



Marutasami and the iron pillar

Marutasami was so excited. His brother had propelled his wheelchair all along the dusty, stony path, past the towering Qutb Minar, and up the metal ramp. It had been tough, but now he was here, in front of the famous iron pillar. It was an unforgettable experience.

Metallurgy

Ancient Indian metallurgists made major contributions to the metallurgical history of the world. Archaeological excavations have shown that the Harappans were master craftsmen and had knowledge of copper metallurgy. They even manufactured bronze by mixing copper and tin. While the Harappans belonged to the Bronze Age, their successors belonged to the Iron Age. India produced highly advanced types of iron-forged iron, wrought iron and cast iron.

The iron pillar



on the pillar mentioning a ruler named Chandra, who probably belonged to the Gupta dynasty (Chapter 10). What is amazing is the fact that the pillar has not rusted in all these years.

Buildings in brick and stone

The skills of our crafts persons are also apparent in the buildings that have survived, such as *stupas*. The word *stupa* means a mound. While there are several kinds of *stupas*, round and tall, big and small, these have certain common features. Generally, there is a small box placed at the centre or heart of the *stupa*. This may contain bodily remains (such as teeth, bone or ashes) of the Buddha or his followers, or things they used, as well as precious stones, and coins.

This box, known as a relic casket, was covered with earth. Later, a layer of mud brick or baked brick was added on top. And then, the dome like structure was sometimes covered with carved stone slabs.

Often, a path, known as the *pradakshina patha*, was laid around the *stupa*. This was surrounded with railings. Entrance to the path was through gateways. Devotees walked around the *stupa*, in a clockwise direction, as a mark of devotion. Both railings and gateways were often decorated with sculpture.

Find Amaravati on Map 7 (page 105). This was a place where a magnificent *stupa* once existed. Many of the stone carvings for decorating the *stupa* were made about 2000 years ago.

Other buildings were hollowed out of rock to make artificial caves. Some of these were very elaborately decorated with sculptures and painted walls.

Some of the earliest Hindu temples were also built at this time. Deities such as Vishnu, Shiva, and Durga

were worshipped in these shrines. The most important part of the temple was the room known as the *garbhagriha*, where the image of the chief deity was placed. It was here that priests performed religious rituals, and devotees offered worship to the deity.

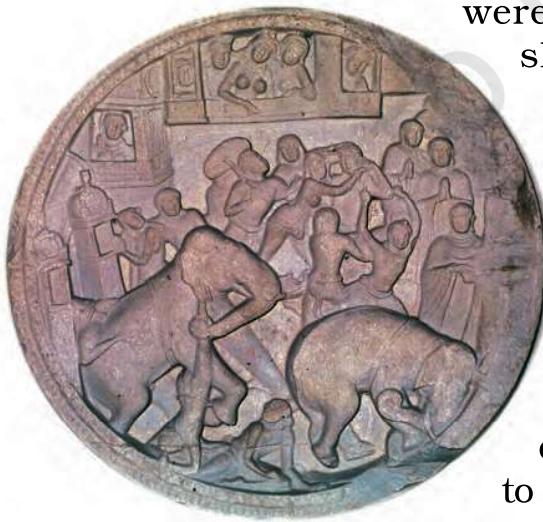


Top : The Great Stupa at Sanchi, Madhya Pradesh.

Stupas like this one were built over several centuries. While the brick mound probably dates to the time of Ashoka (Chapter 7), the railings and gateways were added during the time of later rulers.

Left : Sculpture from Amaravati.

Look at the picture and describe what you see.





Top : An early temple at Bhitargaon, Uttar Pradesh.

This was built about 1500 years ago, and was made of baked brick and stone.

Top Right : Monolithic temples at Mahabalipuram.

Each of these was carved out of a huge, single piece of stone (that is why they are known as monoliths). While brick structures are built up by adding layers of bricks from the bottom upwards, in this case the stone cutters had to work from top downwards.

List the problems that stone cutters may have faced.

Right : The Durga temple at Aihole, built about 1400 years ago.

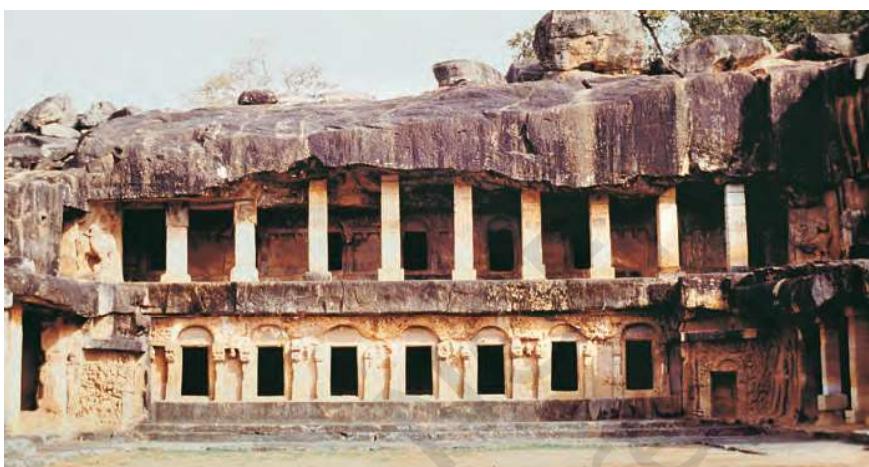
Often, as at Bhitargaon, a tower, known as the *shikhara*, was built on top of the *garbhagriha*, to mark this out as a sacred place. Building *shikharas* required careful planning. Most temples also had a space known as the *mandapa*. It was a hall where people could assemble.

Find Mahabalipuram and Aihole on Map 7 (page 105). Some of the finest stone temples were built in these towns. Some of these are shown here.



How were stupas and temples built?

There were several stages in building a *stupa* or a temple. Usually, kings or queens decided to build these as it was an expensive affair. First, good quality stone had to be found, quarried, and transported to the place that was often carefully chosen for the new building. Here, these rough blocks of stone had to be shaped and carved into pillars, and panels for walls, floors and ceilings. And then these had to be placed in precisely the right position.



Kings and queens probably spent money from their treasury to pay the crafts persons who worked to build these splendid structures.

Besides, when devotees came to visit the temple or the *stupa*, they often brought gifts, which were used to decorate the buildings. For example, an association of ivory workers paid for one of the beautiful gateways at Sanchi.

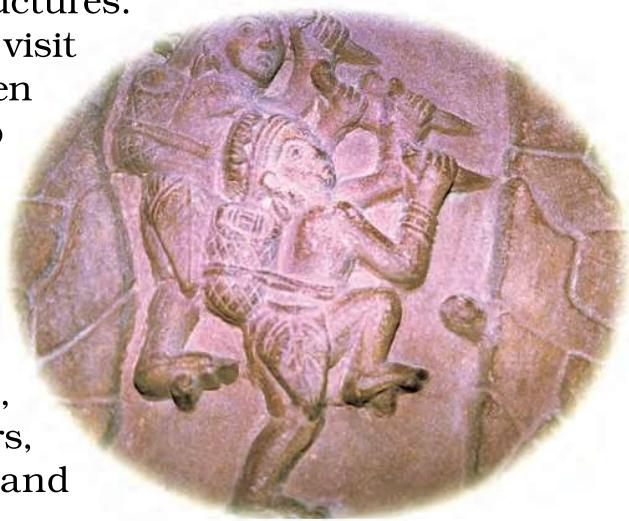
Among the others who paid for decorations were merchants, farmers, garland makers, perfumers, smiths, and hundreds of men and

Left : A Jaina monastery from Orissa. This two storey building was carved out of the rock surface. Notice the entrance to the rooms. Jaina monks lived and meditated in these rooms.

In what ways is the cave shown here different from the illustration on p. 14?

Below : A sculpture from the National Museum, New Delhi.

Can you see how some of the caves may have been hollowed out?





Paintings from Ajanta.
Describe what you see
in each of these
paintings.

women who are known only by their names which were inscribed on pillars, railings and walls. So when you get a chance to visit any of these buildings, remember how several hundreds of people probably worked to construct and decorate them.

Make a diagram like the one on page 88 (Chapter 8) to show the stages in the building of a temple or stupa.

Painting

Find Ajanta on Map 7 (page 105). This is a place where several caves were hollowed out of the hills over centuries. Most of these were monasteries for Buddhist monks, and some of them were decorated with paintings. Here are some examples.

As the caves are dark inside, most of these paintings were done in the light of torches. The colours, which are vivid even after 1500 years, were made of plants and minerals. The artists who created these splendid works of art remain unknown.



The world of books

Some of the best-known *epics* were written during this period. Epics are grand, long compositions, about heroic men and women, and include stories about gods.

A famous Tamil epic, the *Silappadikaram*, was composed by a poet named Ilango, around 1800 years ago. It is the story of a merchant named Kovalan, who lived in Puhar and fell in love with a courtesan named Madhavi, neglecting his wife Kannagi. Later, he and Kannagi left Puhar and went to Madurai, where he was wrongly accused of theft by the court jeweller of the Pandya king. The king sentenced Kovalan to death. Kannagi, who still loved him, was full of grief and anger at this injustice, and destroyed the entire city of Madurai.

A description from the *Silappadikaram*

Here is how the poet describes Kannagi's grief:

"O witness of my grief, you cannot console me. Is it right that your body, fairer than pure gold, lies unwashed here in the dust? Is it just that in the red glow of the twilight, your handsome chest, framed with a flower wreath, lies thrown down on the bare earth, while I remain alone, helpless and abandoned to despair? Is there no god? Is there no god in this country? Can there be a god in a land where the sword of the king is used for the murder of innocent strangers? Is there no god, no god?"

Another Tamil epic, the *Manimekalai* was composed by Sattanar around 1400 years ago. This describes the story of the daughter of Kovalan and Madhavi. These beautiful compositions were lost to scholars for many centuries, till their manuscripts were rediscovered, about a hundred years ago.

Other writers, such as Kalidasa, (about whom you read in Chapter 10) wrote in Sanskrit.

A verse from the Meghaduta

Here is a verse from Kalidasa's best-known poem, the Meghaduta, in which a monsoon cloud is imagined to be a messenger between lovers who are separated from one another.

See how the poet describes the breeze that will carry the cloud northwards:

“A cool breeze, delightful as it is touched
With the fragrance of the earth
Swollen by your showers,
Inhaled deeply by elephants,
And causing the wild figs to ripen,
Will blow gently as you go.”

Do you think Kalidasa can be described as a lover of nature?

Recording and preserving old stories

A number of Hindu religious stories that were in circulation earlier were written down around the same time. These include the Puranas. *Purana* literally mean old. The Puranas contain stories about gods and goddesses, such as Vishnu, Shiva, Durga or Parvati. They also contain details on how they were to be worshipped. Besides, there are accounts about the creation of the world, and about kings.

The Puranas were written in simple Sanskrit verse, and were meant to be heard by everybody, including women and *shudras*, who were not allowed to study the Vedas. They were probably recited in temples by priests, and people came to listen to them.

Two Sanskrit epics, the Mahabharata and Ramayana had been popular for a very long time. Some of you may be familiar with these stories. The Mahabharata is about a war fought between the Kauravas and Pandavas, who were cousins.

This was a war to gain control of the throne of the Kurus, and their capital, Hastinapura. The story itself was an old one, but was written down in the form in which we know it today, about 1500 years ago. Both the Puranas and the Mahabharata are supposed to have been compiled by Vyasa. The Bhagavad Gita, about which you learnt in Chapter 9, was also included in the Mahabharata.

The Ramayana is about Rama, a prince of Kosala, who was sent into exile. His wife Sita was abducted by the king of Lanka, named Ravana, and Rama had to fight a battle to get her back. He won and returned to Ayodhya, the capital of Kosala, after his victory. Like the Mahabharata, this was an old story that was now written down. Valmiki is recognised as the author of the Sanskrit Ramayana.

There are several versions (many of which are performed) of the Mahabharata and the Ramayana, popular amongst people in different parts of the subcontinent. Find out about a version in your state.

Stories told by ordinary people

Ordinary people also told stories, composed poems and songs, sang, danced, and performed plays. Some of these are preserved in collections of stories such as the Jatakas and the Panchatantra, which were written down around this time. Stories from the Jatakas were often shown on the railings of *stupas* and in paintings in places such as Ajanta.

Here is one such story:

The story of the monkey king

Once upon a time there was a great monkey king, who lived on the banks of the Ganga in the Himalayas, with 80,000 followers. They fed on the fruit of a special mango tree, which were very sweet. Such exquisite mangoes did not grow on the plains. One day, a ripe mango fell into the river and floated all the way to Varanasi. There the king of the city who was bathing in the river found it, and was amazed when he tasted it. He asked the foresters of his kingdom whether they could find the tree for him, and they led him all the way to the Himalayas. There, the king and his courtiers had their fill of mangoes. At night, the king discovered that the monkeys were also feasting on the fruit, and decided to kill them.



However, the king of the monkeys worked out a plan to save his followers. He broke off branches of the mango tree, and tied them to form a 'bridge' across the river, and held on to one end till all his followers crossed over.

Exhausted with the effort, he fell down and lay dying.

The human king saw what had happened, and tried unsuccessfully to revive the monkey. When he died, the king mourned his death and paid him full respect.

This story is shown on a piece of sculpture found from a *stupa* at Bharhut in central India. Can you identify which parts of the story are shown in the sculpture?

Why do you think these were chosen?

Writing books on science

This was also the time when Aryabhata, a mathematician and astronomer, wrote a book in Sanskrit known as the *Aryabhatiyam*. He stated that day and night were caused by the rotation of the earth on its axis, even though it seems as if the sun is rising and setting everyday. He developed a scientific explanation for eclipses as well. He also found a way of calculating the circumference of a circle, which is nearly as accurate as the formula we use today. Varahamihira, Brahmagupta and Bhaskaracharya were some other mathematicians and astronomers who made several discoveries. Try and find out more about them.

KEYWORDS

stupa
temple
painting
epic
story
Purana
science mathematics

Zero

While numerals had been used earlier, mathematicians in India now invented a special symbol for zero. This system of counting was adapted by the Arabs and then spread to Europe. It continues to be in use throughout the world.

The Romans used a system of counting without using zero. Try and find out more about it.

Ayurveda

Ayurveda is a well-known system of health science that was developed in ancient India. The two famous practitioners of Ayurveda in ancient India were Charaka (1st-2nd centuries C.E.) and Sushruta (c. 4th century C.E.). *Charak Samhita*, written by Charak is a remarkable book on medicine. In his treatise, *Susruta Samhita*, Sushruta speaks about elaborate surgical procedures.

Elsewhere

Paper has become a part of our daily lives. The books we read are printed on paper, and we use paper for writing. Paper was invented in China about 1900 years ago, by a man named Cai Lun. He beat plant fibres, cloth, rope and the bark of trees, soaked these in water, and then pressed, drained and dried the pulp to create paper. Even today, hand made paper is made through a similar process.

SOME IMPORTANT DATES

- ▶ beginning of stupa building (2300 years ago)
- ▶ Amaravati (2000 years ago)
- ▶ Kalidasa (1600 years ago)
- ▶ Iron pillar, Temple at Bhitaragaon, Paintings at Ajanta, Aryabhata (1500 years ago)
- ▶ Durga temple (1400 years ago)

The technique of making paper was a closely guarded secret for centuries. It reached Korea about 1400 years ago, and spread to Japan soon after. It was known in Baghdad about 1800 years ago. From Baghdad it spread to Europe, Africa, and other parts of Asia including the subcontinent.

What were manuscripts in early India made out of? (Hint: See Chapter 1)

Imagine

You are sitting in a *mandapa* of a temple. Describe the scene around you.



Let's recall

1. Match the following

Stupa

Place where the image of the deity is installed

Shikhara

Mound

Mandapa

Circular path around the stupa

Garbhagriha

Place in temples where people could assemble

Pradakshina patha

Tower

2. Fill in the blanks:

(a) _____ was a great astronomer.

(b) Stories about gods and goddesses are found in the _____

(c) _____ is recognised as the author of the Sanskrit Ramayana.

(d) _____ and _____ are two Tamil epics.

Let's discuss



3. Make a list of the chapters in which you find mention of metal working. What are the metals objects mentioned or shown in those chapters?
4. Read the story on page 122. In what ways is the monkey king similar to or different from the kings you read about in Chapters 5 and 10?
5. Find out more and tell a story from one of the epics.

Let's do



6. List some steps that can be taken to make buildings and monuments accessible to differently abled people.
7. Try and list as many uses of paper as you can.
8. If you could visit any one of the places described in this chapter, which would you choose and why?

A quick look at dates

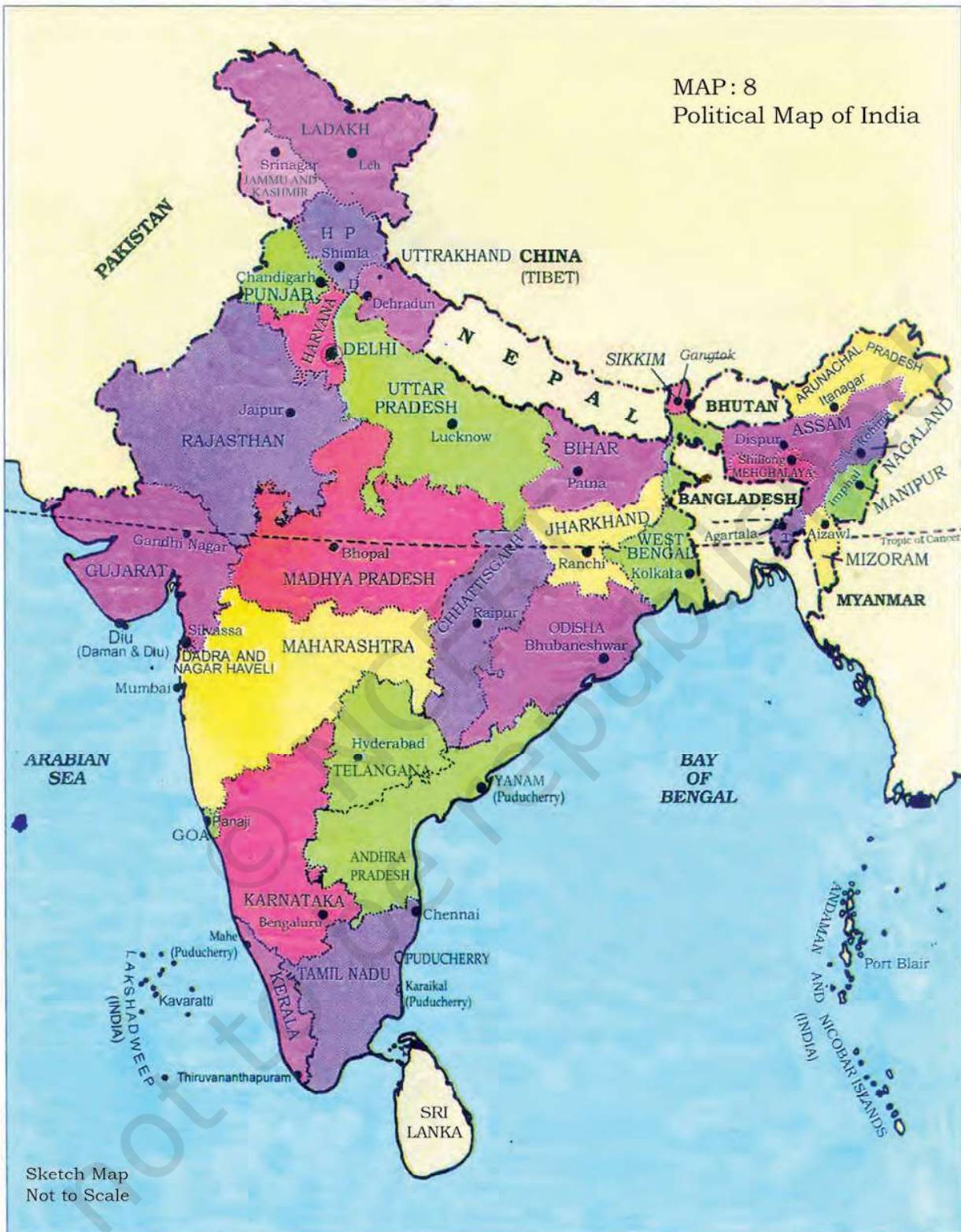
Throughout the book, we have used *approximate* dates to give you a rough idea of when events/processes took place, using the year 2000 as our starting point. Generally, the letter *c.*, which stands for the Latin word *circa*, meaning ‘approximate’ is used for such dates.

You will find dates written differently in other books that you may use.

- ▶ For instance, for the Palaeolithic period (Chapter 2), dates may be mentioned in terms of millions of years ago, written as *mya*
- ▶ The beginning of farming and herding at Mehrgarh (Chapter 2) dates to c. 6000 BC/ BCE
- ▶ The Harappan cities flourished between c. 2700 and 1900 BCE
- ▶ The Rigveda was composed between c. 1500 and 1000 BCE
- ▶ *Mahajanapadas* and cities developed in the Ganga valley and new ideas associated with the Upanishads, Jainism and Buddhism emerged c. 500 BCE
- ▶ Alexander invaded the northwest c. 327-325 BCE
- ▶ Chandragupta Maurya became king c. 321 BCE
- ▶ Ashoka ruled between c. 272/268 to 231 BCE
- ▶ The composition of the Sangam texts, c. 300 BCE-300 CE
- ▶ The reign of Kanishka, c. 78-100 CE
- ▶ The establishment of the Gupta empire, c. 320 CE
- ▶ The compilation of the Jaina texts at the council at Valabhi, c. 512/521 CE
- ▶ The rule of Harshavardhana, 606-647 CE
- ▶ Xuan Zang comes to India, 630-643 CE
- ▶ The rule of Pulakeshin II, 609-642 CE.

In some cases, for example, the date from when Ashoka began to rule, you may find that more than one date is shown. This is because historians have not been able to agree on which is the correct date. Dates with question marks after them indicate that these are uncertain.

MAP : 8
Political Map of India



NOTES