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Union Public Service Commission

PAPER 2 || VOLUME – 1

SIERRA INNOVATIONS

UPSC - ANTHROPOLOGY

UNIT - IX : History of administration of tribal areas, tribal policies, plans, programmes of tribal development and their implementation		
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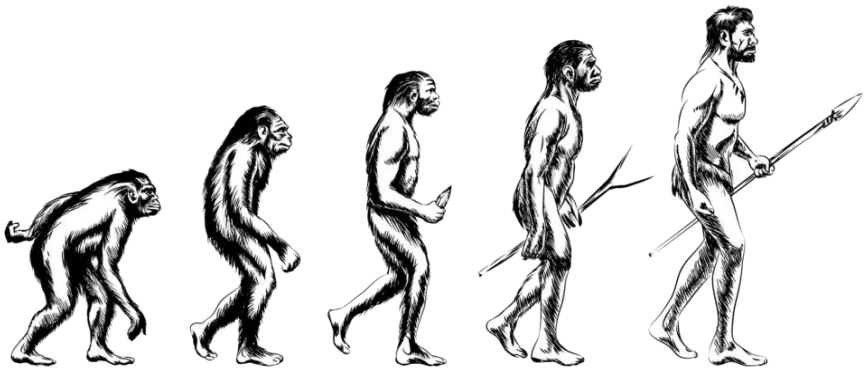
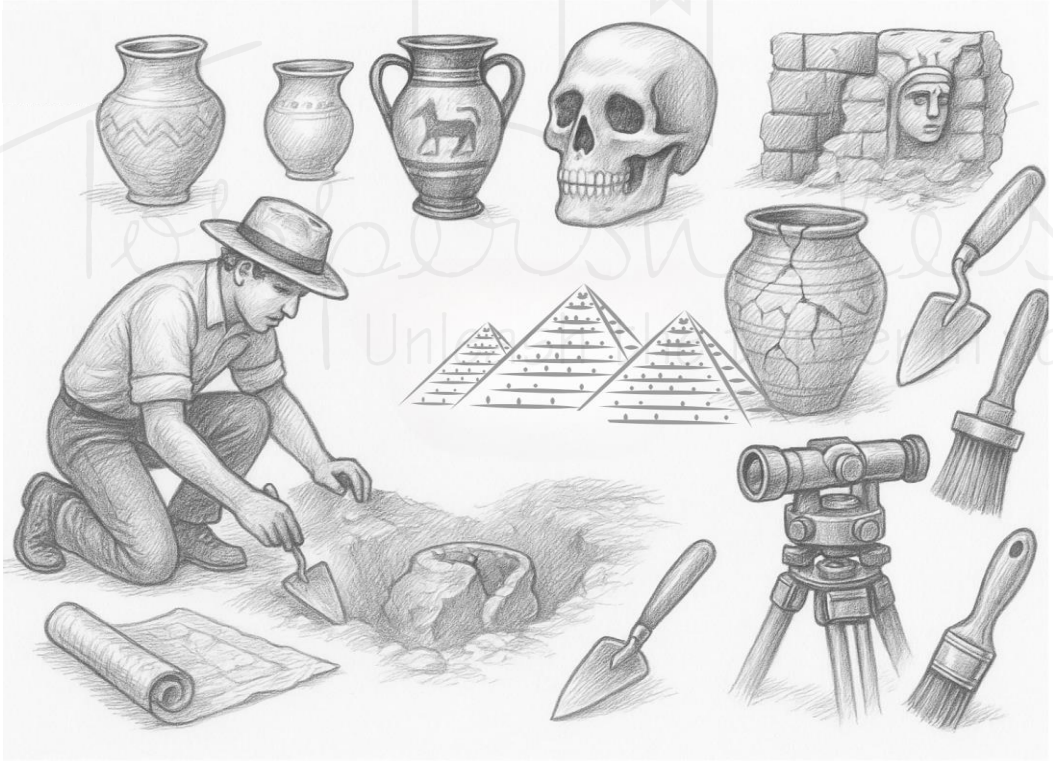
I UNIT

Archaeology and Evolution of Indian Culture



1.1 Archaeology and Evolution of Indian Culture



- **Archaeology:** The word Archaeology is derived from Greek words-"arkhaios" means ancient and "logos" means study.So archaeology is the study of human activity in the past.The archaeology anthropology try to reconstruct the event of human past dating back to millions of years ago.Archaeological Anthropology tries to understand the formation of earth,the emergence and evolution of life through geological ages.

- **Cultural changes:** Cultural changes refer to the transformation in the beliefs, values, customs, behaviors, and material traits of a society over time. These changes can occur due to internal innovations or external influences like globalization, migration, or technological advancements.

Scope & Goals of Archaeology

- **Traditional View:** Historically, archaeology focused on uncovering, documenting, examining, and interpreting material remains from the human past. It was largely centered on excavation and classification of artifacts.
- **Expanded Perspective:** Modern archaeology has broadened its aims to understand the dynamic relationship between material culture and human behavior. The field now incorporates interdisciplinary tools to reconstruct past lifeways and cultural transformations.

As per Sharer and Ashmore (1993), archaeology has three primary goals:

- **Form of Understanding the Physical Evidence:** This involves examining the structure, style, and spatial-temporal distribution of archaeological materials.
- **Indian Example:** Dating and cultural affiliation of Indian sites are often inferred through ceramic typologies (e.g., Pre-Harappan, Harappan, Painted Grey Ware, NBPW, Black and Red Ware), stone tool assemblages (e.g., Madras hand axes, Soan valley pebble tools), and metal artifacts (e.g., Copper Hoards, Iron tools).
- **Function of Reconstructing Human Behavior:**This refers to determining the use and role of artifacts to model how ancient people lived, worked, and interacted with their environment.
- **Tools:**The presence of hand axes and cleavers in the Lower Palaeolithic or adzes and axes in the Neolithic suggest their use in hunting, woodworking, or food production, reflecting both technology and subsistence patterns.
- **Process of Explaining Cultural Change:** The aim here is to understand how and why cultures evolved or declined over time.
- **Factor**: Shifts in culture have been linked to factors like the advent of copper and iron metallurgy, changing river courses, sea-level fluctuations, the rise and fall of early states, maritime trade, and awareness of monsoon patterns

New/Processual Archaeology (Neo-Archaeology)

- Processual Archaeology marked a significant shift from traditional archaeological methods, introducing a more scientific and analytical approach. It emerged as part of an intellectual movement grounded in **logical positivism**, promoting the use of systematic methods and empirical testing.
- This approach argues that explaining cultural change requires more than just narration it demands investigation into the **factors and influences** driving that change.
- Called “Processual” because it emphasizes the **mechanisms and sequences** behind cultural development, it views culture as an **adaptive system** through which human societies adjust to their environments.

- It aligns with the principles of **Cultural Ecology**, as it focuses not only on collecting artifacts but also on ecofacts natural remains that offer insight into past human-environment interactions.

New Tools in Archaeology

- Modern archaeology has incorporated innovative methods like **Ethnoarchaeology**, which involves studying present-day traditional communities and their material culture to draw parallels with ancient societies.

Examples include:

- Lewis Binford's work with the **Eskimos**, and
- Brian Hayden's study of **quern-stones** in Mesoamerica.
- Additionally, the **quantitative revolution** post-1940s introduced **statistical techniques** and **positivist approaches** for more rigorous data collection and analysis.

Old vs. New (Processual) Archaeology – Key Differences

- **Focus on Societies:** Old Archaeology focused exclusively on extinct cultures, while New Archaeology studies both extinct and living societies through analogies and cultural survivals.
- **Nature of Study:** Old Archaeology was largely descriptive, emphasizing chronology and artifact classification; New Archaeology is interpretative, aiming to explain cultural processes and human behavior.
- **Perspective and Methodology:** New Archaeology (emerging in the 1960s) adopts a cultural and systemic view of evolution, using general systems theory (influenced by Talcott Parsons) and logico-deductive reasoning supported by statistical tools and cross-cultural parallels.

Development of Archaeology in India

- **Colonial Origins (19th Century):** Archaeology began evolving under British colonial rule, primarily driven by the interests of colonial administrators.
- **Early Pioneers:**
  - **Col. Meadows Taylor** explored **South Indian Megaliths**.
  - **Alexander Cunningham (1861)** initiated historical archaeological studies in **North India**.
  - **Robert Bruce Foote (1863)** laid the foundation for Indian prehistoric archaeology by discovering the first **Paleolithic tools** at **Attirampakkam** near Chennai.
- **Institutional Foundations:** The **Archaeological Survey of India (ASI)** was established in 1861, around the same time as major prehistoric museums in Europe, reflecting parallel global developments.
- **Foreign Influences:** Early Indian archaeology was shaped by models from **France and England**, contributing to the development of **Euro-Asiatic archaeology** in India.
- **Indus Valley Discoveries:** The 20th-century excavations at **Harappa** and **Mohenjo-Daro** dramatically transformed Indian archaeology, revealing an advanced urban civilization.

- **Stratigraphic and Geological Contributions:**
  - **De Terra & Patterson (1939)**, via the Yale-Cambridge Expedition, studied the **Soan Tradition** in the Potwar Plateau.
  - **Michael Todd** identified **Upper Paleolithic layers** at **Khandivli** near Mumbai.
- **Early Syntheses:**
  - **Stuart Pigott (1950)** in Prehistoric India was among the first to attempt a comprehensive synthesis of archaeological data.
  - **Panchanan Mishra** also contributed to this analytical shift.
- **Critique of Early Approaches:** Until the 1940s, Indian archaeology was seen as a form of **"stamp collection"** (Kuhn, 1970) focused on collecting artifacts without theoretical frameworks.
- **Introduction of Time-Space Perspective:**
  - **Mortimer Wheeler (1944)** introduced systematic **excavation methods**, including **vertical stratigraphy**.
  - His approach, called the **"time-space perspective"** by Dhavalikar (1984), shaped generations of Indian archaeologists.
  - However, this also led to an overemphasis on **sequence-building**, sometimes at the cost of cultural analysis.
- **Rise of Ecological Thinking:** Influenced by American archaeologists, Indian archaeology began incorporating **ecological perspectives**, evolving into **Environmental Archaeology**.
- **Institutional and Intellectual Growth:**
  - **Deccan College (1964)** led efforts to consolidate archaeological knowledge in India.
  - Key thinkers like **D.D. Kosambi** (scientific history approach) and **K. Subbarao** (The Personality of India, 1958) emphasized **regional ecology and cultural patterns**.
- **Academic Platforms and New Archaeology:**
  - The journal **Puratattva** was launched in 1967 as a dedicated platform for archaeological research.
  - In the 1970s, **New/Processual Archaeology** began influencing Indian thought, termed the **"Bin-Clarke revolution"** by Dhavalikar (memorial lecture).
  - **Prof. H.D. Sankalia (1974)** and **Paddayya (1985)** promoted **Processual** approaches in the Indian context.

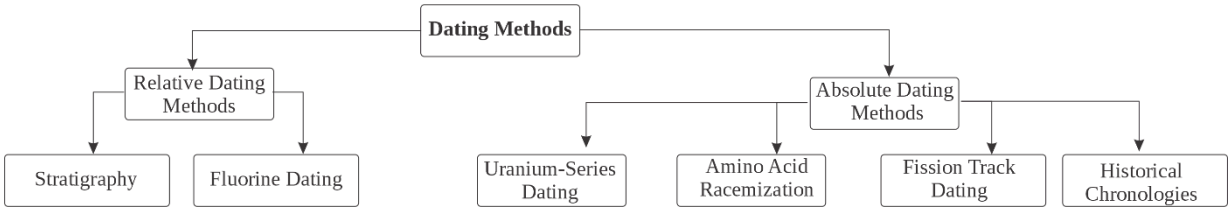
Contemporary Critique and Limitations

- **Prof. D.N. Bhattacharya** argued that Indian archaeology remains in a **"descriptive nascent stage"**, lacking analytical depth.
- He emphasized that its deep attachment to **historical narratives** prevents it from fully engaging with the complexities of Indian civilization.

Chronology

- Chronology is the science of arranging events, artifacts, or phenomena in their order of occurrence in time. It helps to understand the sequence and timing of historical or prehistoric events.

- In archaeology, chronology involves establishing the age of sites, artifacts, or cultural layers to build a timeline of human activities and civilizations.It can be divided into two main types:



Relative Dating method

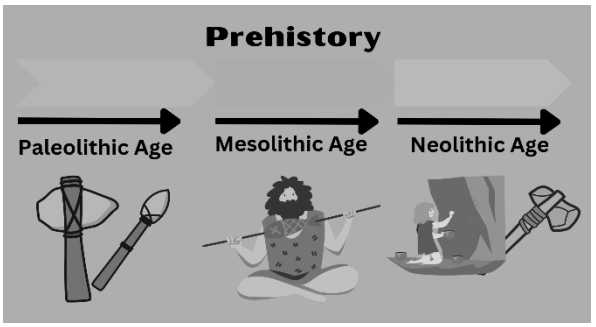
- Relative dating methods in archaeology are techniques used to determine the chronological sequence of artifacts, features, or sites without assigning a specific calendar date. In anthropology, these methods help establish the temporal order of cultural or environmental changes. Here are some common relative dating methods:
- **Stratigraphy**
  - Based on the Law of Superposition, which states that in undisturbed sequences of sedimentary layers, the oldest layer is at the bottom and the youngest is at the top.
  - Application: By examining the stratigraphic layers, archaeologists can determine the relative ages of artifacts and features found within those layers.
- **Fluorine Dating**
  - Principle: Measuring the amount of fluorine absorbed by bones from the surrounding soil over time.
  - Application: Comparing the fluorine content of bones from the same site can help determine their relative ages, as bones buried for longer periods will have absorbed more fluorine.
- **Pollen Analysis (Palynology)**
  - Principle: Studying pollen grains preserved in archaeological layers.
  - Application: Changes in pollen composition over time can reflect environmental changes, which can be correlated with human activity and relative dating of archaeological sites.

Absolute dating Method

- Absolute dating methods in archaeology provide a specific calendar date or range of dates for artifacts, features, or sites. .Eg:origin of species was published in 1859.These are absolute despite the fact that they are tentative with a range of plus or minus error.
- These methods are more precise than relative dating and can help establish an exact timeline for archaeological findings. Here are some common absolute dating methods:
- **Radiocarbon Dating (C-14 Dating)**
  - Principle: Measures the decay of the radioactive isotope carbon-14 (C-14) in organic materials.
  - Application: Useful for dating organic materials such as wood, bone, and charcoal up to about 50,000 years old.

- **Dendrochronology (Tree-Ring Dating)**
  - Principle: Analyzes the pattern of tree rings in wooden samples.
  - Application: Provides exact calendar years for wooden artifacts or structures by matching the tree ring patterns with known sequences. Can date back several thousand years.
- **Potassium-Argon (K-Ar) Dating**
  - Principle: Measures the decay of radioactive potassium-40 (K-40) to argon-40 (Ar-40) in volcanic rocks.
  - Application: Used to date volcanic layers above or below archaeological sites, with a range from thousands to billions of years.
- **Thermoluminescence (TL) Dating**
  - Principle: Measures the light emitted from minerals within ceramics or heated stones when they are reheated.
  - Application: Dates the last time the object was heated, useful for ceramics and burnt stones up to about 500,000 years old.
- **Optically Stimulated Luminescence (OSL) Dating**
  - Principle: Measures the last time sediment grains were exposed to sunlight.
  - Application: Used to date the burial time of sediments, such as those found in archaeological sites, up to about 100,000 years old.
- **Uranium-Series Dating**
  - Principle: Measures the decay of uranium isotopes (e.g., uranium-234 to thorium-230) in calcium carbonate formations like stalactites and stalagmites.
  - Application: Useful for dating cave deposits and archaeological sites within them, ranging from about 1,000 to 500,000 years.
- **Amino Acid Racemization**
  - Principle: Measures the ratio of L-amino acids to D-amino acids in organic materials.
  - Application: Can be used to date bone, shell, and teeth, useful for periods up to a few million years.
- **Fission Track Dating**
  - Principle: Analyzes the damage trails (fission tracks) left by the spontaneous fission of uranium-238 in minerals and glasses.
  - Application: Dates volcanic ash layers and some minerals, with a range from thousands to billions of years.
- **Electron Spin Resonance (ESR) Dating**
  - Principle: Measures the trapped electrons accumulated in bone or shell over time due to exposure to natural radiation.
  - Application: Useful for dating tooth enamel, bones, and shells up to about 1 million years.
- **Historical Chronologies**
  - Principle: Uses historical records and inscriptions to establish dates.
  - Application: Useful for regions with well-documented histories, such as ancient Egypt, Mesopotamia, and Mesoamerica.

- Absolute dating methods are critical for constructing a precise timeline of human history and prehistoric events. By using these methods, archaeologists can establish a more accurate chronology and better understand the temporal context of their findings.

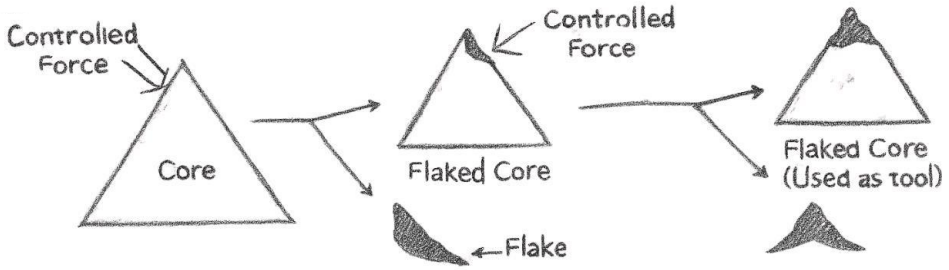


Lower Palaeolithic Culture

- The Lower Palaeolithic Culture represents the earliest phase of human prehistory, marked by the first appearance of stone tools and the emergence of early human ancestors like Homo erectus. It coincides with the Pleistocene epoch, a period of significant climatic fluctuations. This stage is characterized by the development of core and flake tools, the beginning of hunting and scavenging behavior, and the eventual control of fire and laying the foundation for cultural and biological evolution.
- **Time Period:** Spanning roughly from **2.5 million years ago to around 400,000–100,000 years ago**, the Lower Palaeolithic marks the earliest phase of the Stone Age, though dates vary by region.
- **Human Evolution:** Associated primarily with **Homo erectus**, this period witnessed major milestones like the **control of fire** and early tool-making.
- **Climate Conditions:** This phase overlaps with the **Pleistocene Epoch**, which saw alternating cycles of:
  - **Glaciation in the northern hemisphere** (e.g., Mindel and Riss glacial phases)
  - **Pluviation in the southern hemisphere** (e.g., Kamasian pluvial phase)
  - These were separated by **inter-glacial** and **inter-pluvial** dry periods.

Tool Technology

- **Direct Percussion / Stone Hammer Technique:** The earliest method of tool-making where one stone was struck directly with another to remove flakes.
- **Step Flaking / Simple Controlled Technique:** A more refined technique involving the careful removal of flakes in a step-like pattern to shape the tool.
- **Clactonian Technique:**Involved striking flakes from a core without forming a bifacial edge; typical of non-Acheulian tool assemblages.



- **Levalloise Technique:** A prepared-core technique where flakes of predetermined shape were removed from a carefully shaped core; shows advanced planning and skill.
- **Anvil-on-Anvil Technique:** The core was placed on a large stationary stone (anvil) and struck with another stone, creating pressure from both sides to detach flakes.
- **Cylinder Hammer Technique:** Used cylindrical stones as hammers to shape tools more uniformly; associated with greater control over flake size.
- **Victoria West / Vaal Technique:** A specialized core preparation technique found in the **Madrasian culture** of South India, used for producing large flakes or blades.

Tool Material:

- **Quartzite** was the most commonly used raw material in Lower Palaeolithic India due to its durability and availability.

Tool Tradition

- **Oldowan Industry**: Originated in Olduvai Gorge, Tanzania; dated to ~2.2 million years ago; earliest known tools; made of quartzite; included core tools like crude choppers and chopping tools with V-shaped working edges; associated with Homo habilis and Homo erectus.
- **Abbevillian Industry**: Found in Abbeville, France; dated to 800,000 – 400,000 years ago; oldest tool tradition in Europe; consisted mainly of large, crude chopper andchopping tools; associated with early European hominins like Homo heidelbergensis.
- **Acheulian Industry**: Originated in St. Acheul, France and spread widely; dated to 400,000 – 100,000 years ago; included hand-axes, cleavers, and refined bifacial tools; more symmetrical and standardized than previous tools; used by Homo erectus and Homo heidelbergensis; successor to Abbevillian tradition.

European Lower Palaeolithic

- **Important Sites**: Includes locations like St. Acheule, Abbeville, Chilace, Levallois (France), Clacton-on-Sea (England), Isernia (Italy), and Torralba (Spain).
- **Torralba, Spain**: Notable for the rich presence of elephant remains and abundance of hand axes and cleavers.
- **Terra Amata, France**: Among the earliest signs of hut construction and fire use. Holes in the hut center were used for fires, and windbreaks suggest climate adaptation. The site of "Pise de Terra Amata" is also nearby.
- **Acheulean & Abbevillian Tools**: No evidence of cultural progression like that observed at Indian sites (e.g., Bhimbetka).
- **Geographic & Climate Observations**: The northern boundary aligns with glaciation limits, resulting in a largely glacial environment in Europe. In contrast, Africa had mainly pluvial (wet) conditions. In India, both glacial and pluvial phases were noted.

African Lower Palaeolithic

- **Sites**: Key locations include Olduvai Gorge (Northern Tanzania), Kenya Fauresmith, and Uganda.
- **Olduvai Gorge**: Among the most ancient Palaeolithic sites.

- **Kenya Fauresmith**: Displays late Acheulean tools, even comparable to Levalloisian types.
- **Vaal Technique**: A distinctive technique, also called "Victoria West / Vaal", also found in Madrasian culture in India.

Socio-Cultural Aspects

- **Human Types**: H. erectus, H. habilis, H. heidelbergensis appeared in different zones.
- **Lifestyle**: Nomadic hunter-gatherers living in small, scattered groups.
- **Clothing**: Likely did not wear clothes, as there's no direct evidence of clothing from this era.

Indian Lower Palaeolithic

India's Lower Palaeolithic phase had distinct cultural traditions:

- **Two Major Traditions**:
  - **Soanian Tradition**: Based on flake tools, in areas with no formal tool-making.
  - **Acheulean Tradition**: Included hand-axes and cleavers similar to those in Western Old World regions (Africa, Western Europe, South Asia).

Chronology & Environment

- **Time Period**: Upper Pleistocene, approx. 250,000 to 100,000 years ago.
- **Climate**: Varied across regions, with extra-peninsular areas having glacial conditions and peninsular India being wetter.

Tool Types

- **Material**: Mostly quartzite.
- **Choppers**: Used for cutting and chopping.
- **Hand Axes**: For digging and piercing.
- **Cleavers**: For slicing, digging, and heavy-duty tasks.

Regional Cultures & Sites

Lower Palaeolithic cultures are found across India:

- **Soan Valley** – Located in the Potwar Plateau (present-day Pakistan)
- **Sabarmati Valley, Nagri, Chittorgarh, Didwana** – Western India
- **Belan Basin** – Uttar Pradesh
- **Singrauli Basin** – Madhya Pradesh
- **Narshinghpur and Hoshangabad** – Madhya Pradesh
- **Nagarjunakonda and Kurnool** – Andhra Pradesh
- **Kubara and Karmapada** – Odisha
- **Madrasian Culture (Kortalayar Valley)** – Near Attirampakkam, Tamil Nadu

Fossil Discoveries in India

- **1982 Discovery**: Arun Sonakia (Geological Survey of India) found a human fossil in the Narmada River at Hathnora (Madhya Pradesh).
- **Details**: The skull cap belonged to an evolved form of Homo erectus and was buried in a thick gravel bed.
- **Significance**: Proved coexistence of Homo sapiens with earlier hominins in India. Some fossils show mixed traits of Homo sapiens and erectus.

Environmental Context of Indian Lower Palaeolithic

- **Flora and Fauna**: Rich vegetation with abundant plant life. Fossil remains of Terminalia Arjuna and wood fossils from Nevas (Maharashtra) and chili pollen from Inamgaon (Pune) indicate forested environments.
- **Archaeological Finds**: Discoveries in Hoshangabad and Narsinghpur (MP), and Mettur in Karnataka, include fossils of elephants, wild ox, hippos, rhinoceros, and primates.
- **Conclusion**: India's Lower Palaeolithic record shows greater ecological diversity compared to Europe and Africa due to varied climatic zones.

Soan Culture

- **Location**: Soan (or Sohan) Valley lies in the Potwar Plateau, Pakistan, along the Soan River, a tributary of the Indus.
- **Geological Setting**: Situated within the Himalayan glacial zone, the region exhibits alternating glacial and inter-glacial deposits, making it a classic example of river or terrace stratigraphy.
- **Excavation**: Conducted by De Terra and Patterson in 1936; tools are mostly Abbevillian in type.

Material Culture (Soan Valley)

Soan culture is categorized into 6 terraces:

- **Glacial (Aggregational)**: To, T5, T4, T3
- **Inter-glacial (Erosional)**: T2, T1

1. **Pre-Soan (T0):** Consists of large quartzite boulders in weathered form with no signs of working considered pseudo-artifacts unless proven otherwise. Could date back ~2 million years.
2. **Early Soan (T1):**Tools made from pebbles with some basic chopper-chopping forms using direct hammer technique. Crude tool-making is typical.
3. **Late Soan (T2):**Characterized by more advanced flake tools, including Levalloisian flakes, blades, tortoise flakes, and cleavers.Similar tools are found in Chamtar (Pakistan), showing Acheulean influence.
4. **Evolved Soan (T3):** Includes a variety of flakes and flake tools. Finer, more refined blades suggest overlap with middle and upper Palaeolithic technologies.

Other Key Features of Soan Culture

- **Economy**: Predominantly hunting and gathering.
- **Human Variation**: Possible coexistence of human groups using different tool types.
- **Climate**: Marked by alternating glaciation and inter-glaciation.
- **Cultural Overlap**: Early and Late Soan reflect Lower Palaeolithic traits; Evolved Soan transitions into middle/upper Palaeolithic.

Excavations:

- Beas-Banganga (Kangra, HP) – B.B. Lal
- G.C. Mohapatra – Acheulean tools at Simha near Attirampakkam
- Similar findings across India and Pakistan support De Terra and Patterson's work.
- **Dating Challenges:** Dennell & Rendell emphasize caution in dating based on soil strata due to climatic shifts. Suggested methods: **Palaeomagnetic** and **Radiometric dating**.

Madrasian Culture

- **Definition**: The term used for the Lower Palaeolithic culture of southern India.
- **Discovery**: Credited to Robert Bruce Foote at **Attirampakkam**, near Chennai, Tamil Nadu (on river Budda Muvam Yanka), in **1863**.
- **Climate**: Region was mostly **pluvial** with alternating wet phases.

Material Culture (Acheulean Tradition)

- **Tool Typology**: Primarily hand axes and cleavers, contrasting with Soan culture, which used mostly Abbevillian tools.
- **Technique**: 'Para-Levallois' technique (coined by Francois Bordes) involved shaping a core, then flaking it, resembling Levalloisian prep.
- **Kortalayar Valley, Tamil Nadu**: Assemblage reported by Krishnaswami (1983) showed dominance of hand-axes and cleavers (Acheulean).
  - The **Victoria West/Vaal technique** is also reported here.
- **Hungsi, Gulbarga district (KN)**: Excavated by Paddayya tools show:
  - Well-preserved fossils
  - High artifact concentration
- **Hafting Evidence**: H.D. Sankalia claimed tool hafting with wood/bamboo based on marks at base of tools.
- **Andhra Pradesh Sites**: Gundlakamma River, Prakasam, Martalipam, Chintalpadi called the "Treasure House of Indian Lower Palaeolithic."

Important Discoveries

- **Gudiyam Caves, TN**: Microblades dated to **1.5 million years** (Madras University, 2011; confirmed by Dr. Shanti Pappu in 2018).
- If validated, this could become one of the world's oldest tool sites.

Bhimbetka

- **Location**: Raisen (45 km from Bhopal, MP), discovered by **V.S. Wakankar (1962)**.
  - 1000+ rock shelters.

- **Excavations**: V.N. Mishra (1973–76) identified 8 cultural levels from Lower Palaeolithic to Mesolithic.
    - Oldest layers (6–8): Lower Palaeolithic (Late Acheulean), rich in hand-axes and cleavers.
    - Microliths in Mesolithic layers.
    - Also evidence of rock paintings, tools, pottery, and windbreaks.

Didwana

- **Singhi Talai (Rajasthan)**: Found by **V.N. Mishra (1980)**.
    - Formation includes Jayal, Amarpura, and Didwana.
    - Distinctive for **absence of cleavers** in Lower Palaeolithic.
    - Suggests a **unique tool industry**, potentially the "Oldest Lower Palaeolithic site in India."

Middle Palaeolithic Culture

- **Definition**: Transitional period between Lower and Upper Palaeolithi
- **Human Evolution**: Linked to Neanderthals short, broad bodies, receding foreheads, large brains (~1450cc).
- **Cultural Behavior**: Burial practices, evidence of flowers at grave sites (e.g., **Shandiar, Iraq**), show social and emotional development.
- **Timeframe**: **100,000–35,000 BCE**, characterized by cold climate.

Tool Technology & Types

- Based on **Mousterian culture** (La Moustier, France), combining Levalloisian and flake-based tools.
- **Techniques**:
    - Hammer technique for flake detachment
    - "Pecking" also observed
- **Tool Material**:
    - Quartzite remained dominant in India
    - River valleys used crypto-crystalline silicates (quartz, jasper, chert, flint)

Tool Types:

- **Choppers & Hand Axes**: Reduced use
- **Flake Tools**: Scrapers, points, borers, cleavers
- **Smaller Flakes**: Used to make sharper tools
- **Bone Usage**: Sharpened bones and antlers likely used for tools and weapons.

Middle Palaeolithic Culture – Social & Cultural Features

- **Evolutionary Significance**: This phase is associated with Neanderthal evolution, who lived by hunting. The discovery of animals like reindeer suggests cold conditions and hunting-based survival.
- **Fire Usage**: Fire use became common, likely for cooking and protection. Tool use also advanced, especially in hunting.

- **Social Coordination**: Coordinated hunting required group cooperation and communication, likely leading to a **band-like society**.
- **Labour Division**: Emerging distinctions in roles based on age and sex.
- **Burial Practices**: Some evidence of burials with tools and flowers possibly indicating a belief in afterlife and social organization.
- **Social Beliefs**: Supernatural beliefs may have existed, as shown by burial of skulls and items in graves.
- **Symbolic Behavior**: Artistic/symbolic elements (e.g. '#' marks, carvings) seen in Bhimbetka (India) and Gibraltar (Europe) sites.

Indian Middle Palaeolithic Culture

- **Geographical Spread**: Found in multiple Indian states Maharashtra (excluding Ratnagiri), Karnataka, Tamil Nadu, Kerala, Orissa, UP, Bihar, Jharkhand, Gujarat, Punjab, Rajasthan, and Assam.
- **Climatic Background**: Glacial-interglacial phases; peninsular region mainly pluvial.

Regional Variations

- **Soan Culture Complex (Pakistan)**: Identified by De Terra & Patterson (1936); tools include flakes, scrapers, side scrapers, and blades.
- **Bhimberka Complex (Madhya Pradesh)**: Bhimbetka shelter (Layer 5) with Middle Palaeolithic flakes and scrapers; tools made from quartzite and chert.
- **Luni Culture Complex (Rajasthan)**: Sites include Didwana and Luni Valley; tools are high-quality flakes and scrapers; excavated by V.N. Mishra.
- **Nevasa Complex (Maharashtra & Karnataka)**: Nevasa site (H.D. Sankalia, 1956); tools include Levalloisian flakes, blades, and scrapers from Pravara River.
- **Southern Culture Complex (Tamil Nadu)**: Sites: Vada Madurai, Attirampakkam, Gudiyam Caves, Kortalayar Valley; tools: flakes, scrapers, borers, points; Budidhamanvanka stream yielded additional blades, borers, scrapers.
- **Southeast Culture Complex (Andhra Pradesh & Odisha)**: Sites: Chittor, Giddalur (Prakasam), Nagarjunakonda (Nalgonda); tools: flakes, scrapers, Mousterian types.
- **Kurnool–Chhattisgarh Complex**: Forested regions in AP and Chhattisgarh; tools: flakes, scrapers, quartzite implements; cylinder hammer technique noted.
- **Eastern Culture Complex (Uttar Pradesh, Bihar, West Bengal)**: Sites: Belan Valley (G.R. Sharma), Banda (UP), Singhbhum (Bihar), Purulia (WB); tools: flakes, scrapers, microliths; also features rock paintings.

Upper Palaeolithic Culture

The Upper Palaeolithic marks the final phase of the Palaeolithic age, just before the onset of the Mesolithic period. It is characterized by the presence of anatomically modern humans who demonstrated advanced cultural and technological traits. This period spans approximately from 35,000 to 10,000 BCE and coincides with a time of cold climatic conditions, including alternating glacial and interglacial phases, which significantly influenced human adaptation, migration, and survival strategies.

Technology

- **Blade Tools**: Longer than they are wide.
- **Cylinder Hammer Technique**: Used to produce parallel-sided blades from prepared cores.
- **Materials**: Quartz, chert, jasper, chalcedony; also non-lithic materials like bone, antler, ivory.

Tool Types:

- Blades, burins, backed points, arrowheads, harpoons, scrapers, baton-de-commandment (arrow straightener).

European Upper Palaeolithic Traditions

Divided into 5 phases:

- **Perigordian/Chatelperronian (32,000–28,500 BCE)**: Combination of Mousterian and blade techniques.
- **Aurignacian (Blade-Burin Culture) (28,500–22,000 BCE)**: Major use of microliths; famous for figurines and ornaments.
- **Gravettian (22,000–18,000 BCE)**: Known for female figurines, ivory tools, and body ornaments.
- **Solutrean (18,000–15,000 BCE)**: Distinguished by laurel leaf blades and refined bifacial tools.
- **Magdalenian (15,000–8,000 BCE)**: Tools include javelin points, bone tools, and sewing needles.

Social Features:

- Decline of Neanderthals and rise of Homo sapiens.
- Expansion into Australia and New World.
- Group-based society with kinship ties.
- Tools for specific purposes e.g., bone harpoons, needles.
- Symbolic artifacts and cave art (e.g. **Hohle Fels flute**, Venus figurines).
- Rise of **homeopathic magic** and burial rituals.
- Art, music, and ritual practices became widespread.

Indian Upper Palaeolithic Culture

- **Recognition**: Not well established like Europe. Lacks tools like burin or noaille's burin.
- **Climate**: Similar to earlier periods, mostly pluvial in peninsular India.
- **Environment**: Forests and grasslands supported animals like deer, rhinos, and ostriches.
- **Sites**: Kurnool region yielded tools and ostrich eggshells

Regional Variations in Upper Palaeolithic (India)

- **Southern Zone (Andhra Pradesh)**: Excavations by M.L.K. Murthy (1963–64) near River Kallua yielded 90% blade tools; Kalwa and Rangampalli show similarity with European Gravettian tools.

- **Muchchatla Chintamanu Gavi (Kurnool)**: Excavated in 1976 (Murthy); tools include points, chisels, borers, bone tools, scrapers, and spatulas.
- **South-Central Zone (Karnataka)**: Sites: Budihal, Nimburga, Shorapur, Siddhankal; tools include blades, burins, scrapers, points, and borers.
- **Western Peninsular Zone (Maharashtra & Gujarat)**: Sites: Kandivali, Borivli, Patne (Jalgaon); findings include blades, burins, disc bead, and ostrich shell.
- **Central Zone (Madhya Pradesh)**: Sites: Hoshangabad, Narmada River, Bhimbetka (V.N. Mishra); tools include blade tools, burins, and Gravettian points.
- **Eastern Central Zone (Uttar Pradesh & Bihar)**: Sites: Belan Valley, Banda, Lakhudiyar; evidence of figurines, cave paintings, and shrine worship (Baghor stone triangle); Deepa Kumari (2021) reports earliest controlled fire use in India.

Mesolithic Culture

Mesolithic culture refers to the earliest Holocene culture, prior to the advent of widespread food production. It is a transitional phase between the Paleolithic and Neolithic periods.

Time Period and Climate

- Spanning approximately **10,000 BCE to 5,000 BCE**.
- Marked by the end of the Ice Age and the onset of significant cultural and technological developments.
- **Sea levels rose** in coastal areas due to glacial melting.
- **Mediterranean-type** climate appeared in some regions.
- Greater **mobility of animals** and **expansion of grasslands**.

Tool Technology

- Tools were prepared using **blade technology** (for blade tools).
- **Pressure flaking and fluting** were used for crafting smaller tools like microliths.
- **Hafting** of tools became common, allowing for:
  - Fewer accidents,
  - Easy replacement,
  - Better maintenance.

Tool Material

- Tools made from:
  - **Bones**, and
  - **Non-bony materials** such as jasper, **chert**, **chalcedony**, etc.

Tool Types

- New tools called **Microliths** (small chipped stones) were developed.
- Size: **1–8 cm** in length, **<1 cm** in width.
- Produced by **pressure flaking** and **fluting** (not by direct striking).

Composite Tools

- Microliths were **hafted** onto wood or bone.
- Used as composite **tools** (e.g., spears, arrows).

Mesolithic Culture Overview

- **Time Period & Climate**:
  - Spanning approx. **10,000 BCE – 5,000 BCE**.
  - Marks the transition from Paleolithic to Neolithic.
  - End of Ice Age → Rise in sea levels → Expansion of grasslands.
  - Climate became drier; Holocene begins.
- **Location**:
  - Riverbanks, lake shores, caves, and rock shelters.
  - Notably near mouths of rivers, valleys, and central Indian regions.

Tool Technology

- **Blade technology** used for making elongated stone tools.
- **Microliths**: Tiny stone tools (1–8 cm long, <1 cm wide).
- **Pressure flaking & fluting** used instead of direct striking.
- **Composite tools**: Microliths hafted onto wood/bone handles (e.g., spears, arrows).
- **Tool materials**: Bone, antlers, horn, jasper, chalcedony, chert, etc.
- **Bone tools**:
  - Harpoons, barbed hooks, fishhooks, scrapers.
  - Shredded antlers shaped into axe/adze heads.
  - Horn and teeth used similarly.

Geometric Microliths

- Common in European sites (e.g., triangles, trapezes).
- African microliths were cruder, often associated with pottery.

Regional Variations: Mesolithic India (5 Zones)

- **Western Zone (Rajasthan, Gujarat)**
  - Sites: **Bagor**, **Tilwara**, **Langhnaj**
  - Excavators: V.N. Misra, H.D. Sankalia
  - Finds: Geometric & non-geometric microliths, copper tools, ring stones, handmade pottery, iron tools, harpoons, querns, rhinoceros blade, grinders.
- **Central Zone (Madhya Pradesh)**
  - Site: **Bhimbetka (Cave III F-23)**
  - Excavator: H.D. Sankalia
  - Finds: Geometric microliths, fragmented burials, wolf bones, pottery.
- **Northern Zone (UP, Bihar)**
  - Site: **Belan Valley**
  - Excavator: G.R. Sharma
  - Finds: Geometric microliths, circular huts, animal bones, sling stones.

- **Eastern Zone (Orissa, West Bengal)**
  - Sites: **Kuchai**, **Birbhanpur**
  - Excavators: Thapar, Lal
  - Finds: Blade tools, scrapers, trapezoids, lunates, burins, circular houses.
- **Southern Zone (AP, TN, Karnataka)**
  - Sites: **Paddalakallu**, **Bangalore**, **Teri**, **Tirunelveli**, **Gulbarga**, **Bangalthota**
  - Excavators: Sankalia, Zeuner & Allchin, Ayyappan
  - Finds: Over 10,000 microliths, penknives, points, armatures, fluted cores, shells, fish bones.

Socio-Cultural Features

- **Pastoralism**: Early signs, with hunting-fishing economy dominance.
- **Nomadic lifestyle**: Some permanent settlements; others mobile.
- **Hafting** and **precision grip** tools (less reliance on heavy tools like axes/adzes).
- **Stone balls** used as sling weapons.
- **Ground-stone tools** for hollowing logs (canoes).
- **Domestication**: Animals (wolves first).
- **Cultivation**: Begins in later Mesolithic
- **Non-lithic materials**: Bone and antler tools (e.g., Langhnaj rhino blade).
- **Clothing**: Likely from animal skins.
- **Partial sedentarism**: Seen at Sarai Nahar Rai, Bhimbetka.
- **Semi-sedentary lifestyle**: Included netting, honey collection, seed gathering.
- **Cave Art**: Dancing, hunting, music, aggression scenes.
- **Intra-group violence**: Injuries seen in skeletons (Sarai Nahar Rai).

Mesolithic as a Transitional Phase

- **Domestication**: Evident even in tool use (hafting bone/stone).
- **Agriculture**: Starts by end of phase (e.g., rice in Koldihwa, barley/wheat at Mahadaha).
- **Ceramics**: Microliths often associated with early pottery.
- **Burial practices**: Careful burials, grave goods (e.g., beads, ochre use).

Neolithic Culture

The Neolithic period, also known as the ‘New Stone Age’, marks the beginning of settled life, agriculture, and advanced tools. Spanning approximately **7000 BCE to 3000 BCE**, it began with the end of the Ice Age and melting glaciers, opening up new fertile lands. Humans transitioned to a food-producing economy, using **pecking, grinding, and polishing** techniques to make polished stone tools.

Key Features:

- **Time Period**: 7000 BCE – 3000 BCE
- **Tool Technology**: Use of polished tools such as axes and adzes; pecking, grinding, and polishing.
- **Tool Material**: Granite, basalt, jade, quartzite; organic tools (bone, wood) also used.
- **Settlements**: Permanent houses made of mud or bricks; agriculture and domestication of animals.

Neolithic Regional Variations

- **Near East**:
  - Natufian culture (c. 10,000 BCE) in the Levant is credited with early agriculture.
  - Important sites: Tell Mureybit, Aleppo, Jericho, and Catal Huyuk.
- **Europe**:
  - Sites: Abbot's Way (UK), Otzi (Italy), Vinca (Serbia).
  - Cultures: Starcevo, Horgen, Linear pottery.
- **Africa**:
  - Sites: El-Badari (Egypt)s, Merimde, Nile valley.
  - Domestication and agriculture reached Egypt from West Asia by 5000 BCE.

Neolithic Socio-Cultural Features

- **Domestication**: Animals (sheep, goats) and plants cultivated for food and farming.
- **Rural Settlements**: Farming led to permanent villages; ruins in Mesopotamia show planned structures.
- **Pottery**: Enabled storage of grains, water, and food.
- **Social Structure**: Emergence of hierarchy and labor division.
- **Art & Expression**: Cave art, ornaments, and symbolic pottery.
- **Gender Roles**: Men focused on farming; women on household tasks and child-rearing.

Neolithic as a Revolution

- **V. Gordon Childe** coined the term "Neolithic Revolution" to describe this major cultural shift. Despite lasting only 400 years in human history, it marked a profound transformation in how humans lived, worked, and interacted.

Key Transformations:

- Shift from microliths to large polished tools (crypto-crystalline silica).
- Emergence of handled tools.
- Full domestication of plants and animals.
- Beginning of complex societies and permanent settlements.
- Advanced pottery techniques (before wheel use).
- Early religious and symbolic practices.

Indian Neolithic

Neolithic culture in India was first discovered in **Karnataka (1842)**. Later, sites across south and north India were excavated, revealing Neolithic tools, pottery, and domesticated remains.

Time Period & Climate: Spanned between **2700 BCE and 1400 BCE**, with favorable pluvial conditions in the south.

Different Classifications of Indian Neolithic (Agrawal, 1981)

- **North-western Neolithic** (e.g., Kili Gul Mohammad, Pakistan):
  - Early phase: Pre-ceramic, mud houses, bone and chert tools, domesticated sheep/goats.
  - Later phase: Handmade pottery appears.
- **Northern Neolithic** (e.g., Burzahom, Kashmir):
  - Two phases: handmade pottery and bone tools, followed by metal and wheel-made pottery.
  - Pit dwellings and painted ceramics.
- **Eastern Neolithic** (e.g., Chirand in Bihar, Assam, Odisha):
  - Ground stone tools, handmade cord-impressed pottery, and shouldered celts.
  - Cattle domestication and burial sites.
- **Southern Neolithic** (e.g., Tekkalakota, Sanganakallu, Piklihal in Karnataka & A.P.):
  - Shows both Neolithic and Chalcolithic traits.
  - Features include ash mounds and cow dung heaps.