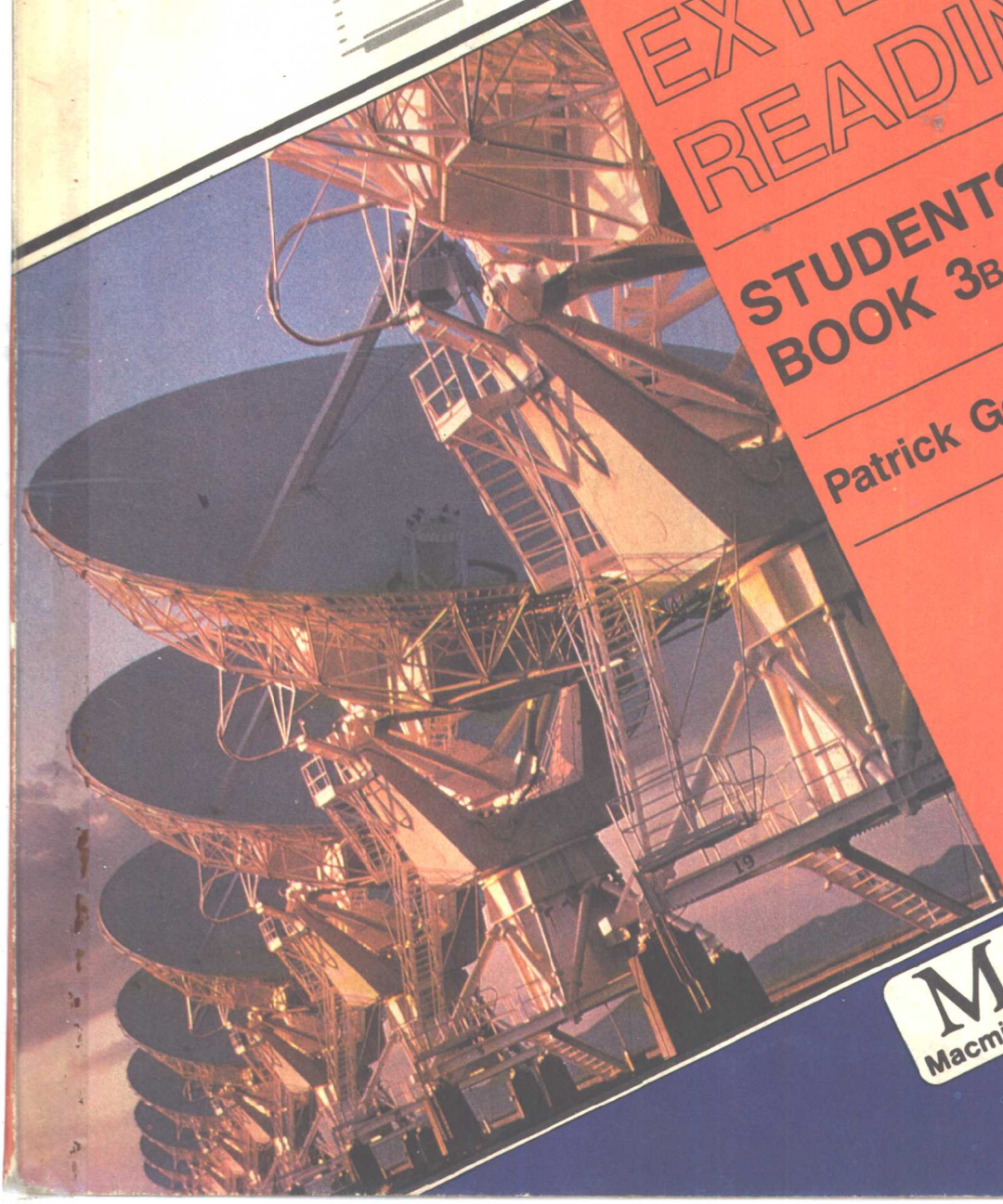
RD GRADE

现代英语 第三级 泛读

EXTENSIVE READING

STUDENTS' BOOK 3B

Patrick Goldsmith



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for University Students

Extensive Reading

Students' Book

Grade 3 B

Patrick Goldsmith

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UNIT 7

BEFORE READING

1 (a) **Make sure you know the meaning of the following words. If there are any you are not sure of, look them up in your dictionary and make a note of their meanings.**

binoculars	placenta
fossil	predecessor
fur	squirrel
glide	thumb
hang	twins
mammal	wing
mammalian	wrist
marsupial	zoology

(b) **Choose appropriate words from the list to complete the sentences below.**

1 I watched them ____ across the ice.
2 There are many ____ in the park, collecting nuts ready for the winter.
3 He took out his ____ and looked across the field.
4 The eagle spread its ____ and flew away.
5 I often think it's a pity people don't have ____.

(c) **Discuss the following questions in groups.**

1 Do you know of any animals that are not birds or bats but which can propel themselves through the air?
2 Did bats evolve recently, or a long time ago?
3 How do bats reproduce?

SCANNING

2 **Scan the text quickly to find whether the following statements are true or false.**

1	The colugo is a kind of rabbit.	T F
2	The colugo lives in Malaysia and the Philippines.	T F
3	The colugo lives in woods.	T F
4	The colugo provides a link between the birds and the bats.	T F
5	The colugo's flying surface stretches from the wrist.	T F
6	Bats have developed some features which are similar to birds.	T F
7	Bats have no teeth.	T F

8 Female bats are too heavy to fly when they are pregnant. T F
9 Bats normally give birth to twins. T F
10 Some bats live to be twenty years old. T F

READING TEXT ONE

FLYING MAMMALS

We have some idea of how the mammals may have managed to get into the air. In Malaysia and the Philippines there lives an animal so odd that zoology has had to give it an order all of its own. This is the colugo. It is about the size of a large rabbit but its entire body, from its neck to the end of its tail, is covered by a softly furred coat of skin, delicately coloured grey and cream. When the animal hangs beneath a branch or presses itself against a tree, this skin makes it practically invisible and when it extends its legs, the coat becomes a kind of wing. I was once taken to an area of woodland in Malaysia where people said there were many of these strange creatures. I searched a likely-looking tree with my binoculars, examining every lump on the tree and branches with great care. Having convinced myself that it contained nothing, I turned away to look at another, only to see out of the corner of my eye, a huge square shape come off the tree and float silently away. I ran after it, but it landed low down on another tree over a hundred yards away and by the time I got there, the animal was quite high and running upwards, its two front feet moving forward together, followed by its back feet, its coat moving around it like an old blanket.

The colugo's technique for floating through the air has several parallels. The marsupial sugar-glider moves through the air in just the same way. Two groups of squirrels have also independently developed this ability. But the colugo has the biggest wing of this kind and started to fly in this way early in mammalian history, for it is certainly a very primitive member of the group and seems to be a direct descendant of an insect-eating animal. Having perfected a way of life, it has not needed to change. It cannot be regarded as a link with bats, for its body is different in many fundamental respects, but it is an indication of a stage that some early insect-eaters may have passed through on their way to achieving proper flight and becoming those true masters of the air, the bats.

That development took place very early, for fossils of fully-developed bats have been found which date back to fifty million years ago.

The bat's flying surface stretches not just from the wrist, like the colugo, but along the extended second finger. The other two fingers form supports extending back to the rear edge. Only the thumb remains free and small. This retains its nail and the bat uses it to clean itself and to help it climb about in its nest. Its chest bone has grown to support the muscles which move the wings.

The bats have many of the features developed by birds in order to save body weight. The bones in the tail are thinned to mere straws to support the flying surface or have been lost altogether. Though they have not lost their teeth, their heads and noses are usually short to avoid being nose-heavy in the air. They had one problem that birds did not fact. Their mammalian predecessors had perfected the technique of feeding their young internally by means of a placenta. Evolution's clock can seldom be put back and no bat has gone back to laying eggs. The female bat must therefore fly with the heavy load of her developing baby inside her. In consequence, it is not surprising to find that bat twins are rare and in almost every case, it is usual for only one young to be born each season. This, in turn, means that if the population is to be maintained, the females must breed over a long period, and indeed, bats are, for their size, surprisingly long-lived creatures, some living around twenty years.

COHESION

3 **Choose the most suitable alternative to complete the following statements.**

1 In 'makes it practically invisible' (lines 5-6) *it* refers to
- A a branch
- B a tree
- C the animal

2 The *huge square shape* (line 10) was
- A the animal
- B a coat
- C a lump on the tree

3 *the group* (line 19) means
- A the mammalian group
- B the insect-eaters
- C the group formed by the marsupial sugar-glider, the squirrels and the colugos themselves

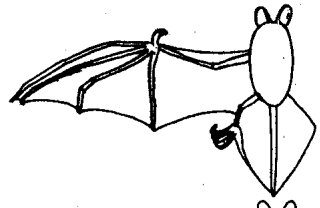
4 *on their way* (line 22) means
- A on the bats' way
- B on the insect-eaters' way
- C on the colugos' way

5 *have been lost altogether* (lines 32-33) refers to
- A the bones
- B the straws
- C the flying surface

COMPREHENSION

4 **Which of the following drawings is closest to the description of the bat's wing in the text?**

1



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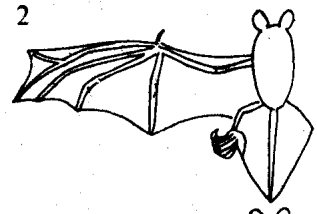

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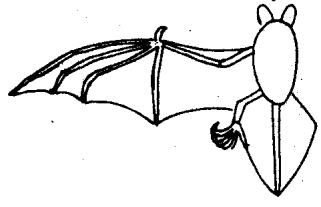

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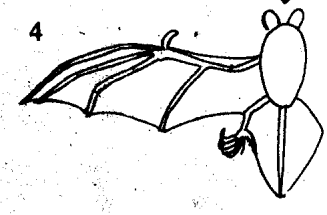


BEFORE READING

5 (a) **Make sure you know the meaning of the following words. If there are any you are not sure of, look them up in your dictionary and make a note of their meanings.**

acute	obstacle
ammonia	signal
burst	sonar
cave	sophisticated
chamber	track (verb)
cockroach	transparent
echo	ultra- (prefix)
frequency	wave
modification	

(b) **Discuss the following points in groups.**

1 Do you know *precisely* how bats fly in the dark?
2 Do bats ever hit anything by mistake?
3 What sort of places do bats choose to live in?

READING TEXT TWO

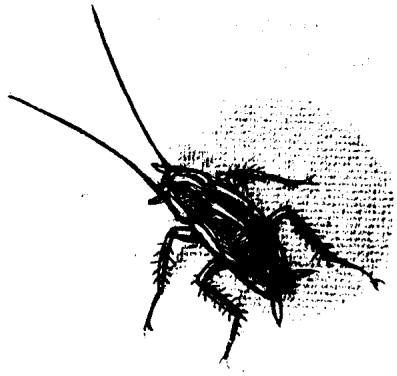
Today, all bats fly at night and it is likely that this was always the case, since the birds had already laid claim to the day. To do so, however, the bats had to develop an efficient navigation system. It is based on ultra-sounds like those made by certain small mammals and almost certainly many other primitive insect-eaters. The bats use them for sonar, an extremely sophisticated method of echo-location. This is similar in principle to radar, but radar employs radio waves while sonar uses sound waves. These are of frequencies that lie a long way above the range of the human ear. Most of the sounds we hear have frequencies of around several hundred vibrations a second. Some of us, particularly when we are young, can with difficulty just distinguish sounds with a frequency of 20,000 vibrations a second. A bat, flying by sonar, uses sounds of between 50,000 and 200,000 vibrations a second. It sends out these sounds in short bursts twenty or thirty times every second and its hearing is so acute that from the echo each signal makes, the bat is able to judge the position not only of obstacles around it, but of the

Long-eared bat

insects it is hunting, which are also likely to be flying quite fast.

Most bats wait to receive the echo of one signal before emitting the next. The closer the bat is to an object, the shorter the time taken for the echo to come back, so the bat can increase the number of signals it sends the closer it gets to its target and thus track it with increasing accuracy as it closes in for the kill.

Hunting success, however, can mean that it becomes blind for a moment, for if its mouth is filled by an insect, a bat cannot send its signals in the normal way. Some species avoid this difficulty by signalling through their noses and have developed a variety of ugly modifications to their noses that serve to concentrate the beam of the signals and act like tiny trumpets. The echoes are picked up by the ears and these too are elaborate, extremely sensitive and capable, in many cases, of being twisted to detect a signal. So the face of many bats is loaded with sonar equipment — elaborate, almost transparent ears, covered with red blood vessels, and on the nose, leaves to direct the sound. Each species has its own pattern. Why? Probably so that each can produce a unique call. Signals from other species are filtered out. The system, described in such terms, sounds simple. It seems less so when you encounter it in action. The Gomanton Caves in Borneo contain several million bats, belonging to eight different species. They have lived there for so long that in one chamber their droppings form a huge pile that spreads across the cave floor and rises thirty metres to the roof. In order to see the bats, we once walked up it. Its surface was covered by a moving, shining carpet of cockroaches feeding on the stuff and a heavy smell of ammonia rose from it. At the top, close to the roof of the chamber, we found the



A cockroach

bats living in narrow cracks in the rock. As we shone our torches on them, some left the roof and flew past us, their wings brushing our faces. Others hung there, twisting their heads extremely nervously, to look at us with their little black eyes. Beyond we could see thousand upon thousand, packed together as thick as heads of grain in a wheat field and moving in their alarm as though a wind passed over them. Suddenly, they moved in terror. Trying to escape from their homes to the main chamber behind us, they came pouring out like a river. By the time we ourselves had moved back to the top of the pile of droppings, the main chamber was filled with flying bats. Afraid of the daylight outside and in terror of us inside, they circled round and round, filling the air with the beating of their bare wings. We could just detect the lower components of their signals, but their sonar was beyond our ears. The heat from their bodies made it hard to breathe. We were covered in droppings. There were certainly several hundred thousand, flying round and round beneath the ceiling, as thick as snow driven by a strong wind. Yet flying at such speeds, they must all have been using their sonar. Why did their calls not interfere with one another, making it impossible for them to hear the signals? How could they react so fast that they did not crash into each other? In such places, the dimensions of the problems of sonar navigation seem beyond understanding.

When evening comes at Gomanton, the bats leave the cave travelling along regular and restricted paths along the rock ceiling flying nose to tail and half a dozen or so across so that

they form one continuous ribbon. They emerge from one corner of the cave mouth at the rate of thousands a minute, a stream of black bodies rushing out over the forest to begin the night's hunt. The pile of droppings at the back of the cave shows how successful they have been. A little simple arithmetic makes it clear that every night these bats must catch several tons of small insects.

A few insects have developed systems to protect themselves from bats. In America, there are flying insects that have the ability to adjust to the frequency of the bat sonar. As soon as they hear a bat approaching, they drop to the ground. Other species go into a dive which the bats find hard to follow. Yet others manage to interrupt the signal or send back high-frequency sounds that convince the bat that they cannot be eaten and should be avoided.

COMPREHENSION

6 (a) **Read the passage in not more than ten minutes and then decide whether the following statements are true or false *without consulting the text*.**

1	Some people can hear the sonar used by bats.	T	F
2	No bat can eat and emit sonar signals at the same time.	T	F
3	Bats emit sonar signals in a continuous stream.	T	F
4	Bats never hit each other when they are flying together.	T	F
5	The bats of the Gomanton Caves belong to different species.	T	F
6	Bats have no eyes.	T	F
7	The bats at Gomanton leave the cave as it gets dark.	T	F
8	The Gomanton bats eat insects.	T	F

(b) **Once you have finished exercise (a), check your answers carefully by referring back to the text, and give line references to support your decisions.**

COHESION

7 **Choose the most suitable alternative to complete the following statements.**

1 *them* (line 4) refers to
- A certain small mammals
- B primitive insect-eaters
- C ultra-sounds

2 In 'around it' (line 12) *it* refers to
- A the echo
- B the signal
- C the bat

3 In lines 14 - 17 *it* and *its* appear five times. Write the sentence out in full, replacing *it* and *its* with an appropriate noun each time.

4 *these* (line 22) refers to
- A tiny trumpets
- B the echoes
- C the ears

5 *the signals* (line 46) means
- A their own signals

B each other's signals
C all the signals

BEFORE READING

8 (a) **Make sure you know the meaning of the following words. If there are any you are not sure of, look them up in your dictionary and make a note of their meanings.**

damage	spit
fox	thorn
nectar	tongue
pollen	trail (verb)
quarrel	vampire

(b) **Choose appropriate words from the list to complete the sentences below.**

1 The ____ has been at the chickens again!
2 Like the bats mentioned in this text, the humming-bird also drinks ____ from flowers.
3 They had a terrible ____ and didn't speak to each other again for ten years.
4 There are ____ on the stem of the rose.
5 There are many frightening stories about ____.

(c) **Discuss the following questions in groups.**

1 Are there many differences between the different species of bats, or are they all basically very similar?
2 What do you know about the habits of the vampire bat?

SCANNING

9 **Scan the text quickly to find whether the following statements are true or false.**

1	Some plants rely on bats to reproduce.	T F
2	Flying foxes use sonar to fly.	T F
3	Fruit bats live in trees.	T F
4	Flying foxes may travel a long way for their food.	T F
5	Most bats do not eat meat.	T F
6	Vampire bats never attack humans.	T F
7	Dogs may hear vampires coming.	T F
8	There are bats in almost every part of the world.	T F

READING TEXT THREE

Not all bats feed on insects. Some have discovered that nectar and pollen are very good, and have learnt how to stay in one position in front of flowers and gather nectar by putting their long thin tongues into the flowers. Just as a great number of plants have evolved to exploit the services of insects to help them reproduce, so too some rely on bats. Some desert plants, for

example, only open their flowers at night. These are large and pale, for in the darkness colour is of no use. Their smell, however, is heavy and strong and the flowers are at a safe distance from the plant's thorns so that the bats are able to visit them without damaging their wings.

Fruit bat

The biggest of all bats live only on fruit. They are called flying foxes, not only because of their size - - and some of them have wings that extend one and a half metres from tip to tip — but because their coats are red-brown and their faces are very fox-like. They have large eyes but only small ears and lack any kind of nose-leaf so it is clear that they are not sonar flyers. Whether this major difference between them and other, insect-eating, bats indicates that the two groups derive from separate branches of primitive insect-eaters is not yet agreed. Fruit bats live not in caves but in the tops of trees in communities of tens of thousands, hanging like huge black fruit, hidden in their wings, quarrelling noisily among themselves. Occasionally one will stretch a wing and carefully lick it, keeping it clean and in good flying order. If the day is hot, they may fan themselves with their half-spread wings so that the whole community seems to be moving in a wind. A sudden noise or a shake of the tree will produce many angry cries and hundreds will take off, but they will soon re-settle. In the evening, they set off in parties to feed. Their shape is quite unlike that of birds, for they lack a projecting tail, and their flight is very different from that of insect-hunting bats. Their huge wings beat steadily as long lines of them keep a level course across the evening sky. They may travel as far as seventy kilometres in their search for fruit.

Other bats have taken to feeding on meat. Some attack birds in their nests, some take frogs, and one is reported to feed on other bats. An American species even manages to fish. At dusk, it beats up and down over ponds, lakes, or even the sea. The skin of the tail in most bats extends to the ankles. In the fishing bat, it is attached much higher up at the knee, so that the legs are quite free. The bat can therefore trail its feet in the water, keeping the lower part of the skin of its wings out of the way by folding up its tail. Its toes are large and armed with hook-shaped claws. When they strike a fish, the bat lifts it to its mouth and kills it with its powerful teeth.

The vampire bat has become very specialised indeed. Its front teeth are modified into two

Vampire bat

sharp little knives. It settles gently on a sleeping mammal, a cow or even a human being. Its spit contains a substance which ensures that the blood will continue to flow for some time. The vampire then sits beside the wound drinking the blood. Vampires fly by sonar and it is said that the reason that dogs, who can hear very high frequencies, are so seldom attacked by them is that they can hear the vampires coming.

All in all there are nearly a thousand species of bats. They have made homes for themselves and found sufficient food in all but the very coldest parts of the world. They must be considered one of the most successful of the early insect-eating variations.

GLOBAL COMPREHENSION

10 **Read the whole text through again carefully to answer the following questions.**

1 Mark those characteristics which are common to *all* bats:

- they eat fruit
- they fly at night
- they are mammals
- they have leathery wings
- they eat insects
- they eat meat
- they eat fish
- they drink blood
- they use sonar
- they drink nectar

2 Explain in your own words how the bats' sonar works.

3 For flying creatures, what are the advantages of laying eggs over giving birth to live young?

UNIT 8

BEFORE READING

1 (a) **Make sure you know the meaning of the following words. If there are any you are not sure of, look them up in your dictionary and make a note of their meanings.**

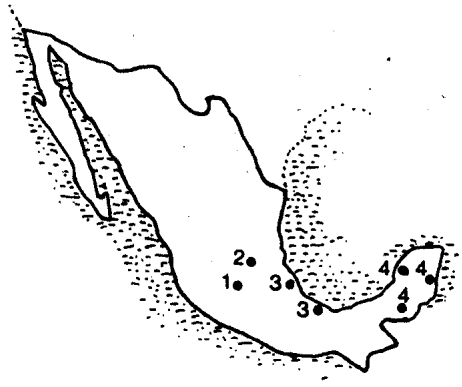
avenue	noble
beam	pot
ceremonial	right angle
ceremony	Spanish
court	square
craftsman	sunken (past participle of verb *to sink*)
hieroglyph	temple
interior	thrust
luxury	

(b) **Choose appropriate words from the list to complete the sentences below.**

1 A ____ has four ____.
2 They walked down the ____ in the shade of the trees.
3 In many old buildings you can see black ____ supporting the roof.
4 The Aztecs used to worship their gods in special ____.
5 Mexican ____ produce many beautiful objects.
6 The ____ were the first Europeans to visit Mexico.
7 The ____ lived a life of great ____.
8 There was some kind of ____ almost every day in these civilisations.

(c) **Do the following exercises in small groups.**

1 Match the names of the civilisations on the right with the locations of their principal centres, indicated by numbers on the map.



A Aztecs

B Teotihuacanos

C Mayas

D Olmecs

2 Look at the following statements and decide if they are true or false *before reading the text.* You can find the answers later in different parts of the three texts in this unit.

A There were no real civilisations in Meso-America before the arrival of the Europeans. T F

B Writing was unknown in Meso-America until it was introduced by the Spanish. T F

C There were enormous pyramids in Meso-America. T F

D The Maya had an extremely accurate calendar. T F

E The Maya discovered the concept of zero. T F

F Teotihuacan was a city with 150,000 inhabitants when the Spanish arrived. T F

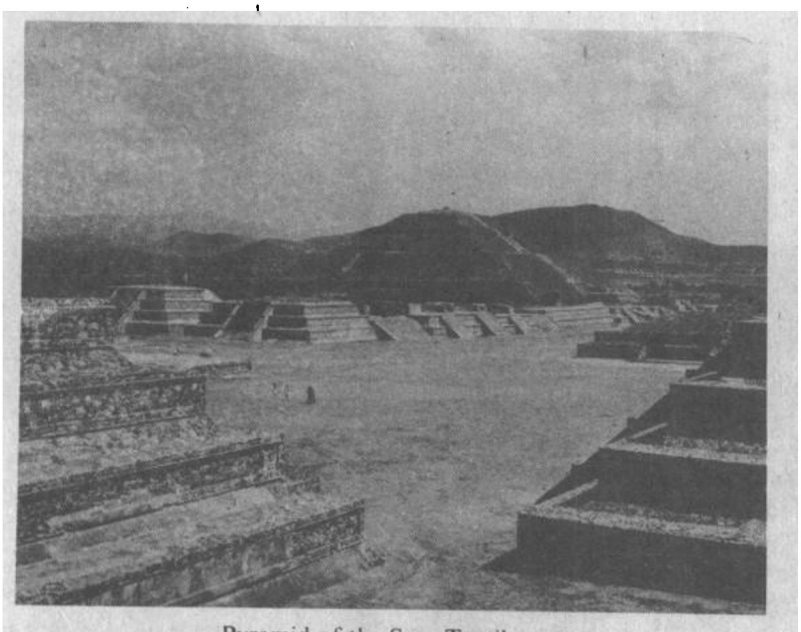
G Tenochtitlan (now Mexico City) was five times the size of London in the same period. T F

H The Aztec civilisation was a democracy. T F

READING TEXT ONE

TEOTIHUACAN

Teotihuacan, located to the north-east of Mexico City, was probably the largest city of the New World before the arrival of the Spanish. At its height, towards the close of the sixth century AD, it covered about twenty square kilometres and may have housed more than 150,000 people. The city was divided into quarters by two great avenues which crosscut each other at right angles, and the entire city was laid out on a plan oriented to these avenues. The Avenue of the Dead, the main north-south road in the city, points 16° east of true north, which may have had a special meaning.

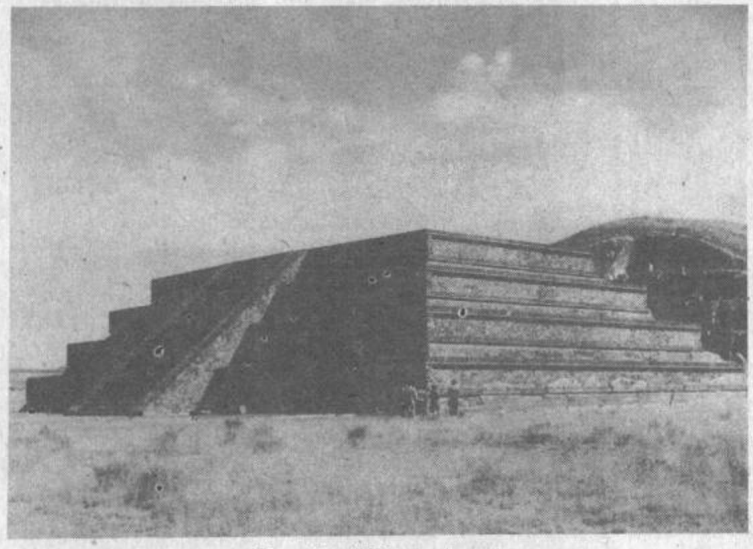


Pyramid of the Sun, Teotihuacan

Planning and construction of Teotihuacan began, according to radiocarbon dates, about the beginning of the Christian era. At that time, the major avenues were laid out and construction

of the major ceremonial structures along the Avenue of the Dead began. Figures and pieces of pots found in the 60-metre high Pyramid of the Sun, the most outstanding feature of Teotihuacan, prove that it was erected during this period. The pyramid rises in four great stages, but there is a fifth and much smaller stage between the third and fourth. An impressive stairway rises dramatically on its west side, facing the Avenue of the Dead. Re-examination suggests that there is a huge tomb at its base, but this has never been explored.

On the northern end of the Avenue of the Dead is the Pyramid of the Moon, very similar to that of the Sun, but with an additional platform-temple extending outwards on the south.



Temple of Quetzalcoatl

Near the exact centre of the city and just east of the Avenue of the Dead is a kind of sunken court surrounded on all four sides by platforms supporting temples. In the middle of the sunken area is the so-called Temple of Quetzalcoatl, which is dated to the second phase of Teotihuacan. It is decorated with heads representing Quetzalcoatl (*Quetzal*, the quetzal bird, which has brilliant green tail feathers, and *coatl*, snake), and another god who may be the Rain God or the Fire Snake.

On either side of the Avenue of the Dead are palaces, probably occupied by noble families, which also fit into the Teotihuacan master plan. Each is a square, sixty metres on a side, and is surrounded by a wall. People walking past would have seen only the high walls facing the street, and occasional small doors. Inside the walls, however, luxury was the rule. Roofs were flat, constructed of large beams. Interior walls were plastered and covered in magnificent paintings of gods and figures from stories. Apartments were connected to one another and arranged around a large central court that was open to the sky.

Further away from the centre, however, the social situation seems to have been quite different. On the eastern side of the city a number of much tinier and poorer apartments have been found. It may be guessed that here lay the crowded houses of the craftsmen and workers who made the city what it was.

Teotihuacan must have been the major manufacturing centre of the Early Classic period (approximately 300 - 600 AD), for the products of its craftsmen were spread over much of Meso-America. These included pottery, pottery figures, and knives and arrow-points made out of volcanic glass. The city had enormous influence throughout the region, and was probably the capital of the largest empire ever seen in Meso-America. Whatever the economic thrust that started it on the road to becoming a city, the evidence both of its immense size and of its strong cultural presence in far-distant regions makes it likely that Teotihuacan must have started to