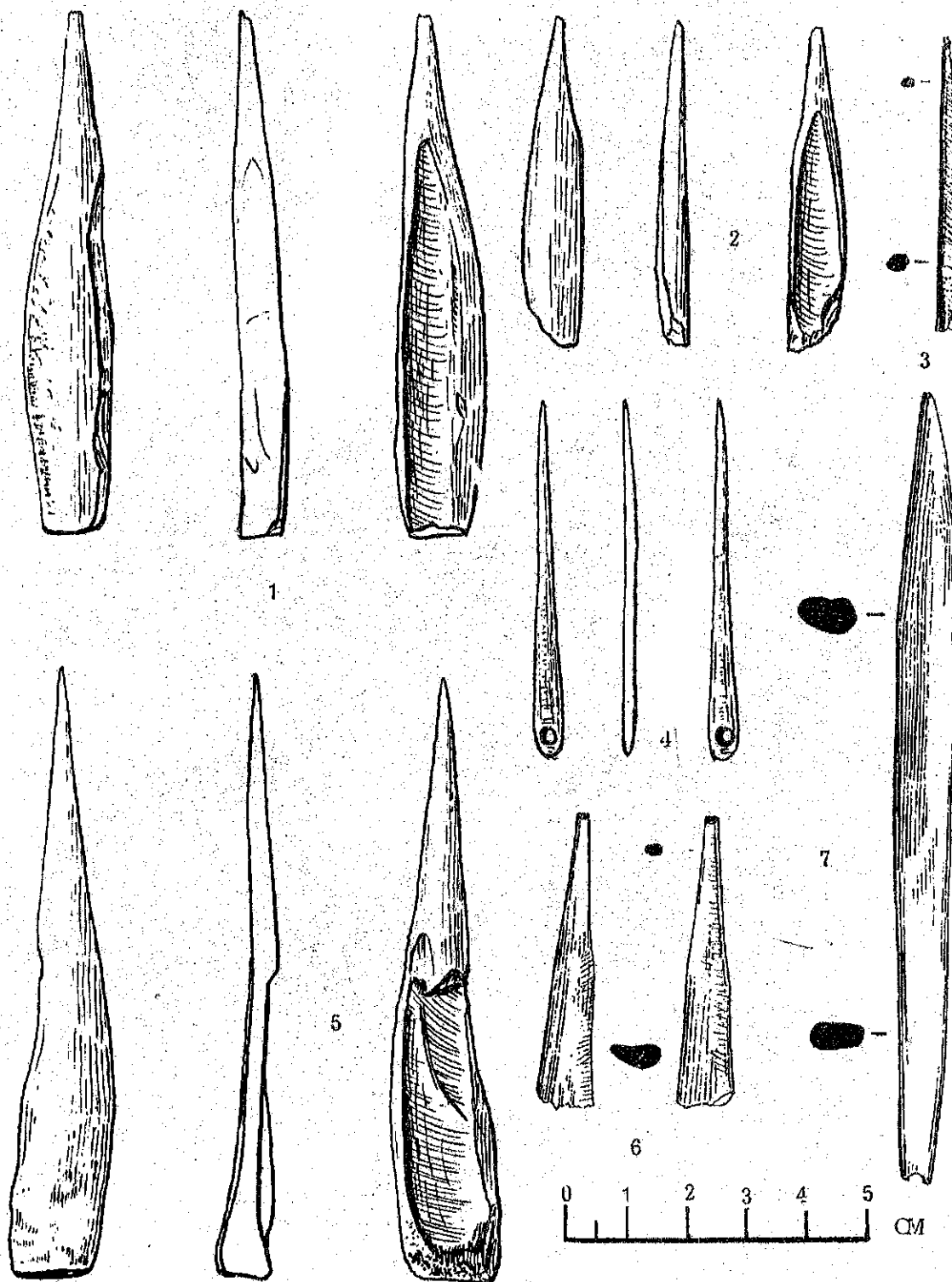
Fig. 35. Neolithic Tools from Mahagara, U.P.



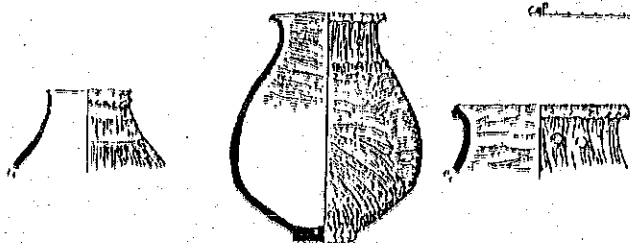
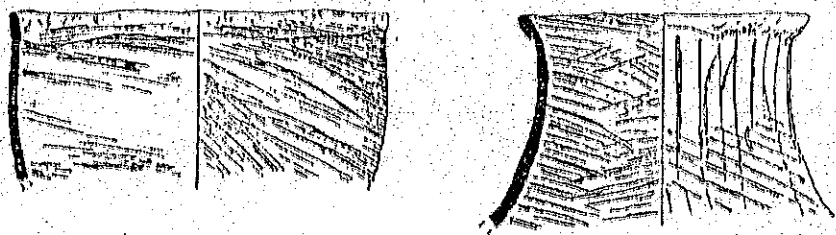
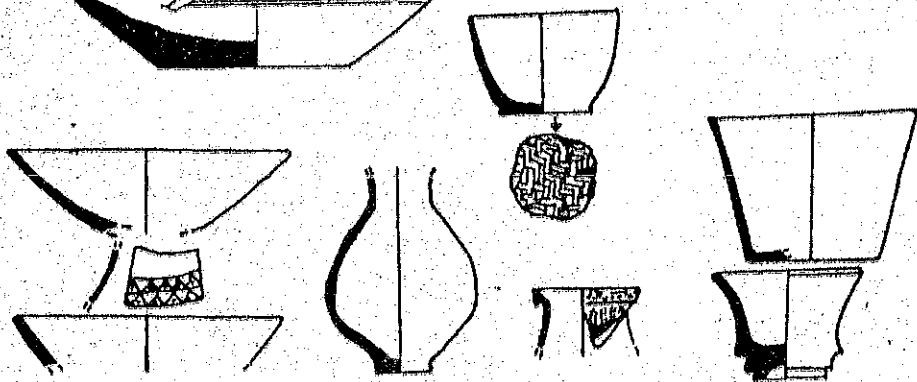
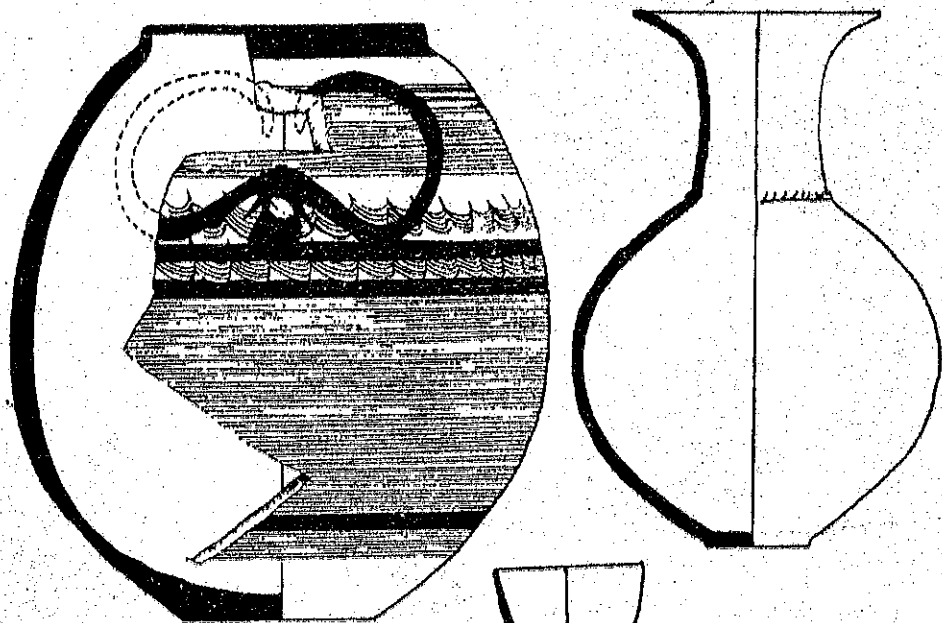




3. Gufkral, Jammu and Kashmir- Bone Tools from Period IA and IB.



8. Gufkral, Jammu and Kashmir- Bone Tools- Period IA, Phase 1, 2 and 3.



11. Burzahom- Pottery from Periods I and II.

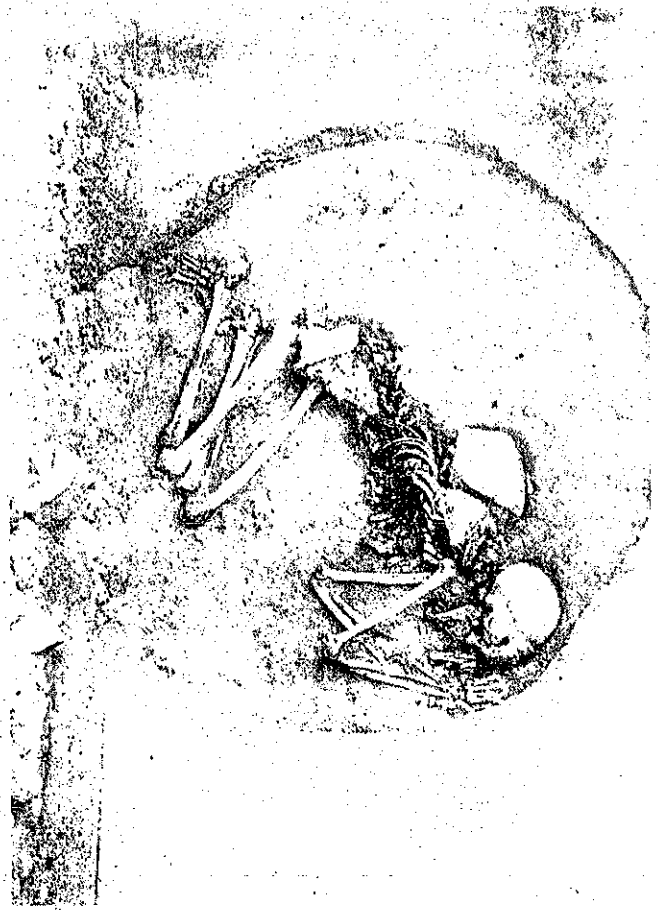


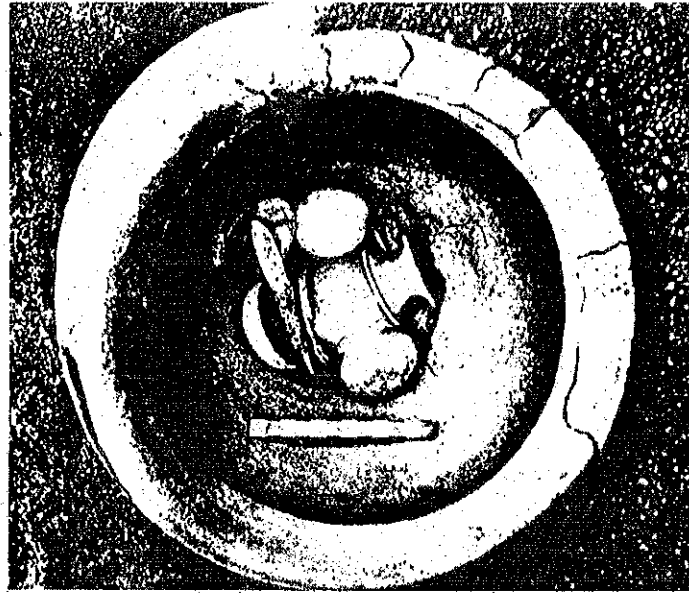
1. Megalithic *kapkol* at Cherramunnagad near Eyyal, Cochin

2. Megalithic multiple hood-stones at Cherramunnagad near Eyyal, Cochin



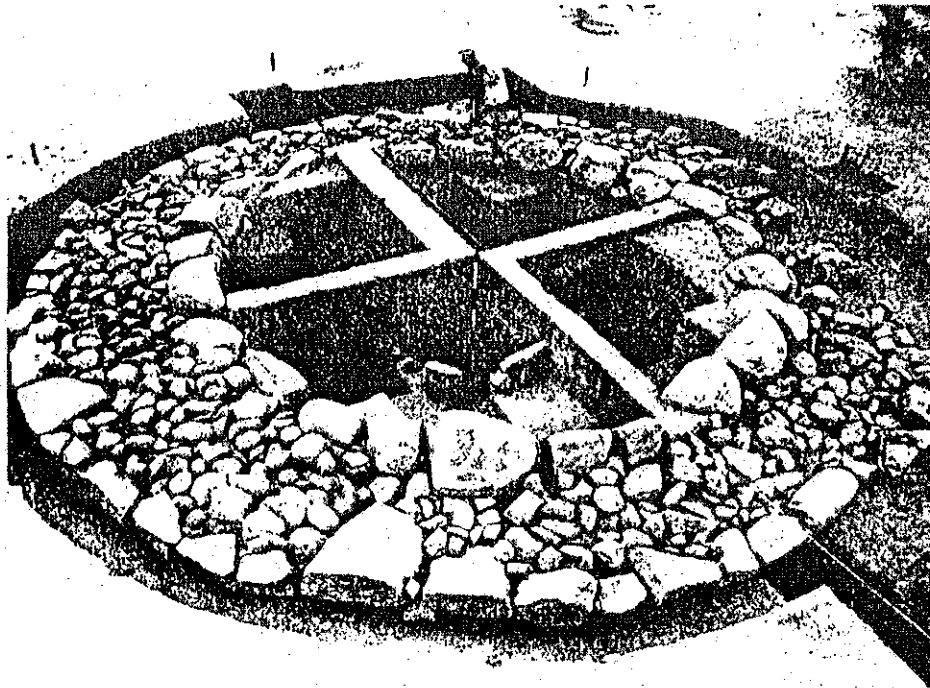
10. Burial zone: human burial, Period II

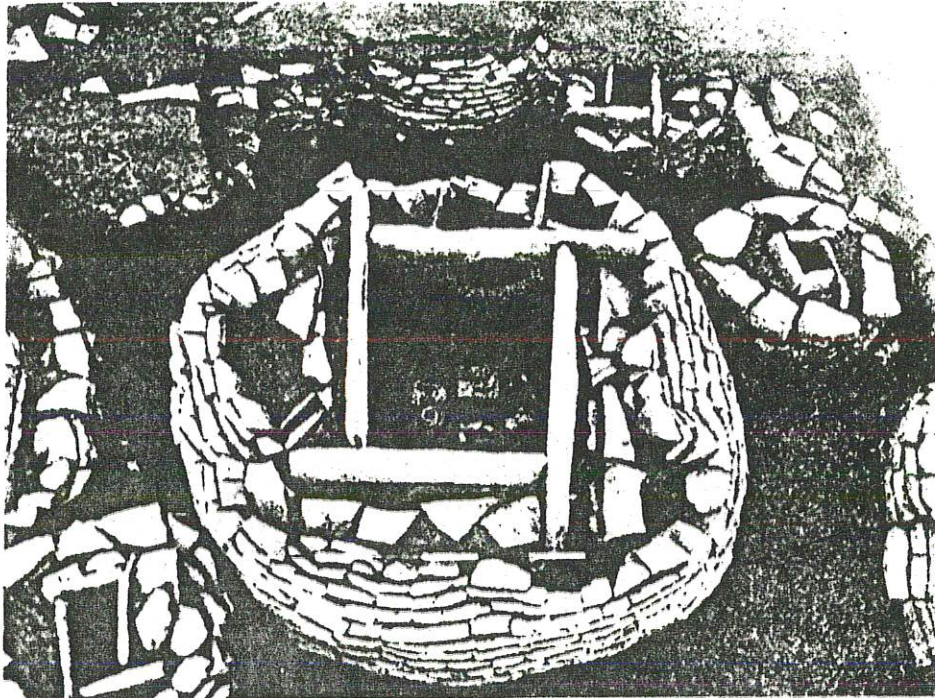




☞ Porkalam: pottery and iron objects at the base of the burial urn

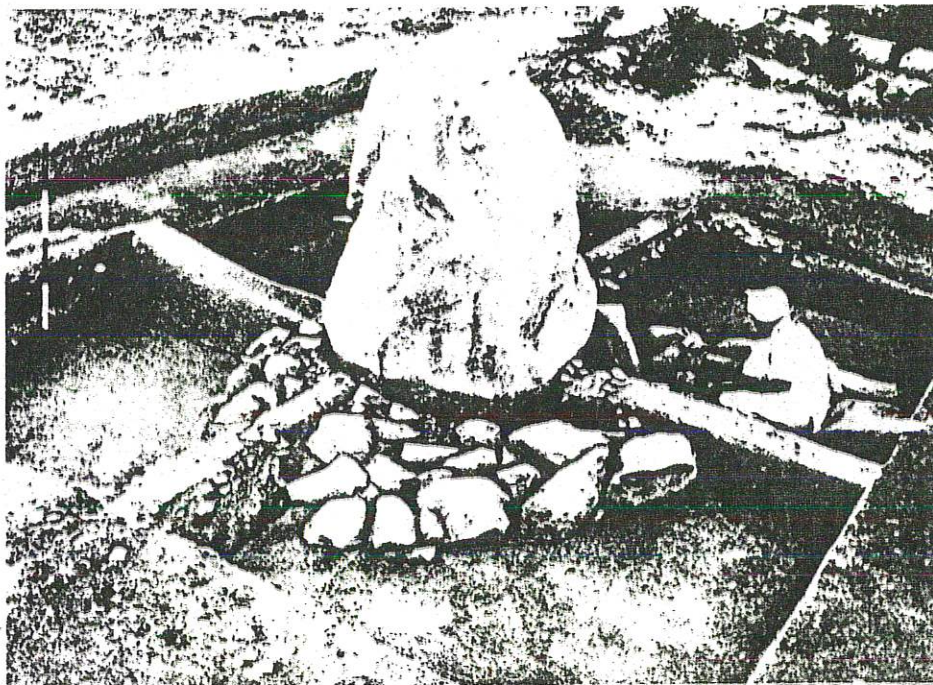
☞ Brahmagiri: megalithic pit-circle after excavation

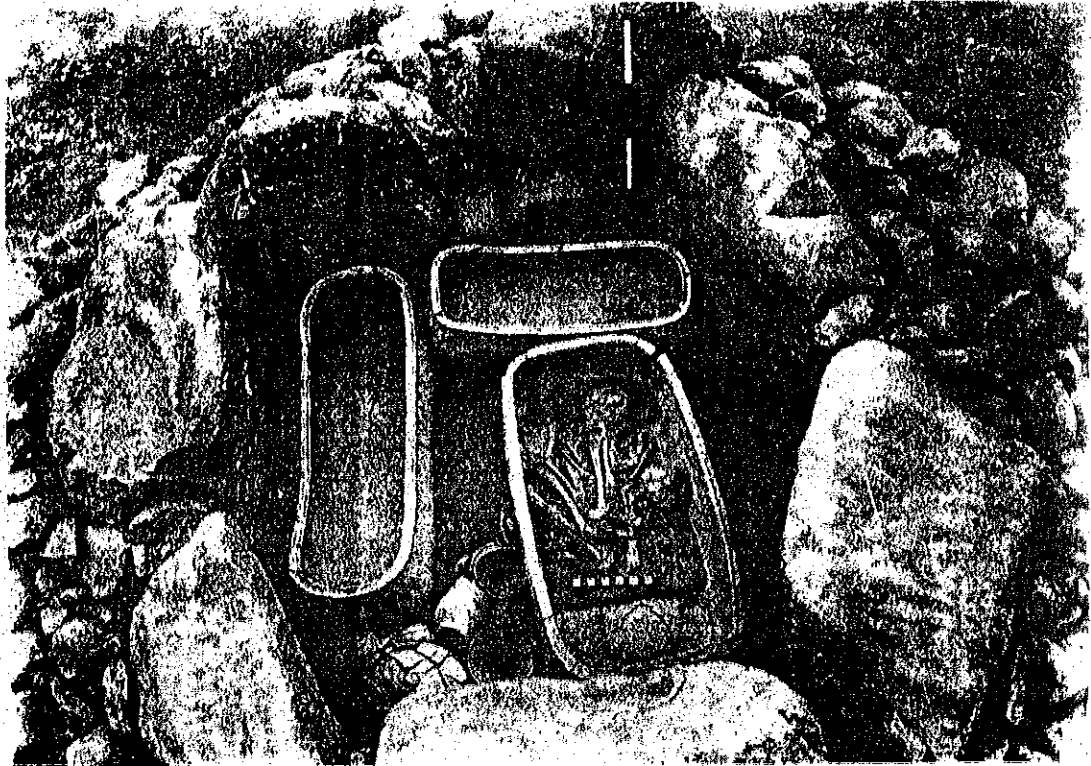




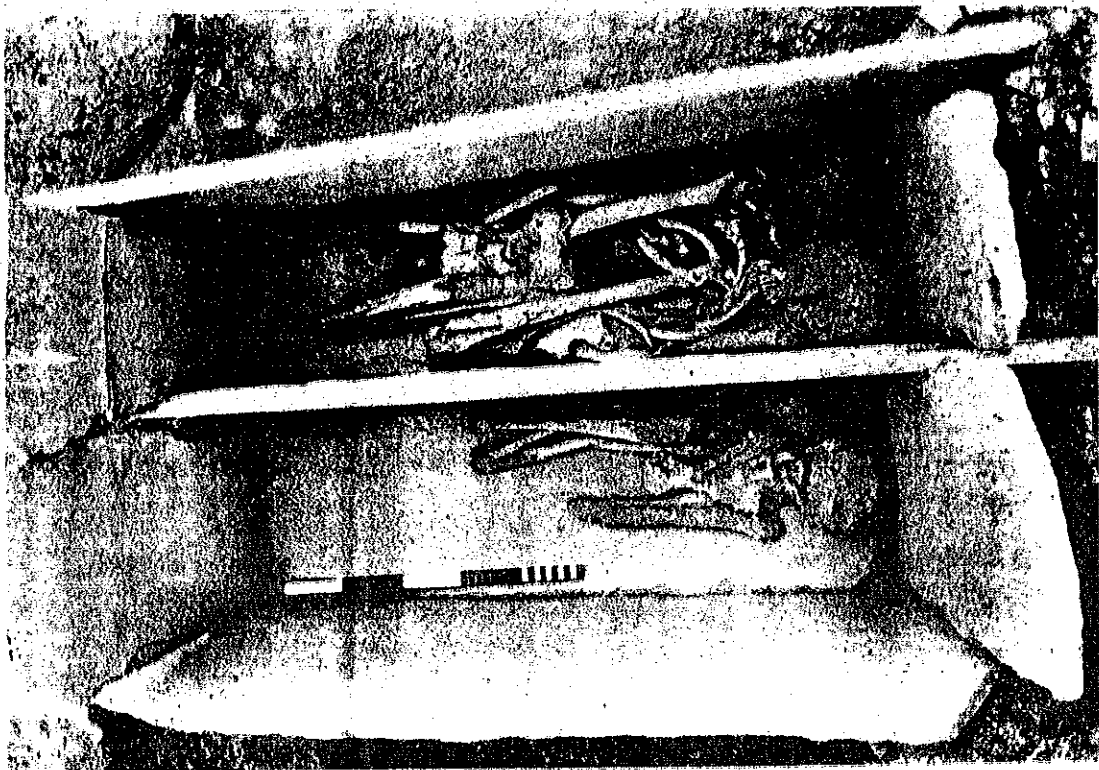
5. Brahmagiri: megalithic cist-circle after excavation

6. Maski: menhir during excavation, not associated with any burial

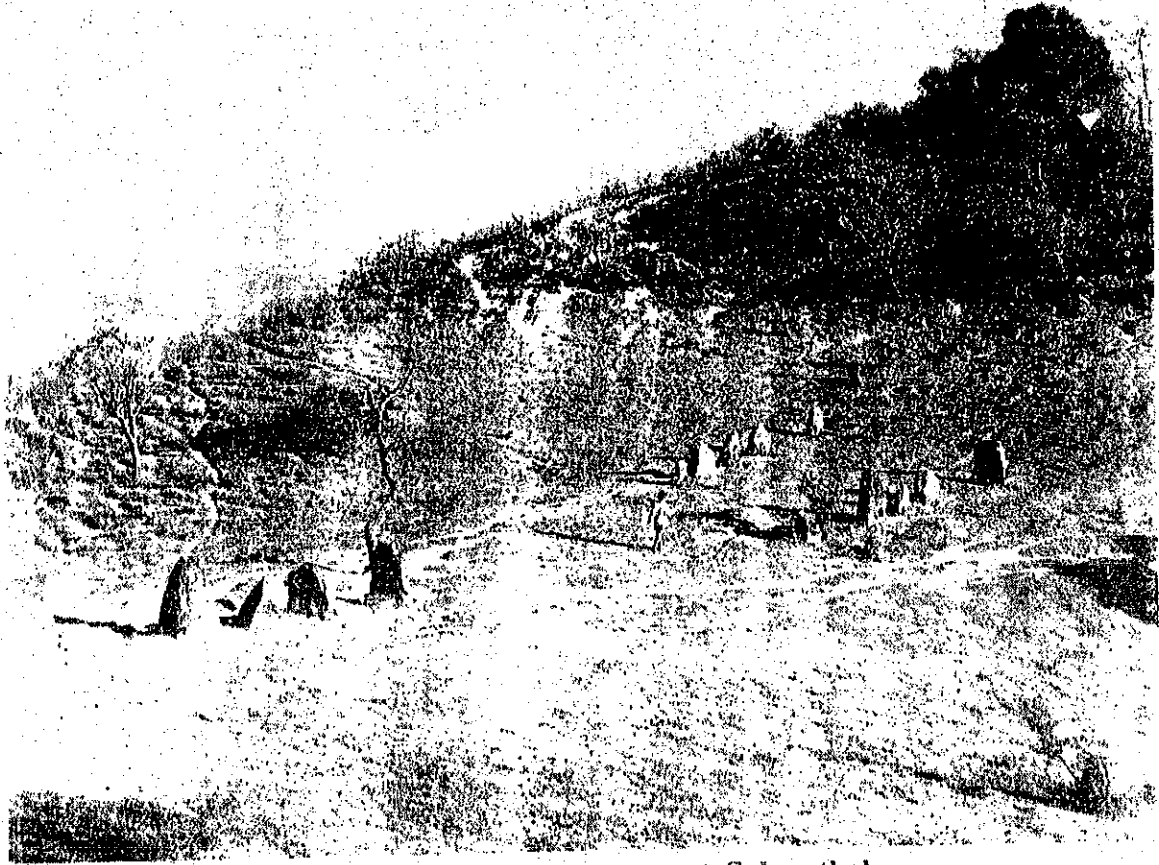




Pl. 7  Sarcophagus.



Pl. 8  Trancepted cists.



Pl. 9 Manipur - Alignments at Salanghel.

2007/4

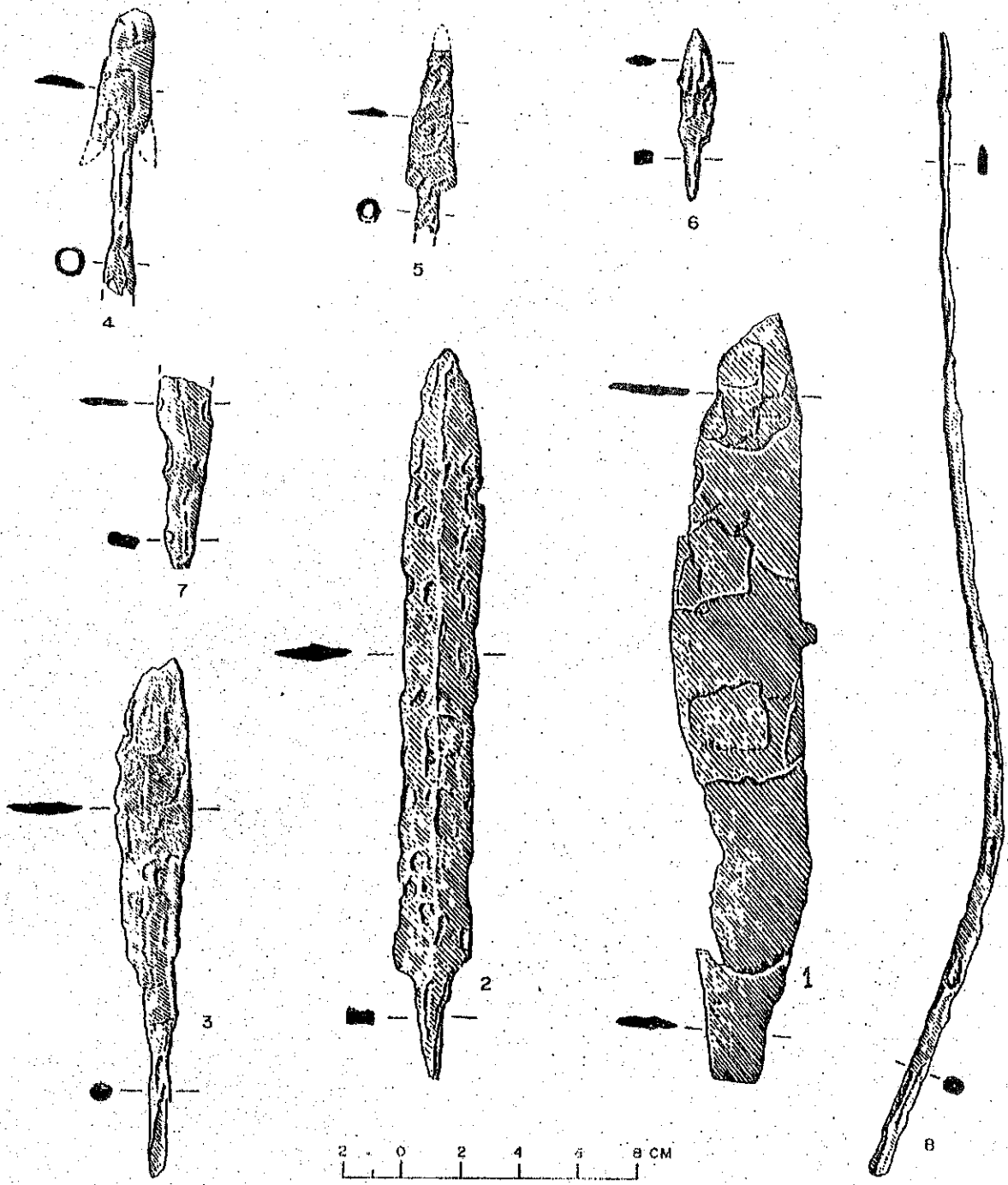
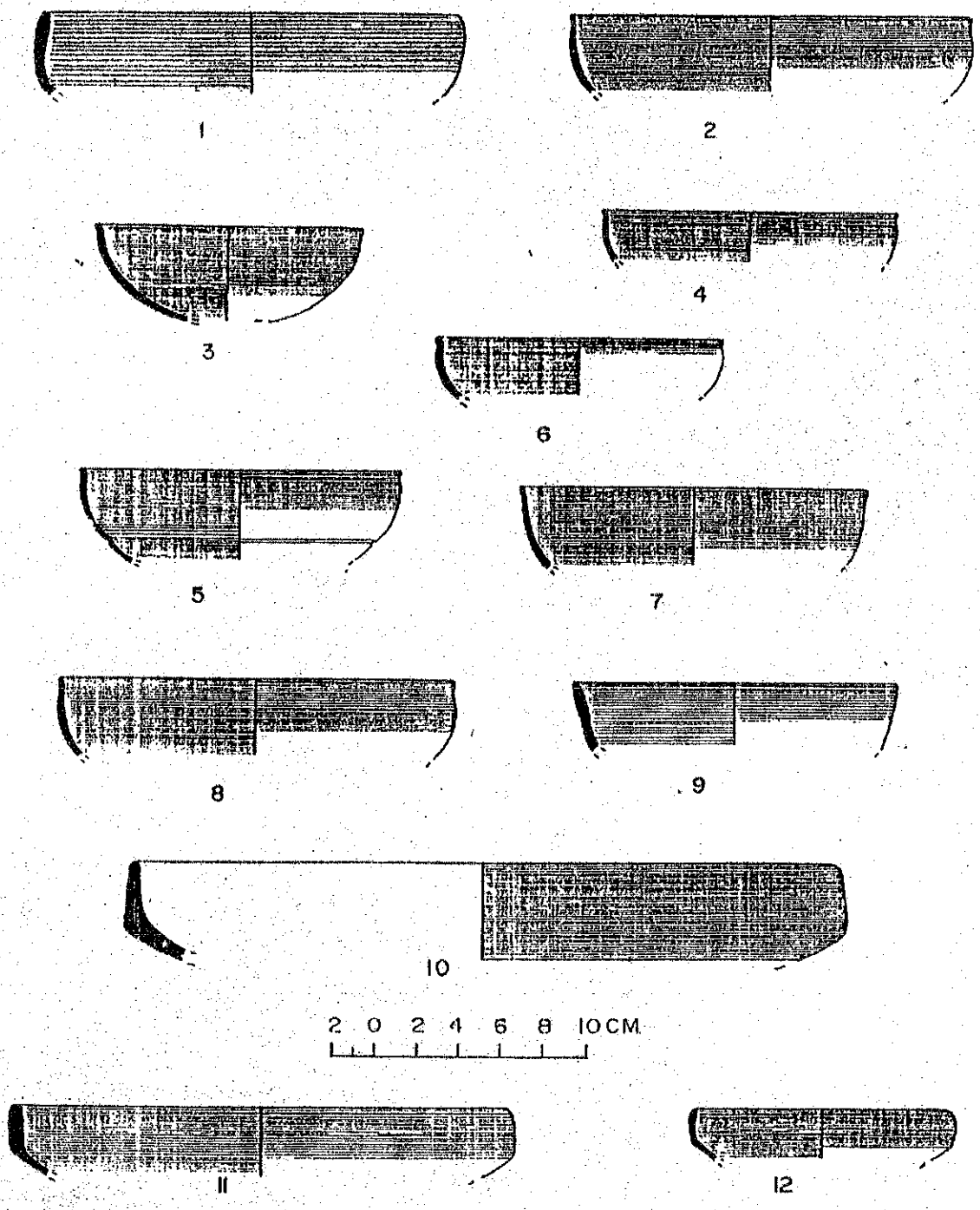
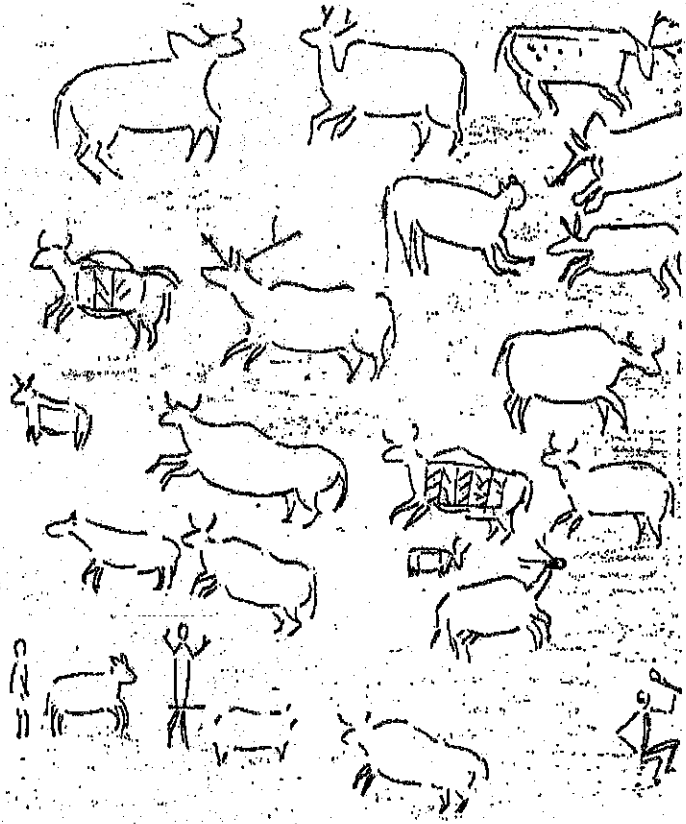


Fig. 10. Karkabhat - Iron objects.



11.
 Fig. 26. Black-and-Red ware types from Sorar - Karkabhat.



शैलासपी के जिल्लित पशु

