

**B.A. Arts(HISTORY) Core –I
UNDER CHOICE BASED CREDIT SYSTEM
1ST SEMESTER UNDER CBCS**

History of India-I

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Core Paper -1

HISTORY OF INDIA- 1

Unit-I: Reconstructing Ancient Indian History

1. Early Indian notions of History
2. Sources of Historical Writings
3. Historical Geography (Major Harappan Sites and Sixteen Mahajanapadas).

Unit-II: Pre-historic Hunter-Gatherers and Food Production

1. Paleolithic Culture: Upper, Middle and Lower; Tool making habit
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1. Origins; Settlement Patterns and Town Planning
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Unit-IV: Cultures in Transition

1. Early Vedic Age: Society, Polity, Religion and Literature
2. Later Vedic Age: Social Stratification (Varna and Gender), Polity, Religion, and Culture

Suggested Text Books:

1. R. S. Sharma, Material Culture and Social Formations in Ancient India, 1983.
2. Upinder Singh, A History of Ancient and Early Medieval India.

Reference Reading:

1. Romila Thapar, Early India: From Beginning to 1300 CE, Penguin.
2. A.L. Basham, The Wonder that was India, Vol.1
3. B. Fagan, Digging from the Earth
4. H.D. Sankhalia, Prehistory of India.
5. B.R. Alchin, The Birth of Indian Civilization.

Early Indian notions of history

It is often said that the first truly historical work produced in India was Kalhana's *Rajatarangini* (River of Kings). This consists of eight books, each called a *taranga* (wave), and is composed in Sanskrit verse. The *Rajatarangini* contains an account of the rulers of Kashmir, from the earliest ones to those of the 12th century CE, the period of its author. Kalhana was a *brahmana*, the son of a minister, and he drew on a range of sources -- monuments, coins, inscriptions, royal orders, manuscripts and his family members' and his own recollections of recent times -- to write his history of Kashmir. He also attempted to explain past events, but often ended up invoking fate. Nevertheless, the *Rajatarangini*, with its awareness of evidence, interest in causation and sequential narrative, is recognizable as a work of history. However, it is a text of the early 2nd millennium CE.

When 18th/19th century European scholars looked for histories of early India, they found very little that conformed to their idea of what a history should be. They concluded that early India was deficient in history-writing. This lack was linked with Indian notions of time. Indian scales of time were regarded as fantastically large, and Indians were accused of subscribing to the view that time flows in cycles, according to which every period of time invariably returns, every event is repeated, and nothing is unique. And the theory of cyclical time was regarded as a hindrance to the development of a true, linear historical sense. While nationalist histories developed in opposition to imperial frames, scholars like R.C. Majumdar, nevertheless, accepted the idea that history was relatively underdeveloped as a branch of early Indian literature.

Value addition: did you know?

What James Mill had to say about the 'chronology and ancient history of the Hindus'

James Mill's enormously influential *The History of British India* was first published in 1817. It was used as a text-book at the 'East India College' at Haileybury, close to London, where young men were trained before being posted to India. This is what Mill has to say at the beginning of the first chapter of the first volume of his three-volume *History*:

'Rude nations seem to derive a peculiar gratification from pretensions to a remote antiquity. As a boastful and turgid vanity distinguishes remarkably the oriental nations they have in most instances carried their claims extravagantly high....

The present age of the world, according to the system of the Hindus, is distinguished into four grand periods, denominated **yugas**. The first is the *Satya*

yuga, comprehending 1,728,000 years; the second the *Treta yuga* comprehending 1,296,000 years; the third the *Dwapar yuga*, including 864,000 years; and the fourth the *Kali yuga*, which will extend to 432,000 years. Of these periods the first three are expired, and in the year 1817 of the Christian era, 4911 of the last. From the commencement, therefore, of the *Satya yuga*, to the present time, is comprehended a space of 3,892,911 years, the antiquity to which this people lay claim.'

Mill roundly condemns such 'Hindu statements' which are 'not only carried to the wildest pitch of extravagance, but are utterly inconsistent', and pronounces that their 'wildness and inconsistency ... place them beyond the sober limits of truth

and history'

It is, however, possible to adopt a different approach. Romila Thapar makes a distinction between 'embedded history' and 'externalized history'. Embedded history is where historical consciousness can only be extracted with effort, as in myth, epic and genealogy. Externalized history, on the other hand, exhibits a more evident historical consciousness, as in chronicles of regions and biographies of figures of authority. If we understand history as a mode of reflecting about the past, we can argue that a sense of history is present in a branch of early Indian literature -- in the **itihasa-purana** tradition. Even texts that invoke divine forces and narratives that are set in cosmological time embed within themselves a commentary on their present, while at the same time giving an account of the past.

The *dana-stutis* and other fragmentary narratives in Vedic literature

Romila Thapar writes that embedded forms of history tend to be scattered. She draws attention to the **dana-stutis** that are found in different parts of the *Rig Veda* (c. 2nd millennium BCE). These are hymns in praise of gifts: bards composed eulogies on their patrons who were often clan chiefs. The occasion for a *stuti* was a successful cattle raid against a neighbouring community in which the chief and his followers captured a large number of cattle. From the wealth he had acquired, the chief gave the bard cattle, horses, gold, chariots and slave girls; and the bard recorded the hero's generosity in a *stuti*, usually naming the donor. However, the *dana-stutis* were not just records of past liberality, they also indicated what was expected from chiefs. Bards claimed that they could bestow immortality on their patrons, and it is true that we know of some **rajas** from the *dana-stutis*.

Extolling the *raja*'s deeds was a part of sacrifices like the *ashvamedha*. From later Vedic

texts (c. 1st half of the 1st millennium BCE) we gather that a horse was let loose to wander for a year as part of the *yajna*. During that period, **vinagathins** or lute-players - one a *brahmana*, the other a *kshatriya* -- sang about the *raja*'s ritual and heroic accomplishments every day at the place of sacrifice. One can note that only particular kinds of information were preserved in the *stutis* and the songs of the *vinagathins* -- what was important from the point of view of their bardic or *brahmana* or *kshatriya* composers. The achievements of *rajas* were recorded. Not surprisingly, the composers of such eulogies did not proclaim their patrons' failures. One can also note that it is likely that many of the narratives that were later incorporated in the Sanskrit epics and Puranas developed from such *stutis* and *gathas* (songs), as also from Vedic **akhyanas** (cycles of stories that commemorated heroes).

The Sanskrit epics: the *Ramayana* of Valmiki and the *Mahabharata* of Vyasa

Traditionally, the events of the Rama story are placed in the Tretayuga, and those of the Mahabharata at the juncture between the Dvapara and Kali *yugas*; and the Kaliyuga is believed to have begun in 3102 BCE. The *Ramayana* informs us that Valmiki saw Rama's story with his mind's eye and turned the vision into the *Ramayana*; he did so when Rama was ruling his kingdom. The *Mahabharata* tells us that Vyasa rose daily for three years and created the *Mahabharata*; he did so after the Kurukshetra war, which ushered in the Kaliyuga. The texts' information about their creation does not tally with the views of modern scholars on the period of composition of the *Ramayana* and the *Mahabharata*. There is broad agreement among scholars that, while the kernel of the stories contained in the texts may date back to the early centuries of the 1st millennium BCE, as we have them now, the *Ramayana* and the *Mahabharata* are products of the final centuries BCE and early centuries CE.

What does the word 'epic' mean? Why are the *Ramayana* and the *Mahabharata* regarded as epics?

Epics recount tales of great heroes who undergo a series of adventures that test their virtue and valour. Their stories encompass features like disputed succession to an ancestral realm, abducted or humiliated wives, journeys through dangerous uncharted lands and bloody wars – their heroes survive all this to emerge victorious. In the form in which we have them, epics *look back* at a heroic age that has passed and glorify values like bravery, honour, fortitude and unswerving obedience to duty. Their heroes tend to have a special relationship with the gods – an epic hero could be a part or an incarnation of a god, for instance. So, these texts bring together the human and divine realms, often in the person of the hero.

As a genre, the epic is not only narrative and heroic, it also tends to be oral in origin. And since such texts have generally been transmitted orally, their stories have been told in a

particular way. Each narrator has recounted the tale in his own manner – dwelling, for instance, on a part that he likes or considers important, elucidating right and wrong, and so on. In the process, epics have changed and grown. They begin with a core text that describes historical

happenings. Fresh material keeps on being introduced around this – later events, new values and didactic matter are added on and, during the evolution of an epic, the scale of the core incident is also hugely inflated. Since all manner of material is added to such texts repeatedly over a long period of time, we cannot speak of a narrowly defined ‘epic age’.

The *Ramayana* and the *Mahabharata* display the features of epics. They are narrative and heroic, and it is believed that the political situation they reflect predates the period of their composition, that they *look back* at a past age. They are generally held to be oral in origin. And scholars like J.L. Brockington have argued that the *Ramayana* and the *Mahabharata*, like other epics, were composed over a long period of time.

Traditionally, the *Ramayana* is regarded as a *kavya* -- a poem about idealized characters, the *Mahabharata* is not. The latter is classified as *itihasa*, literally, 'thus (*iti*) indeed (*ha*) it was (*asa*)'. However, we cannot say with certainty whether or not all the events described in either epic are factually correct. Rather, modern scholars argue that the *Ramayana* and the *Mahabharata* reflect historical processes of change. For instance, Romila Thapar draws attention to the difference in the system of governance in the chronologically early and late portions of the *Mahabharata*. She writes that while much of the early layer indicates a period a little before the emergence of the monarchical state, the later sections assume the existence of well-established monarchies, and the text suggests the transition from 'lineage to state'. Given that both the *Ramayana* and the *Mahabharata* are concerned with enduring problems for rulers, such as determining the heir to the throne, it is not surprising that the two texts contain genealogies. The *Mahabharata* contains the genealogy of the lunar line (*chandravamsha*), and the *Ramayana* contains the genealogy of the solar line (*suryavamsha*). While these genealogies may not be literally true, they do reflect an attempt to capture and order the past or, to put it another way, a historical consciousness.

The Puranas

The Puranas, as we know them, are likely to have been composed from about the 4th-5th centuries CE. The word *purana* refers to that which belongs to the past, and the texts known as the Puranas suggest how the past was seen in the mid-1st millennium CE. The Puranas contain narratives of beginnings. We are told, for instance, that the earth was ruled by the Manus, of whom the first -- Manu Svayambhu -- was born of the god Brahma. A great flood occurred at the time of a later Manu. Everything was submerged, but Manu,

his family and seven sages survived. Manu's children became the ancestors to many lineages. In some versions of the story, Manu's eldest son -- Ikshvaku -- is said to be the ancestor of the *suryavamsha*, and the youngest child -- Ila - the progenitor of the *chandravamsha*. We gather that rulers of the solar and lunar lineages ruled till the Mahabharata war. That event is a time-marker: after an account of the war, the narrative goes on to chronicle the dynasties of the Kaliyuga, the present corrupt age. Not surprisingly, the kings of the post-war period are depicted as inferior to the *suryavamshi* and *chandravamshi* descendants of Manu's progeny. They are often not of *kshatriya* stock, as rulers of the past were. It is evident that people of mixed caste, those regarded as outcastes, *shudras*, foreigners and others of impure origin, as well as upstarts could wield power in the Kaliyuga. The listing of dynasties and their kings brings the account up to about the mid-1st millennium CE.

Genealogies in the future tense

Statements about what happened after the Mahabharata war are made in the future tense in Puranic genealogies. So, the narrator says: 'I will now enumerate the kings who will reign in future periods....' It is evident that the past lay in events that took place before the war. The dynasties of the post-war period include the Shishunaga, Nanda, Maurya, Shunga, Kanva and Andhra. The Guptas are mentioned towards the end of the genealogical lists, and we are told that they will rule over the territories of Prayaga, Saketa and Magadha. Does this indicate that the genealogies were put together in the Gupta period?

There is much in the Puranic genealogies that can be dismissed as fiction. However, it is important to note that many of the rulers mentioned in these genealogies are also known from other sources -- from inscriptions and coins, for instance. It seems that traditions of recording the names of rulers as well as the duration of their reigns existed in early India. The Puranic genealogies were one form in which such information was preserved. One may also note that genealogies become significant at times that witness attempts to either contest or consolidate power. Invoking genealogies at such times can be seen as a way of claiming an exalted status, and this would have been especially important when such claims were tenuous. And scholars like Romila Thapar have drawn attention to the fact that rulers of the post-Gupta period, many of them former underdogs, started latching on to *kshatriya* genealogies to legitimize their power.

Prashastis and charitas

The Sanskrit epics and Puranas were composed in fairly simple Sanskrit verse. Although Sanskrit learning was largely the preserve of the upper castes, and of *brahmana* men in particular, these texts suggest that their contents may have been recounted before audiences that included women and the lower castes. In other words, all sections of society might have had access to the genealogies contained in the epics and Puranas. But there were other texts that were probably meant for a more exclusive, elite audience.

These were usually written in ornate Sanskrit, and were associated with the royal court. This category of texts includes ***prashastis*** (eulogistic inscriptions) and ***charitas*** (accounts of the lives of great men).

While some of the earliest *prashastis* are in Prakrit, the best known are in Sanskrit. Such inscriptions became common from around the 4th century CE. Perhaps the most famous *prashasti* is Samudragupta's 4th century CE Allahabad pillar inscription, which is inscribed on an Ashokan pillar. It was composed by Samudragupta's court poet and minister, Harishena, in Sanskrit prose and verse, and eulogizes the Gupta king's military achievements, cultural accomplishments and personality. It describes his victories over the rulers of north India, and his expeditions to south India. It mentions rulers elsewhere who acknowledged his supremacy. Samudragupta is depicted as an able and compassionate king, his scholarship is praised, as are his musical performances and poetry. While it is likely that some of the descriptions of Samudragupta's exploits are true, it is important to remember that the text was composed by the king's court poet as a panegyric.

Banabhatta's *Harshacharita* is the oldest surviving royal biography in India, and one of the best known. This 7th century CE text in complex Sanskrit prose presents a glowing picture of Banabhatta's patron -- Harshavardhana. It contains an account of the ruler's ancestry and his early life, and culminates with his accession to the thrones of Thanesar and Kanauj. Not surprisingly, *prashastis* and *charitas* depict their authors' patrons as ideal monarchs. This apart, it has been suggested that both kinds of eulogistic compositions may have been especially useful in situations where rulers were somewhat vulnerable. The Allahabad *prashasti* hints at a conflict regarding Samudragupta's claims to the Gupta throne, and Harsha became king after the sudden death of his elder brother and also claimed the kingdom of his deceased brother-in-law. These two rulers may not have been the obvious choice for rulership. And one can ask whether *prashastis* and *charitas* can be understood as means of legitimizing kings whose right to the throne could have been questioned.

The *Harshacharita* and Banabhatta

Given below is a long, complex, eulogistic sentence from the *Harshacharita*, which is typical of the genre of *charita*:

'He [Harsha] was embraced by the goddess of Royal Prosperity, who took him in her arms, and, seizing him by all the royal marks on all his limbs, forced him, however reluctant, to mount the throne -- and this though he had taken a vow of austerity and did not swerve from his vow, hard like grasping the edge of a sword; clinging closely to duty through fear of stumbling in the uneven path of kings, and attended with all her heart by Truth who had been abandoned by all other kings, but had obtained his promise of protection, and waited

on reverentially by the reflected images of a fair handmaid standing near, which fell on his toe-nails, as if they were the ten directions of space impersonate.'

In his biography of Harsha, Banabhatta also tells his audience about himself. Interestingly, he describes himself as a Bhṛigu *brahmana*. As has been mentioned above, the Bhṛigus are associated with the *Mahabharata*. In this way, among others, Banabhatta links himself and his text with the *itihasa* tradition.

Parallel traditions of historical writing and dating systems

There were traditions of historical writing other than those that were related to rulers. One tradition was that of the Buddhist monastic chronicle. While focusing on the *sangha* or monastic order, it included more general information about the history of the period. Maintaining such records probably became more important as monasteries became wealthy institutions, attracting patronage from the rich and the powerful. One may mention as examples the *Dipavamsa* and the *Mahavamsa*, or the Sri Lankan chronicles, both composed in Pali in the mid-1st millennium CE, but narrating events from earlier periods. The *Dipavamsa* focuses on the coming of Buddhism to Sri Lanka and the establishment of the *sangha*. The *Mahavamsa* covers the same themes but also highlights the history of the Mahavihara monastery, to which the author belonged. The

history of the *sangha* was integrated with the political history of Sri Lanka, and even with the rule of the Mauryas in India, for Ashoka is said to have sent his son Mahinda to spread the message of Buddhism to the island. The Buddhists not only maintained records of this sort, they also developed a system of chronology, where major events were dated in terms of the number of years from the death of the Buddha.

There were other systems of dating as well. One involved the use of regnal years. This was a system in which kings took the first year of their reign as the starting point, counting the years of their rule from that beginning. This system was used by the Mauryan ruler Ashoka, who used dates derived from the time of his consecration. So, for instance, his 13th Major Rock Edict tells us that he conquered Kalinga when he had been consecrated eight years. Many different eras were also used in early India. Examples include the Vikrama era of 58 BCE, the Shaka era of 78 CE and the Gupta era of 319-20 CE. It is clear that cyclical time was not the only concept of time known to people in early India. Linear time, too, was used extensively -- in genealogies, biographies and chronicles, for instance. It is also clear that different categories of early Indian texts exhibit a sense of history. We cannot always be sure of the historicity of their contents, but we can be sensitive to the ways in which they demonstrate a historical consciousness. We must remember, however, that these texts suggest how elites reflected on the past, how they recorded and ordered it.

1.2 Sources of History

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History (from the **Greek** ἱστορία, meaning 'a learning or knowing by inquiry') can be broadly taken to indicate the past in general but is usually defined as the study of the past from the point at which there were written sources onwards.

There are obstacles that make it so we do not have a crystal clear, uninterrupted view of the past. Firstly, we have to remember that everyone – not just us, but also people throughout history – is shaped by their upbringing and the societies and times they live in, and we need to be careful not to stick our own labels and values onto past periods. Secondly, our view of the past is made up from the total of things that somehow happened to survive the test of time, which is due to coincidences and decisions made by people before our time. So, we only get a fragmentary, distorted view; it is like trying to complete a puzzle with a lot of oddly shaped and missing pieces.

To fill in the context of the past we wish to study involves carefully questioning a whole bunch of sources – not just written ones – and avoiding pitfalls as much as possible. The closely connected field of **archaeology** offers a priceless helping hand in achieving this, so these sources will be discussed here, too.

UNRAVELLING THE SOURCES

Sources are our way of peering into the past, but the various kinds all present their own benefits and difficulties. The first distinction to make is between primary and secondary sources. A primary source is first-hand material that stems (roughly) from the time period that one wants to examine, whereas a secondary source is an additional step removed from that period – a 'second-hand' work that is the result of reconstructing and interpreting the past using the primary material, such as textbooks, articles, and, of course, websites such as this one.

PRIMARY SOURCES

However cool actual sources from times gone by may be, we cannot simply assume that everything they tell us (or everything we think they tell us) is true, or that we are automatically able to interpret their contents and context correctly. They were made by people, from within their own contexts. Keeping a critical eye and asking questions is thus the way to go, and it is a good idea to cross-examine different sources on the same topic to see whether any kind of consensus rolls out.

Written sources

Some examples of primary written sources are contemporary letters, eyewitness accounts, official documents, political declarations and decrees, administrative texts, and histories and biographies written in the period that is to be studied.

Benefits – details; personal side; context

The unmatched level of detail presented by written sources in general is an obvious goldmine to the greedy historian. Moreover, reading a written source tends to tell you something about the author and the context in which they are **writing** just as well as the topic they concern themselves with.

The detail in some written sources can lead to unexpected discoveries, such as the astonishing fact that the **Phoenicians** already sailed around Cape of Good Hope (South **Africa**) in open boats as early as 600 BCE. **Herodotus**, the 'father of history', writes in his *Histories* – a work recounting the events of the Greco-**Persian Wars** (499-479 BCE) – that

On their return, they declared - I for my part do not believe them, but perhaps others may - that in sailing round Libya [Africa] they had the sun upon their right hand. In this way was the extent of Libya first discovered. (Hdt. IV. 42).

South of the equator, the sun would indeed have been on the sailors' right-hand side while sailing westward around the Cape – a detail the sailors could not have known if they had not actually witnessed it, so it appears to be true.

Pitfalls – transmission; reliability, bias & intentions; contemporaneity

The first hurdle with written sources is their transmission; materials such as papyrus, parchment, and paper do not have infinite lifespans, so the sources we have in front of us right now have usually been copied, reviewed, edited, even translated, at some point in time, and may include mistakes or deliberate changes. This puts a thin barrier between us and the original text.

Secondly, authors may not be reliable, may have been biased, or may have had certain intentions that jeopardise the source's objectivity. Forgery is unfortunately also not entirely outside the realm of possibilities, as the Donatio Constantini (the Donation of Constantine) makes painfully clear. Asking the following questions can help canvass these issues:

Who created the source and what was his or her background?

People are undeniably connected with their backgrounds – upbringing, family, the times they lived in, and so forth, and we have to examine the source from within this framework.

The prevailing values, schools of thought, religion, the political situation, possible censure, as well as whether the source was perhaps commissioned by someone or not, all have an impact on the contents of a source. Comparing a source to other (types of) sources from the same period or concerning the same topic can help determine its reliability and help you form a picture of what may have actually happened.

A personal letter with the goal of declaring the author's love to his recipient yields a different kind of information than a piece of propaganda written in order to strengthen a ruler's position. Of course, the goal may not be quite as easy to spot as that.

Thirdly, it is important to check whether the author was actually around for the events they are writing about. Questions to ask are:

Herodotus, for instance, was not an eyewitness himself, and although usually of decent critical mind, he sometimes fell flat in his judgement of his sources - the person who convinced him that the hind legs of camels have four thigh bones and four knee-joints must have been well chuffed. (Hdt. III.103). Furthermore, when entire speeches are recorded word-for-word, one must wonder how plausible it is, firstly, that the eyewitness remembered all of it, sometimes for a long stretch of time, and, secondly, that the author then recorded the whole speech exactly as recited by his witness, without shaping it to suit his desired narrative.

Epigraphy

Epigraphy refers to the study of inscriptions engraved upon various surfaces such as stone, metal, wood, clay tablets, or even wax, which may vary hugely in length from mere abbreviated words and administrative tablets to depicting entire official decrees.

Usually, inscriptions tend to be pretty durable because of the nature of the materials that were used, although whether or not the inscription has been exposed to the elements makes a bit of a difference. They were often intended to be publically visible, catching the eye like a big neon sign, their content shared with as many people as possible.

This often public nature does not mean inscriptions should just be mindlessly accepted to reflect the exact truth, though; they had authors or commissioners who had certain purposes. Sometimes inscriptions even turn out to be forged, or have been moved and are no longer in their original locations. Things to keep in mind are:

Who created the inscription?

Is this, for instance, a lonely mother who had an elaborate, glorifying, and sappy inscription engraved on the headstone of her young son's grave, for passers-by to see, or is it a ruler's proclamation which subtly connects himself with a divine power?

Perhaps it was created to inform, to record, to glorify, or to influence public opinion.

Can it be dated (by things like the context, monument, or the language), and does the date match the content of the inscription?

A good example of the sometimes misleading nature of inscriptions is the Pantheon in Rome, a sometimes infuriating structure to go look at when you come too close to tourist groups led by guides that are not aware of the full story. The inscription states the following:

Upon deciphering this text – the abbreviations are standardised ones routinely used in inscriptions in Ancient Rome – one would conclude that the building was created by Marcus Agrippa, emperor Augustus' right-hand man. However, the buildings' bricks were stamped with the names of the consuls in office at the time of firing, which has allowed us to date the whole thing to a good century and a half later than Agrippa, belonging instead to the first part of emperor Hadrian's reign, probably between 117-126-8 CE. The good man wanted to honour an earlier building at the same site, which was built by Agrippa around 25 BCE, and decided to stick Agrippa's inscription on his own brand-new entablature. There is thus more than meets the eye.

Settlements, buildings, & monuments

The daily lives of people become visible through the remains of their houses and the buildings they made use of, such as courts of law, bakeries, or schools. Monuments, also not unusually flashing inscriptions at its audience, can reveal the messages their normally powerful creators cried out to the world through their architecture and imagery. As such, they can be used to reconstruct the structure of societies.

Archaeologists have become quite adept at 'reading' the pieces that are left; comparing the remains with others that may be more fully preserved or with primary sources describing the structure; and rebuilding what is essentially a hugely complex 3D puzzle, either on paper or by actually restoring the remains in question. Bits and pieces may have been carted off, destroyed, moved around, fallen over, and so forth, so it is important to keep in mind that the puzzle process may require some guesswork and may result in mistakes being made.

SECONDARY SOURCES

After the maze that is primary sources, we may be tempted to think secondary sources are a sort of safe haven, where skilled researchers have taken all of the above-mentioned issues into account and have already come as close to actual history as possible.

However, this would be a tad naïve; the people writing the secondary material are just as bound to their own contexts as the ancients they are studying. Again, then, we must be wary of possible bias and goals, as well as of the accuracy – it is all too easy to draw conclusions that support your hypothesis. Even if a secondary source may appear reliable in that it shows you which sources they have used and seems to draw logical conclusions from them, it is still possible that the author has hand-picked exactly those sources that support their story, rather than presenting the full picture (which may contradict or add more nuance to their story). To prevent being misled, it is important to always study more than one secondary sources. Compare different books and articles on the subject you are researching, and, after assessing each source's reliability, strengths and weaknesses, try to get as complete a view as possible of the topic.

What is the scope of the source?

Social histories paint a different picture than military ones, so be sure to choose sources that correspond with the questions you yourself want to answer.

It is important the author has documented his or her use of sources, so you can examine them yourself if need be. Keep an eye out for selective use of sources; an author should not simply choose the sources that fit their hypothesis but should take the full range of primary information into account.

The materials to be questioned vary from, for instance, textbooks and course books to independent books, articles (including scientific ones, whose accuracy may be hard to judge by a non-scientist), and websites – but be sure to pick ones that show source lists and authors' names. As long as you stay critical, there is a wealth of information at your disposal.

1.3: Historical geography

Historical geography is the study of the geographies of the past and how the past is represented in geographies of the present. While historical geographers have examined a variety of topics throughout the history of the field, a number of themes stand out: the evolution of cultural and economic regions, the changing relationship between people and the environment over time, the development of cultural landscapes and the diffusion of landscape types to different places, and the history of representing places. Historical geographers primarily use archival records to examine places and landscapes in the past, although field observations, and increasingly tools such as Geographic Information Systems, are also important methods. Since the 1980s, critical social theories such as Marxism, feminism, postcolonialism, and post-structuralism have informed the work of many historical geographers. Historical geography has considerable overlap with other fields in discipline, especially cultural geography. In Britain, for instance, scholars are more likely to speak of cultural-historical geography rather than a separate historical geography. In North America, historical geography also has strong connections to the interdisciplinary field of environmental history

Historical geography is a **sub-discipline of human geography concerned with the geographies of the past** and with the influence of the past in shaping the geographies of the present and the future.

Historical geography by definition is intended to research all spatial aspects of the past. Despite this, historical geographers avoided the research of urban areas for a long time. This was due to the dominance of regionalism in geography during the time of the formation of modern historical geography in the 1920s and 1930s. The founding fathers of the subdiscipline concentrated on the research of rural areas especially of the pre-Industrial-Revolution British Isles, in which towns were considered as part of the regional system while their inner structure was not yet considered a subject of research.

The rise of urban studies and of urban history and growing interest of scholars from fields such as architecture, economy, and sociology in histories of urban areas obliged historical geographers to draw more attention to the study of the past of cities and towns. Growing number of publications on urban historical geography during the 1970s and early 1980s resulted in a debate over defining and dividing historical geographers from other scholars

specializing in the history of urban areas such as urban historians; social, economic, and urban geographers; and historians of architecture.

Nevertheless, interests of urban historical geographers ranged from urban morphology, structure, and functions to social–historical geography of cities and towns, from evolution of European towns in the Middle Ages to the formation of modern cities in the nineteenth century, and to the preservation of historical cities as well. This hampered with the attempt to form a synthetic approach in urban historical geography intended at the integration of different concepts, theories, and methodologies into a coherent method of research of urban past geographies.

The reemergence of cultural geography in the 1980s that marked the emergence of a postmodern geography seems to render irrelevant to the effort of forming such a coherent method. A different approach, liberal eclecticism, rose among historical geographers and afforded the development of urban historical geographies contesting any attempt to form dominance of place, period, or method of research.

View chapter

Sauer believed history is as important to geography as physical terrain and that there is such a thing as a humane use of land. He contemplated the Earth in all its vast physical and cultural variety and its changes through both geological and historical time. Sauer specialized in studying causal relationships between the elements of the natural environment and the activities or creations of human beings, and after his retirement the so-called Berkeley geography graduate school developed the research into cultural ecology. Sauer was one of the first landscape geographers who did not only want to observe and outline the physical landscape but also to understand the background connections of landscape elements and the variety of interrelations within a landscape. He was also ahead of his time when his thoughts included a burgeoning anxiety about the impoverishment of biodiversity caused by human action.

When examining the interplay of the human–environment relationship through the classics of empirical studies, one has to call to mind Henry Clifford Darby's cross-section method as one of the best-known methods in historical geography. It was introduced in *Domesday England* (1977) and is dualistic by nature. During the first stage, a researcher tries to reconstruct historical cross-section points from an exact geographical area. Depending on the area, materials can consist of, for example, old maps, aerial photos, and modern geographic information system (GIS)-generated maps. The second stage consists of analyzing processes of change by writing vertical themes, or narratives, in which the idea is to explain the change in landscape by paying attention to the context in which the change has happened.

During the second stage of the cross-section method, one needs to observe both natural and socioeconomic processes. It is also essential to pay attention to timescales because the scales of nature are different from the scales of humanity. Furthermore, it is necessary to remember that it is impossible to trace the present exclusively from the past. In certain cases, the present includes several alternatives and only one is going to be realized. However, the past is contiguous with the present, defining it and also diminishing the number of existing possibilities. Both history of nature and history of humanity include information that supervises the future of the units to which it is related.

The idea of nature and knowledge of the place of humans in nature clarify in Clarence J. Glacken's monumental work *Traces on the Rhodian shore* (1967). He rightly insisted that it is impossible to understand nature without integration with an understanding of history.

According to him, nature and history become empty ideas if isolated from each other. He related social and natural phenomena to the imagined dichotomy of humanity and nature. His main thesis on how nature influences culture and vice versa has later become groundwork for many geographical, philosophical, historical, and environmental studies.

The historical geographies of the production and evaluation of various kinds of geographical knowledge, together with the spatial and chronological unevenness of geographies of other kinds of knowledge and belief and their dissemination by individuals and agencies, form a key part of the understanding of the human and physical geographies of the past, and they in turn inform some of our current knowledge of places and peoples.

Geographical information and related ideas and concepts presented for elite and more general consumption have been strongly bound up in contemporary societies, economies, political and cultural systems, technologies, gender relations, and understandings, together with dominant and minority philosophies and belief systems. Each has produced arrays of ideas, artifacts, and evidences, on the basis of which those systems can be understood and analyzed. Certain aspects of geographical knowledge, such as the history of exploration and (re)discovery, are better understood than its actual dissemination, both to specialists and to those with more general interests.

Approaches

Rural historical geographies have in the main been concerned with the facts and artifacts of land, landscape and settlement, and associated socioeconomic and cultural contexts. Rural landscapes comprise the most extensive material record of humanity–environment relations. Past generations have inscribed the rural with the marks of their passage leaving geographers with a richly layered landscape legacy which has often been characterized as a palimpsest, or series of horizons of settlement extending back in time.

Historical continuity in rural landscapes and societies has been one of the traditional themes in rural geographical studies. They have also often been infected with a modicum of nostalgia for a disappearing, often idyllic rural, of small-scale largely local communities, in opposition to more rapidly changing larger-scale urban society. In a rural context, there has been significant overlap between historical and cultural geography. Cultural geography originally had a greater historical emphasis, especially evident in the works of early cultural geographers like Carl Sauer, though cultural geography today is more focused on issues in contemporary rural societies

Sixteen Maha janpad:

There were sixteen of such Mahajanapadas: **Kasi, Kosala, Anga, Magadha, Vajji, Malla, Chedi, Vatsa, Kuru, Panchala, Machcha, Surasena, Assaka, Avanti, Gandhara and Kamboja**. Kasi is a region settled around Varanasi. It has a predominant position among the sixteen Mahajanapadas.

Angutara Nikaya, a Buddhist scripture mentions 16 great kingdoms or Mahajanapadas at the beginning of the 6th century BCE in India. They emerged during the Vedic Age. The history of the emergence of Mahajanapadas can be linked to the development of eastern Uttar Pradesh and western Bihar during the 6th to 4th century BCE where agriculture flourished due to the availability of fertile lands and iron production increased due to availability of iron ore in large quantities. This resulted in the expansion of the territories of the Janapadas (due

to the use of iron weapons) and later addressed as 16 highly developed regions or the Mahajanapadas

Emergence of Mahajanapadas from Janapadas

The Janapadas were the major kingdoms of Vedic India. During that period, Aryans were the most powerful tribes and were called 'Janas'. This gave rise to the term Janapada where Jana means 'people' and Pada means 'foot'.

By the 6th century BCE, there were approximately 22 different Janapadas. Socio-economic developments chiefly due to the use of iron tools in agriculture and military, along with religious and political developments led to the rise of the Mahajanapadas from small kingdoms or Janapadas. The people gained a strong allegiance to the territory or Janapada they belonged to rather than the tribe or the jana. This period is also known as the era of **second urbanisation**, first being the Harappan civilisation.

During that period, the political centre shifted from the west of the Indo-Gangetic plains to the eastern side of it. This was due to better fertility of the land because of more rainfall and rivers. Also, this region was closer to iron production centres.

Which were the 16 Mahajanapadas?

The list below provides you with the names of 16 Mahajanapadas:

1. Kasi
2. Kosala
3. Anga
4. Magadha
5. Vajji
6. Malla
7. Chedi/Cheti
8. Vatsa
9. Kuru
10. Panchala
11. Matsya
12. Surasena/Shurasena
13. Assaka
14. Avanti
15. Gandhara
16. Kamboja

In the course of time, smaller or weak kingdoms, and the republics were eliminated by the stronger rulers. Vajji and Malla were Gana-Sanghas. The Gana-Sanghas had a government by assembly and within the assembly they had oligarchy. In the 6th century only 4 powerful kingdoms remained:

1. Magadha (Important rulers: Bimbisara, Ajatashatru)
2. Avanti (Important ruler: Pradyota)
3. Kosala (Important ruler: Prasenjit)

4. Vatsa (Important ruler: Udayana)

Later, all of them were annexed to or became part of Magadha. Know more about the rise and growth of the Magadha Empire in the linked article.

We shall now look into a little detail of each one of these sixteen mahajanapadas and their capitals:

1. **Anga:** This mahajanapada finds mention in the Atharva Veda and the 'Mahabharata'. During the reign of Bimbisara, it was taken over by Magadha empire. It is located in present day Bihar and west Bengal.
2. **Magadha:** It also finds reference in the Atharva Veda which tells that Magadha was semi-brahmanical place. It was situated in present day Bihar close to Anga, separated by river Champa. Later, Magadha became a center of Jainism. Along with that, the first Buddhist Council was held in Rajagriha.
3. **Kasi:** It was located around Varanasi which was the capital as well. It is believed that this city got its name from rivers Varuna and Asi as mentioned in the Matsya Purana.
4. **Vatsa or Vamsa:** This mahajanapada followed the monarchical form of governance. This kingdom was one of the sixteen Mahajanapadas. And its capital was located at Kausambi. This was an important city for economic activities. There was a prosperous trade and business scenario in 6th century BC. After the rise of Buddha, the ruler Udayana made Buddhism a state religion. Vatsa was located around the present day Allahabad.
5. **Kosala:** It was located in modern Awadh region of Uttar Pradesh. Its capital was Ayodhya.
6. **Saurasena:** Its capital was Mathura. This place was a centre of Krishna worship at time of Megasthenes. Also there was a dominant followership of Buddha here.
7. **Panchala:** Its capital was Ahichchatra and Kampilaya for its northern and southern regions respectively. It was located in present day western Uttar Pradesh. And it shifted from monarchy to being a republic later.
8. **Kuru:** Their capital was Indraprastha in present day Meerut and Haryana. The region around Kurukshetra was supposedly the site for Kuru Mahajanapada. It shifted to a republican form of governance later.
9. **Matsya:** It was located to south of the Kurus and west of the Panchalas. Its capital was at Viratanagar, which lies around present day Jaipur.
10. **Chedi :** This was mentioned in the Rigveda, its capital was Sothivati. It lay around the present day Bundelkhand region.
11. **Avanti:** Avanti was important in terms of rise of Buddhism. Its capital was located at Ujjaini or Mahismati. It was located around present day Malwa and Madhya Pradesh.
12. **Gandhara:** Their capital was at Taxila. Gandhara are mentioned in the Atharva Veda as people who were highly trained in art of war. It was important for international commercial activities.
13. **Kamboja:** Kamboja had its capital named as Pooncha. It is located in present day Kashmir and Hindukush. Various literary sources mention that Kamboja was a republic.
14. **Ashmaka or Assaka:** The capital of this mahajanapada was located at Pratisthan or Paithan. Ashmaka was located at the bank of Godavari.

15. **Vajji:** Its capital was Vaishali. It was an important Mahajanapadas. The major races residig here were Licchavis, Vedehans, Jnatrikas and Vajjis.
16. **Malla:** It was one of the sixteen mahajanapadas. It finds mention in 'Mahabharata' and Buddhist and Jain texts. They were a republic (Samgha). Their capital was Kusinara located around present day Deoria and Uttar Pradesh.

Harappan

The Harappan civilization was located in the Indus River valley. Its two large cities, Harappa and Mohenjo-daro, were located in **present-day Pakistan's Punjab and Sindh provinces**, respectively. Its extent reached as far south as the Gulf of Khambhat and as far east as the Yamuna (Jumna) River.

Overview

- The Indus River Valley Civilization, 3300-1300 BCE, also known as the Harappan Civilization, extended from modern-day northeast Afghanistan to Pakistan and northwest India.
- Important innovations of this civilization include standardized weights and measures, seal carving, and metallurgy with copper, bronze, lead, and tin.
- Little is understood about the Indus script, and as a result, little is known about the Indus River Valley Civilization's institutions and systems of governance.
- The civilization likely ended due to climate change and migration

Geography and time-frame

In 1856, British colonial officials in India were busy monitoring the construction of a railway connecting the cities of Lahore and Karachi in modern-day Pakistan along the Indus River valley.

As they continued to work, some of the laborers discovered many fire-baked bricks lodged in the dry terrain. There were hundreds of thousands of fairly uniform bricks, which seemed to be quite old. Nonetheless, the workers used some of them to construct the road bed, unaware that they were using ancient artifacts. They soon found among the bricks stone artifacts made of soapstone, featuring intricate artistic markings.

Though they did not know it then, and though the first major excavations did not take place until the 1920s, these railway workers had happened upon the remnants of the Indus Valley Civilization, also known as the **Harappan Civilization**, after Harappa, the first of its sites to be excavated, in what was then the Punjab province of British India and is now in Pakistan.

Initially, many archaeologists thought they had found ruins of the ancient Maurya Empire, a large empire which dominated ancient India between c. 322 and 185 BCE.

Before the excavation of these Harappan cities, scholars thought that Indian civilization had begun in the Ganges valley as Aryan immigrants from Persia and central Asia populated the region around 1250 BCE. The discovery of ancient Harappan cities unsettled that conception and moved the timeline back another 1500 years, situating the Indus Valley Civilization in an entirely different environmental context.

Scholars are still piecing together information about this mysterious civilization, but they have learned a great deal about it since its rediscovery. Its origins seem to lie in a settlement named **Mehrgarh** in the foothills of a mountain pass in modern-day Balochistan in western Pakistan. There is evidence of settlement in this area as early as 7000 BCE.

The Indus Valley Civilization is often separated into three phases: the **Early Harappan Phase** from 3300 to 2600 BCE, the **Mature Harappan Phase** from 2600 to 1900 BCE, and the **Late Harappan Phase** from 1900 to 1300 BCE.

At its peak, the Indus Valley Civilization may have had a population of over five million people. The Indus cities are noted for their **urban planning**, a technical and political process concerned with the use of land and design of the urban environment. They are also noted for their baked brick houses, elaborate drainage systems, water supply systems, and clusters of large, nonresidential buildings.

The Indus Valley Civilization began to decline around 1800 BCE. Archaeological evidence indicates that trade with Mesopotamia, located largely in modern Iraq, seemed to have ended. The advanced drainage systems and baths of the great cities were built over or blocked. Writing began to disappear, and the standardized weights and measures used for trade and taxation fell out of use.

Urban infrastructure and architecture

By 2600 BCE, small Early Harappan communities had developed into large urban centers. These cities include Harappa, Ganeriwala, and Mohenjo-daro in modern-day Pakistan and Dholavira, Kalibangan, Rakhigarhi, Rupar, and Lothal in modern-day India. In total, more than 1,052 cities and settlements have been found, mainly in the general region of the Indus River and its tributaries.

Mohenjo-daro is thought to have been built in the twenty-sixth century BCE; it became not only the largest city of the Indus Valley Civilization but one of the world's earliest major urban centers. Located west of the Indus River in the Larkana District, Mohenjo-daro was one of the most sophisticated cities of the period, with advanced engineering and urban planning.

Harappa was a fortified city in modern-day Pakistan that is believed to have been home to as many as 23,500 residents living in sculpted houses with flat roofs made of red sand and clay. The city spread over 150 hectares—370 acres—and had fortified administrative and religious centers of the same type used in Mohenjo-daro.

Both cities had similar organization and featured **citadels**, central areas in a city that were heavily fortified—protected with defensive military structures. Additionally, both cities were situated along the Indus River. This structure would have allowed those at the higher levels of the buildings in either city to look down the river and see into the distance.

The remains of the Indus Valley Civilization cities indicate remarkable organization; there were well-ordered wastewater drainage and trash collection systems and possibly even public baths and **granaries**, which are storehouses for grain. Most city-dwellers were artisans and merchants grouped together in distinct neighborhoods. The quality of urban planning suggests efficient municipal governments that placed a high priority on hygiene or religious ritual.

Harappans demonstrated advanced architecture with dockyards, granaries, warehouses, brick platforms, and protective walls. These massive walls likely protected the Harappans from floods and may have deterred military conflicts. Unlike Mesopotamia and Ancient Egypt, the inhabitants of the Indus Valley Civilization did not build large, monumental structures. There is no conclusive evidence of palaces or temples—or even of kings, armies, or priests—and the largest structures may be granaries. The city of Mohenjo-daro contains the Great Bath, which may have been a large, public bathing and social area.

Innovation and exchange

The people of the Indus River Valley Civilization achieved many notable advances in technology, including great accuracy in their systems and tools for measuring length and mass. Fire-baked bricks—which were uniform in size and moisture-resistant—were important in building baths and sewage structures and are evidence that Harappans were among the first to develop a system of **standardized weights and measures**. The consistency of brick

size across cities also suggests unity across the various urban areas, which is evidence of a broader civilization.

Harappa, Mohenjo-daro, and the recently partially-excavated Rakhigarhi demonstrate the world's first known urban sanitation systems. The ancient Indus systems of sewage and drainage developed and used in cities throughout the Indus region were far more advanced than any found in contemporary urban sites in the Middle East and even more efficient than those in many areas of Pakistan and India today. Individual homes drew water from wells, while wastewater was directed to covered drains on the main streets. Houses opened only to inner courtyards and smaller lanes, and even the smallest homes on the city outskirts were believed to have been connected to the system, further supporting the conclusion that cleanliness was a matter of great importance.

Harappans are known for **seal carving**— the cutting of patterns into the bottom face of a **seal**, a small, carved object used for stamping. They used these distinctive seals for the identification of property and to stamp clay on trade goods. Seals—decorated with animal figures, such as elephants, tigers, and water buffalos—have been one of the most commonly discovered artifacts in Indus Valley cities.

Religion, language, and culture

Little is known about Harappan religion and language. A collection of written texts on clay and stone tablets unearthed at Harappa—which have been carbon dated 3300-3200 BCE—contain trident-shaped, plant-like markings that appear to be written from right to left. There is considerable debate about whether it was an encoded language at all and whether it is related to Indo-European and South Indian language families. The Indus script remains indecipherable without any comparable symbols, and is thought to have evolved independently of the writing in Mesopotamia and Ancient Egypt. Researchers are using technological advances in computer science in order to attempt to decipher it.

Ten symbols made of geometric shapes and lines, arranged in a horizontal line.

The 'Ten Indus Scripts' discovered near the northern gateway of the citadel Dholavira. Image courtesy of Siyajkak and Gregors of Wikimedia Commons.

The Harappan religion also remains a topic of speculation. It has been widely suggested that the Harappans worshipped a mother goddess who symbolized fertility. In contrast to Egyptian and Mesopotamian civilizations, the Indus Valley Civilization seems to have lacked any temples or palaces that would give clear evidence of religious rites or specific deities.

Many Indus Valley seals include the forms of animals; some depict the animals being carried in processions, while others show mythological creations like unicorns, leading scholars to speculate about the role of animals in Indus Valley religions. Interpretations of these animal motifs include signification of membership in a clan, elite class, or kin structure. One seal from Mohenjo-daro shows a half-human, half-buffalo monster attacking a tiger. This may be a reference to the Sumerian myth of a monster created by Aruru—the Sumerian earth and fertility goddess—to fight Gilgamesh, the hero of an ancient Mesopotamian epic poem. This is a further suggestion of international trade in Harappan culture.

Indus Valley excavation sites have revealed a number of distinct examples of the culture's art, including sculptures, seals, pottery, gold jewelry, and anatomically detailed figurines in terracotta, bronze, and steatite.

Unit -II

Objectives

In this lesson, students investigate hominid evolution. Throughout the chapter, an emphasis will be on the importance of fossil evidence in unraveling the history of our ancestors. After completing this chapter, you will be able to:

- understand the concept and various theories of human evolution on the earth surface
- learn about the genetic relationship between humans and our closest living relatives
- trace the fossil history of the mankind and to Identify major fossil groups: Australopithecus, Homo Habilis, Homo Erectus, Homo-Neanderthalensis, and Homo sapiens.
- discuss that concepts like culture, religion and ethics evolved with humans.

Introduction

There are questions that have bothered mankind for ages such as from where did we come from, when did our ancestors appear on earth? And there have been as numerous answers as there are religions in the world. But common to all early ideas was the concept of creation. It was almost universally accepted that the world and all its creations- plants, insects, birds, animals and human beings-were created at the same time by some supernatural being, call it God, or whatever. No wonder, the idea of creation was deep-rooted in almost all religious faiths and humans were considered to be the supreme creation of god. Science, however, looks at things differently. It tries to understand and observed facts on the basis of logical explanations and evidence wherever possible. In this lesson students will subsequently come across various aspects about human evolution such as the concept of evolution, ours primate heritage and phases of human evolution.

Before the discussion of human origin, we should know the meaning of the tem evolution. Evolution is defined as the process by which different kinds of living organism developed from earlier forms. In another version it would define as the development of dissimilarities between ancestral and descendant population. In the process of evolution all living organism on this earth surface witnessed certain changes in their morphology through time. Human being, the wisest among the creature passes through several phases of evolution which is regarded as the climax of phylogenetic history of organisms. The evolution of man can be studies through its morphology by comparative anatomy of fossils and also by the comparative biochemistry of the present day humans, apes and other primates. The fossil record of the human history, although rudimentary, has been quite helpful in determining largely what we are seeking, namely a sound history and evolution of human species. This observation is obvious if one looks at the fossil history from early primates to the present man.

Theory and Fact of Human Evolution

Different theories have been given by different scholars, scientist, Anthropologist, religious teachers regarding the origin and evolution of man. During the 18th century, scholars grew increasingly interested in biological diversity and human origins. The following are some of the theories of human evolutions.

Theory of creationism

Before the scientific discoveries of fossils records, in the theological world the commonly accepted explanation for the origin of species came from **Genesis**, the first book of the Bible, wherein it is stated that God had created all life during six days of creation and this is known as the theory of creationism. According to creationism, biological similarities and differences originated at the Creation. Characteristics of life forms were seen as absolute; they could not change. Through calculations based on genealogies in the Bible, the biblical scholars James Ussher and John Lightfoot even claimed to trace the creation to a very specific time: October 23, 4004 B.C., at 9 A.M.

Theory of Catastrophism

Fossil discoveries during the 18th and 19th centuries raised doubts about creationism. In this circumstance a modified explanation combining creationism with catastrophism arose to replace the original doctrine. In this view, fires, floods and other catastrophes, including the biblical flood involving Noah's ark, had destroyed ancient species. After each destructive event, God had created again, leading to contemporary species. On this theory critics questioned that how did the catastrophists explain certain clear similarities between fossils and modern animals? And the proposer of this theory argued that some ancient species had managed to survive in isolated areas. For example, after the biblical flood, the progeny of the animals saved on Noah's ark spread throughout the world.

Theory of Transformism/Evolution

The alternative to creationism and catastrophism was transformism, also called evolution. Evolutionists believe that species arise from others through a long and gradual process of transformation, or descent with modification. Charles Darwin became the best known of the evolutionists. However, he was influenced by earlier scholars, including his own grandfather. In a book called **Zoonomia** published in 1794, Erasmus Darwin had proclaimed the common ancestry of all animal species.

In 19th century, Charles Darwin put forward the idea that humans have evolved from apes, in his book *The Descent of Man*. Darwin based his hypotheses on his wide-ranging studies of plant and animal life, of different continents and island of the world, which he carried out during a five year voyage-from 1831 to 1836 on board the research ship HMS Beagle. On examining the hundreds of species of plants, animals and birds he had seen and collected during his voyage, Darwin could distinguish small changes in characters between similar species inhabiting different ecological niches. He summarized his findings in the book, *On*

the Origin of Species by Means of Natural Selection, published in 1859, in which he described how one species could evolve into another more fit to survive in a changed environment, by a process which he called natural selection. Human beings, Darwin believed, evolved by a similar process. Charles Darwin also was influenced by Sir Charles Lyell, the father of Geology.

During his famous voyage to South America aboard the *Beagle*, Darwin read Lyell's influential book *Principles of Geology*, which exposed him to Lyell's principle of uniformitarianism, which states that the present is the key to the past. Explanations for past events should be sought in the long-term action of ordinary forces that still operate today. Thus, natural forces such as rainfall, soil deposition, earthquakes, and volcanic action gradually have built and modified geological features such as mountain ranges. The earth's structure has been transformed gradually through natural forces operating for millions of years. *Uniformitarianism* was a necessary building block for evolutionary theory. It cast serious doubt on the belief that the world was only 6,000 years old. It would take much longer for such ordinary forces as rain and wind to produce major geological changes. The longer time span also allowed enough time for the biological changes that fossil discoveries were revealing. Darwin applied the ideas of uniformitarianism and long-term transformation to living things. He argued that all life forms are ultimately related and that the number of species has increased over time.

Charles Darwin provided a theoretical framework for understanding evolution. He offered natural selection as a powerful evolutionary mechanism that could explain the origin of species, biological diversity, and similarities among related life forms. Darwin proposed a theory of evolution. The theory of evolution, through natural selection, was Darwin's major contribution. Darwin postulated the theory that apes and human had a common ancestors. In his *descent of man* he discussed about human ancestry. According to him man descended from minute organisms, the simplest forms of distant past and from simple form evolved the complex form through various stages. The most complex form is represented by man.

Our place among primates

Our nearest relatives (animals with which we share common ancestry) are other members of the zoological order known as primates, which includes humans, apes, monkeys, and lemurs. Apes are our closest relatives. Similarities between apes and humans are evident in anatomy, brain structure, genetics and biochemistry. Many similarities between organisms reflect their common ancestry. In other words, organism's share features they have inherited from the same ancestor. Apes and humans belong to the same taxonomic super family, Hominidea (hominoids) means all two legged man like species extinct or living. Apes and humans are more closely related to each other than either is to monkeys. Most closely

related to humans are the African great apes: chimpanzees and gorillas. A more distant relative is Asia's great ape, the orangutan, which survives on two Indonesian islands, Gibbons and Siamangs are smaller and more widespread Asian apes. The primates share structural and biochemical homologies that distinguish them from other mammals. Human being belong to the large mammalian order of primates, with in that order, humans being is the members of genus homo means gean of a family of hominidae, characterized by a relatively large cranial capacity, limbs structure adopted to a habitual erect postures and a bipedal gait, well developed and fully erect posture and a hand capable of power and precision, grips and ability to make, standardized precision tools using one tool to make another. Thus, human although belong the order of primates is the wisest among them owing to his intelligence and others physical features which separated human from rest of the mammals of primates order.

Primate Heritage

In course of search for missing link between primates and human to trace the evolution of mankind on the earth surface, in the 20th century a numbers of fossils remains were discovered from different parts of globe. All those discoveries gives us a good ideas on the origin of human being. As per the paleontological study the primate fossil history dates back to 60 million years

i.e. to Paleocene times, more specifically to the cretaceous age (Cretaceous is a geological age of our earth), the fossils of mammals of this period, their teeth, jaws and skulls bear affinities with Lemuroids. Next primates fossil record found in the Eocene times were comparable to modern lemurs except that their brain was smaller and teeth specializations were not found. There is a poor fossil record of primates in Oligocene times. Some 20 million years ago during Miocene times the fossils of **hominoids** appeared and towards the end of Miocene the old world monkeys appeared.

In the line of hominid evolution the major fossil record was that of **Dryopithecus**. This fossil had teeth like those of living apes, and long limb bones. **Dryopithecus** belongs to the sub-family Dryopithecinae which included chimpanzees, gorillas and orangutans. The next major fossil finds belong to Pliocene age dating back to 10 million years. Such fossils also belong to the late Miocene age. These rare fossils of subfamily Dryopithecinae belong to the genera **Sivapithecus** and **Ramapithecus** and were discovered in Siwalik hills of northern India. These fossils were the earliest recognizable hominid fossils along with those discovered in Kenya and Hungary. Subsequently, the genus **Gigantopithecus** was found both in Siwalik Hills and Pleistocene deposits of South China. All these fossils show certain hominid characters such as the shortening of the face, thickening of molar enamel and modest development of canines. The hominid nature of such fossils became obvious with the discovery of a beautifully preserved partial skull of a **Sivapithecus** discovered in 1982

by Pilbeam. The skull resembled that of orangutan. To sum up, although several late Miocene and Pliocene fossils were found there was no real consensus that they belonged to hominids. The real hominid fossils did not appear, until Pleistocene times that is until eight million years before the present. In the subsequent discussion we will be discussing the hominid fossils that were ancestral to the genus *Homo* and provided evidence for the evolution of modern man.

Trends in Human Evolution

The world's climate began to get cooler in five to ten million years ago, and the rain forests of Africa were replaced with savannas and open woodland. In these climatic changes evolved a new kind of hominoid of bipedal order. These new hominoids are classified as hominids-that is, of the human line. There are two major groups of hominids: few species of the genus *Homo* and some species of the older, smaller-brained genus *Australopithecus*. In the subsequent paragraphs we will discuss *Australopithecus*, and then *Homo* along with their varieties based on the fossil findings.

Before our discussion on the fossil history of the humans we shall briefly look into those facts, which distinguish humans or genus *Homo* from his ancestors namely the apes. These differences are clearly indicative of the trends in human evolution which are to a certain extent supported by the available fossil evidence. Some of the general trends in human evolution which we will examine in the subsequent discussion are: The development of bipedalism so that the forelimbs are set free for performing specific tasks, the development of visual capacity which has been perfected by the evolution of a binocular stereoscopic vision, an increase in cranial capacity in order to accommodate a larger volume of brain, a receding forehead, development of opposable thumb and the development of arched feet, etc.

Besides the above mentioned anatomical changes other important factors that were responsible for delimiting the genus *Homo* are: Evolution of culture by which it is meant that individuals in a society formulate concepts and communicate them to the other members of the society and by evolution of communication to express their views among each other it is meant that language has to be developed as a fundamental medium of culture. We will also examine here the cultural advances of mankind as per the material evidence they left behind such as lithic tools and traces of art activities.

In subsequent paragraphs our analysis of human evolution would focus the trends we mentioned above in relation to fossil records. Whereas it is possible to obtain the fossil evidence for the anatomical traits we mentioned and to a certain extent to depict cultural evolution such as subsistence pattern and other cultural activities.

Australopithecines: The Earliest Hominins

The oldest known hominidae remains are classified as belonging to the genus

Australopithecus and are found only in Africa. The first ever australopithecine fossil was found in 1924 at Taung, South Africa by famous anatomist Raymond Dart. It was the skull of a 5 year old child still with its milk teeth showing a mixture of human and ape like features. What fascinated Dart's attention was that the rock in which the skull was embedded had been collected near other fossils that suggested that the rocks and their fossils were several million years old. Scientists estimate Dart's skull to be 2.8 million years old. Professor Raymond Dart coined the term ***Australopithecus Africanus*** (from the Latin *australo*, meaning -southern and the Greek *pithecus*, meaning -ape), the ape from the south of Africa to describe the first fossil representative of this species, the skull of a juvenile that was found accidentally in a quarry at Taung, South Africa.

Other Australopithecus Species

In 1938, a second, stockier kind of *Australopithecus* was unearthed in South Africa. Called *Australopithecus robustus*, it had massive teeth and jaws. In 1959, in East Africa, Mary Leakey discovered a third kind of *Australopithecus* called *Australopithecus boisei* (after Charles Boise, an American-born businessman who contributed to the Leakeys' projects)—who was even more stockily built. Like the other australopithecines, *Australopithecus Boisei* was very old- almost 2 million years.

In 1974, anthropologist Don Johanson went to the remote Afar Desert of Ethiopia in search of early human fossils and hit the jackpot. He found the most complete, best preserved australopithecine skeleton known. Nicknamed -Lucy, the skeleton was 40% complete and over 3 million years old. The skeleton and other similar fossils have been assigned the scientific name *Australopithecus Afarensis* (from the Afar Desert). The shape of the pelvis indicated that Lucy was a female, and her leg bones proved she walked upright. Her teeth were distinctly hominid but her head was shaped like an ape's and her brain was about the size of a large orange.

In the subsequent years, three additional kinds of australopithecines have been reported. These seven species provide ample evidence that australopithecines were a diverse group, and additional species will undoubtedly be described by future investigators. The evolution of hominids seems to have begun with an initial radiation of numerous species. Based on stratigraphy of these fossil hominins, found at five main sites in South Africa, the time of these fossils can be placed in between 3 and 2 million year ago. Subsequent to this finding several additional skeletons, most of which were incomplete, were found. All such finds fell into two groups:

- i) A lighter more progressive group or the **Gracile** type
- ii) A heavier less progressive group or the **Robustus** type.

-Gracile indicates that members of *Australopithecus Africanus* were smaller

and slighter, less robust, than were members of *Australopithecus Robustus*. The trend toward enlarged back teeth, chewing muscles and facial buttressing continued in the South African australopithecines. However, the canines are reduced and the premolars are fully bicuspid. The diet of Australopithecine was the vegetation of the Savanna, although these early hominins also might have hunted small and slow-moving game. As well, they may have scavenged, bringing home parts of kills made by large cats and other carnivores. Overall robustness, especially in the chewing apparatus, increased through time among the australopithecines.

In East Africa the site of Laetoli is located 50 kms south of Olduvai Gorge in Tanzania. In this site M. Leaky found in volcanic ash a twenty meter trail of footprints of three hominids of 3.75 million years age. Also fossil fragments of 13 individuals, mostly teeth and jaws with a few post-cranial bones were found. The discovery of fossil footprints of 3.75 million years old essentially suggests that upright walking had already developed to a great degree. This observation has to be viewed in relation to the brain size. Mostly the brain case of australopithecines ranged from 400 to 600 C.C. and was in fact much larger in proportion to that of the body which was about 1.2 meters tall and weighed around 23 kilograms. Most of the fossils were found in cave sites which mean that by 2 million years ago the use of caves as shelter has begun. It is believed that the males while collecting and bringing in the food for the families should have got their forelimbs freed. In other words bipedalism evolved in relation to the concept of provisioning for the family. The forehead was more rounded than chimpanzees and eyebrow ridges were still very prominent but less so than in chimpanzees. The jaws protrude prominently but less than those of modern apes. The dental arcades of australopithecines were intermediate between the apes and other advanced hominids in overall shape, in the size of the canines and in the prominence of cusps of premolars and molars. Thus, the characters of the australopithecines suggest a hominid ancestry in them. From the available fossil evidence it cannot be precisely said the point of time at which the branching of the genus *Homo* from australopithecines took place. As date, there is reason to believe that *Australopithecus Africanus* could be the point from which the genus, *Homo* bifurcated. This hypothesis seems to be reasonable until new fossils suggesting a different line of bifurcation is discovered. Our discussion on the australopithecines, as the immediate ancestors of genus *Homo* ends here.

Homo Habilis or the Handy man

Olduvai Gorge is a deep gash running between the volcanic highlands and the Serengeti Plains of east Africa. The landscape of Olduvai gorge today is in many way similar to that seen by early man a couple of million years ago. The only differences is that in early times a lake occupied what is now the central part of the Gorge. It is here among exposed layers of clay and volcanic ash that remains of *Homo Habilis*, the first true member of the human

family were discovered.

The first fragments of Homo Habilis fossils earthed by the British paleoanthropologist and son of Louis S.B. Leakey, Richard Leakey and his team around 1960, about the same time that *Boisei* fossils came up. But at that time they didn't really provide any clue to the creature they belonged to. It was only in April 1964 that it was announced that 1.8 million year old fragments belonged to a new genus with features resembling humans more than apes was discovered. At the suggestion of Raymond Dart it was named Homo Habilis, or handy man. The name was quite appropriate as a large collection of primitive stone tools were also recovered at the same site, indicating that Homo Habilis was indeed quite adept at making tools.

Although the original Habilis fossils were discovered at Olduvai Gorge in Tanzania, the best specimens were unearthed later at Koobi Fora on the shores of Lake Turkana in Kenya. There in, 1972, Richard Leakey's team recovered the most complete skull of Homo ever found, along with thousands of fossils of other animals, and stone tools.

Even a casual look at the Habilis skull found at Koobi Fora was enough to convince anyone that it was more humanlike than apelike. The face of Homo Habilis was flatter than that of any of the Australopithecus species and its brain size was significantly larger-680 ml- although still only half as large as the average human brain today. So Homo Habilis must have been more intelligent than any of the earlier ape-like ancestors of man. But what is more significant is that the Habilis brain was not only bigger but also more complex than the brain of any of the Australopithecus species.

From the shape of the skull and the marks of its inner surface, brain specialist have identified a specific area in the Habilis brain similar to what is known as Broca's area in the human brain, which is essential for speech. This means that, although Homo Habilis had a brain only half as big as the human brain, it probably had the capability of uttering a few simple

words, but not much.

The appearance of Homo Habilis marked a quantum jump in the human evolution process. Australopithecus Robustus and Australopithecus boisei which came before it were more apelike, living an exceedingly primitive life, without articulate speech, with poor tools and weapons and probably surviving on a meatless diet. In which heralded not only the beginning of speech, but also the all important advantage of stone tools.

From the kind of stone tools found at Habilis sites one thing became clear, Homo Habilis was intelligent enough to gather the right kind of stone for making tools from places as far as 10 to 15 Km away and then shape them carefully into various forms. From the way the tools were shaped by hand by flaking, one can tell that the first human like tool makers were right handed. They were possibly our earliest ancestors known to eat meat. The fossils sites

also give an impression of group activity and some sort of social organization. Some scientists even conjecture that Homo Habilis saw the beginning of ritual and folklore typical human endeavors.

From the sampling of stone tools recovered from Habilis sites, it appears that the tools were quite useful. Small sharp –edged flakes chipped off larger stones formed tools for cutting the meat from bones of dead animals. That such tools were actually been used for cutting meat is evident from the fine cut marks seen on fossil bone fragments unearthed as Habilis sites. The pattern of accumulations of these remains suggests that our early ancestors brought dead animals and tools to a common spot where meat was butchered.

On the basis of the fossils finds at Olduvai Gorge and Koobi Fora, we can build up a possible scenario in which Homo Habilis lived. The daily life at Olduvai represents a crucial juncture in human evolution. These earliest ancestors of ours shared the land with rich faunas- antelopes, pigs, birds, tigers and elephants which flourished in the salubrious climates of 1.85 million years ago, which was far cooler and wetter than today's parched plains. Like all primates Homo Habilis subsisted mainly on a diet of plant parts such as fruits and berries and also roots and tubers which they dug up using pointed bones and also stone tools. In addition, the diet also included raw meat which they probably scavenged from the kills of other carnivores.

Although they were more enterprising than the earlier apes, Homo Habilis in all probability made their homes in the trees to escape from carnivores. We know this from their skeletal remains: they reveal that Homo Habilis had long arms well adapted to tree climbing.

From the study of fossils remains, other interesting facts about Homo Habilis have come to light. Patterns of tooth growth indicate that the family life at Olduvai was more like that of an ape than of humans. They indicate that Habilis children grew up nearly twice as fast as children of modern humans. This would also mean that our early ancestors would have been young adults by age 12, parents in their teens, and become old by the time they turned 30.

An interesting thing about the fossils finds at Olduvai Gorge and Koobi Fora is that all the sites where fossil remains of Homo Habilis have been located are also the sites which have yielded fossil fragments of Australopithecus boisei lived at the same time and possibly in the same terrains as Homo Habilis did. But we have no idea as to how the two coped with each other or whether they competed for food, which seems unlikely. Homo Habilis with much greater brain power and stone tools must have had a wider choice of food than the more primitive Australopithecus Boisei. No wonder, it would be the more advanced Homo Habilis that would now be on the direct road to human hood, leaving the others by the wayside.

It is now an accepted fact that the appearance of Homo Habilis was the turning point in human evolution; it marked a major milestone in the march of the lowly ape towards human

hood. Most probably it was brought about by a sharp environmental change of the kind that had earlier provided the stimulus to primitive apes to come out of the forest and adopt to a life on ground. That this may really have been the cause is borne out by climatic data. Records show that after the global freeze about 6 million years ago the climate had warmed up again. But, around 2.5 million years ago temperature dropped again bringing in a little of ice age.

It was during this period, it is now believed, that the early ancestors of man split into two diverging branches. One branch leading to Australopithecus Robustus and the other to Homo Habilis, which subsequently led towards modern humans. By the time Homo Habilis died some

1.5 million years ago, a new, more advanced human ancestor had appeared on the scene. Named Homo erectus or the upright man, this large brained ancestor of ours was a true wanderer. It would become the first early humans to leave the cradle of the African continent and spread around the world.

Early Tools

The oldest obviously manufactured tools were discovered in 1931 by L. S. B. and Mary Leakey at Olduvai Gorge, Tanzania along with the fossils record of the species Homo habilis. This site gave the tools their name-Oldowan pebble tools. The oldest tools from Olduvai are about 1.8 million years old. Still older stone tools have been found in Ethiopia, Congo, and Malawi. Stone tools consist of cores and flakes. The core is the piece of rock from which flakes are removed; the core can be worked to become a tool itself. A chopper is a tool made by flaking the edge of such a core on one side. Oldowan pebble tools represent the world's oldest formally recognized stone tools. With the use of cores about the size of a tennis ball, flakes were struck off one or both sides to form a chopping or cutting edge. The flakes also could be fashioned into tools and were the basis of several later stone tool industries. Thus, Homo Habilis being capable of using his hand was the first species in the line of human evolution to manufacture stone tools for his sustenance. This species is popularly known as the handy man.

Homo Erectus: The Erect Man

In the last decade of the nineteenth century an unusual fossil discovery was made in the island of Java in South-East Asia that would turn out to be a landmark in the search for human origin. The discovery was made by Dutch Anatomist Eugene Dubois, who in the late 1880s developed a passion for finding the true human ancestor, the missing link between apes and modern man. At that time a dozen of discoveries of manlike fossils were known but nothing that could be considered as the missing link. Dubois was inspired by the writings of German Zoologist Ernst Haeckel, who was a strong supporter of Darwin's ideas. Haeckel reasoned that since humans and apes are closely related, then, if humans have indeed evolved from apes, there must have been some kind of an intermediate link between them. He had even given a name for that intermediate form. He called it Pithecanthropus, meaning ape like man. He even suggested where remains of such a creature would be found- in the bone caves of the Malay Archipelago. In 1887, Dubois sailed for the Dutch East India with the avowed intention of finding remains of fossil ape -man.

In 1889, two years after arriving in Java, Dubois set out on his search along the Solo River.

In 1891, two key fossils turned up near the village Trinil- a tooth and a skull cap. The next year, a modern looking thigh bone was found which clearly did not belong to an ape. The fossils were dated at about 1 million years. Realizing that the skull cap certainly belonged to a creature with a large brain and convinced that the tooth, skull cap and thigh bone came from the same individual Dubois was sure that he had stumbled upon the fossils remains of Haeckel's missing link. He called the creatures *Pithecanthropus Erectus*., because from the shape of its thigh bone there was no doubt that this ape-like man walked upright. To the public it would be known as Java Man. Dubois claimed that his Java man was the transition from which in accordance with the teachings of evolution, must have existed between man and the apes. Several other specimens of *pithecanthropus* were discovered later from the nearby sites.

Forty years later, in China, a young paleontologists, named W.C. Pei, found a similar skull cap embedded in deposits in a limestone cave in a large hill near the village of Zhokoudian, near Beijing. Pei's find was named *Sinanthropous Pekingensis* or Chinese man of Perking. To the public at large it was just the Peking man. The fossils of Peking man were less than 1 million year old. Today, of course, we know about both Java man and Peking man belonged to the same species *Homo Erectus*, a species intermediate between the first upright walking human ancestors and modern man.

The oldest and most complete specimens of *Homo Erectus* came up at a site at Nariokotome on the western shore of Lake Turkana in Kenya in 1984. The discovery of the fossils was made by Richard Leakey's team. It was almost an entire skeleton, fragmented, of course, of a boy, who must have been no more than nine year old when he died at the edge of the ancient lake, more than 1.5 million years ago. The specimens soon came to be known as the Turkana boy.

The age at which the Turkana boy died was inferred from his teeth growth pattern. At the time of his death his second molar was beginning to show through, in modern human children this would happen at the age of 11 and in apes at age seven. Since the place of *Homo erectus* was somewhere midway it was rescannable to assume that the boy had died when he was nine.

The discovery of the almost complete skeleton of the Turkana boy lay to rest the earlier ideas about the physical appearance of *Homo Erectus*. Ever since Dubois' time, it was ‘squat, heavy-boned and powerfully muscled’ creature. The Turkana boy changed all that. According to Alan Walker- Richard Leakey's team mate who led the group that studied the skeleton- the boy would have grown to a tall, slender adult with a height not less than 1.8 m. he was build much like the people who live around Lake Turkana today- people whose long, slender limbs and bodies are good at shedding the heat load mercilessly imposed by the sun. what is more important is that the Turkana boy represented the earliest human

ancestor known to science whose general body proportions marked those of living people.

In facial appearance, Homo Erectus was not much different from its predecessor, homo Habilis. The face still had protruding jaws, no chin, thick brow ridges and a long, low skull, although its teeth were somewhat smaller. But what distinguished it from its predecessors was its rather large brain, with a volume close to 1000 cc, compared to 680 cc for Homo Habilis and 1,350 cc for modern humans.

With its larger, more complex brain, Homo Erectus certainly had better intelligence than its predecessor and must have developed intellectual curiosity none of its predecessors was endowed with. It may even have had some capability of speech. We can tell about the higher intelligence of Homo erectus from the variety of advanced stone tools and weapons found at the excavation sites. These included large quantities of double-edges, teardrop-shaped hand axes and other sharp edged cutting tools.

Evidence from China and elsewhere where charcoal has been found at several sites suggests that Homo Erectus also know how to control fire and cook food. This may have been one of the factors that led to a reduction in teeth size in later human ancestors, because chewing cooked food needs less force than chewing raw meat or uncooked food.

The Great Exodus and Aftermath

The larger brain capacity may also have endowed Homo Erectus with an urge to venture out beyond its immediate neighborhood in search of new pastures. Like humans today, he must have wanted to see what was on the other side of the mountains. Another factor that may have made Homo Erectus move out of Africa could be population pressure due to increasing numbers at the few favorable locations. But, whatever may have been the driving force, with its better hunting and foraging skills and substantially improved capability of exploiting the environment, Homo erectus may not have faced much difficulty in moving into a new unexplored territory. And so, with Homo erectus began the big exodus out of Africa, about 1 million years ago. They spread far and wide as fossil evidences from China, South-East Asia and from the Narmada Valley in India show. Surprisingly, no definitive fossil evidence of the presence of Homo Erectus has been found in Europe. The Ice Age glaciations prevailing in that part of the world at that time may have prevented the early human wanderers from venturing north onto the frigid ice- covered land, at least temporarily. When populations of Homo Erectus began to move out of Africa about 1 million year ago, they carried their improved knowledge of tool making with them which was crucial for their survival in an unknown, hostile environment. As they spread across Europe and Asia, they improved their tool-making techniques-broad flakes gave way to narrow blades. The blades were further shaped to produce the finest of implements. These mute stones, products of a different kind of mind at work, tell the story of a real change in the path of human history.

Besides improved tool making, Homo Erectus migrant brought in a different kind of change. Faced with unfamiliar environments in their new homes, they rapidly evolved area- specific adaptations which helped them cope more successfully with the new environments. The change in skin colour may have been one of them.

As Homo Erectus moved into cooler lands of Europe, they found that sunlight was not as abundant as in their earlier home i.e. tropical Africa. Their brown skins would have been a problem. Not only was a layer of protective pigment no longer necessary against the mild sun, but the pigment would also have prevented the synthesis of Vitamin D in the skin. So some of the migrants living in cooler climates must have lost, over a few generations, much of the skin pigmentation, and become white skinned. In this way, regional physical distinctions may have become gradually established.

From the size of the skull of the Turkana boy it has been estimated that homo erectus were born with brains one third of the size of the adult brain, as in t modern humans. It is quite possible that the Turkana boy also must have come into this world in a helpless state, like modern human infant do. This could mean that the intense parental care of infants which is part of modern human social milieu had already begun to develop in early Homo Erectus, some 1.7 million years ago.

With its larger brain, and greater intelligence, Homo Erectus represented a pivotal point in human evolution. It can be said that whatever came before it was more apelike and whatever came later was more humanlike.

Over a period of a million years Homo Erectus evolved gradually. The above discussion shows that Homo Erectus pushed the hominin range beyond Africa-to Asia, Europe and Eurasia , as evidenced from the discoveries of fossils record from China and Indonesia in the east besides Africa. Small groups broke off from larger ones and moved a few miles away. They foraged new tracts of vegetation and carved out new hunting territories. Through population growth and dispersal, Homo Erectus gradually spread and changed. By around 500,000 years ago some of our ancestors looked sufficiently like us and sufficiently different from earlier Homo Erectus.

Homo Erectus first arose about 1.6 million years ago and is believed to have lived for at least 600,000 years at a time when the transition to *Homo sapiens* took place. The fossil finds of Homo Erectus indicate several first happenings in the human history.

- For the first time man became from being an opportunistic scavenger to a cooperative and big game hunter.
- For the first time he had come to know the use of fire.
- From being a mere stone scrapper, he became a systematic tool maker.
- There is evidence to indicate that he had home bases of campsites from where he operated.

- And also for the first time we had such fossils from outside Africa, in Eurasia. *Homo erectus* variously named as Pithecanthropus, Sinanthropus and Atlanthropus, first appeared during the Pleistocene interglacial period. Natural selection, it appears acted on specific characters which favoured the accumulated wisdom, such as increased body size, increased longevity, symbolic human-style culture, and loss of body heat.
- The cranial capacity of the pithecanthropine man ranged between 800 C.C. to 1125 C.C. The later populations of Homo Erectus were known as cave man or ape man.

The fossil evidence did suggest that Homo Erectus was very clever as compared to the apes but dull as compared to the modern man.

Tool of Homo erectus

Two specific skills of ***Homo Erectus*** make him stand apart from all his predecessors: i) skills as an efficient tool maker ii) skills as a cooperative game hunter. Both the skills could be associated with the larger brains they had. The tools made by ***Homo Sapiens*** were more refined than those of their immediate ancestors. The ***Homo Erectus Species*** was the real author of lower Paleolithic age. Stone tool making industry can be said to fall into two categories:

- i) Tools of Oldowan industry which were simple, unspecialised and geographically restricted. Subsequently, the Oldowan industry developed more skill and sophistication as is known in South and East Africa.
- ii) The Acheulian industry is characterized by large hand axes with fine workmanship. Such tools were abundant in regions from France to India. The Acheulian industry lasted almost a million years and probably ***Homo Sapiens*** also used these tools.

Big Game Hunting

The most important event that led to the evolution of modern man is his transition from being a hunter-gatherer to that of a big game hunter. During the middle Pleistocene times there were huge herds of very large mammals. Bones of such large mammals were found associated with the human fossil finds and the contemporary fossil tools. Initially the big game hunting was probably not carried out on a large scale and might have been cooperative venture. Here, several males surrounded a selected individual and killed it by the handiest method. The important point is that the whole process was a cooperative venture. It could be true that although the hunting was a cooperative venture, Homo Erectus could not have detailed any specific plan in advance because of the lack of communication skills. But the cooperative venture served one big purpose namely it enabled the formation

of multi-family groups and socializing tendencies. In other words, big game hunting could have been the reason for the development of different social roles for males and females. This means the division of labour was being established and the role of female was getting confined mostly to child bearing and rearing children along with gathering of vegetal matter and slow game. The big game hunting brought certain changes in the physical structure of the human beings. Man hunted the animals during the day time. This meant that the hard work of chasing and killing animals had to be done in the hot sun. Selection during these times favoured individuals that lost the metabolic heat faster than their fellow individuals. During these times possibly man had lost the thick hair of body and developed a high density of sweat glands in the skin. Man could effectively evaporate and cool all over the body.

Invention and Use of Fire

Another tool that Homo *Erectus* has learnt to use was fire and in fact man had multiple uses for fire. It is not very clearly known how man had learnt to tame the fire but he understood that it was a source of warmth at a time when the thick hair from the body was being eliminated. Man also found use in fire in scaring of large carnivores. With a generalized tooth row that he was now developing, it became important for him to soften the tough meat and vegetables. Fire was also used to harden the pointed wooden stakes so that it is converted into a spear. Finally, fire also contributed to the development of social behaviour.

The era of *Homo erectus* should have probably come to an end some 275 thousand years ago, but by that time all those salient characters that are found in modern man had come to be established in *Homo erectus*. It has not been possible for the paleontologists and anthropologists to determine precisely the time of transition from *Homo erectus* to *Homo sapiens* although the first fossils of *Homo sapiens* were at least 300,000 years old.

Homo Sapiens: The Wise Man

Africa, which was center stage during the australopithecine period, is joined by Asia and Europe during the Homo Erectus and Homo Sapiens periods of hominid evolution. Recent discoveries, along with reinterpretation of the dating and the anatomical relevance of some earlier finds, are filling in the gap between Homo Erectus and archaic Homo Sapiens. Archaic Homo Sapiens (300,000 to 28,000 B.P.) encompasses the earliest members of our species, along with the Neanderthals (130,000 to 28,000 B.P.) of Europe and the Middle East and their Neanderthal-like contemporaries in Africa and Asia. A rounding out of the brain case was associated with the increased brain size. Homo sapiens first appeared in the fossil record between 200,000 to 300,000 years ago.

There are only slight physical differences between Homo Erectus and Homo Sapiens and the transition between the two species is obvious from the earliest known groups of Homo

Sapien, the Neanderthal man. Whereas Homo Sapien is characterized by a large and round brain case, smaller brow ridges and a more pronounced chin as compared to pithecanthropus, Neanderthals were more or less intermediate

The Neanderthals:

The first Neanderthal was found in 1856 in a German valley called Neander Valley-*tal* is the German word for valley. Scientists had trouble interpreting the discovery. It was clearly human, yet different enough from modern people to be considered strange and abnormal. There have been numerous subsequent discoveries of Neanderthals in Central Europe and the Middle East. For example, Neanderthal fossils found at the Shanidar cave in northern Iraq date to around 60,000 B.P., as does a Neanderthal skeleton found at Israel's Kebara cave.

By 75,000 B.P., after an interglacial interlude, Neanderthals man again faced extreme cold as the Wurm glacial began. To deal with that environment, they wore clothes, made elaborate tools, and hunted reindeer, mammoths, and woolly rhinos. The Neanderthals were stocky, with large trunks relative to limb length that minimizes surface area and thus conserves heat. Another adaptation to extreme cold was the Neanderthal face, which has been likened to a Homo erectus face that has been pulled forward by the nose. This extension increased the distance between outside air and the arteries that carry blood to the brain and was adaptive in a cold climate. The brain is sensitive to temperature changes and must be kept warm.

The massive nasal cavities of Neanderthal fossils suggest long, broad noses. This would expand the area for warming and moistening air. Neanderthal characteristics also include huge front teeth, broad faces, and a rugged skeleton and musculature. Neanderthal teeth probably did many jobs later done by tools. The front teeth show heavy wear, suggesting they were used for varied purposes, including chewing animal hides to make soft winter clothing out of them. The massive Neanderthal face showed the stresses of constantly using the front teeth for holding and pulling.

Neanderthal man was distributed all over Europe, Asia and Africa. Their cranial capacity was larger than that of modern man. It is not very clear whether Neanderthals represent a stage in the evolution of modern man or whether they represent another race of modern man. Both modern man and Neanderthals were found together during the later part of Wurm glaciations and since this is so at one point, it indicates that the Neanderthals represent only another modern race. Neanderthals are known for their fine tool industry, the Mousterian industry in which the hand axe was slowly replaced by various tools. With prominent eyebrow ridges, they had a receding forehead and the cranial capacity was greater than that of modern man averaging about 1450 C.C. The teeth and jaws were large and heavy as compared to modern man and he had a receding chin. Indications are that he

had a powerful neck musculature, robust limb bones and a skeleton more adapted to higher levels of activity and stress. Anatomy of the hand indicated a powerful grip. The stature was 1.5 meters and he was a cave dweller. Culturally Neanderthals appeared to be more advanced. They had the habit of burying dead ones with reverence as was evidenced by the presence of flowers in the burial centers. This group was biologically very successful and consisted of a homogeneous and widely distributed people.

The Homo Sapien Sapien: Cro-Magnon Man

Modern humans, Homo Sapiens Sapiens appeared in fossils some **33** thousand years ago. The first fossil was discovered from the Cro-Magnon shelter in France and hence the fossil was known as Cro-Magnon man. Subsequently many such fossils were known from France, Italy and Middle East. All such fossils exhibited reduced brow ridges, steep forehead, high rounded cranial vault, short face and pronounced chin. Being bulky, they were not as tall as Neanderthals. Structurally the Cro-Magnon man had a lot of resemblance to modern Europeans.

It appears that the stone implements of Cro-Magnon's man had a high technological perfection. Modern human being in Europe made tools in a variety of traditions, collectively known as Upper Paleolithic because of the tools' location in the upper, or more recent, layers of sedimentary deposits. Upper Paleolithic traditions emphasized blade tools. Blades were chipped off prepared cores 4 to 6 inches high, by hitting a punch made of bone or antler with a hammer stone. Blades then were modified to produce a variety of special-purpose implements. Some were composite tools that were made by joining reworked blades to other materials. Europe's Upper Paleolithic economy depended on cooperative hunting of mammoths, woolly rhinoceroses, bison, wild horses, bears, wild cattle, wild boars, and-principally-reindeer. Increasing sophistication and diversity in tool-making techniques are the varied special-purpose tools made by Upper Paleolithic populations. Scrapers were used to hollow out wood and bone, scrape animal hides, and remove bark from trees. Burins, the first chisels, were used to make slots in bone and wood and to engrave designs on bone. Awls, which were drills with sharp points, were used to make holes in wood, bone, shell, and skin. Upper Paleolithic bone tools have survived: knives, pins, needles with eyes, and fish hooks. The needles suggest that clothes sewn with thread-made from the sinews of animals-were being worn. Fishhooks and harpoons confirm an increased emphasis on fishing.

One could obtain in fossils long thin blades of various types. Further, Cro-Magnons had a taste for art. They made beads, carved statues and even engraved pictures. The cave paintings made by these men are a record of their aesthetic sense. Their burials were ceremonial and gave an indication of their cultured life. It could be said that with the

appearance of Cro-Magnon, the modern human, the morphological evolution of humans is more or less complete and any further progress is relate to culture and language.

A significant shift in the pattern of the human activity has occurred beginning about 10,000 years ago. This shift manifested itself in various aspects of his life. For instance, there was a shift from hunting and gathering to agriculture. There was a shift in the tool making process also. From the Paleolithic age which was marked by making stone tools, he began to make his implements first in bronze and then in iron. And beginning 5,000 years ago special occupations developed, the cities began to be formed and the development of various aspects of culture such as writing, history, wealth, leisure, science and arts took place. This can briefly be the evolution of modern humans.

An Overview of Hominid Evolution

In the above sections we discussed in detail the fossil record of primates in general and more particularly those of apes and the humans. Despite the fact that in recent years a number of hominid fossils have been discovered, the fossil history of humans is not complete and the evidence is only fragmentary. Therefore, it has become necessary that based on the available evidence we need to synthesize an acceptable path of human ancestry. It is only during the late Pliocene period the first remarkable hominid *Australopithecus Afarensis* (Lucy) appeared. The *Australopithecus Afarensis* led to *Australopithecus Africanus* which divided into two lineages: 1) to *Australopithecus Robustus* and *Australopithecus Boisei* which represented the termination of the australopithecine lineage. 2) the more progressive branch gave rise to *Homo Habilis* to *Homo Erectus* and finally to *Homo Sapiens*.

The fossil history of humans makes one thing clear that at any given time not more than one species of *Homo* existed, although many contemporary sub-species could have lived. The fossil evidence suggests that the origin of *Homo Sapiens* from *Homo Erectus* could have occurred during the middle Pleistocene times. While discussing the origin of modern man we mentioned that the Neanderthals were a separate race by themselves. The classical Neanderthal fossils of later date were found from Western Europe although the skeletons of early Neanderthals were found in Eastern Europe and Asia. Obviously the Neanderthal race, a modern but a distinct race from *Homo sapiens* occupied the old world as early the second interglacial period.

By around the fourth glaciations the classical Neanderthal man got separated from the main population. The *Homo Sapiens Sapiens*, it is believed, should have arisen from the main population and developed into a more progressive Cro-Magnon man. From the Eastern Europe the Cro-Magnon man invaded the West and replaced his Neanderthal cousins. Neanderthal fossils are at least 45,000 years old and are associated with Mousterian tools. About 40,000 years before the present skeletons of both Neanderthals and modern man

could be found. Considering the fact that these fossils were found in Eastern Europe it is suggested that modern humans made their appearance in the Middle East Europe, moved out from there and replaced the Neanderthals. At such times inter-mating could have occurred between Neanderthals and Cro-Magnon man and the latter inherited the genes of the former.

Evolution is an ever continuing process, what we have discussed here is one aspect of human evolution. Currently man is evolving by adapting biologically to his own cultures. The evolution of cultures and civilization will be the subject matter of our next unit.

Objective

The chapter deals with civilizations in Mesopotamia, the earliest among the ancient river valley civilizations. In Mesopotamia civilization flourished on the banks of river Euphrates and Tigris. The objectives of this unit are to.

- Make you aware about development of civilization in Mesopotamia.
- Provide a brief sketch on the geography, of Mesopotamia.
- Describe the political, economic, social and religious aspects of various phases of Mesopotamian civilization.
- Enumerate the development of Art and Architecture, script and literature and science and technology of Mesopotamia and
- Assess the contribution of Mesopotamia to subsequent human civilization.

Introduction to Civilizations in Mesopotamia

Two rivers flow from the mountains of eastern Turkey, down through Syria and Iraq and finally debouch in to the Persian Gulf. Six thousand years ago, the waters of these rivers provided the lifeblood that allowed the formation of farming settlements. These grew into villages and then cities. It is here in this land urban civilization flourished for a long period of time and bestow the mankind with the first ever farming and commerce, the horse and carriage, the coinage, the industries, the law and government, the drainage systems, the geometry and astronomy, the calendar, clock and zodiac, the alphabet and script, the literature and music, the sculpture and architecture, the religious system, the cosmetics and jewelry, etc or even more need for a civilized society.

Before dealings with the different phases of urban Mesopotamian civilization let's have a brief look into the geography of this region which helps to flourish them. Presently the region is characterized with a desert climate dominating the landscape between the Persian Gulf and the Mediterranean Sea in Southwest Asia. Yet within this dry region lies an arc of land that provides some of the best farming in Southwest Asia. The region's curved shape and the richness of its land led scholars to call it the *Fertile Crescent*.

In the eastern part of the Fertile Crescent, the Tigris and Euphrates rivers flow south-eastward to the Persian Gulf. Between them lies a plain that became known as Mesopotamia, which in Greek means -land between the rivers. The Tigris and Euphrates rivers flooded Mesopotamia at least once a year. As the floodwater receded, it left a thick bed of mud called silt. In this rich, new soil, farmers could plant and harvest enormous quantities of wheat and barley. The surpluses from their harvests allowed villages to grow. People first began to settle and farm in southern Mesopotamia before 4500 B.C. Gradually the prosperous agriculture accelerated the process of urbanisation and growth of civilisation. In this Fertile Crescent successively three phase of urban civilisation flourished such as the Sumerian, Babylonian and the Assyrian. The civilisation flourished up to the annexation of Babylon by the Achaemenid in the 6th Century B.C and subsequently by Alexander the great in the 4th century B.C. in the subsequent pages we will have a brief discussion on the above mentioned three phases of Mesopotamian civilisation.

Sumerian: Historical & Geographical Background

Modern man first began to settle and introduce farming in southern Mesopotamia before 4500 B.C. It was around 3500 B.C., the people called as Sumerians arrived in Mesopotamia and settled over here. The Sumerians mixed with the local farmers, and their language became dominant in the region. No one knows for sure where the Sumerians came from. Good soil was the advantage that attracted these settlers to the flat, swampy land of Sumer. There were, however, three disadvantages to their new environment. First, the unpredictable flooding of the rivers and arid climatic condition, secondly, the defenceless situation of Sumer and the third, the extremely limited natural resources of Sumer such as stone, wood, and metal must had created problems of scarcity of materials for manufacturing of tools or construction of buildings.

Over a long period of time, the people of Sumer created solutions to deal with these problems. To provide water, they dug irrigation ditches that carried river water to their fields and allowed them to produce a surplus of crops. For defence, they built city walls with mud bricks. Finally, Sumerians traded with the peoples of the mountains and the desert for the products they lacked. Sumerians traded their grain, cloth, and crafted tools for the stone, wood, and metal they needed to make their tools and buildings.

These activities required organization, cooperation, and leadership. It took many people working together, for example, for the Sumerians to construct their large irrigation systems. Leaders were needed to plan the projects and supervise the digging. These projects also created a need for laws to settle disputes over how land and water would be distributed. These leaders and laws were the beginning of organized government.

The Sumerians stand out in history as one of the first groups of people to form a civilization. Five key characteristics set Sumer apart from earlier human societies are advanced cities,

specialized workers, complex institutions, record keeping, and advanced technology. All the later peoples who lived in this region of the world built upon the innovations of Sumerian civilization. By 3000 B.C., the Sumerians had built a number of cities, each surrounded by fields of barley and wheat. Although these cities shared the same culture, they developed their own governments, each with its own rulers. Each city and the surrounding land it controlled formed a city-state. A city-state functioned much as an independent country does today. Sumerian city-states included Uruk, Kish, Lagash, Umma, and Ur.

The early history of Mesopotamia is in one aspect the struggle of the non-Semitic peoples of Sumeria to preserve their independence against the expansion and inroads of the Semites. In the midst of their struggles these varied stocks unconsciously, perhaps unwillingly, cooperated to produce the first extensive civilization known to history, and one of the most creative and unique

Race

Historians are in doubt about the original home land, ethnic origin and the route of immigration of the Sumerians in Mesopotamia. Perhaps they came from central Asia, or the Caucasus, or Armenia, and moved through northern Mesopotamia down the Euphrates and the Tigris along which, as at Ashur, evidences of their earliest culture have been found; perhaps, as the legend says, they sailed in from the Persian Gulf, from Egypt or elsewhere, and slowly made their way up the great rivers; perhaps they came from Susa, among whose relics is an asphalt head bearing all the characteristics of the Sumerian type; perhaps, even, they were of remote Mongolian origin, for there is much in their language that resembles the Mongol speech. The skeletal remains and sculptural reliefs show them as a short and stocky people, with high, straight, non-Semitic nose, slightly receding forehead and downward-sloping eyes. Many wore beards, some were clean-shaven, most of them shaved the upper lip.

The Sumerian Flood

In or about 2300 B.C. the ancient poets and scholars of Sumeria started the reconstruction of their ancient history. The poets wrote legends of a creation, a primitive paradise and a terrible flood that engulfed and destroyed it because of the sin of an ancient king. This tradition of legendary flood passed down into Babylonian and Hebrew tradition, and became part of the Christian creed. In 1929 Professor Woolley, digging into the ruins of Ur, discovered an eight-foot layer of silt and clay; this, if we are to believe him, was deposited during a catastrophic overflow of the Euphrates, which lingered in later memory as the Flood. Beneath that layer were the remains of a pre-diluvian culture that would later be pictured by the poets as a Golden Age.

Polity in Sumeria

The priest-historians of Sumer created a past spacious enough for the development of all

the marvels of Sumerian civilization. They formulated lists of their ancient kings, extending the dynasties before the Flood to 4,32,000 years and told such impressive stories of two of these rulers, Tammuz and Gilgamesh, that the latter became the hero of the greatest poem in Babylonian literature, and Tammuz passed down into the pantheon of Babylon and became the Adonis of the Greeks. Perhaps the priests exaggerated a little the antiquity of their civilization. We may loosely judge the age of Sumerian culture by observing that the ruins of Nippur are found to a depth of sixty-six feet, of which almost as many feet extend below the remains of Sargon of Akkad as rise above it to the topmost stratum on this basis Nippur would go back to 5262 B.C. Tenacious dynasties of city-kings seem to have flourished at Kish ca. 4500 B.C., and at Ur ca. 3500 B.C.

From 3000 B.C. onward the clay-tablet records kept by the priests, and found in the ruins of Ur, present a reasonably accurate account of the accessions and coronations, uninterrupted victories and sublime deaths of the petty kings who ruled the city-states of Ur, Lagash, Uruk, and the rest; the writing of history and the partiality of historians are very ancient things.

This lucid interval was ended normally by one Lugal-zaggisi, who invaded Lagash, overthrew Urukagina and sacked the city at the height of its prosperity. The temples were destroyed, the citizens were massacred in the streets and the statues of the gods were led away in shameful bondage.

Sargon of Akkad

Meanwhile another people of Semitic race had built the kingdom of Akkad under the leadership of Sargon I and had established its capital at Agade some two hundred miles northwest of the Sumerian city-states. His origin was not royal history could find no father for him and no other mother than a temple prostitute. He called himself King of Universal Dominion and ruled a small portion of Mesopotamia. He invaded many cities, captured much booty and killed many men. East and west, north and south the mighty warrior marched conquering Elam washing his weapons in symbolic triumph in the Persian Gulf, crossing western Asia, reaching the Mediterranean, and establishing the first great empire in history. For fifty-five years he ruled, while legends gathered about him and prepared to make him a god. His reign closed with all his empire in revolt. Three sons succeeded him in turn. The third, Naramsin, was a mighty builder, of whose works nothing remains but a memorial slab, recording his victory over an obscure king.

Achievement of Gudea

By the twenty-sixth century B.C. Lagash again flourished under Gudea, an enlightened monarch. His stocky statues are the most prominent remains of Sumerian sculpture. Gudea was honored by his people not as a warrior but as a Sumerian Aurelius, devoted to religion, literature and good works; he built temples, promoted the study of classical antiquities in the spirit of the expeditions that unearthed him, and tempered the strength of the strong in

mercy to the weak. One of his inscriptions reveals the policy for which his people worshiped him, after his death, as a god. During seven years the maid servant was the equal of her mistress, the slave walked beside his master, and in my town the weak rested by the side of the strong.

The Golden Age of Ur

Meanwhile Ur of the Chaldees was having one of the most prosperous epochs in its long career from 3,500 B.C. to 700 B.C. Its greatest king, Urengur, brought all western Asia under his pacific sway and proclaimed for all Sumeria the first extensive code of laws in history. The vibrating trade on the Euphrates made Ur prosperous. On account of this prosperity Urengur, beautified his city with temples and built lavishly in the subject cities of Larsa, Uruk and Nippur. His son Dungi continued his work through a reign of fifty eight years, and ruled so wisely that the people deified him as the god who had brought back their ancient Paradise. But soon that glory faded. The warlike Elamites from the East and the rising Amorites from the West swept down upon the leisure, prosperity and peace of Ur, captured its king, and sacked the city with primitive thoroughness.

Elam and Amor ruled Sumeria for two hundred years. Then from the north came the great Hammurabi, King of Babylon; retook from the Elamites Uruk and Isin; bided his time for twenty-three years; invaded Elam and captured its king; established his sway over Amor and distant Assyria, built an empire of unprecedented power, and disciplined it with a universal law. For many centuries now until the rise of Persia the Semites would rule the Land between the Rivers. Of the Sumerians nothing more is heard and they lost in the ocean of human history. But Sumerian civilization remained. Sumer and Akkad still produced handicraftsmen, poets, artists, sages and saints; the culture of the southern cities passed north along the Euphrates and the Tigris to Babylonia and Assyria as the initial heritage of Mesopotamian civilization.

City states of Sumer: Kings and the Government.

Each city maintained a jealous independence and indulged itself in a private king called Patesi or priest-king. The term priest king indicates by the very word that the government was bound up with religion. By 2800 B.C. the growth of trade made such municipal separatism impossible and generated "empires" in which some dominating personality subjected the cities and their Patesis to his power and wove them into an economic and political unity. The king dwelt in an inaccessible palace, whose two entrances were so narrow as to admit only one person at a time; to the right and left were recesses from which secret guards could examine every visitor, or pounce upon him with daggers. Even the king's temple was private, hidden away in his palace, so that he might perform his religious duties without exposure, or neglect them inconspicuously.

The king went to battle in a chariot, leading an army armed with bows, arrows and spears.

The wars were waged frankly for commercial routes and goods. The defeated were customarily sold into slavery or slaughtered on the battlefield. Sometimes a tenth of the prisoners, struggling unsuccessfully in a net were offered as living victims to the thirsty gods. The chauvinistic separatism of the cities stimulated life and art, but led to civic violence and at last destroyed Sumeria.

In the empires social order was maintained through a feudal system. After a successful war the ruler gave tracts of land to his valiant chieftains, and exempted such estates from taxation. These men kept order in their territories, and provided soldiers and supplies for the exploits of the king. The finances of the government were obtained by taxes in kind, stored in royal warehouses, and distributed as pay to officials and employees of the state.

To this system of royal and feudal administration was added a body of law, already rich with precedents when Ur-engur and Dungi codified the statutes of Ur. This was the fountainhead of Hammurabi's famous code. It was cruder and simpler than later legislation, but less severe: where, for example, the Semitic code killed a woman for adultery, the Sumerian code merely allowed the husband to take a second wife and reduce the first to a subordinate position. The law covered commercial as well as sexual relations and regulated all loans and contracts, all buying and selling, all adoptions and bequests. Courts of justice sat in the temples, and the judges were for the most part priests; professional judges presided over a superior court. The best element in this code was a plan for avoiding litigation: every case was first submitted to a public arbitrator whose duty it was to bring about an amicable settlement without recourse to law. 88 It is a poor civilization from which we may not learn something to improve our own.

Economic Condition of Sumeria

The basis of this civilisation was a soil made fertile by the annual overflow of rivers swollen with the winter rains. The overflow was perilous as well as useful; the Sumerians learned to channel it safely through irrigating canals that ribbed and crossed their land. This irrigation system, dating from 4000 B.C., was one of the great achievements of Sumerian civilization, and certainly its foundation. From these watered fields came abounding crops of corn, barley, spelt, dates, and many vegetables. The plough appeared early, drawn by oxen and already furnished with a tubular seed drill. The gathered harvest was threshed by drawing over it great sledges of wood armed with flint teeth.

The Sumerians made some use of copper and tin, and occasionally mixed them to produce bronze; now and then they went so far as to make large implements of iron. But metal was still a luxury and a rarity. Most Sumerian tools were of flint; some, like the sickles for cutting the barley, were of clay; and certain finer articles, such as needles and awls, used ivory and bone. Weaving was done on a large scale under the supervision of overseers appointed by the king, after the latest fashion of governmentally controlled industry. Houses were made of

reeds, usually plastered with an adobe mixture of clay and straw moistened with water and hardened by the sun. Cows, sheep, goats and pigs roamed about the dwelling. Water for drinking was drawn from wells.

Goods were carried chiefly by water. Because of its scarcity stone was brought up the Gulf or down the rivers, and then through numerous canals to the docks of the cities. Land transportation was also there. Here and there in the ruins are business seals bearing indications of traffic with Egypt and Indus Valley of India. There was no coinage yet and trade was normally by barter; but gold and silver were already in use as standards of value, and were often accepted in exchange for goods sometimes in the form of ingots and rings of definite worth, but generally in quantities measured by weight in each transaction. Many of the clay tablets that have brought down to us fragments of Sumerian writing are business documents, revealing a busy commercial life. A system of credit existed by which goods, gold or silver might be borrowed, interest to be paid in the same material as the loan and at rates ranging from 15 to 33% per annum.

Religion and Morality

King Ur-engur proclaimed his code of laws in the name of the great god Shamash, for government had so soon discovered the political utility of heaven. Having been found useful, the gods became innumerable; every city and state, every human activity had some inspiring and disciplinary divinity. Sun-worship was already old when Sumeria began, expressed itself in the cult of Shamash. Nippur built great temples to the god Enlil and his consort Ninlil. Uruk worshiped especially the virgin earth-goddess Innini, known to the Semites of Akkad as Ishtar the loose and versatile Aphrodite-Demeter of the Near East. Kish and Lagash worshiped a Mater Dolorosa, the sorrowful mother goddess Ninkarsag, who, grieved with the unhappiness of men interceded for them with sterner deities. Ningirsu was the god of irrigation and Abu or Tammuz was the god of vegetation. Even Sin was a god of the Moon; he was represented in human form with a thin crescent above his head. The air was full of spirits beneficent angels, one each as protector to every Sumerian and demons or devils who sought to expel the protective deity and take possession of body and soul.

Most of the gods lived in the temples, where they were provided by the faithful with revenue, food and wives. The tablets of Gudea list the objects which the gods preferred: oxen, goats, sheep, doves, chickens, ducks, fish, dates, figs, cucumbers, butter, oil and cakes. We may judge from this list that the well-to-do Sumerian enjoyed a plentiful cuisine. Originally, it seems, the gods preferred human flesh; but as human morality improved they had to be content with animals. A liturgical tablet found in the Sumerian ruins says, with strange theological sign: "The lamb is the substitute for humanity; he given up a lamb for his life."

The priests became the wealthiest and most powerful class in the Sumerian cities. In most

matters they were the government; it is difficult to make out to what extent the Patesi was a priest and to what extent a king. Urukagina rose against the clergy, denounced them for their voracity, accused them of taking bribes in their administration of the law and charged that they were levying such taxes upon farmers and fishermen as to rob them of the fruits of their labor. He swept the courts clear for a time of these corrupt officials, and established laws regulating the taxes and fees paid to the temples, protecting the helpless against extortion, and providing against the violent alienation of funds or property. Already the world was old, and well established in its time-honored ways.

Presumably the priests recovered their power when Urukagina died. Even in this early age the great myths of religion were taking form. Since food and tools were placed in the graves with the dead, we may presume that the Sumerians believed in an after-life. They pictured the other world as a dark abode of miserable shadows, to which all the dead descended indiscriminately. They had not yet conceived heaven and hell, eternal reward and punishment; they offered prayer and sacrifice not for "eternal life," but for tangible advantages here on the earth.

The Sumerian Society

In Sumerian society rich and poor were stratified into many classes and gradations. Slavery was highly developed and property rights were already sacred. Between the rich and the poor a middle class took form composed of small-business men, scholars, physicians and priests. Medicine flourished, and had a specific for every disease; but it was still bound up with theology and admitted that sickness, being due to possession by evil spirits, could never be cured without the exorcising of these demons. A calendar of uncertain age and origin divided the year into lunar months, adding a month every three or four years to reconcile the calendar with the seasons and the sun. Each city gave its own names to the months.

The priests transmitted education as well as mythology and doubtless sought to teach as well as to rule, by their myths. To most of the temples were attached schools wherein the clergy instructed boys and girls in writing and arithmetic, formed their habits into patriotism and piety, and prepared some of them for the high profession of scribe. School tablets survive, encrusted with tables of multiplication and division, square and cube roots and exercises in applied geometry.

Women were attached to every temple some as domestics some as concubines for the gods or their duly constituted representatives on earth. To serve the temples in this way did not seem any disgrace to a Sumerian girl; her father was proud to devote her charms to the alleviation of divine monotony, and celebrated the admission of his daughter to these sacred functions with ceremonial sacrifice, and the presentation of the girl's marriage dowry to the temple.

Marriage was already a complex institution regulated by many laws. The bride kept control of the dowry given her by her father in marriage and though she held it jointly with her husband, she alone determined its inheritance. She exercised equal rights with her husband over their children; and in the absence of the husband and a grown-up son she administered the estate as well as the home. She could engage in business independently of her husband and could keep or dispose of her own slaves. But in all crises the man was lord and master. Under certain conditions he could sell his wife, or hand her over as a slave to pay his debts. Nevertheless, as in most civilizations, the women of the upper classes almost balanced by their luxury and their privileges and the labor and disabilities of their poorer sisters. Cosmetics and jewelry are prominent in the Sumerian tombs.

Letters and Arts

The startling fact in the Sumerian remains is writing. The marvelous art seems already well advanced, fit to express complex thought in commerce, poetry and religion. The oldest inscriptions are on stone and date apparently as far back as 3600 B.C. Towards 3200 B.C. the clay tablet appears, and from that time on the Sumerians seem to have delighted in the great discovery. It is our good fortune that the people of Mesopotamia wrote not upon fragile, ephemeral paper in fading ink, but upon moist clay deftly impressed with the wedge-like point of a stylus. With this malleable material the scribe kept records, executed contracts, drew up official documents, recorded property, judgments and sales, and created a culture in which the stylus became as mighty as the sword. Having completed the writing, the scribe baked the clay tablet with heat or in the sun and made it thereby a manuscript far more durable than paper and only less lasting than stone. This development of cuneiform script was the outstanding contribution of Sumeria to the mankind.

Sumerian writing reads from right to left. The Babylonians were the first people to write from left to right. The linear script as we have seen was apparently a stylized and conventionalized form of the signs and pictures painted or impressed upon primitive Sumerian pottery. Presumably from repetition and rush over centuries of time the original pictures were gradually contracted into signs so unlike the objects which they had once represented that they became the symbols of sounds rather than of things. By 2700 B.C., great libraries had been formed in Sumeria; at Tello, for example, in ruins contemporary with Gudea, Archaeologists discovered a collection of over 30,000 tablets ranged one upon another in neat and logical array. As early as 2000 B.C. Sumerian historians began to reconstruct the past and record the present for the edification of the future; portions of their work have come down to us not in the original form but as quotations in later Babylonian chronicles. Among the original fragments, a tablet was found at Nippur, bearing the Sumerian prototype of the epic of Gilgamesh, which we shall study later in its developed Babylonian expression.

Temples and Palaces

Behind these apparent beginnings of culture were doubtless many centuries of development, in Samaria and other lands. Nothing has been created, it has only grown. Just as in writing Sumeria seems to have created cuneiform, so in architecture it seems to have created at once the fundamental shapes of home and temple, column, vault and arch. The Sumerian peasant made his cottage by planting reeds in a square, a rectangle or a circle, bending the tops together, and binding them to form an arch, a vault or a dome; this, we surmise, is the simple origin or earliest known appearance, of these architectural forms. Among the ruins of Nippur is an arched drain 5000 years old; in the royal tombs of Ur there are arches that go back to 3500 B.C., and arched doors were common at Ur 2000 B.C.

The richer citizens built palaces hanging on a mound sometimes forty feet above the plain, and made purposely inaccessible except by one path. Since stone was scarce, these palaces were mostly of brick. The plain red surface of the walls was relieved by terracotta decoration in every form spirals, chevrons, triangles, even lozenges and diapers. The inner walls were plastered and painted in simple mural style. The house was built around a central court, which gave shade and some coolness against the Mediterranean sun for the same reason as well as for security. The rooms opened upon this court rather than upon the outer world. Windows were a luxury or perhaps they were not wanted. For the temples stone was imported and adorned with copper entablatures and friezes inlaid with semiprecious material. Usually the most important temple in the city was not only built upon an elevation, but was topped with a ziggurat a tower of three, four or seven stories, surrounded with a winding external stairway and set back at every stage. Here on the heights the loftiest of the city's gods might dwell, and here the government might find a last spiritual and physical citadel against invasion or revolt.

The temples were sometimes decorated with statuary of animals, heroes and gods; figures plain, blunt and powerful, but severely lacking in sculptural finish and grace. Most of the extant statues are of King Gudea, executed resolutely but crudely in resistant diorite. In the ruins of Tell-el- Ubaid, from the early Sumerian period, a copper statuette of a bull was found much abused by the centuries but still full of life and bovine complacency. A cow's head in silver from the grave of Queen Shub-ad at Ur is a masterpiece that suggests a developed art too much despoiled by time to permit of our giving it its due.

Of the pottery one may not speak so leniently. Perhaps time misleads our judgment by having preserved the worst; perhaps there were many pieces as well carved as the alabaster vessels discovered at Eridu but for the most part Sumerian pottery, though turned on the wheel is mere earthenware, and cannot compare with the vases of Elam. Better work was done by the goldsmiths. Vessels of gold tasteful in design and delicate in finish have been found in the earliest graves at Ur, some as old as 4000 B.C. The ruins have given us a

great number of cylindrical seals mostly made of precious metal or stone with reliefs carefully carved upon a square inch or two of surface. These seem to have served the Sumerians in place of signature and indicate a refinement of life and manners disturbing to our naive conception of progress as a continuous rise of man through the unfortunate cultures of the past to the unrivaled zenith of today.

The oldest written records known to us are Sumerian; this, which may be a whim of circumstance, a sport of mortality, does not prove that the first civilization was Sumerian. Statuettes and other remains akin to those of Sumeria have been found at Ashur and Samarra, in what became Assyria; we do not know whether this early culture came from Sumeria or passed to it along the Tigris. The code of Hammurabi resembles that of Ur-engur and Dungi, but we cannot be sure that it was evolved from it rather than from some predecessor ancestral to them both. It is only probable, not certain, that the civilizations of Babylonia and Assyria were derived from or fertilized by that of Sumer and Akkad. The gods and myths of Babylon and Nineveh are in many cases modifications or developments of Sumerian theology; and the languages of these later cultures bear the same relationship to Samaria.

Babylonian

Looking at the site of ancient Babylon today no one would suspect that these hot and dreary wastes along the Euphrates were once the rich and powerful capital of a civilization that almost created astronomy, added richly to the progress of medicine, established the science of language, prepared the first great codes of law, taught the Greeks the rudiments of mathematics, physics and philosophy, gave the Jews the mythology which they gave to the world and passed on to the Arabs part of that scientific and architectural lore. The same Tigris and Euphrates rivers that watered Sumeria and Akkad also in subsequent period nourished the Hanging Gardens of Babylon. As in Egypt the Nile, so here the Tigris and the Euphrates provided for thousands of miles an avenue of commerce and in their southern reaches springtime inundations that helped the peasant to fertilize his soil. Through the abundance of the rivers and the labour of many generations of men, Babylonia became the Eden of Semitic legend, the garden and granary of western Asia.

Early Polity: Hammurabi

Historically and ethnically Babylonia was a product of the union of the Akkadians and the Sumerians. Their mating generated the Babylonian type in which the Akkadian Semitic strain proved dominant. Their warfare ended in the triumph of Akkad and the establishment of Babylon as the capital of all lower Mesopotamia. At the outset of this history stands the powerful figure of Hammurabi (2123-2081 B.C.) conqueror and lawgiver through a reign of forty-three years. Ancient seals and inscriptions transmit him to us partially a youth full of fire and genius, a very whirlwind in battle, who crushes all rebels, cuts his enemies into

pieces, marches over inaccessible mountains and never loses in any war. Under him the petty warring states of the lower valley were forced into unity and peace and disciplined into order and security by an historic code of laws.

The Code of Hammurabi was unearthed at Susa in 1902, beautifully engraved upon a diorite cylinder that had been carried from Babylon to Elam as a trophy of war. This legislation was a gift from Heaven. One side of the cylinder shows the King receiving the laws from Shamash, the Sun-god himself. This ancient origin combined with Babylonian circumstance to give the Code a composite and heterogeneous character. It begins with compliments to the gods but takes no further notice of them in its astonishingly secular legislation. It mingles the most enlightened laws with the most barbarous punishments, and sets the primitive trial by ordeal alongside elaborate judicial procedures and a discriminating attempt to limit marital tyranny. All in all, these 285 laws, arranged almost scientifically under the headings of personal property, real estate, trade and business, the family, injuries and labour, form a code more advanced and civilized than that of Assyria a thousand and more years later.

This unifying legislation was one of Hammurabi's accomplishments. At his command a great canal was dug between Kish and the Persian Gulf, thereby irrigating a large area of land and protecting the cities of the south from the destructive floods of Tigris. Despite the secular quality of his laws Hammurabi was clever enough to gild his authority with the approval of the gods. He built temples as well as forts, and pleased the clergy by constructing at Babylon a gigantic sanctuary for Marduk and a massive granary to store up wheat for gods and priests. These and similar gifts were an astute investment, from which he expected steady returns in the respectful obedience of the people. From their taxes he financed the forces of law and order and had enough left over to beautify his capital. Palaces and temples rose in Babylon, a bridge spanned the Euphrates to let the city spread itself along both banks, ships manned with ninety men plied up and down the river. Two thousand years before Christ Babylon was already one of the richest cities that history had yet known.

The people were of Semitic appearance, dark in hair and features. The common dress for both man and women was a white linen cloth reaching to the feet. In the women it left one shoulder bare and in the men it was enlarged with mantle and robe. As wealth grew the people developed a taste for colour and dyed for themselves garments of different colours. The bare feet of the Sumerian period gave way to shapely sandals and the male head in Hammurabi's time was swathed in turbans. Women wore necklaces, bracelets and amulets and strings of beads in their carefully coiffure hair. The men flourished walking-sticks with carved heads and carried on their girdles the prettily designed seals with which they attested their letters and documents. The priests wore tall conical caps to conceal their

humanity.

It is almost a law of history that the same wealth that generates a civilization announces its decay. Wealth produces ease as well as art. It softens a people to the ways of luxury and peace and invites invasion from stronger arms and hungrier mouths. On the eastern boundary of the new state a hardy tribe of mountaineers the Kassites looked with envy upon the riches of Babylon. Very soon after Hammurabi's death they invaded the land plundered it, retreated, raided it again and again and finally settled down in it as conquerors and rulers, which resulted in the origin of aristocracies in later Babylonian culture.

The Kassite Domination

The Kassites a people of non-Semitic stock perhaps descendants of European immigrants from Neolithic days. Their victory over Semitic Babylon represented one more swing of the racial pendulum in western Asia. For several centuries Babylonia lived in an ethnic and political chaos that put a stop to the development of science and art. They were expelled after almost six centuries of rule as disruptive as the similar sway of the Hyksos in Egypt. The disorder continued for four hundred years more under obscure Babylonian rulers to until the rising power of Assyria in the north stretched down its hand and brought Babylonia under the kings of Nineveh. When Babylon rebelled, Sennacherib destroyed it almost completely but the friendly despotism of Esarhaddon restored it to prosperity and culture. The rise of the Medes weakened Assyria and with their help Nabopolassar liberated Babylonia set up an independent dynasty and leave this second Babylonian kingdom to his son Nebuchadrezzar II, villain of the vengeful and legendary Book of Daniel.

Days of Babylonian Glory: King Nebuchadrezzar

Nebuchadrezzar was the most powerful ruler of his time in the Near East and the greatest warrior, statesman and builder in all the succession of Babylonian kings after Hammurabi. When Egypt conspired with Assyria to reduce Babylonia to vassalage again, Nebuchadrezzar met the Egyptian hosts at Carchemish (on the upper reaches of the Euphrates) and almost annihilated them. Palestine and Syria then fell easily under his sway and Babylonian merchants controlled all the trade that flowed across western Asia from the Persian Gulf to the Mediterranean Sea.

Nebuchadrezzar again beautify the city of Babylon and patronise the priests. He resisted the temptation to be merely a conqueror. He venture out occasionally to teach his subjects the virtues of submission but for the most part he stayed at home making Babylon the unrivalled capital of the Near East and the largest and most magnificent metropolis of the ancient world. Nabopolassar had laid plans for the reconstruction of the city; Nebuchadrezzar used his long reign of forty-three years to carry them to completion. Through the centre of the town ran the palm-fringed Euphrates, busy with commerce and spanned by a handsome bridge. Practically all the better buildings were of brick as stone

was rare in Mesopotamia. The bricks were often faced with enamelled tiles of brilliant blue, yellow or white, adorned with animal and other figures in glazed relief, which remain to this day supreme in their kind. Nearly all the bricks so far recovered from the site of Babylon bear the proud inscription "I am Nebuchadrezzar, King of Babylon."

In its glorious days in the city of Babylon there was a mountain of masonry an immense and lofty ziggurat, rising in seven stages of gleaming enamel to a height of 650 feet, crowned with a shrine containing a massive table of solid gold and an ornate bed on which each night some woman slept to await the pleasure of the god. This structure taller than the pyramids of Egypt was probably the "Tower of Babel" of Hebraic myth. South of the ziggurat stood the gigantic Temple of Marduk, tutelary deity of Babylon. Around and below this temple the city spread itself out in a few wide and brilliant avenues crossed by crowded canals and narrow winding streets alive, no doubt with traffic and markets and scented with garbage and humanity.

Connecting the temples was a spacious way, paved with asphalt covered bricks and overlaid with flags of limestone and red breccias. This broad avenue was flanked with walls of coloured tile, on which stood out, in low relief, one hundred and twenty brightly enamelled lions roaring to keep the impious away. At one end of the Sacred Way rose the magnificent Ishtar Gate a massive double portal of resplendent tiles, adorned with enamelled flowers and animals of admirable colour, vitality and line.

Six hundred yards north of the "Tower of Babel" raised a mound called Kasr on which Nebuchadrezzar built the most imposing of his palaces. At its centre situated his principal dwelling palace. The walls of finely made yellow brick, the floors of white and mottled sandstone; reliefs of vivid blue glaze adorned the surfaces and gigantic basalt lions guarded the entrance of his palace. Nearby, supported on a succession of superimposed circular colonnades were the famous Hanging Gardens which the Greeks included among the Seven Wonders of the World. The gallant Nebuchadrezzar had built them for one of his wives, the daughter of Cyaxares, King of the Medes. This princess, unaccustomed to the hot sun and dust of Babylon pined for the greenness of her native hills. The topmost terrace was covered with rich soil to the depth of many feet providing space and nourishment not merely for varied flowers and plants but for the largest and most deep-rooted trees. Hydraulic engines concealed in the columns and manned by shifts of slaves carried water from the Euphrates to the highest tier of the gardens. Here seventy-five feet above the ground in the cool shade of tall trees and surrounded by exotic shrubs and fragrant flowers, the ladies of the royal harem walked unveiled, secure from the common eye. While in the plains and streets below the common man and woman ploughed, wove, built, carried burdens and reproduced their kind. This was the city of Babylon in the days of her glory as described by Herodotus, the father of History.

Babylonian Economy

The fertile soil of this civilisation was ploughed by tenants or by slaves; some of it by peasant proprietors. The waters of the rising rivers were not allowed to flood the land as in Egypt; on the contrary, every farm was protected from the inundation by ridges of earth, some of which can still be seen today. The overflow was guided into a complex network of canals or stored into reservoirs, from which it was sluiced into the fields as needed or raised over the ridges by shadufs buckets lifted and lowered on a pivoted and revolving pole. Nebuchadrezzar distinguished his reign by building many canals and gathering the surplus waters of the overflow into a reservoir one hundred and forty miles in circumference, which nourished by its outlets vast areas of land. The land produced a variety of cereals and pulses, great orchards of fruits and nuts, and above all, the date. From this beneficent mixture of sun and soil the Babylonians made bread, honey, cake and other delicacies. They mixed it with meal to make one of their most sustaining foods. Meat was rare and costly, but fish from the great streams found their way into the poorest mouths.

Some inhabitant sustained their life by mining copper, lead, iron, silver and gold from the earth. Tools, which had still been of stone in the days of Hammurabi, began to be made of bronze then of iron and the art of casting metal appeared. Textiles were woven of cotton and wool; stuffs were dyed and embroidered with such skill that these tissues became one of the most valued exports of Babylonia. As far back as we can go in Mesopotamian history we find the weaver's loom and the potter's wheel; these were almost the only machines. Buildings were mostly of clay mixed with straw; or bricks still soft and moist were placed one upon the other and allowed to dry into a solid wall cemented by the sun.

During the heydays of Babylonian civilisation trades multiplied and became diversified and skilled, and as early as Hammurabi industry was organized into guilds of masters and apprentices. Local transport used wheeled carts drawn by asses. The horse is first mentioned in Babylonian records about 2100 B.C., With this new means of locomotion and carriage, trade expanded from local to foreign commerce; Babylon grew wealthy as the commercial hub of the Near East, and the nations of the ancient Mediterranean world were drawn into closer contact for good and ill. Nebuchadrezzar facilitated trade by improving the highways. Countless caravans brought to the bazaars and shops of Babylon the products of half the world.

Government in Mesopotamia never succeeded in establishing such economic order as that which the Pharaohs achieved in Egypt. Commerce was harassed with a multiplicity of dangers and tolls. It was safer, where possible, to take the great national highway the Euphrates, which Nebuchadrezzar had made navigable from the Persian Gulf to Thapsacus. His campaigns in Arabia and his subjugation of Tyre opened up to Babylonian commerce the Indian and Mediterranean Seas but these opportunities were only partially

explored. For on the open sea as in the mountain passes and the desert wastes risk beset the merchant at every hour. Vessels were large but reefs were many and treacherous at any moment pirates might board the ships, robbed the merchandise and enslave or kill the crew. The merchants reimbursed themselves for such losses by restricting their honesty to the necessities of each situation.

These difficult transactions were made easier by a well-developed system of finance. The Babylonians had no coinage but even before Hammurabi they used besides barley and corn ingots of gold and silver as standards of value and mediums of exchange. The metal was unstamped, and was weighed at each transaction. Loans were made in goods or currency but at a high rate of interest, fixed by the state at 20% per annum for loans of money and 33% for loans in kind. Even these rates were exceeded by lenders who could hire clever scribes to circumvent the law. There were no banks but certain powerful families carried on from generation to generation the business of lending money. They dealt also in real estate and financed industrial enterprises. Persons who had funds on deposit with such men could pay their obligations by written drafts. The priests also made loans particularly to finance the sowing and reaping of the crops.

It was essentially a commercial civilization. Most of the documents that have come down from it are of a business character sale, loans, contracts, partnerships, commissions, exchanges, bequests, agreements, promissory notes etc. We find in these tablets abundant evidence of wealth and a certain materialistic spirit that managed like some later civilizations to reconcile piety with greed.

Slavery in Babylon

We see in the literature many signs of a busy and prosperous life but we find also at every turn reminders of the slavery that underlies all cultures. The most interesting contracts of sale from the age of Nebuchadrezzar are those that have to do with slaves. They were recruited from captives taken in battle from slave-raids carried out upon foreign states by marauding Bedouins and from the reproductive enthusiasm of the slaves themselves. Most of the physical work in the towns was done by them including nearly all of the personal service. Female slaves were completely at the mercy of their purchaser, and were expected to provide him with bed as well as board. It was understood that he would breed through them a copious supply of children and those slaves who were not so treated felt themselves neglected and dishonoured. The slave and all his belongings were his master's property: he might be sold or pledged for debt; he might be put to death if his master thought him less lucrative alive than dead. If he ran away no one could legally keep him and a reward was fixed for his capture. On the other hand the slave's master paid his doctor's fees and kept him moderately alive through illness, slack employment and old age. He might marry a free woman and his children by her would be free; half his property, in such a case, went on his

death to his family. He might be set up in business by his master and retain part of the profits with which he might then buy his freedom or his master might liberate him for exceptional or long and faithful service. But only a few slaves achieved such freedom. The rest consoled themselves with a high birth-rate, until they became more numerous than the free. A great slave-class moved like a swelling subterranean river underneath the Babylonian state.

The Law: Code of Hammurabi

Economic character of Babylonian society necessitated a monarchy supported by commercial wealth or feudal privilege, and protected by the judicious distribution of legal violence. A landed aristocracy gradually displaced by a commercial plutocracy helped to maintain social control and served as an intermediary between people and king. Within the limits of this arbitrary rule the government was carried on by central and local lords or administrators appointed by the king. These were advised and checked by provincial or municipal assemblies of elders or notables who managed to maintain even under Assyrian domination a proud measure of local self-government.

Every administrator and usually the king himself acknowledged the guidance and authority of that great body of law which had been given form under Hammurabi, and had maintained its substance, despite every change of circumstance and detail through fifteen centuries. The legal development was from supernatural to secular sanctions, from severity to lenience and from physical to financial penalties. In the earlier days judges were priests and to the end of Babylonian history the courts were for the most part located in the temples. In the days of Hammurabi secular courts responsible only to the government were replacing the judgment-seats presided over by the clergy.

Penology began with the law of equivalent retaliation. If a man knocked out an eye or a tooth or broke a limb of a patrician precisely the same was to be done to him. If a house collapsed and killed the purchaser the architect or builder must die, if the accident killed the buyer's son, the son of the architect or builder must die. Gradually these punishments in kind were replaced by awards of damages; a payment of money was permitted as an alternative to the physical retaliation, and later the fine became the sole punishment. The penalty varied not merely with the gravity of the offense but with the rank of the offender and the victim. A member of the aristocracy was subject to severe penalties for the same crime than a man of the people but an offense against such an aristocrat was a costly extravagance. In such rough ways, through thousands of years, those traditions and habits of order and self-restraint were established which became part of the unconscious basis of civilization.

Within certain limits the state regulated prices, wages and fees. What the surgeon might charge was established by law; and wages were fixed by the Code of Hammurabi for

builders, brick makers, tailors, stonemasons, carpenters, boatmen, herdsmen and labourers. The law of inheritance made the man's children, rather than his wife, his natural and direct heirs. The widow received her dowry and her wedding-gift, and remained head of the household as long as she lived. The sons inherited equally, and in this way the largest estates were soon re-divided and the concentration of wealth was in some measure checked.

There is no evidence of lawyers in Babylonia, except for priests who might serve as notaries and the scribe who would write for pay anything from a will to final judgement. The plaintiff preferred his own plea without the luxury of terminology. Litigation was discouraged. The very first law of the Code reads with almost illegal simplicity: If a man bring an accusation against a man and charge him with a crime but cannot prove it the accuser shall be put to death. There are signs of bribery and of tampering with witnesses. A court of appeals staffed by "the King's Judges," sat at Babylon and a final appeal might be carried to the king himself. There was nothing in the Code about the rights of the individual against the state. But articles 22-24 provided if not political at least economic protection. If a man practise brigandage and be captured that man shall be put to death. If the brigand be not captured the man who has been robbed shall in the presence of the god make an itemized statement of his loss, and the city and governor within whose province and jurisdiction the robbery was committed shall compensate him for whatever was lost.

Religion in Babylon

The power of the king was limited not only by the law and the aristocracy but by the clergy. Technically the king was merely the agent of the city god. Taxation was in the name of the god, and found its way directly or deviously into the temple treasuries. The king was not really king in the eyes of the people until he was invested with royal authority by the priests and conducted the image of Marduk in solemn procession through the streets. In these ceremonies the monarch was dressed as a priest, symbolizing the union of church and state and perhaps the priestly origin of the kingship. Even the mighty Hammurabi received his laws from the god. From the Patesis or priest-governors of Sumeria to the religious coronation of Nebuchadrezzar, Babylonia remained in effect a theocratic state, always under the dominance of the priests.

The wealth of the temples grew from generation to generation as the uneasy rich shared their dividends with the gods. The kings, built the temples equipped them with furniture, food and slaves, donate to them land and assigned to them an annual income from the state. When the army won a battle the first share of the captives and the spoils went to the temples. Certain lands were required to pay to the temples yearly tribute; if they failed, the temples could shut out on them; and in this way the lands usually came into possession by the priests.

As the priests

could not directly use or consume this wealth, they turned it into productive or investment capital and became the greatest agriculturists, manufacturers and financiers of the nation. Not only did they hold vast tracts of land; they owned a great number of slaves or controlled hundreds of labourers, who were hired out to other employers or worked for the temples in their diverse trades from the playing of music to the brewing of beer.

The Gods in Babylonia were numerous. Every town had its tutelary divinity. The gods were not aloof from men; most of them lived on earth in the temples ate with a hearty appetite and through night-time visits to pious women gave unexpected children to the busy citizens of Babylon. Oldest of all were the astronomic gods: Anu, the immovable firmament, Shamash, the sun, Nannar, the moon and Bel or Baal, the earth into whose bosom all Babylonians returned after death. Every family had household gods to whom prayers were said and libations poured each morning and night; every individual had a protective divinity. Nevertheless the Babylonian derived no satisfaction from the idea of personal immortality. Most bodies were buried in vaults, a few were cremated and their remains were preserved in urns. The dead body was not embalmed but professional mourners washed and perfumed it, clad it presentably, darkened its eyelids, put rings upon its fingers and provided it with a change of linen. If the corpse was that of a woman it was equipped with scent bottles, combs, cosmetic pencils, and eye-paint to preserve its fragrance and complexion in the nether world.

The usual offering was food and drink. A frequent sacrifice on Babylonian altars was the lamb. In general to the Babylonian religion meant correct ritual rather than the good life. To do one's duty to the god one had to offer proper sacrifice to the temples and recite the appropriate prayers. To participate in or reverently to attend long and solemn processions, to anoint the idols with sweet-scented oils, to burn incense before them, clothe them with rich vestments or adorn them with jewellery, to offer up the virginity of their daughters in the great festival of Ishtar; to put food and drink before the gods, and to be generous to the priests these were the essential works of the devout Babylonian soul.

Some of the finest literary relics of the Babylonians are prayers that breathe a profound and sincere piety. The surviving literature abounds in hymns full of that passionate self abasement. Such psalms and hymns were sung sometimes by the priests. Like all the religious literature of Babylon they were written in the ancient Sumerian language, which served the Babylonian and Assyrian.

For the Babylonian sin was no mere theoretical state of the soul. Like sickness it was the possession of the body by a demon that might destroy it. Everywhere in the Babylonian view these hostile demons loitered, they hid in strange crannies, slipped through doors or even through bolts and sockets and jumped upon their victims in the form of illness or madness whenever some sin had withdrawn for a moment the beneficent guardianship of

the gods. Protection against these demons was provided by the use of magic amulets, talismans and kindred charms; images of the gods, carried on the body, would usually suffice to frighten the devils away. Never was a civilization richer in superstitions. Every turn of chance from the anomalies of birth to the varieties of death received a popular, sometimes an official and sacerdotal interpretation in magical or supernatural terms. Every movement of the rivers, every aspect of the stars, every dream, every unusual performance of man or beast, revealed the future to the properly instructed Babylonian. The fate of a king could be forecast by observing the movements of a dog. This religion, with all its failings, probably helped to urge the common Babylonian into some measure of decency and civic obedience. For the whole of Babylon was a sink of iniquity and a scandalous example of luxurious laxity to all the ancient world. Even Alexander, who was not above dying of drinking, was shocked by the morals of Babylon.

The Position of Women in Babylon

Various classes of prostitutes lived within the temple precincts. Some of them plied their trade there and amassed great fortunes. Sacred prostitution continued in Babylonia until abolished by Constantine (ca. 325 A.D.). Alongside it in the wine-shops kept by women secular prostitution flourished. In general the Babylonians were allowed considerable premarital experience. It was considered permissible for men and women to form unlicensed unions. Legal marriage was arranged by the parents and was sanctioned by an exchange of gifts obviously descended from marriage by purchase. Babylonian marriage seems to have been as monogamous and faithful as in Hindu of India. Premarital freedom was followed by the rigid enforcement of marital fidelity. The adulterous wife and her paramour according to the Code were drowned unless the husband in his mercy preferred to let his wife off by turning her almost naked into the streets. Childlessness, adultery, incompatibility or careless management of the household might satisfy the law as ground for granting the man a divorce.

In general the position of woman in Babylonia was lower than in Egypt. To carry out her many functions she had to be free to go about in public very much like the man. She could own property, enjoy its income, sell and buy, inherit and bequeath. Some women kept shops, and carried on commerce; some even became scribes, indicating that girls as well as boys might receive an education. But the Semitic practice of giving almost limitless power to the oldest male of the family won out against any matriarchal tendencies that may have existed in prehistoric Mesopotamia. Among the lower classes they were maternity machines, and if they had no dowry they were little more than slaves. The worship of Ishtar suggests a certain reverence for woman and motherhood.

Subsequently morals grew negligent when the temples grew rich and the citizens of Babylon, wedded to delight, bore with equanimity the subjection of their city by the Kassites,

the Assyrians, the Persians, and the Greeks.

Letter and Literature

Babylonia has left us an adequate heritage of literature as compared with Egypt. Its gifts were in commerce and law. Scribes were numerous in cosmopolitan Babylon. The Babylonians wrote in cuneiform upon tablets of damp clay, with a stylus. When the tablets were filled they dried and baked them into durable manuscripts of brick. If the thing written was a letter it was dusted with powder and then wrapped in a clay envelope stamped with the sender's cylinder seal. Tablets in jars classified and arranged on shelves filled numerous libraries in the temples and palaces of Babylonia. These Babylonian libraries are lost; but one of the greatest of them that of Borsippa was copied and preserved in the library of Ashurbanipal, whose 30,000 tablets are the main source of our knowledge of Babylonian life.

The decipherment of Babylonian script baffled students for centuries. It was in 1835, Henry Rawlinson, a British diplomatic officer stationed in Persia, deciphered the famous trilingual inscription of Darius I at Behistun in modern Iran. He found it three hundred feet high on an almost inaccessible rock at Behistun in the mountains of Media, where Darius-I had caused his carvers to engrave a record of his wars and victories in three languages old Persian, Assyrian, and Babylonian.

The Babylonian language was a Semitic development of the old tongues of Sumeria and Akkad. It was written in characters originally Sumerian, but the vocabulary diverged in time into a language so different from Sumerian that the Babylonians had to compose dictionaries and grammars to transmit the old classic and sacerdotal tongue of Sumeria to young scholars and priests. In Babylonian, as in Sumerian, the characters represented not letters but syllables; Babylon never achieved an alphabet of its own but remained content with a "syllabary" of some three hundred signs. The Babylonians looked upon letters as a device for facilitating business. They did not spend much of their clay upon literature. Official chroniclers recorded the piety and conquests of the kings, the vicissitudes of each temple, and the important events in the career of each city.

Twelve broken tablets found in Ashurbanipal's library, now displayed in the British Museum form the most fascinating relic of Mesopotamian literature the Epic of Gilgamesh. Like the Iliad it is an accretion of loosely connected stories, some of which go back to Sumeria 3000 B.C. Part of it is the Babylonian account of the Flood. Gilgamesh was a legendary ruler of Uruk or Erech, a descendant of the Shamash-napishtim who had survived the Deluge and had never died.

Babylonian Art

A keen aesthetic sense survived to some degree the Babylonian absorption in commercial life, epicurean recreation and compensatory piety may be seen in the chance relics of the

minor arts. Patiently glazed tiles, glittering stones, finely wrought bronze, iron, silver and gold, delicate embroideries, soft rugs and richly dyed robes, luxurious tapestries, pedestal tables, beds and chairs, these lent grace, if not dignity or final worth to Babylonian civilization.

Painting was purely subsidiary. It decorated walls and statuary but made no attempt to become an independent art. We do not find among Babylonian ruins any paintings that glorified the Egyptian tombs or such frescoes as adorned the palaces of Crete. Babylonian sculpture remained similarly undeveloped and was apparently stiffened into an early death by conventions derived from Sumeria and enforced by the priests. All the faces portrayed are one face, all the kings have the same thick and muscular frame and all the captives are cast in one mould. Very little Babylonian statuary survives and that without excuse.

Babylonian architecture hardly rises to more than a few feet above the sands. There are no carved or painted representations among the relics to show us clearly the form and structure of palaces and temples. Houses were built of dried mud or among the rich of brick. They seldom knew windows and their doors opened not upon the narrow street but upon an interior court shaded from the sun. The temple was raised upon foundations level with the roofs of the houses whose life it was to dominate; usually it was an enormous square of tiled masonry built like the houses around a court. In this court most of the religious ceremonies were performed. Near the temple in most cases rose a ziggurat a tower of superimposed and diminishing cubical stories surrounded by external stairs. Its uses were partly religious, as a lofty shrine for the god partly astronomic as an observatory from which the priests could watch the all-revealing stars. Here and there among the ruins are vaults and arches forms derived from Sumeria, negligently used and unconscious of their destiny. Decoration interior and exterior was almost confined to enamelling some of the brick surfaces with bright glazes of yellow, blue, white and red with occasional tiled figures of animals or plants. In this way ceramics became the most characteristic art of the ancient Near East. The very cheapness of brick corrupted Babylonian design with such materials it was easy to achieve size and difficult to compass beauty.

Babylonian Science

Being merchants, the Babylonians were more likely to achieve successes in science than in art. Commerce created mathematics and united with religion to beget astronomy. The priests of Mesopotamia unconsciously laid the foundations of those sciences. Babylonian mathematics rested on a division of the circle into 360 degrees and of the year into 360 days. On this basis it developed a system of calculation by sixties, which became the parent of later systems of reckoning by twelve. Computation was made easier by tables which showed not only multiplication and division but the halves, quarters, thirds, squares and cubes of the basic numbers. Geometry advanced to the measurement of complex and

irregular areas.

Astronomy was the special science of the Babylonians. For which they were famous throughout the ancient world. Here again magic was the mother of science. The Babylonians studied the stars not so much to chart the courses of caravans and ships, as to divine the future fates of men. They were astrologers first and astronomers afterward. Every planet was a god, interested and vital in the affairs of men: Jupiter was Marduk, Mercury was Nabu, Mars was Nergal, the sun was Shamash, the moon was Sin, Saturn was Ninib and Venus was Ishtar. Every movement of every star determined or forecast some terrestrial event of the Babylonian.

Out of astrologic observation and charting of stars astronomy developed slowly. As far back as 2000 B.C. the Babylonians had made accurate records of the rising and setting of the planet Venus. They had fixed the position of various stars and were slowly mapping the sky. Under Nebuchadrezzar, astronomic progress was resumed; the priest-scientists plotted the orbits of sun and moon noted their conjunctions and eclipses, calculated the courses of the planets and made the first clear distinction between a planet and a star. They determined the dates of winter and summer solstices, of vernal and autumnal equinoxes and following the lead of the Sumerians divided the ecliptic into the twelve signs of the Zodiac. They measured time by a water-clock and a sun-dial and these seem to have been not merely developed but invented by them.

They divided the year into twelve lunar months, six having thirty days, six twenty-nine with a total 354 days in all. They added a thirteenth month occasionally to harmonize the calendar with the seasons. The month was divided into four weeks according to the four phases of the moon. An attempt was made to establish a more convenient calendar by dividing the month into six weeks of five days, but the phases of the moon proved more effective than the conveniences of men. The day was divided into twelve hours and each of these hours was divided into thirty minutes so that the Babylonian minute had the feminine quality of being four times as long as its name might suggest.

The dependence of Babylonian science upon religion had a more stagnant effect in medicine than in astronomy. It was not so much the obscurantism of the priests that held the science back as the superstition of the people. Already by the time of Hammurabi the art of healing had separated itself in some measure from the domain and domination of the clergy. A regular profession of physician had been established with fees and penalties fixed by law. But this almost secularized science found itself helpless before the demand of the people for supernatural diagnosis and magical cures.

Decline of Babylon

The Babylonian were the people listened lovingly to their priests and crowded the temples to seek favours of the gods. The marvel is that they were so long loyal to a religion that

offered them so little consolation. Tradition and the Book of Daniel tell how Nebuchadnezzar after a long reign of uninterrupted victory and prosperity, after beautifying his city with roads and palaces and erecting fifty-four temples to the gods fell into a strange insanity thought himself a beast walked on all fours and ate grass. For four years his name disappears from the history and governmental records of Babylonia; it reappears for a moment and then in 562 B.C., he passes away.

Within thirty years after his death his empire crumbled to pieces. Nabonidus, who held the throne for seventeen years, preferred archaeology to government and devoted himself to excavating the antiquities of Sumeria while his own realm was going to ruin. The army fell into disorder; business men forgot love of country in the sublime internationalism of finance. The people busy with trade and pleasure unlearned the arts of war. The priests usurped more and more of the royal power and fattened their treasuries with wealth that tempted invasion and conquest. When Cyrus and his disciplined Persians stood at the gates, the anticlerical of Babylon connived to open the city to him and welcomed his enlightened domination. For two centuries Persia ruled Babylonia as part of the greatest empire that history had yet known. Then the exuberant Alexander came, captured the unresisting capital conquered all the Near East and drank himself to death in the palace of Nebuchadnezzar.

The civilization of Babylonia was not as fruitful for humanity as Egypt's not as varied and profound as India's and not as fine and mature as China's. And yet it was from Babylonia that those fascinating legends came which through the literary artistry of the Jews became an inseparable portion of Europe's religious lore. It was from Babylonia, rather than from Egypt that the nomadic Greeks brought to their city-state and then to Rome and to ourselves the foundations of mathematics, astronomy, medicine, grammar, lexicography, archaeology, history and philosophy. The Greek names for the metals and the constellations, for weights and measures, for musical instruments and many drugs, are translations, sometimes mere transliterations, of Babylonian names. Babylonian architecture through the ziggurat led to the towers of Muslim mosques and campaniles of medieval art. The laws of Hammurabi became for all ancient societies a legacy comparable to Rome's gift of order and government to the modern world. Through Assyria's conquest of Babylon, her appropriation of the ancient city's culture and her dissemination of that culture throughout her wide empire, through the long Captivity of the Jews and the great influence upon them of Babylonian life and thought, through the Persian and Greek conquests which opened with unprecedented fullness and freedom all the roads of communication and trade between Babylon and the rising cities of Ionia, Asia Minor and Greece through these and many other ways the civilization of the Land between the Rivers passed down into the cultural endowment of our race.

Assyrian

Meanwhile, three hundred miles north of Babylon, another civilization had appeared. Forced to maintain a hard military life by the mountain tribes always threatening it on every side, it had in time overcome its assailants, had conquered its parent cities in Elam, Sumeria, Akkad and Babylonia, had mastered Phoenicia and Egypt and had for two centuries dominated the Near East with brutal power. Sumeria was to Babylonia and Babylonia to Assyria. The first created a civilization, the second developed it to its height, the third inherited it, added little to it, protected it and transmitted it as a dying gift to the encompassing and victorious barbarians. For barbarism is always around civilization, amid it and beneath it, ready to engulf it by arms or mass migration or unchecked fertility. The new state grew about four cities fed by the waters or tributaries of the Tigris: Ashur, which is now Kala'at-Sherghat; Arbela, which is Irbil; Kalakh, which is Nimrud; and Nineveh, which is Kuyunjik just across the river from oily Mosul.

The god Ashur gave his name to a city and finally to all Assyria. There the earliest of the nation's kings had their residence, until its exposure to the heat of the desert and the attacks of the neighbouring Babylonians led Ashur's rulers to build a secondary capital in cooler Nineveh named also after a god, Nina, the Ishtar of Assyria. Here, in the heyday of Ashurbanipal, 300,000 people lived, and all the western Orient came to pay tribute to the Universal King.

The population was a mixture of Semites from the civilized south (Babylonia and Akkadia) with non-Semitic tribes from the west (probably of Hittite or Mitannian affinity) and Kurdish mountaineers from the Caucasus. They took their common language and their arts from Sumeria, but modified them later into an almost undistinguishable similarity to the language and arts of Babylonia. Their circumstances, however, forbade them to indulge in the effeminate ease of Babylon. From beginning to end they were a race of warriors, mighty in muscle and courage, abounding in proud hair and beard, standing straight, stern and stolid on their monuments and bestriding with tremendous feet the east-Mediterranean world. Their history is one of kings and slaves, wars and conquests, bloody victories and sudden defeat. The early kings once mere tributary to the south took advantage of the Kassite domination of Babylonia to establish their independence and soon one of them adorned himself with that title which all the monarchs of Assyria were to display: "King of Universal Reign." Out of the dull dynasties of these forgotten potentates certain figures emerge whose deeds illuminate the development of their country.

Political History

While Babylonia was still in the darkness of the Kassite era, Shalmaneser I brought the little city-states of the north under one rule, and made Kalakh his capital. But the first great name in Assyrian history is Tiglath-Pileser I. He was a mighty hunter he hunted nations as well as

animals. In every direction he led his armies, conquering the Hittites, the Armenians and forty other nations, capturing Babylon and frightening Egypt into sending him anxious gifts. With the proceeds of his conquests he built temples to the Assyrian gods and goddesses. Then Babylon revolted, defeated his armies, pillaged his temples and carried his gods into Babylonian captivity. Tiglath-Pileser died of shame.

His reign was a symbol of all Assyrian history: death and taxes, first for Assyria's neighbours, then for herself. Ashurnasirpal II conquered a dozen petty states, brought much booty home from the wars, cut out with his own hand the eyes of princely captives, enjoyed his harem, and passed respectably away. Shalmaneser III carried these conquests as far as Damascus; fought costly battles, killing 16,000 Syrians in one engagement; built temples, levied tribute and was deposed by his son in a violent revolution. Sammuamat ruled as queen-mother for three years and provided a fragile historical basis for the Greek legend of Semiramis half goddess and half queen, great general, great engineer and great statesman so attractively detailed by Diodorus the Sicilian. Tiglath-Pileser III gathered new armies, re-conquered Armenia, overran Syria and Babylonia, made vassal cities of Damascus, Samaria and Babylon, extended the rule of Assyria from the Caucasus to Egypt, tired of war, became an excellent administrator, built many temples and palaces, held his empire together with an iron hand, and died peacefully in bed. Sargon II, an officer in the army, made himself king led his troops in person, and took in every engagement the most dangerous post; defeated Elam and Egypt, re-conquered Babylonia, and received the homage of the Jews, the Philistines, even of the Cypriote Greeks; ruled his empire well, encouraged arts and letters, handicrafts and trade, and died in a victorious battle that definitely preserved Assyria from invasion by the wild Cimmerian hordes.

His son Sennacherib put down revolts in the distant provinces adjoining the Persian Gulf, attacked Jerusalem and Egypt without success, sacked eighty-nine cities and 820 villages, captured 7,200 horses, 80,000 oxen, 800,000 sheep, and 208,000 prisoners. The official historian, on his life, did not understate these figures. Then, irritated by the prejudice of Babylon in favour of freedom, he besieged it, took it, and burned it to the ground; killed the inhabitant, plundered the temples and palaces and Gods of Babylon were chopped to pieces. With the spoils of his conquests and plunder Sennacherib rebuilt Nineveh, changed the courses of rivers to protect it, reclaimed waste lands with the vigour of countries suffering from an agricultural surplus, and was assassinated by his sons while piously mumbling his prayers.

Another son, Esarhaddon, snatched the throne from his blood-stained brothers, invaded Egypt to punish her for supporting Syrian revolts, made her an Assyrian province, amazed western Asia with his long triumphal progress from Memphis to Nineveh, dragging endless booty in his train; established Assyria in unprecedented prosperity as master of the whole

Near Eastern world. He delighted Babylonia by freeing and honouring its captive gods and rebuilding its shattered capital. Then, conciliated Elam by feeding its famine-stricken people in an act of international beneficence almost without parallel in the ancient world; and died on the way to suppress a revolt in Egypt, after giving his empire the kindest rule in its half-barbarous history.

His successor, Ashurbanipal (the Sardanapalus of the Greeks), reaped the fruits of Esarhaddon's sowing. During his long reign Assyria reached the climax of its wealth and prestige. After him his country was ruined by forty years of intermittent war and finally fell into exhaustion and decay and ended its career hardly a decade after Ashurbanipal's death. He was not merely a conqueror is proved by his munificence as a builder and as a patron of letters and the arts. He commissioned innumerable scribes to secure and copy for him all the classics of Sumerian and Babylonian literature, and gathered these copies in his library at Nineveh, where modern scholarship found them almost intact after twenty-five centuries of time had flowed over them.

Unit-III

THE HARAPPAN CIVILIZATION

In the previous chapter you learnt that the people in the prehistoric times used tools and weapons made of stone. Later man started using metals. Copper was the first metal to be used by man for making tools. Gradually several cultures developed in Indian subcontinent which were based on the use of stone and copper tools. They also used bronze, a mixture of copper and tin, for this purpose. This phase in history is known as the Chalcolithic (Chalco-Copper; lithic-Stone) period. The brightest chapter in the Chalcolithic period in India is the Harappan civilization which is also referred to as the Indus Valley civilization. Harappan civilization was discovered in 1920–22 when two of its most important sites were excavated. These were Harappa on the banks of the river Ravi and Mohenjodaro on the banks of the Indus. The first was excavated by D. R. Sahani and the second by R.D. Bannerji. On the basis of the archaeological findings the Harappan civilization has been dated between 2600 B.C–1900 BC and is one of the oldest civilizations of the world. It is also sometimes referred to as the 'Indus Valley civilization' because in the beginning majority of its settlements discovered were in and around the plains of the river Indus and its tributaries. But today it is termed as the Harappan civilization because Harappa was the first site, which brought to light the presence of this civilization. Besides, recent archaeological findings indicate that this civilization was spread much beyond the Indus Valley. Therefore, it is better it is called as the Harappan civilization. It is the first urban culture of India and is contemporaneous with other ancient civilizations of the world such as those of Mesopotamia and Egypt. Our knowledge of the life and culture of the Harappan people is based only on the archaeological excavations as the script of that period has not been deciphered so far. The Harappan civilization did not appear all of a sudden. It developed gradually from earlier Neolithic village cultures. It is believed that the better technology to exploit the fertile plains of river Indus might have resulted in increased agricultural production. This led to the production of larger surplus to feed and maintain non-agricultural people such as artisans, administrators, etc. It also helped in the promotion of exchange or trading contacts with distant regions. It brought prosperity to the Harappan people and they were able to set up cities. By around 2000 BC several regional cultures developed in different parts of the subcontinent which were also based on the use of stone and copper tools. These Chalcolithic cultures which lay outside the Harappan zone were not so rich and flourishing. These were basically rural in nature. The origin and development of these cultures is placed in the chronological span between circa 2000 BC–700 BC. These are found in Western and Central India and are described as non-Harappan Chalcolithic cultures.

OBJECTIVES

After studying this lesson, you will be able to: explain the origin and extent of the Harappan civilization; describe the Harappan town-planning; understand the Harappan social and economic life; discuss the Harappan religious beliefs; explain how and why did the civilization decline; identify the Chalcolithic Communities outside Harappan zone; explain economic condition and settlement pattern of these Chalcolithic communities.

The archaeological remains show that before the emergence of Harappan civilization the people lived in small villages. As the time passed, there was the emergence of small towns which ultimately led to full-fledged towns during the Harappan period. The whole period of Harappan civilization is in fact divided into three phases: (i) Early Harappan phase (3500 BC–2600 BC) – it was marked by some town-planning in the form of mud structures, elementary trade, arts and crafts, etc., (ii) Mature Harappan phase (2600 BC–1900 BC) – it was the period in which we notice well-developed towns with burnt brick structures, inland and foreign trade, crafts of various types, etc., and (iii) Late Harappan phase (1900 BC–1400 BC) – it was the phase of decline during which many cities were abandoned and the trade disappeared leading to the gradual decay of the significant urban traits. Let us first have a glance over the geographical extent of the Harappan civilization. The archaeological excavations reveal that this culture was spread over a vast area which included not only the present day states of India such as Rajasthan, Punjab, Haryana, Gujarat, Maharashtra, Western Uttar Pradesh but also Pakistan and some parts of Afghanistan. Some important sites of this civilization are: Manda in Jammu and Kashmir; Shortughai in Afghanistan; Harappa in Western Punjab (Pakistan); Mohenjodaro and Chanhudaro in Sind; Kalibangan in Rajasthan; Lothal and Dholavira in Gujarat; Banawali and Rakhigarhi in Haryana; Daimabad in Maharashtra while Sutkagendor on the Makran Coast (near Pakistan-Iran border) is the western most site of the Harappan civilization and Alamgirpur in western Uttar Pradesh marks its eastern most limit. The location of settlements suggests that the Harappa, Kalibangan (On R GhaggarHakra generally associated with the lost river Saraswati), Mohenjodaro axis was the heartland of this civilization and most of the settlements are located in this region. This area had certain uniform features in terms of the soil type, climate and subsistence pattern. The land was flat and depended on the monsoons and the Himalayan rivers for the supply of water. Due to its distinct geographical feature, agro-pastoral economy was the dominant feature in this region. Besides the urban settlements of the Harappans, there were many sites inhabited by the primitive communities consisting of stone-age hunter-gatherers or pastora nomads, which existed side by side. Some sites served as ports or trading out-posts. It may be noted that the important determinants of urbanisation are well-planned cities, specialised arts and crafts, trade, taxation, script, etc. In this respect Harappan culture fulfilled all these criteria for being called as an urban culture.

TOWN PLANNING

The most interesting urban feature of Harappan civilization is its town-planning. It is marked by considerable uniformity, though one can notice some regional variations as well. The uniformity is noticed in the lay-out of the towns, streets, structures, brick size, drains etc. Almost all the major sites (Harappa, Mohenjodaro, Kalibangan and others), are divided into two parts—a citadel on higher mound on the western side and a lower town on the eastern side of the settlement. The citadel contain large structures which might have functioned as administrative or ritual centres. The residential buildings are built in the lower town. The streets intersect each other at right angles in a criss-cross pattern. It divides the city in several residential blocks. The main street is connected by narrow lanes. The doors of the houses opened in these lanes and not the main streets. The houses of common people, however, differed in size from a single-room house in Harappa to bigger structures. The houses were largely built of burnt bricks. The bigger houses had many rooms surrounding a square courtyard. These houses were provided with private wells, kitchens and bathing platforms. The difference in the size of the houses suggests that the rich lived in the larger houses whereas the one-room buildings or barracks might have been intended for the poorer section of the society. The drainage system of the Harappans was elaborate and well laidout. Every house had drains, which opened into the street drains. These drains were covered with manholes bricks or stone slabs (which could be removed for cleaning) were constructed at regular intervals by the side of the streets for cleaning. This shows that the people were well acquainted with the science of sanitation changing cloth. Scholars believe that the 'Great Bath' was used for ritual bathing. Another structure here located to the west of the 'Great Bath' is the granary. It consists of several rectangular blocks of brick for storing grains. A granary has also been found at Harappa. It has the rows of circular brick platforms, which were used for threshing grains. This is known from the finding of chaffs of wheat and barley from here. At Lothal, a brick structure has been identified as a dockyard meant for berthing ships and handling cargo.

ECONOMIC ACTIVITIES

Agriculture The prosperity of the Harappan civilization was based on its flourishing economic activities such as agriculture, arts and crafts, and trade. The availability of fertile Indus alluvium contributed to the surplus in agricultural production. It helped the Harappan people to indulge in exchange, both internal and external, with others and also develop crafts and industries. Agriculture alongwith pastoralism (cattle-rearing) was the base of Harappan economy. The granaries discovered at sites like Harappa, Mohenjodaro and Lothal served as the storehouses for grains. We do not have any clear evidence of the tools used for agriculture. However, the furrows or plough-marks have been observed in a field at

Kalibangan. These indicate plough cultivation. A terracotta plough has also been reported from Banawali in Hissar district of Haryana. The irrigation was carried on a small scale by drawing water from wells or by diverting river water into channels. The chief food crops included wheat, barley, sesasum, mustard, peas, jejupe, etc. The evidence for rice has come from Lothal and Rangpur in the form of husks embedded in pottery. Cotton was another important crop. A piece of woven cloth has been found at Mohenjodaro. Apart from cereals, fish and animal meat also formed a part of the Harappan diet. (ii) Industries and Crafts The Harappan people were aware of almost all the metals except iron. They manufactured gold and silver objects. The gold objects include beads, armlets, needles and other ornaments. But the use of silver was more common than gold. A large number of silver ornaments, dishes, etc. have been discovered. A number of copper tools and weapons have also been discovered. The common tools included axe, saws, chisels, knives, spearheads and arrowheads. It is important to note that the weapons produced by the Harappans were mostly defensive in nature as there is no evidence of weapons like swords, etc. Stone tools were also commonly used. Copper was brought mainly from Khetri in Rajasthan. Gold might have been obtained from the Himalayan river-beds and South India, and silver from Mesopotamia. We also have the evidence of the use of the bronze though in limited manner. The most famous specimen in this regard is the bronze 'dancing girl' figurine discovered at Mohenjodaro. (Fig 3.3) It is a nude female figure, with right arm on the hip and left arm hanging in a dancing pose. She is wearing a large number of bangles. Bead-making also was an important craft. Beads were made of precious and semiprecious stones such as agate and carnelian. Steatite was used for making beads. The evidence of beadmakers' shops have been found at Chanhudaro and Lothal. Gold and silver beads have also been found. Ivory carving and inlaying used in beads, bracelets and other decorations were also in practice. The Harappans thus showed their masterly skill in a variety of arts and crafts A well-known piece of art of the Harappan period is a stone sculpture of a bearded man discovered at Mohenjodaro. (Fig 3.4) His eyes are half closed indicating a posture of meditation. Across the left shoulder is an embroidered cloak. In the opinion of some scholars it could be a bust of a priest. A large number of terracotta figurines of males and females have been discovered from various Harappan sites. (Fig 3.5) The female figurines outnumber those of males and are believed to represent the worship of mother goddess. Besides these, a variety of models of birds, monkeys, dogs, sheep, cattle, humped and humpless bulls are found. However, the noteworthy specimen in this regard are various models of terracotta carts. Pottery-making was also an important industry in the Harappan period. These were chiefly wheel-made and were treated with a red coating and had decorations in black. These are found in various sizes and shapes. The painted designs consist of horizontal lines of varied thickness, leaf patterns, palm and pipal trees.

Birds, fishes and animals are also depicted on potteries. The Harappans manufactured seals of various kinds. More than two thousand seals have been discovered from different sites. These were generally square in shape and were made of steatite. It is noteworthy that while the seals depict a number of animals there is no representation of horse on these. It has led many scholars to argue that horse was not known to the Harappan people though there are others who do not accept this argument. Besides various kinds of animals, the Harappan seals contain some signs in the Harappan script which however has not been deciphered so far. The most famous of the seals is the one with a horned male deity represented on it. He has three heads and is sitting in a yogic posture surrounded by four animals viz elephant, tiger, rhinoceros and a buffalo. He has been identified by many scholars with the ancient form of the god Pashupati (Lord of beasts) though there are others who dispute this identification.

Trade Trading network, both internal (within the country) and external (foreign), was a significant feature of the urban economy of the Harappans. As the urban population had to depend on the surrounding countryside for the supply of food and many other necessary products, there emerged a village-town (rural-urban) interrelationship. Similarly, the urban craftsmen needed markets to sell their goods in other areas. It led to the contact between the towns. The traders also established contacts with foreign lands particularly Mesopotamia where these goods were in demand. It is important to note that various kinds of metals and precious stones were needed by craftsmen to make goods, but as these were not available locally they had to be brought from outside. The presence of such raw material found at sites away from the place of its origin naturally indicates it must have reached there through an exchange activity. Thus Rajasthan region is rich in copper deposits and the Harappans acquired copper mainly from the Khetri mines located here. Kolar gold fields of Karnataka and the river-beds of the Himalayan rivers might have supplied the gold. The source of silver may have been Jwar mines of Rajasthan. It is believed that it must have also come from Mesopotamia in exchange for the Harappan goods. Among the precious stones used for making beads, the source of lapis-lazuli was located in Badakshan mines in northeast Afghanistan. Turquoise and Jade might have been brought from Central Asia. Western India supplied agate, chalcedony and carnelian. The seashells must have come from Gujarat and neighbouring coastal areas. Timber of good quality and other forest products were perhaps obtained from the northern regions such as Jammu. The Harappans were engaged in external trade with Mesopotamia. It was largely through Oman and Behrain in the Persian Gulf. It is confirmed by the presence of Harappan artefacts such as beads, seals, dice etc. in these regions. Though the artefacts from those regions are rarely found at the Harappan sites, a seal of West Asian or Persian origin has been discovered at Lothal which confirms this contact. Mesopotamian cities like Susa, Ur, etc. have yielded about two dozen of Harappan seals. Besides seals, other artefacts of

Harappan origin which have been discovered include potteries, etched carnelian beads and dices with Harappan features. The inscriptional evidence from Mesopotamia also provides us with valuable information on Harappan contact with Mesopotamia. These inscriptions refer to trade with Dilmun, Magan and Meluhha. Scholars have identified Meluhha with Harappan region, Magan with the Makran coast, and Dilmun with Bahrain. They indicate that Mesopotamia imported copper, carnelian, ivory, shell, lapis-lazuli, pearls and ebony from Meluhha. The export from Mesopotamia to Harappans included items such as garments, wool, perfumes, leather products and silver. Except silver all these products are perishable. This may be one important reason why we do not find the remains of these goods at Harappan sites.

RELIGIOUS BELIEFS AND PRACTICES

Our knowledge on the religious beliefs and practices of the Harappans is largely based on the Harappan seals and terracotta figurines available to us. The Harappan religion is normally termed as animism i.e., worship of trees, stones etc. (Fig 3.8) A large number of terracotta figurines discovered at the Harappan sites have been associated with the worship of mother goddess. (Fig 3.9) Many of these represent females adorned with a wide girdle, loin cloth and necklaces. They wear a fan-shaped head dress. In some cases the female is shown with an infant while there is one that shows a plant growing out of the uterus of a woman. The latter type probably symbolizes the goddess of earth. There are many scholars who refer to the worshiping of linga (phallus) and yoni (female sex organ) by the Harappans but some are doubtful about it. Harappans' belief in a male deity is evident by the seal depicting a deity with a buffalohorned head-dress, sitting in a yogic posture and surrounded by animals. Many scholars identify him with god Pashupati (Lord of beasts) or 'Proto-Shiva' though some dispute it. In another instance, a deity is shown with horns and flowing hair standing nude between the branches of a Pipal tree and a worshipper is kneeling in front. It may represent tree worship. Animal worship also appears to be popular among the Harappans. The evidence of fire worship has also been found at some sites such as Kalibangan and Lothal. At Kalibangan, a series of raised brick platforms with pits containing ash and animal bones have been discovered. These are identified by many scholars as fire altars. Fig 3.8 Symbolic Pipal Tree from Mohenjodero Fig 3.9 Mother Goddess from Mohenjodero This also shows that the Harappans living in different areas followed different religious practices as there is no evidence of fire-pits at Harappa or Mohanjodaro. The burial practices and the rituals related with them have been a very important aspect of religion in any culture. However, in this context Harappan sites have not yielded any monument such as the Pyramids of Egypt or the Royal cemetery at Ur in Mesopotamia. Dead bodies were generally rested in north-south direction with their head towards north and the feet towards south. The dead were buried with a varying number of earthen pots. In

some graves the dead were buried along with goods such as bangles, beads, copper mirrors. This may indicate that the Harappans believed in life after death. At Lothal three joint or double burials with male and female bodies together were discovered. Kalibangan has yielded evidence of a symbolic burial along

TOOLS, IMPLEMENTS AND OTHER OBJECTS

The chalcolithic cultures are characterised by the use of tools made of copper as well as stone. They used chalcedony, chert etc. for making stone tools. The major tools used were long parallel-sided blades, pen knives, lunates, triangles, and trapezes. Some of the blade tools were used in agriculture. Main copper objects used include flat axes, arrowheads, spearheads, chisels, fishhooks, swords, blades, bangles, rings and beads. Beads made of carnelian, jasper, chalcedony, agate, shell, etc. frequently occur in excavations. In this context, the findings from Daimabad hoard are noteworthy. The discovery includes bronze rhinoceros, elephant, two-wheeled charriot with a rider and a buffalo. These are massive and weigh over sixty kilograms. From Kayatha (Chambal valley) also copper objects with sharp cutting edges have been recovered. These reflect the skills of the craftsmen of the period.

SUBSISTENCE ECONOMY

The people of these settlements subsisted on agriculture and cattle rearing. However, they also practised hunting and fishing. The main crops of the period include, rice, barley, lentils, wheat, jawar, coarse gram, pea, green gram, etc. It is to be noted that the major parts of this culture flourished in the zone of black soil, useful mainly for growing cotton. Skeletal remains from the sites suggest the presence of domesticated and wild animals in these cultures. The important domesticated animals were cattle, sheep, goat, dog, pig, horse, etc. The wild animals included black buck, antelope, nilgai, barasinga, sambar, cheetah, wild buffalo and one-horn rhino. The bones of fish, water fowl, turtle and rodents were also discovered.

Unit-IV

Objectives

After the study of this chapter, the learners can understand:

- *the nature and significance of literary source for reconstruction of history;*
- *the nature and importance of archaeological sources for writing of history*
- *foreign accounts and their importance for the writing of Indian history.*

Introduction

India has a rich cultural heritage. The progress of man in the past is the subject matter of

history. In order to understand the present India we have to trace back its roots in Ancient India. However, to reconstruct its history is a difficult task for the historians. Especially difficulty faced in the matter of types and nature of sources. In order to study the life of Indian people in the past, we have to rely on different sources of Indian history. Although there is an absence of any historical chronicle, it does not mean that Indians lacked in historical sense. The information derived from literary sources and corroborated by archaeological evidence helps us to form a complete picture of our ancient times. The sources for the reconstruction of ancient Indian history can be studied under three broad headings namely (1) Literary sources (2) Archaeological sources and (3) Accounts of the Foreign historians and travellers.

Sources of Ancient Indian History

Availability and decipherment' are two limitations regarding the sources of Ancient Indian History. Those were the British administrative officers who, for their administrative needs, first paid attention to Ancient Indian history. Like, Sir William Jones (judge), in 1784, founded 'Asiatic Society of Bengal', for learning, understanding and publishing sources of Ancient Indian History. Then, after the formation of Archaeological Survey of India in 1861, search for archaeological sources get legal-momentum. Then, after the discovery of Indus civilization in 1922, boosted love for ancient Indian history among Indians. Then, until now, various types of sources are coming forth and their interpretation is becoming more challenging job for the historians of Ancient India. This chapter will analyze the importance of various sources for the reconstruction of Ancient Indian History

Literary/written sources

The literary/written sources to reconstruct Ancient Indian history can be classified among three major categories, (i) Religious, (ii) Secular and (iii) Scientific. It also comprised of some different kinds of sources like (iv) Sangam literature and (v) travelogues of foreign travelers.

Religious literature

Religion was the backbone of society of Ancient World. India was not an exception. Hence, we find large amount of canonical/religious literature of various religions, prevalent in Ancient India. These throw light on the, along with religious, socio-economic aspects and political thought and ideology of the period under study. However, such sources should be used with caution. Because, first of all, most of the religious sources are retained through oral traditions and put into writing, hundreds of years after their actual creation. Besides, 'what-we-have-now' are the editions of actual writings. Secondly, religious literatures were mainly written to provide guidance with an idealist approach. Hence, whatever written is there, is 'dos and don'ts' kind of nature and not 'as- actual'. Sometimes, the body of works like Puranas, though written in 4th century AD onwards, written as if they were created 1000 years before and prophesying something about 1000 years after! Hence, with tools like internal and external criticism, a historian can make use of these sources and reconstruct the history of Ancient India.

Vedic/Hindu canonical literature:

It comprised of sources like four Vedas, Brahmins, Aranyakas, Upanishads, Shad-darshanas, Shad-angas, Sutras, Smritis and Puranas.

Vedas: The Aryans have created four Vedas; Rig, Yajus, Sam, Atharva. The Vedas (from Vid means to know) were basically compilation of prayers of Aryans for the Gods, which were mainly the powers in nature. According to Aryans, the Vedas were heard (and not created by men), hence these were called 'Shrutis' and 'a-paurusheya (not created by any man)'. The Vedas are also called as 'Samhita'.

Rig-Veda: Rig-Veda is the earliest among four Vedas. It is comprised of 10 mandalas and 1028 suktas. These were prayers to the gods like Indra, Varuna, Agni, Parjanya, Vayu, Marut etc. It gives us information regarding socio-economic, religious, political condition of Early Aryans, located in the area of Sapta-Sindhus. For example, the 'Purushsukta' of its 10th mandala depicts the origin of Varnasystem in India.

Yajur-Veda: It comprised the prayers to be recited while performing sacrifices or yajnya. Actually, the major parts of the prayers are borrowed from the Rig-Veda, itself. It has two parts, Shukla and Krishna and six other samhitas. The Vajasaneyi Samhita of Yajurveda throws ample lights on various Vedic sacrifices.

Sam-Veda: It comprised the prayers to teach how to recite the prayers while performing sacrifices. Again it comprised the prayers from Rig-Veda, and provided methods to recite them. Hence, it is considered as the origin of Indian classical music.

Atharva-Veda: It comprised assorted subjects like magic, black-magic, superstitions etc. We find origins of medicines, botany, and surgery in this Veda. The four Vedas throw light on life-ways of Vedic Aryans. We come to know that, when the Aryans, initially were settled in Saptasindhu region, their life-style was different. The second to ninth mandala of Rig-Veda tells us about this. But when they migrated to more eastern part of their actual location, and came into contact with other communities, we find drastic changes in their life-ways. The first and 10th mandala of Rig-Veda and other three Vedas inform such change. Hence, to understand Vedic Aryans, we have to think in two parts: Early Vedic and Later Vedic.

After Vedas, some other important works were compiled by Vedic Aryans. These were basically created to explain the thoughts and laws in the Vedas: to make them more understandable. Hence, these work as appendices of Vedas and were mostly in prose. These were comprised of, Brahmanas, Aranyakas, Upanishads, Vedangas, Shad-darshanas.

Brahmanas: The Brahmanas were created to teach the procedure of sacrifices that were compiled in the Vedas. Hence, each Veda has its own Brahmana, e.g. of Rigveda-Aitareya Brahmana, of Samveda- Jaiminiya Brahmana, Yajurveda-Shatapath and of Atharvaveda-Gopath. From these Brahmanas, we get information of Vedic Aryans' various institutions, like, four Varnas, four Ashramas, philosophy etc.

Aranyakas: The Aranyakas were created to teach the learning of Vedic religion, especially sacrifices & mystic philosophy into seclusion. Aitareya Aranyaka is meant for Rig- Veda whereas Taittiriya Aranyaka is for Yajur-Veda.

Upanishads: The word Upanishad means 'to learn, by sitting close to one's teacher'. These were created to teach the learning of Vedic spiritualism, comprising the subject of, like, knowledge of one's self, knowledge of God, relations between self and God, creation of Universe, our place in such a vast Universe, etc. Traditionally there are 108 Upanishads, however, some of the important are, Ken, Kath, Prashna, Aitereya, Chandogya etc. As these come, chronologically, at the end of Vedas, hence, the Upanishads are also known as 'Vedanta'. The basic backbone of Indian religions were based, mostly, on Upanishads, hence, with the help of later, we can understand Indian religions more holistically.

Vedanga: These were created to make Vedas more understandable, as follows:

- **Shiksha:** How to pronounce the Vedic prayers in proper manner
- **Kalpa:** Rules to perform sacrifice in a proper manner
- **Vyakaran:** To know the proper grammar of Sanskrit language
- **Nirukta:** Etymology of words, mentioned in the Vedas.
- **Chanda:** Various meters in which Vedic shlokas are structured to recite. It comprised of Gayatri meter (chanda), Anushtubha meter (chanda) etc.
- **Jyotish :** It deals with proper time (Shakun) on which sacrifices should be performed. It also discusses the subjects of astronomy like Sun, Moon, and constellations and, on cycles of seasons etc.

Shad-darshanas: These works deal with philosophical teaching or aspects in the Vedas. These are six, like, Vaisheshik (Kanad), Nyaya (Kanad), Sankhya (Kapil), Yog (Patanjali), Mimansa (Jaimini), Uttar-mimnsa (Badrayan). These cover topics like the theory, logic, unity of soul with God, atoms, Vedic rituals, structure of universe etc.

Sutras: The 6th century BC was the milestone in the history of India. The period witnessed emergence of early states and growth in economy and coinage. In this period, India went through its second urbanization. This was the period where heterodox religions like Buddhism, Jainism, Ajivakas were grew and developed. They challenged Vedic religion and its shortcomings and provided a strong alternative. Besides, during that period, India was came into closer contacts with foreigners.

Such was the period of constant churning and speedy processes. In response to such changes, the custodians of Vedic religion resorted to reconstruct and regulate their religion. Hence, Sutras were created to provide norms, rules and regulation to consolidated Vedic religion. Sutras were compiled around 6th c. BC. These were comprised of three sutras, viz. Dharmasutras, Shrautsutras and Grihyasutras; together they are called as Kalpasutras. They throw ample light on such processes, going through during 6th c. BC.

The Smritis: During the last centuries of BC and first centuries of AD, India again witnessed the period of speedy changes. The economy was flourished, India had great relations with Roman world, Buddhism was at its peak, local dynasties were forming empires: thus no area, be it society or culture, was untouched by such changes. Such was the dynamic and vibrant scenario. Vedic religion, again, felt to reconstruct their religion and thus created the Smritis. The Smritis, like Sutra, are the books of norms, codes, rules, regulations to consolidate and reconstruct Vedic religion. These were written by various scholars, like, Manu, Narad, Parashar, Yajnyavalka etc. Hence, we find many smrities on their name, e.g. Manu-smriti, Narad-smriti etc.

Puranas: Up to 3-4th century AD, Buddhism was its peak. Under Mahayana, the idol of Buddha was started worshipping; and thus, it gained popularity. On the other side, Vedic religion was felt alienated and needed popularity among the masses. It was introspecting and experimenting in its thoughts. As a result, Vedic religion, for common mass, created a certain kind of literature and, through it, opened the doors of religion to common mass. The genre of literature is called as 'Puranas'. The Puranas are mainly comprised of 18 Puranas and these were classified according to the devotional cults, prevailed in 3rd-4th c. India. For example, the Puranas of Shaiva consisted of Shaiv Puranas, Vayu Puranas, Skanda Puranas; whereas the Vaishnavas venerated Vishnu Purana, Garud Purana, Matsya Purana, Varaha Purana. The Shakti cult (devoted to mother goddesses) and Ganapatya cult also created their own Puranas.

Such Puranas have common sections, like, origin of universe, stories regarding respective God and its Family, importance of pilgrim centres and pilgrimages, political dynasties and

myths of lineages (vansha and vanshanucharit) etc. Subsequently, other related subjects were also touched in the Puranas, like, iconography, architecture (Vishnudharmottar Purana), medicines, geography, political history etc. In short, to understand India of 3rd to 6th century AD, the Puranas help historians in a large manner.

Buddhist Canonical Literature

Buddhism was the religion of masses; hence, their literature and the language of them were maintained as of the followers. Hence, these are in various languages, like, Prakrit (Pali), Tibetan, Chinese, Sinhali etc. To challenge Vedic religion, these were also written in Sanskrit language. The vast body of Buddhist literature comprised of, mainly, the Pitakas, the Jatakas, etc.

Pitakas: The Pitakas comprised of three compilations, viz. Vinaya, Sutta, Abhidhamma and together they are known as 'Tri-Pitakas'. The Vinaya- Pitaka was compiled by Upali and comprised of five books. These were basically created to provide codes of conducts for Monasteries, Bhikus, Bhikkunis, their daily routine, ethics etc. It has parts like Sutta-vibhanga (origin of codes regarding Bhikkus), Khandaka (rules regarding entry into monastery and admissions etc) and Parivar. The Sutta-pitaka compiled by Ananda. These were created to teach Buddha's teaching with examples, parables and lectures. This body of literature is oriented towards common people. The Sutta-Pitaka comprised of five books (nikayas), like Digha-nikay, Mazzim-nikaya, Sanyukta-nikaya, Anguttar- nikaya, Khuddak-nikaya. The Khuddak-nikaya was an important volume consisting of works like, Dhammapada, Suttanipata, Thergatha and Therigatha. Jatakas were also become part of Khuddak- nikaya.

The same, i.e. Buddha's teaching is the main theme of Abhidhamma-Pitaka, however, it has a philosophical & scientific form. Obviously, these were meant for Buddhist scholars. It comprised of 'Kathavastu' an important Buddhist book. In, short, these books throw ample light on thoughts and codes-of-conducts of Buddhism.

The Jatakas: The Jatakas are the compilation of the stories regarding previous births of Buddha. To solve the problems of his followers, Buddha devised a beautiful method to tell the stories from his own-experiences that of his previous births, and, the skeptic or problem follower drew answers from these stories. These were the Jatakaas who throw light on India during 6th c. BC.

Dipvamsha and Mahavamsha: These Buddhist works are of Shri Lankan origin. They inform us about Ashokathe Mauryan Emperor and various Buddhist scholars.

Divyavadan: This Buddhist work is of Napali origin. It tells Buddhist stories and throws light on northern dynasties, from Mauryan kings to Shunga period. The Buddhist literature also comprised of other important works, like, Milind-Panha (discussion between Bhikku Nagsen with Milind (Menander) Buddhist turned Greek king; Ashvaghosha's Buddha-Charit (biography of Buddha); Mahavastu, Lalitvistar, Manjushri Mulkalpa etc.

Jain Canonical Literature

Ancient Jain literature is in various languages, like, Prakrit (Ardhamagadhi, Shaurseni), Tamil, Sanskrit etc. The literature can mainly be classified into two parts, Anga (14) and Agamas (purva). Besides, Chedasutras (6) and Mulsutras (4) are also important parts of it.

Anga and Agam: These works throw light on the teaching of Mahavir. The Acharang Sutra reflects on codes-of-conducts of Jain monks'; whereas, Bhagavati Sutra throws light on Mahavir's biography and his exploits.

Philosophical: These comprised of Samaysar, Pravachansar etc. These were mainly created by Acharya Kundakunda, reflected upon Jain spiritualism.

Puranas: The Jain Puranas were based on the framework of Vedic epics and Puranas; however, with the main content of Jain philosophy. These comprised of Harivamsha purana, Maha-purnana, Padmacharit etc.

Biographies: These were comprised of Bhadrabahu-Charita, Jasahar-chariu, Naykumar-chariu etc. The Bhadrabahu -charita throws light on the events related to Mauryan Emperor Chandragupta and his teacher, Bhadrabahu-Jain Acharya. The Jain literature also comprised of Kathakosh of Harisen, Parishishta-parva of Hemchandra Suri, Dhananjay-mala (thesaurus),

Alankar-chintamani (on literature), Mahavir-ganit-sarsamgraha (mathematics), Niti-vakya-mrita of Somdeva (Political Science) etc.

Secular Literary Sources

India was not totally engulfed itself in religions, as half-learned people may think. It also created a large hoard of secular literature throughout thousand years of its history. A mere cursory glance through it may testify this.

Histories

India was not unaware of history-writing. We would understand some regional histories in following lines.

Rajtarangini: This is perceived as the first-book of history of India, as per modern lines of historiography. It is the history of Kashmir, written by Kalhan (born in 1100 AD in Kashmir). He completed this book within two years, during the reign of King Jaysimha of Kashmir. It is in Sankrit, comprising eight Khandas (chapters/volumes) and 7826 sholkas (verses). It gives history of Kashmir from the period of Mahabharata-war up to 12th century AD; however, only from 9th century, a precise history can be seen. Kalhan was an unbiased historian who, for writing history, utilized large body and variety of sources. He undertook field-work and traveled throughout Kashmir. During his travel, he, not only collected sources but also interviewed local people and collected oral traditions. Thus based on literary sources and oral tradition and through extensive field-work, he wrote 'Rajatrangani'. His work shows his love of Kashmir and respect of his patron king. However, as a historian, he also criticizes the negative-points of his king. The work shows his beautiful narrative-descriptive style, dramatic dialogues, sprinkled with good-advises here and there. Rajatrangini shows importance of sources and variety of them for writing of history. It also stresses the impartiality and unbiased nature of historian. According to Kalhana, "...Such person (historian) should be praised whose writing abstained itself from any kind of anger-hatred and remained impartial while describing historical events..". Such was the urge of Kalhana and work like Rajtarangini. Hence, it is called as first book of History in India. Apart from Rajtarngini, the 'Rasmala' and 'Kirtikaumudi' (written by Someshvar) inform us about the history of Gujarat during the Chalukya (of Lata) period.

Eulogies

The Eulogies are those works which are created to praise the patron king (and his deeds) by a charan/bhat/poet in the court. Such work, though one-sided, informs us about king, his dynasty and family, his deeds & policies etc.

Vikramank-deva-charit: This eulogy is written by Bilhan who praises the king Vikramaditya (of Chalukya dynasty) and his various deeds.

Gaudavaho: Vakpati wrote this eulogy in praise of Yashovarman's (of Malwa) victory over Bengal (Gaud region).

Harsha-charit: This eulogy was written by Banbhata in praise of Harshavardhana. Besides, some other notable eulogies comprised of Kumarpala-charit (by Hemchandra),

Hammir-mad- mardan (by Jaychand Suri) etc.

Epic and Kavya Literature

The literature comprised of dramas, poetry, epics etc. These are secular kind of literature hence we find factual information regarding society and economy, sometimes polity of specific period. However, these should be used with caution as their purpose was not-to-write-history but to entertain readers.

Epics: Epics comprised of Mahabharata (by Vyasa) and Ramayana (by Valmiki). We get information from these epics of vast areas of interests, like, the movement of Aryans throughout Indian subcontinent, their relations with local or native communities and tribes, their political thoughts, institutions, society, social customs and traditions, forest tribes, economy etc. It also deals

with long-term processes like Aryanization of India, inception of Urbanization, conflicts between two modes of economies (Pastoralism and agriculture) etc. In short, to understand India during 8th to 6th century BC, these epics proved to be important source.

Dramas: The 'Sariputta-prakaran' was considered as the first drama, written by Ashvaghosha. Then, one scholar-Bharat wrote his famous 'Natyashastra' on dramatics. Some of the important drams are as follows:

Mudra-rakshas: This is a drama, written by one Vishakhadatta. The drama deals with one incident concerned with Chanakya (the prime minister of Chandragupta Maurya) and Rakshasa (Amatya of Dhanananda). The play gives information on Chankyas politics, espionage and the foundation of Mauryan Empire. His drama 'Devi-chandraguptam' deals with the life of Chandragupta II of Gupta dynasty.

Mrichcha-katika: This drama revolves around the love between one poor Charudatta and beautiful Ganika (prostitute) Vasantasena. It is written by Raja Shudrak which sheds light on economical affluence of ancient India, the prostitutes and respect to them in society, the social structure etc. It also gives passing reference on people's revolt against unjust king.

Malvika-agnimitra: This play was written by Kalidasa, great poet and dramatist during Gupta period. The subject of the drama is the love between one Malvika and Agnimitra, brave king of Shunga dynasty. Kalidasa also wrote beautiful dramas like Vikramorvasiya, Shakuntal etc.

Nanganada, Ratnavali, Priyadarshika: These plays were written by king Harshavardhana. These reflect upon socioeconomic condition and religious outlook during his reign. Other dramas of importance comprised of Uttar-rama-charit and Malati-madhav of Bhavbhuti, Svapna-vasavdatta of Bhasa, etc.

Poetry: After early centuries of Christian era, and especially during Gupta times, India witnessed growth of classical literature. The 'Raghu-vamsha', 'Kumar-sambhav', 'Riti-samhar' and 'Meghaduta' were the classic creation of Kalidasa. The last two are world-famous and the description of nature and cycles of seasons, written therein reflects, not only the classicality India received at that time, but, the contemporary ecology of that time. Other works of poetry consisted of Dashakumara-charit (Dandi), Kiratarjuniya (Bharavi), Ravan-vadha (Bhatti), Vasavadatta (Subandhu) etc.

Compilations: Some compilations are of worth mentioning regarding secular sources; such as **Gatha-saptashati** of 'Hala, the Satavahana king was himself a great man of literature. He collected folk tales/songs and compiled into 'Gatha-saptashati, a compilation of 700 shortpoems. It has a great literary merit. As a source, it is an impartial source which gives information of common folks during early historic Godavari-valley. It touches, mainly the

human relations, various relationships and complexities, the cropping patterns, social structures etc. Then, some other compilations include Brihat-katha (of Gunadhya), Brihatkatha-manjari (of Kshemendra), Panchatantra (of Vishnusharma). These are basically universal stories, told to inculcate ethics and moral values in the hearts and minds of peoples and children, by using imaginary dialogues between trees and animals.

Scientific Treaties

Ancient India was not unaware of scientific attitude. Hence, considerable amount of scientific work were created during that period. The treaties mainly comprised of works on Political sciences and Grammar, however, after early centuries, many scientific works were started showing up on subjects like medical science, agro-irrigation science, mathematics, astrology-astronomy, art- architecture, iconography etc. Especially, Gupta period witnessed the emergence of various sciences.

Arthashastra: This main subject matter of this book is 'Political Science', written by Chanakya/Kautilya, the prime minister in Chandragupta Maurya's court. He defines Arthashastra as 'the science to teach how to be benefitted by the power and how to preserve it'. In short, it informs us about methods to acquire power and various types of administrative systems/policies to sustain it. This book is a firsthand document which informs us about the polity and administrative system of Mauryan Empire. As it is an administrative document and especially 'written-for-the-king, it is in courtlanguage, i.e. Sanskrit. To write this book, Chanakya took review of, pervious researches of 18 scholars on the subjects. The Arthashstra comprised of 15 parts (pradhikaranas), 150 chapters (adhyayas), 180 headings (up-vibhagas) and 6000 verses (Shlokas). The Parts are as follows:

1. Vinaya-dhikar (appointments of ministers)
2. Adhyaksha-prachar (responsibilities of administrator: forts, taxes, weightsmeasure, espionage etc.)
3. Dharmasthiya (Laws regarding marriages)
4. Kantak-shodhan (punishments)
5. Yogvritta (duties of servants)
6. Mandal-yoni (External Polices: who are friends and who are enemies)
7. Shada-guna (External Affairs)
8. Vyasana-dhikaraka (how to search for the origin/cause of problems)
9. Abhiyasytkarma (Preparation before war)
10. Sangramic (war-strategies)
11. Sangha-vritta (how to divide and rule)
12. A-baliyas (how to defend weak state from more powerful enemy)
13. Durga-labhopay (how to capture forts)
14. Aushad-nishadak (various methods to defeat the enemy)
15. Tantra-yukti (the meaning of Arthashastra, i.e. political science)

In short Arthashastra have touched upon various matters of state-concerns, like, the integral parts of state system (theory of Saptanga), relations among various states, duties of officers and servants, administrative divisions of Empire, taxation system, laws, foreign affairs etc. Other subjects are also dealt with, like, social conditions in various regions, medicinal plants, mines and the art of mining, cropping pattern, irrigation systems etc.

Other political treaties comprised of Niti-sar (by Kamandak), Niti-vakya-mrit (by Somadevsuri).

Ashtadhyayi and Mahabhashya: Ashtadhyayi deals with Grammar, written by Panini. It throws light on social churning of 6th century BC, i.e. the period of second urbanization in

India. Similar work is Mahabhashya, written by Patanjali, informs us about social condition during Early Historic period.

Charak-samhita and Sushrut-samhita: These works inform us about medical sciences during Ancient India and considered as the basis of Ayurveda-branch of medicines.

Brihat-samhita: It is written by Varhamihir and of an encyclopedic nature. It touches various subjects like, crops, cropping pattern, agriculture technology, how to foresee earthquakes, astronomy, astrology etc. It testifies the scientific progress in India during Gupta period. He also has written 'Pancha-siddhantika', concerns with eclipses, path of planets and pace of constellation etc. Other works on astronomy and astrology comprised of Aryabahatiya (by Aryabhatta), Brhama- sphuta-siddhant (by Brahmagupta) etc.

Sangam Literature

The Sangam literature gives us information regarding early historic and historic Southern India. The Sangam means an assembly. The body of Sangam literature comprised of the poems, presented in three assemblies, by Tamil poets. These poems were actually collected by the poets, from various eco-regions in southern India. Thus, these are basically folk-lore, compiled by urban poets. The important works are Shilappadikaram, Manimekhalai, Pattupattu etc. There are five eco- regions in Tamil-land, called as 'Tinaï' and these are five, hence, 'Ain-tinaï'. Each 'tinaï' has a specific kind of ecology and, naturally, specific kind of response (or mode of subsistence) to their surrounding ecology. Thus, the poems in hilly regions display different subject-matter or surroundings than those were of coastal region. However, these folk-songs were created on two basic theme lines, i.e. Love (ekam) and War (puram). Thus, 'waiting on the coast for her lover who was not written from fishing' is a matter of tension in coastal region and 'fear of attacks of wild animals on her lover' is a concern of hilly regions.

Such type of literature is mostly a secular one and reflects true nature of common men-women and their life-style. If we look deeply into that, vast hoard of information could come forward of utmost importance, like, ancient ecology, modes of subsistence and methods/techniques to acquire food, forest/sea/plain-products, cropping patterns and their cycle, methods of irrigation, social condition and tensions in social groups, independence of eco-regions and interdependence upon each other whereas on other sides, Tamil polity, kingship and duties of kinds, towns and town administration, laws, judiciary, city-layouts, internal and external trade etc.

Foreign Accounts

After the invasion of Persians and Greeks, India was re-exposed to ancient world. The wars were some incidents; however the process of mobility of people between two counties became a sustainable phenomenon of Ancient India. Such travelers were foreigners hence they had no obligation to any king of the region. Hence, their accounts are impartial and; being 'eye-witness' gives us first hand information on the subjects they touched upon. However, it should be kept in mind that, as they were foreigners and not-rooted in India, it is not possible to expect from them a perfect knowledge of the socio-economic and political thoughts and institutions in India.

The Greeks and Romans

Herodotus: He is considered as first historian of the world. He, while describing the war between Persian and Greece, mention Indian soldiers, fighting along the side of Persians.

Megasthenes: He was the ambassador of Seleucus Nicator, posted in the court of

Chandrgupt Maurya. In his work, 'Indica', he gives description of the layout of Pataliputra, like, a big city, with an extent of 14 km x 2 km, fortified with 570 bastions and 67 gateways with one huge royal palace etc. He also touches upon social structure, caste-system, caste-relations etc. It should be noted that the original Indica is lost; hence, we can't use any information, actually written in there. However, the travelers, who came into India after Megasthenes, have referred Indica and quoted it. Thus, through them i.e. indirectly, we can use 'Indica' as a source.

Peryplus of the Erythraean Sea: This travelogue is an anonymous work, presumed to be written by one fisherman on Egypt coast. The work gives us impartial and objective information on the Indo-Roman trade during Early Historic period. It informs us about the ports on India's coast- line, trade-centres in India, the trade-routes-connecting trade centres and ports, distance between centres, the list of items-of-trade, the annual volume of trade, the rates, types of ships etc.

Chinese

Fa-Hien (Fa Xian) (337-422 AD): This Chinese traveler visited India during Gupta period. He was a Buddhist monk, visited India to seek knowledge from Dev-bhumi (i.e. India) and visit Buddhist pilgrimage centres. On the basis of his three years of travel, he has written, in his chronicle 'Records of Buddhistic Kingdoms', on society and culture of North India, besides, various factors in Gupta administration.

Hiuen-Tsiang (Xuan Zang) (602-664 AD): This Chinese Buddhist monk, against all odds, visited India during Harshavardhana's reign. He started his journey in 629 AD, from Gansu, and then through, Gobi Desert-Kyrgyzstan-Uzbekistan-Samarkand-Balkh came to India in 630 AD. He visited Buddhist pilgrimage centres, stayed at Nalanda University and studied Buddhism, gone through original Buddhist works, collected original manuscripts and mementos, made copies, attended Harsha's assembly and after years of travel throughout India, returned to China in 645 AD. In China he wrote his account as 'Si-Yu-Ki' (Great Tang Records on the Western Regions). This chronicle give vivid description of what he had witnessed in India. He gives information of kings especially Harsha and his generosity, people and customs of various regions in India, life-ways etc. He has written of habits and nature of Maharashtrian people. Other chronicles consists of Taranath's (Tibetan Buddhist monk) Kangyur and Tangyur, reflect upon early Medieval India.

Material/Archaeological sources

The Material/Archaeological sources comprised of (i) Inscriptions, (ii) Coins, (iii) Ancient Monuments, (iv) Sculptures & Paintings and (v) Archaeological Remains

Inscriptions

After contact between Persian and India, India came to know the importance of 'art-in-stone'. Being a stable material, stones were being used for engraving king's orders, policies, outlooks to public them and kept them for time immemorial. These were also used for issuing land-grants to the grantee. With same notion, court-poets also engraved eulogies by using such material to make it immortal. These are generally called inscriptions and written, either on rock or pillar. These are called Epigraphs or edicts.

Epigraphs

The earliest epigraphs in India are those of Ashoka, the Mauryan Empire. He, to propagate his dhamma and policies, issued 14 edicts. These were inscribed on rocks, e.g. Junagadh (Gujarat). Besides, he put up pillars in public places or places where people can gather easily; and, inscribed them. To help people to read these commands, he, categorically, inscribed them into the language and script of common people, i.e. Brahmi (script) and Parkrit (language). The edicts in North- western India had Kharoshtri script, known to local

people of that area. These Ashokan epigraphs (rock-edicts and pillar-edicts) inform us, near about biography of Ashoka, like, his early days, his gruesome war with Kalinga and his remorse, his conversion to Buddhism, his dhamma, his compassionate attitude towards other religion and the same expectations from his subjects, his methods of propagation, stress on morality-ethics-civic sense and universal values etc. Other inscriptions of importance comprised of

- Naganika's inscription at Nangeghat which gives information of various sacrifices, performed by Satavahana King Satakarni I and his deeds
- Gautami Balashri's and Yajnya Satkarani's inscription at Nasik caves which give information on the adventures of Gautamiputra Satkarni, the great Satavahana king.
- Kharvela's inscription at Hathigumpā tells his deeds.
- Harisena's inscription (eulogy) on the pillar of Allahabad (called as 'Prayagprashasti'), informing us about adventures and campaigns of Samudragupta, great Gupta emperor.
- Ravikirti's eulogy at Aihole informs us about adventures of Pulkeshi II, the Chalukya king of Badami.

So far the epigraphs for 'land-grants' are concerned; we find lots of information in there. Like, the king or issuing authority, his lineages, mythical origins of his dynasty, his kingdom and its extent, then; the origin/gotra of grantee; then; purpose of grant, the extents and limits of granted land, list of rights and privileges to the grantee, punishments to the trespassers or violators of the grant etc. Such epigraphs, along with the king's biographical sketch, as immovable, also inform us about the extent of the kingdom of the issuer.

Copper-plates

Generally for 'land-grants' the copper-plates were engraved and issued to the grantee. These are basically three plates of copper, tied with each other through copper knot. The upper and last portions are left un-engraved as these can be blurred with ravages of time. Such copper-plate reveals the same information that is in the land-grants, engraved as epigraphs. Such copper-plates give information on socio-economic condition of that period. For example the 'Sauhagaura-copper plate' informs us about severed draught and the measures undertaken by authorities to tackle the problem of food-shortage.

Coins

Since 6th century BC we receive information regarding coins in India. Basically the earliest were crude and of punch-marked silver coins; Punch-Marked Coins then, after the stability of foreigners in India like Greek, Kushanas, Parthian, round, cast-coins with bust of kings-Deities, their titles etc. With their influence, Indian dynasties also came up with developed coins. However, those were the Guptas who came up with fully developed coins. We find such ancient coins, generally by accidents; or through gifts. Such coins help us to reconstruct our Ancient History through many ways, like,

- Coins inform us about such dynasties and kings which missed place in literary sources.
- The metal used in them informs us about ancient metallurgy.
- The proportion of pure metal in the coins of 'claimed metal' informs us about economical condition of issuing dynasty. For example, the gold-coins of Kushanas and Guptas are true to their 'claim' and show higher proportion of gold in them; whereas, the proportion is minimal or more-or-less absent in later Gupta rulers. This shows the growth of Indian economy since Kushanas to Gupta period and dwindling during later Gupta period.
- Coins inform us the economic relationship among people. For example, the

discovery of northern punch-marked-coins in Deccan indicated relationships between north and south India. The same is true when we find Roman coins in Deccan during Satavahana period and Satavahana coins in Mediterranean world.

- Religious symbols or figures of deities on coins inform us about religious outlook of issuing dynasties. For example, Krishna and Balarama in the coins of Agathocles' indicated compassionate attitude of that Greek king. The symbols related to Vishnu on Gupta coins like Garuda-dhvaja indicates their belief on Vaishnavism. The titles also tell us about their religious attitude, e.g. titles of Guptas like Param-vaishnava, param-bhagavat indicate their inclination towards Vaishnavism. Samudragupta with Garud-dhvaja.

- Coins also reflect king's personality, his interests etc. For example, the lionslayer image of Chandragupta II indicates his braveness; the harp-in-hand image of Samudragupta indicates his love for art.

- Some coins also have years, engraved on them. It helps to date the issuers.

- The coins also help for relative dating. For example, in archaeological excavations, if we find coins in one specific stratum then that stratum is relatively dated to the period of that coin. **1.1.4.3.Ancient Architecture/Monuments**

Earlier, during Stone Age, people took shelters in caves. However, the invention of agriculture compelled them to reside on plains. Thus, the houses get started from Neolithic period. Initially, those were made from perishable materials like wood and grass, hence, except post-holes, we find nothing of that. The scenario changed when burnt-bricks were started utilizing for constructing houses or public architecture or so-called Ancient Monuments. This can be witnessed from Chalcolithic period. Since then, India witnessed developments and variations in material, as well as, types of construction, public/civic and individual. These, broadly, can be classified into Secular and Religious architecture. So, let us, at first, look at the secular architecture in Ancient India.

Secular Architecture/monuments

So far the public and secular architecture is concerned; first instances were brought from western and north-western India that is of Harappan civilization of Chalcolithic period. During Harappan civilization, India went through its first urbanization. Hence, public/civic architecture of utmost importance was dotted these cities. These comprised of, long-wide roads, huge bathing places, tanks, religious places, granaries/warehouses, thrashing floors, dock-yards, man-made ports, sanitary arrangements like bathrooms and gutters, stadium, pavilion, palaces, fortification, bastion etc. The site of Inamgaon, during Chalcolithic period, also came up with a large bund and canal.

Then, in Mauryan and post-Mauryan period, we find, large fortification (Pataliputra), palaces (Pataliputra), stadiums (Nagarjunkonda), flight of steps to the rivers (Nagarjunkonda) etc. The remains of houses also give information on the standard-of-life and livingcondition of that period. It also throws light on civic sense, personal hygiene of concerned people. Such sources give us information on socio-economic condition, the role of polity, defensive strategies, water- management, civic sense, life-style of the people of concern period.

Religious Monuments

Monuments of Heterodox Religion: The religious monuments started showing up from Mauryan period. It started with the caves of Ajivakas (at Barabar and Nagarjuni hills: Bihar), then, we find large number of Buddhist monuments in India. Then, since Gupta period, we find the beginning, growth and classicality in Hindu monuments in India. Buddhist Stupas, Chaityas, Viharas Since Early Historic period, India was dotted with Buddhist Stupas, Chaityas and Viharas. At the outset, the construction began in Northern India; then

through Gujarat, percolated to Maharashtra; and through Orissa, came to Andhra Pradesh. The Stupas were created on the physical remains or used-equipments of Buddha or noteworthy Buddhist monks. These stupas were surrounded by beautifully decorative Gateways (torana), e.g. stupas at Sanchi, Barhut (Madhya Pradesh); Amaravati (Andhra Pradesh); Pauni, Kolhapur (Maharashtra); Sannati (Karnataka).

The Chaityas are Buddhist chapels/temples; where Buddha was worshipped in the symbolic form of Stupa at the end of Chaityas. Except one at Bairat, the Chaityas were created in the caves;

e.g. Chaityas at Bhaje (the earliest of them), Bedasa, Karle.

The Viharas are the residential place of Buddhist monks, where a large space is surrounded by rooms along all its three sides. Similar to Chaityas, these were also hewn in rock, e.g. Viharas at Kanheri, Nasik, Junnar etc. After some centuries and under the influence of Mahayana cult, the stupa in Chaitya replaced by idol of Buddha and Chaityas were combined with Viharas. This development can be witnessed in Ajanta.

These Buddhist shrines give lot of information regarding various areas; like, the development of religious thought and ideology, its spread in various regions, influence from other religions, its influence on other cults, the monastery (Sangha), relations between monastery and traders, stylistic evolution and growth of art etc. Besides, the decorative motives on the gateways give us idea of public/individual architecture, flora-fauna, artistic styles of concerned period etc.

Hindu Temples: Since Gupta period we witness beginning of separate temple architecture. Initially, drawing influence from Buddhist cave art, these were started in caves. However, to congregate large masses, these descended on plains. The first experiment in separate-temple architecture can be seen in modest temple No. 7, at Sanchi. It only comprises two parts, garbhagriha (sanctum) and mukhamandapa (frontal space). Then, through Tigava, Nachana and Devgad (all in Madhya Pradesh), a complete temple with 'garbhagriha-enclosed path of pradakshina- mukhmandapa at three sides and pier' emerged; and that is with beautiful sculptures. The treatment to the Shikhara was to maintain it high, hence, it got narrower to the top. Hence, when a viewer looks at the temple his gaze goes straight, from base to top. Such style is called as 'Nagara style'.

However, in Deccan and South India, the progress was different. At the outset, Chalukyas experimented in Temple architecture, from rock-cut temples (Badami) to separate temples (Pattadakal and Aihole). Near about same time, Pallavas, created temples in rock-cut fashion (the 'Ratha Temples at Mahabalipuram). Then, Cholas came up with huge temples. Drawing from these experiments, the Rashtrakutas undertook an experiment of beautiful temple; however, in rock-cut fashion. That is Kailasa temple of Ellora. These temples in Deccan and South India generally use stone-slabs; placing upon each other for the Shikharas. Hence, the Shikhara looks steps-like, presenting squat impression. Such, architectural style is known as 'Dravida style'.

After such experimentation, large temples, beautified with sculptures started dotting whole of India. After 6th-7th century AD, growth of regionalism paved way of emergence of regional styles in temple architecture. Thus, within short period of time, India became abode of temples with beautiful sculptures on their walls and complex plan plus designs. Such Ancient monuments are the mute but objective source of Ancient Indian history. They help us to understand the growth of religion as well as ideology of religions. It also informs us about the exchange and influence of ideas among various belief systems. It also give us idea of changes, growth of artistic styles and influences they draw on them. It also tells us the nature of patronage and the role of temples in political economy of the concerned

period.

Sculptures & Paintings

Sculptures: Since Harappan period we find evidences of sculptures in India. These were made of various materials, like, stone, steatite, clay, terracotta, lime, bronze, ivory, wood etc. Some of them got place in shrine and became idol or icon. Some of them were made to beautify the walls of temples. Some of them were individual sculpture, made for various purposes, like as toys and for entertainments. The bronze statues of dancer (Harappan civilization) and toys (Diamabad) during Chalcolithic period show artistic merit, as well as expertise in metallurgy of India. Various other statues of the same periods indicate place of entertainment, hairstyles, ornaments and costume of Harappans. Same is true with terracotta toys, belonged to Shunga period.

The Mauryan sculptures, like, the Yakshi of Didarganj indicate the contemporary affluence and aesthetic sense of people. The sculptural-reliefs on the gateways of stupas (Sanchi, Barhut), not only display growth of Buddhist ideology, but also of various other things like flora, fauna, civic architecture etc. The statue of Kanishka indicates the foreign origin of the king and costume of foreign style, like, high shoes, overcoats etc.

Bronze statue of Poseidon and relieves on plates/mirror-handles (Kolhapur) indicate trade relationship between Kolhapur and Rome during Satavahana period. The same is true by finding of ivory figure of Laxmi of Ter in the site of Pompeii (in Rome). Gupta sculptures indicate high artistic merit India achieved during that period. At this time, the science of sculptures had attained perfection and classicality. Hence, after Gupta period, the sculptures were made on the same models, that were determined during Gupta period. Whereas, the development of icon/idols (individual sculptures for worship) regarding their poses and weapons they carry, indicate, development of religious ideology and influence they draw from various sources. These also indicate synchronization of various cults. A separate branch as 'Iconography' studies such developments.

Paintings: Earliest instances of paintings can be found in the rock-shelters of Bhimbetaka (Madhya Pradesh). These were drawn by Mesolithic cave-dwellers by using colours and tools from his surrounding nature. Through these rock-paintings we can understand the life-style of Mesolithic people; like, his way of living, methods of hunting, the flora and fauna in his surrounding etc. Then, we find beautiful paintings, especially from Ajanta and then at Bagh. The world-famous paintings of Ajanta give us information about religious ideology, the spiritual serenity, the ornaments, the costumes, the foreign visitors etc. And of course, through these paintings, we can understand the artistic merit and great esthetic sense of concerned period.

Whereas, the paintings of Chola king on the walls of temples at Tamil Nadu, display the concept of 'divine kingship' of Chola polity.

1.1.4.4. Archaeological Remains

People settles-people live-create institutions and physical structure and in some unfavorable condition leave the place. The place gets abandoned with material remains that people have left behind-unintentionally. Then, by the environmental agents like wind, soil, rain, a heap of soil gets accumulated on that place. Then, again the next group of people settles over there. Then, the same cycle continues. Thus, after sequence of repeated settlements and abandoning, a heap of soil forms over that place. Such heaps are called as 'archaeological mounds', hiding in its belly the history of mankind. Then some certain kind of historians, called as archeologists unearthed these mounds, called as an excavation. Through excavation, archaeologists exposed the hidden history of that specific settlement.

The archaeological material they unearthed can be used as sources for the reconstruction of history of that particular settlement.

The material helps us to reconstruct history of: those common people who were disregarded by the written source; those periods before the discovery of writing; to supplement the history, reconstructed by written sources. Following is a brief list of archaeological material that can be used as source:

Pottery: During Protohistory up to Early Medieval period, the basic equipment of the common people was the pottery. The Pottery or 'ceramic assemblage' comprised of various items, like, bowls, plates, pots, etc. It should be noted the pottery gets differentiated according to respective culture that created them. The difference lies in shapes, fabrics, surface-treatment (fabric, colour, designs, painting), pottery-making technique etc. Thus, specific pottery-type is assigned to particular culture/period. With such logic, archaeologist can date the site relatively on the basis of these differences. Hence, pottery is considered as alphabet of that site.

Beads: Since time-immemorial the bead-industry is one of the world-famous industries of India. These were made of various materials, like, stone, semi-precious stones (like Agate, Chalcedony, Crystal, Turquoise, Lapis-lazuli), glass, metals like gold, copper; terra cotta, ivory, shell etc. Besides, those were of different shapes like round, square, cylindrical, barrel-shaped etc. The technology was so higher that we have achieved the technique of making beads, inlaying other metal into them. These can be used as source to know the technological development & esthetic sense of specific period.

Faunal Remains/Bones: Excavations reveal large amount of bones or faunal remains. These shed light on the surrounding historical ecology or ecosystem of that particular site. Besides, we can also understand the dietary habits of concerned people.

Floral Remains: The floral remains are also give us information on the surrounding historical ecology and dietary habits of concerned people.

Foundations of architecture: During horizontal excavations, we come across foundation of architecture of related period. The architecture comprised of civic architecture like huts, houses, palaces, stadiums, assembly-halls, bath-rooms, ware-houses, activity areas like kitchen-bedrooms- hall-verandah-thrashing floors; roads, system of sanitation, water source, etc. On these bases and the layout of sites we can know the standard-of-living of the people, besides, the spatial distribution in the area indicates the social division of particular period, if any. The structures like bunds/docks throw light on the economy and technological development, attained by these people. Whereas; defensive architectures, like fortification, bastion, moats indicate the affluence of that particular site and quantum of threat to that site.

Domestic Material: The excavations reveal a hoard of domestic items, like, kitchen equipment (pots, hearth, spatula, querns etc.), ornaments, items of entertainment like toys; etc. These were made of various materials, like, stone, clays, terra-cotta, metal, shell, ivory etc.

Occupational Material: The occupation material comprised of agricultural equipments (hoe, plough, fishing-equipments (hook, net), trade-equipments (weights & measures, seals and sealing, coins). These were also made of various material, like, stone, clay, terracotta, metal etc.

The Charcoal: Excavation unearths burnt-organic material of any kind. These are called as 'Charcoal'. Such charcoal, in specific amount and through laboratory tests, could be used for dating the period, called as 'Carbon-14'.

Use of Sources: An Analysis

If we had to rely on literary sources alone, our information would have been incomplete. The greatest handicap in the study of the history of ancient India is the absence of a definite chronology. Since the fall of the Andhras in the third century AD our knowledge about ancient India is very less. Fortunately the gap has been filled by actual remains of this period in the shape of coins, inscriptions and monuments.

We do not have continuous written records of the past because some have been destroyed with passage of time. Some records narrate falsification of data, some do not write the events as they were held but mention the impression of the event on the mind of the writer followed by latter's interpretation. Moreover the bias and exaggeration in the works of court poets does not give an objective assessment of the period the work pertains to. It is at this stage that the actual remains of the past come to the rescue of the historians to form a fair and objective assessment of the events that took place in the past.

The digging of the old sites at Pataliputra gives us information regarding the old capital of the Mauryas. The Angkor vat in Combodia and Barabodur in Java bear testimony to the colonial and cultural activities of the Indians in ancient times. The temples of Deogarh in Jhansi and Bhitargaon near Kanpur throw light on the artistic activities of the Guptas. The excavations at Sarnath have added to our knowledge regarding Buddhism and Ashoka. Stone tools and artifacts tell us about the Paleolithic age. Paintings at Ajanta and Ellora show the artistic excellence of Indians in ancient times.

Conclusion

Thus, in order to study Indian history in a comprehensive manner one has to depend on literary as well as archaeological sources which help us to form a complete picture of the ancient times. The information provided by literary texts if corroborated by archaeological remains helps the historian to improve the scale of historical authenticity and reliability of fact.

Summary

- *India has a rich cultural heritage and Ancient India is a glorious epoch in Indian history. However, as we go back in time, we suffered great lack of written sources to reconstruct its history.*
- *Very few written sources are there at our disposal. They were mostly of religious nature and, should be used with caution, either for they were written by a small group of people or, for, they were basically the guidelines for the society-and don't depict actual facts. W*
- *We also find written sources of great literary merit, like, epics, anthology, dramas, etc. There were also treatises on science like politics, astrology, astronomy, medicines, irrigations, architecture etc.*
- *The architectural and evidences of art also help us to understand Ancient India. Another group of source is archaeological sources.*

For understanding India before the beginning of literacy and to understand life-ways of common man, and to date scientifically, such archaeological remains help us a lot