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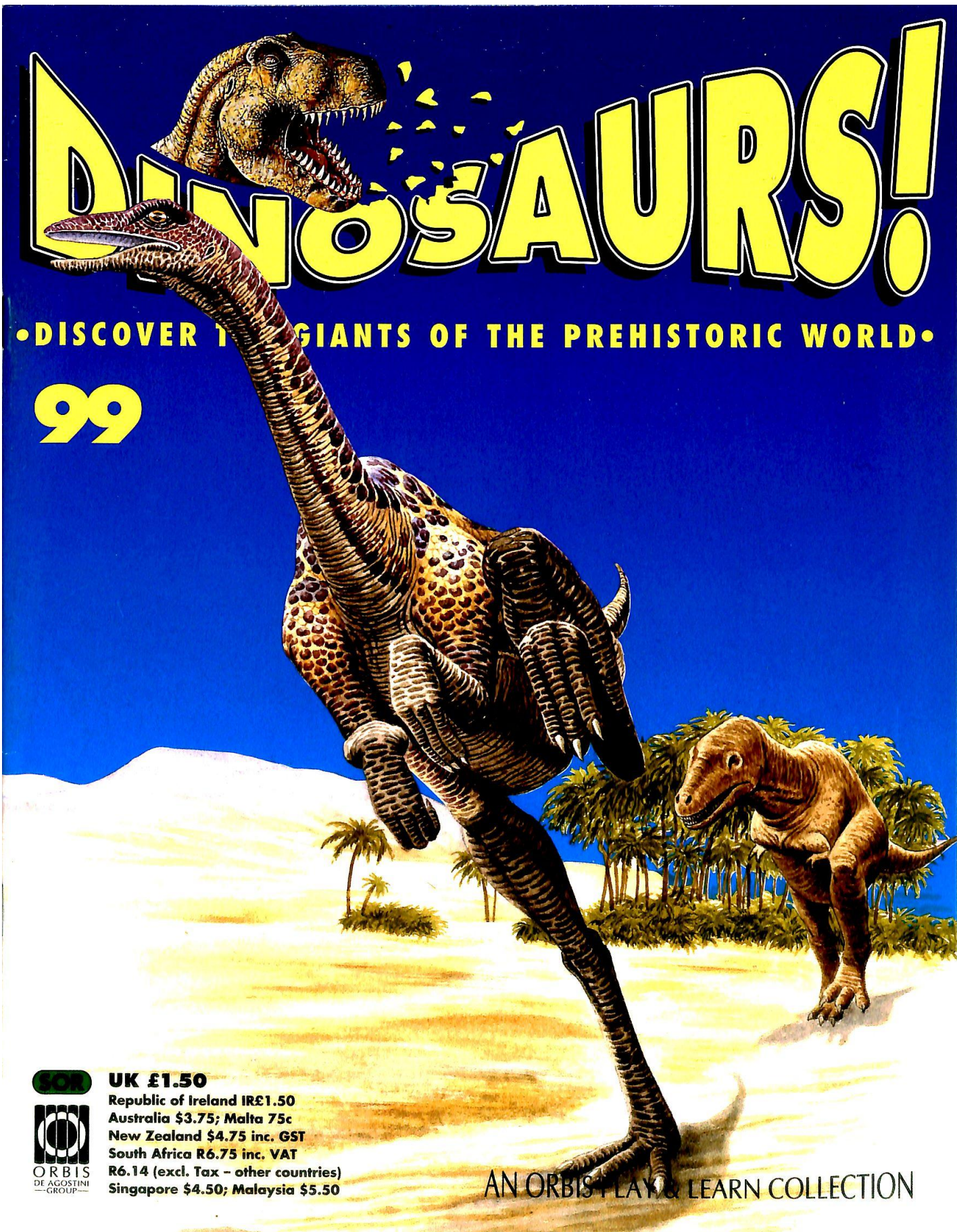


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DINOSAURS!

• DISCOVER THE GIANTS OF THE PREHISTORIC WORLD •

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DINOSAURS!

• DISCOVER THE GIANTS OF THE PREHISTORIC WORLD •

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Meet two Mongolian dinosaurs and a meat-eating mammal

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IDENTIKIT

ANSERIMIMUS

Long-legged *Anserimimus* sprinted across the Mongolian plains.

A*nserimimus* was one of the ornithomimid dinosaurs, or 'bird mimics'. The group is better known as the 'ostrich dinosaurs'. It got its name because its members probably looked and behaved rather like today's ostrich.

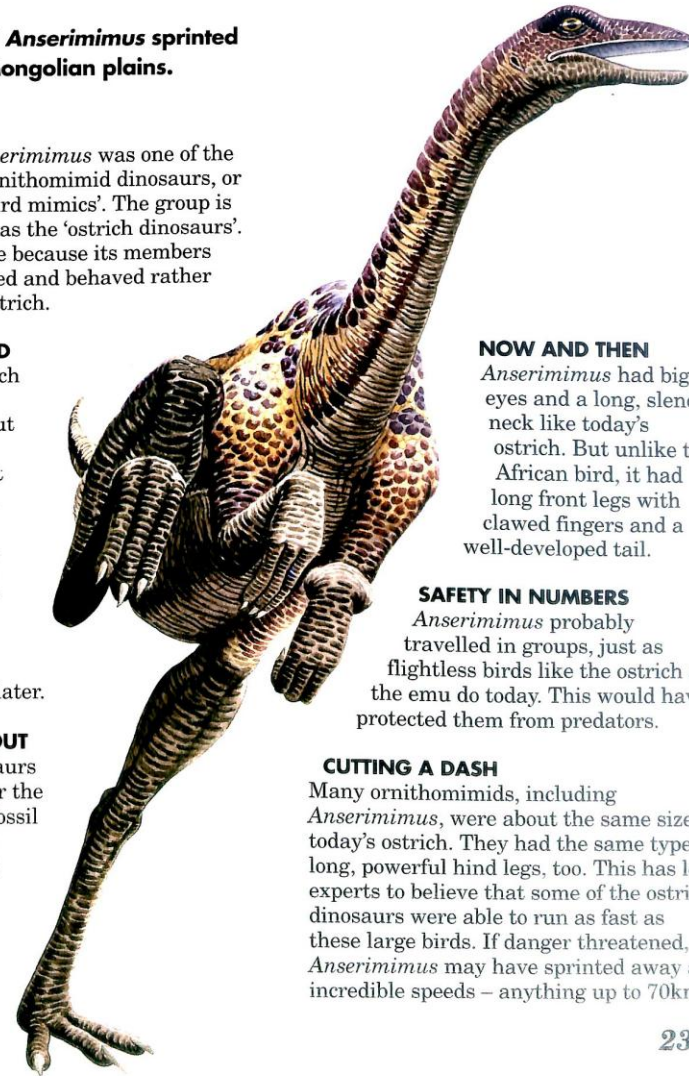
IN AT THE END
 The first ostrich dinosaurs appeared about 115 million years ago. But most of them, including *Anserimimus*, lived towards the end of the Age of the Dinosaurs, more than 20 million years later.

GETTING ABOUT
 Ostrich dinosaurs spread all over the world. Their fossil remains have been found as far apart as Mongolia, in Asia, and North America.

NOW AND THEN
Anserimimus had big eyes and a long, slender neck like today's ostrich. But unlike the African bird, it had long front legs with clawed fingers and a well-developed tail.

SAFETY IN NUMBERS
Anserimimus probably travelled in groups, just as flightless birds like the ostrich and the emu do today. This would have protected them from predators.

CUTTING A DASH
 Many ornithomimids, including *Anserimimus*, were about the same size as today's ostrich. They had the same type of long, powerful hind legs, too. This has led experts to believe that some of the ostrich dinosaurs were able to run as fast as these large birds. If danger threatened, *Anserimimus* may have sprinted away at incredible speeds – anything up to 70km/h!





MAINLY MEAT

Ostrich dinosaurs mainly ate meat, but they had no teeth. Instead, these bird-like reptiles used their sharp, horny beaks to snap up small animals and insects.

PARTLY PLANTS

Scientists think that ornithomimids were not fussy eaters. They probably ate plants too. Like an ostrich, *Anserimimus* could have grazed on the open plains, feeding on buds and shoots, but the dinosaur's powerful jaws meant it could eat much tougher vegetation than an ostrich can.

USEFUL CLAWS

Anserimimus had stronger arms than most ostrich dinosaurs. It may have used its long, spade-shaped front claws to hook down leafy branches, or to pick fruits from low-growing trees. This dinosaur may also have used its sharp claws to dig up the ground and root out tender grubs or to break open insect nests.

EGG STEALERS

Some experts believe ornithomimids such as *Anserimimus* ate eggs, too. They may have dug out other dinosaurs' nests with their spade-like hands. They could have cracked open the eggs they found with their sharp beaks.

UNDER ATTACK

There were plenty of predators around in Mongolia during the Late Cretaceous. An ostrich can kill a lion with a hefty kick. Perhaps, if attacked, *Anserimimus* could also lash out with its powerful, clawed hind legs.

SPEEDING AWAY

But this dinosaur's main defence would have been speed. A scared *Anserimimus* could easily have outrun hungry tyrannosaurs such as *Tarbosaurus*.

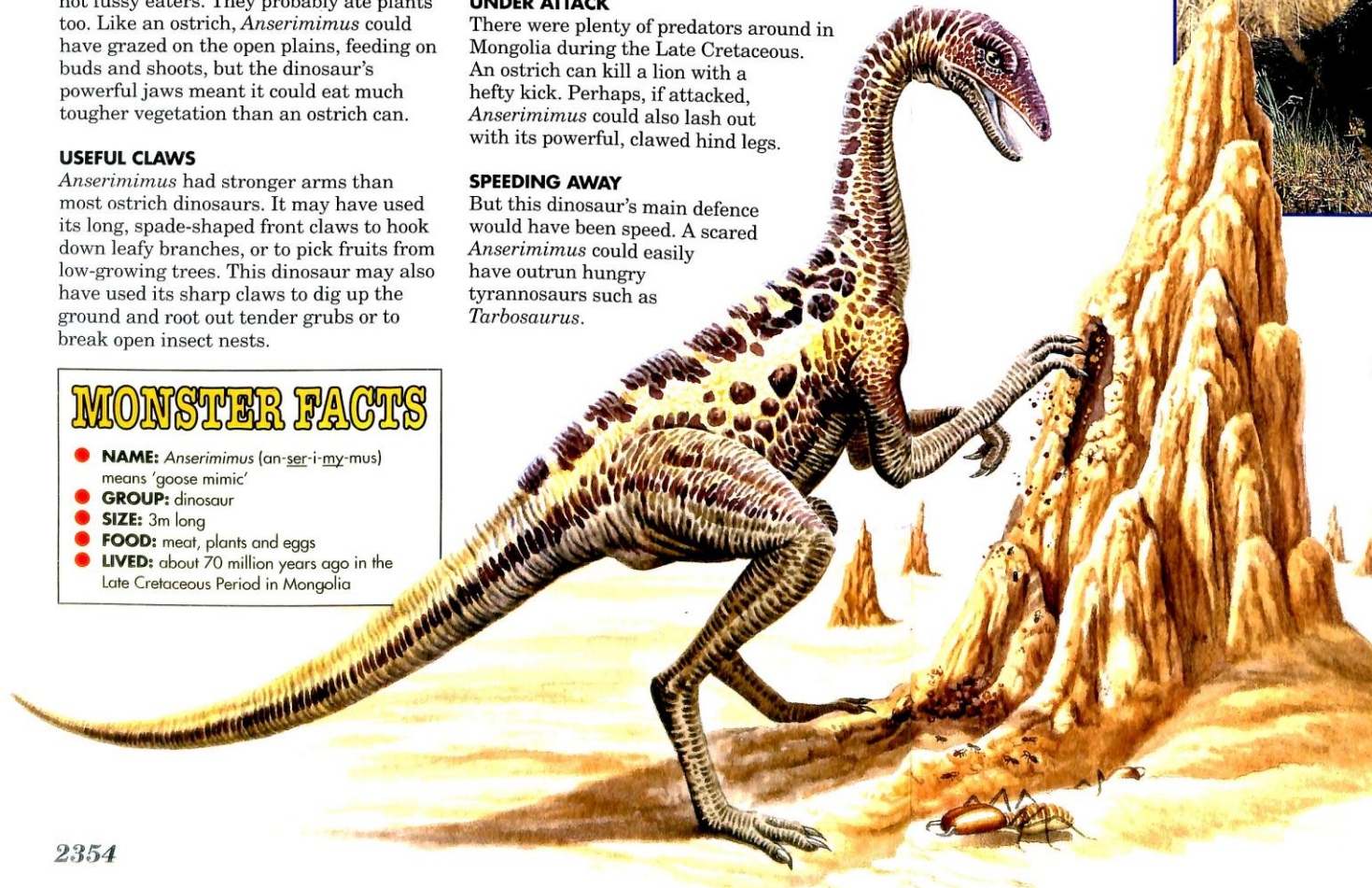
Anserimimus may have used its long, spade-shaped claws to dig out termite mounds. Once inside the nest, the dinosaur could snap up the bugs in its sharp, toothless beak.



Experts think that *Anserimimus* attacked insect nests in the same way as anteaters do today. Once it has broken into the nest, this giant anteater (above) licks up termites with its long, sticky tongue.

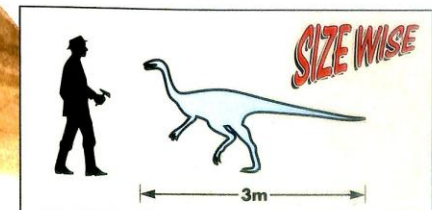
MONSTER FACTS

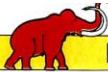
- **NAME:** *Anserimimus* (an-ser-i-my-mus) means 'goose mimic'
- **GROUP:** dinosaur
- **SIZE:** 3m long
- **FOOD:** meat, plants and eggs
- **LIVED:** about 70 million years ago in the Late Cretaceous Period in Mongolia



Is it true that ornithomimids behaved like today's wading birds?

Experts once believed that ornithomimids waded through the shallows of lakes and seas to find food. But scientists now disagree. They point out that ornithomimids have very different shaped toes from today's wading birds, such as herons.





OSTEOBORUS

Packs of *Osteoborus* scavenged for meat millions of years ago.



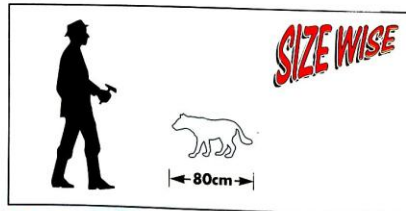
Osteoborus sniffed out the corpses of animals that had just died, just as a hyena does today. *Osteoborus* may also have robbed other meat-eaters of their kills. A pack of snarling *Osteoborus* could have frightened away the predator, and then started tucking in themselves. *Osteoborus* had huge jaws and could crunch through bone with its sharp teeth.

DOG DAYS

Osteoborus died out 2 million years ago and a new, more successful scavenger took its place. These scavengers were more like dogs. In fact, today's dogs are descended from them.

MONSTER FACTS

- **NAME:** *Osteoborus* (oss-tee-oh-bore-uss) means 'bone crusher'
- **GROUP:** mammal
- **SIZE:** 80cm long
- **FOOD:** meat
- **LIVED:** about 8 million years ago in the Late Miocene Period in North America



TYLOCEPHALE

This small dinosaur had a spectacular, dome-shaped head.



Tylocephale belonged to the 'thick-headed' lizard family. These dinosaurs got their name because of their extraordinary, heavily boned skulls. They were called pachycephalosaurs, or 'thick heads', after the biggest bone-headed dinosaur of all, *Pachycephalosaurius*.

TALL ORDER

Tylocephale had the tallest domed head of any pachycephalosaur discovered so far. *Tylocephale's* amazing bony helmet was so high, at over 13cm, that it was even noticeable from the back.

MONSTER FACTS

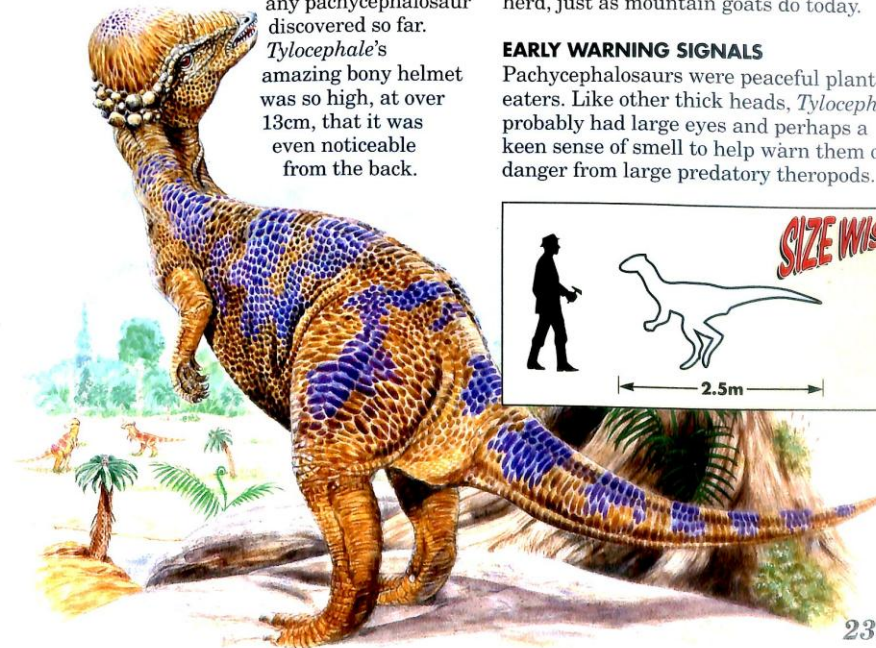
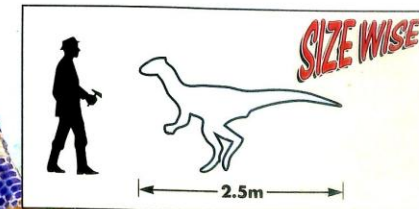
- **NAME:** *Tylocephale* (tye-luh-sef-uh-lee) means 'swollen head'
- **GROUP:** dinosaur
- **SIZE:** up to 2.5m long
- **FOOD:** plants
- **LIVED:** about 80 million years ago in the Late Cretaceous Period in Mongolia

HEAD OF THE HERD

Experts believe the male dinosaurs used their armoured heads for fierce head-butting contests to see who should lead the herd, just as mountain goats do today.


EARLY WARNING SIGNALS

Pachycephalosaurs were peaceful plant-eaters. Like other thick heads, *Tylocephale* probably had large eyes and perhaps a keen sense of smell to help warn them of danger from large predatory theropods.



Living with the dinosaurs

The Mesozoic Era began 245 million years ago and lasted almost 180 million years. Many animals, including the dinosaurs, appeared in the first half of this Era.

 At the beginning of the Mesozoic Era, animal life on our planet was recovering from a great extinction that had wiped out many species. The reptiles took the opportunity to fill the gaps. By the end of the Mesozoic, reptiles walked on the land, swam in the seas and flew in the air.

REPTILE SUCCESS

Reptiles were successful because they adapted to changing conditions. Some lived partly in water and partly on land. *Tanystropheus* lived mainly on the sea shore. It plunged its long neck into the water and speared fish on its sharp teeth.

THE DINOSAURS ARRIVE

The most important land reptiles of the time, the dinosaurs, made their appearance quite early in the Mesozoic Era. At first they were all small saurischian ('lizard-hipped'), meat-eating dinosaurs. *Eoraptor*, 'the dawn hunter' from South America, was one of the first.

MASSIVE PLANT-EATERS

By the middle of the Mesozoic Era, in the Jurassic Period, many kinds of dinosaur, both lizard- and bird-hipped, flourished. *Cetiosaurus*, a huge, plant-eating sauropod, lived in the Mid Jurassic. By then the climate had changed, and the Earth was covered in steamy jungles.

ALL AT SEA

Reptiles ruled the seas, too. From early in the Mesozoic Era the ichthyosaurs, those dolphin look-alikes, cruised the world's oceans. They were very successful and survived for about 100 million years. Remember that people have only been around for 200,000 years so far! Ichthyosaurs died out near the end of the Mesozoic. *Shonisaurus* was the biggest ichthyosaur in the Mesozoic seas.

KEY

THE TRIASSIC

- 1 *Tanystropheus*
- 2 *Cymbospondylus*
- 3 *Placodus*
- 4 *Eudimorphodon*
- 5 *Coelophysis*
- 6 *Eoraptor*
- 7 *Shonisaurus*
- 8 *Morganucodon*

THE JURASSIC

- 9 *Dimorphodon*
- 10 *Dilophosaurus*
- 11 *Protosuchus*
- 12 *Macroplata*
- 13 *Plesiosaurus*
- 14 *Megalosaurus*
- 15 *Scelidosaurus*
- 16 *Cetiosaurus*

SURFACE BREATHERS

The pliosaur, such as *Macroplata*, and plesiosaurs, such as *Plesiosaurus*, used their paddles to propel themselves through the seas. Like the ichthyosaurs, they breathed air. If you could have flown over an ocean in the Mesozoic Era, you would have seen marine reptiles gulping air on the surface and diving beneath the waves.

REPTILES OF THE AIR

Flapping through the air, above the reptiles on land and in the water, were the flying reptiles, the pterosaurs. They took to the air early in the Mesozoic Era, about 70 million years before the first bird flew. Just like the dinosaurs, the pterosaurs came in all different sizes, from blackbird-sized creatures to huge flying giants.

MESOZOIC MAMMAL

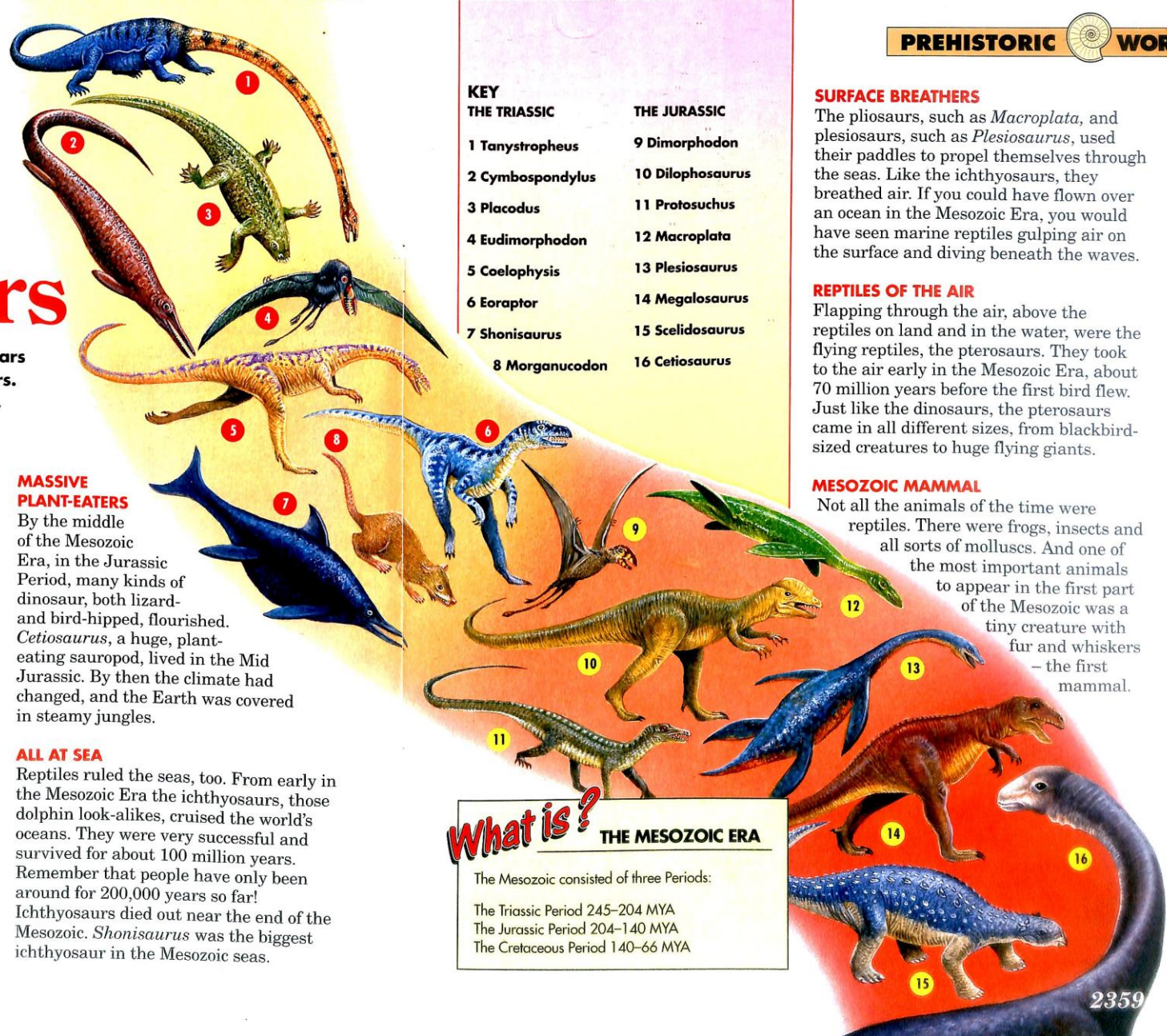
Not all the animals of the time were reptiles. There were frogs, insects and all sorts of molluscs. And one of the most important animals to appear in the first part of the Mesozoic was a tiny creature with fur and whiskers – the first mammal.

What is?

THE MESOZOIC ERA

The Mesozoic consisted of three Periods:

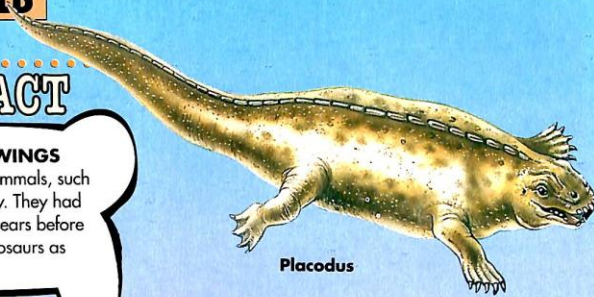
- The Triassic Period 245–204 MYA
- The Jurassic Period 204–140 MYA
- The Cretaceous Period 140–66 MYA



IT'S A FACT

WAITING IN THE WINGS

During the Mesozoic Era mammals, such as *Morganucodon*, were tiny. They had to wait another 160 million years before they took over from the dinosaurs as rulers of the Earth.



Placodus

LOOK NO FINS!

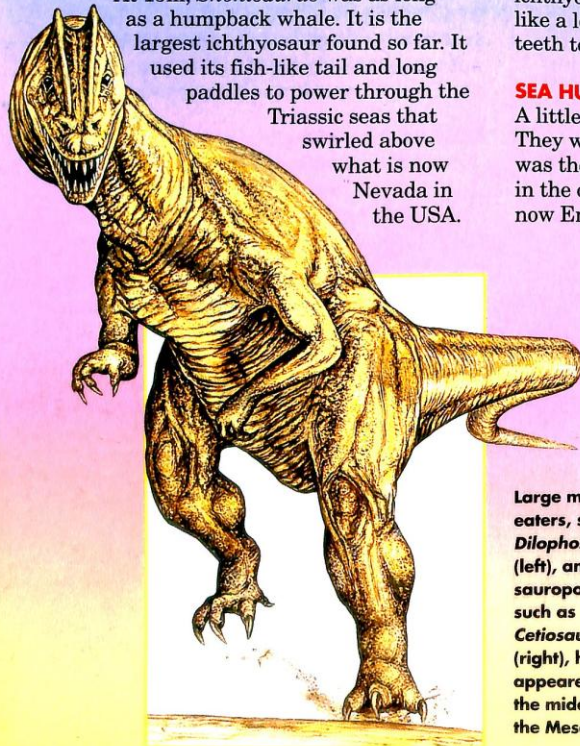
Another Early Mesozoic ichthyosaur, *Cymbospondylus*, was about 10m long. It had no back or tail fins like the later ichthyosaurs, but its mouth was shaped like a long beak and lined with pointed teeth to help it to catch fish easily.

SEA HUNTERS

A little later, different reptiles appeared. They were the plesiosaurs. *Plesiosaurus* was the first, and it lived by catching fish in the oceans that covered parts of what is now England and Germany in the Jurassic.

WHALE OF AN ICHTHYOSAUR

At 15m, *Shonisaurus* was as long as a humpback whale. It is the largest ichthyosaur found so far. It used its fish-like tail and long paddles to power through the Triassic seas that swirled above what is now Nevada in the USA.



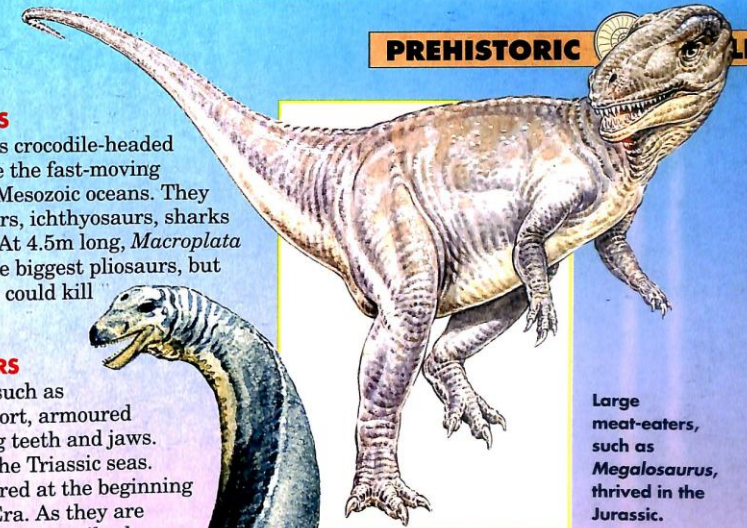
Large meat-eaters, such as *Dilophosaurus* (left), and sauropods, such as *Cetiosaurus* (right), had appeared by the middle of the Mesozoic.

POWERFUL JAWS

Pliosaurus, such as crocodile-headed *Macroplata*, were the fast-moving predators of the Mesozoic oceans. They hunted plesiosaurs, ichthyosaurs, sharks and giant squid. At 4.5m long, *Macroplata* was not one of the biggest pliosaurs, but its powerful jaws could kill quite large prey.

TRIASSIC TERRORS

The placodonts, such as *Placodus*, had short, armoured bodies and strong teeth and jaws. They hunted in the Triassic seas. Crocodiles appeared at the beginning of the Mesozoic Era. As they are very adaptable, these reptiles have managed to survive until today. *Protosuchus* was the very first crocodile.



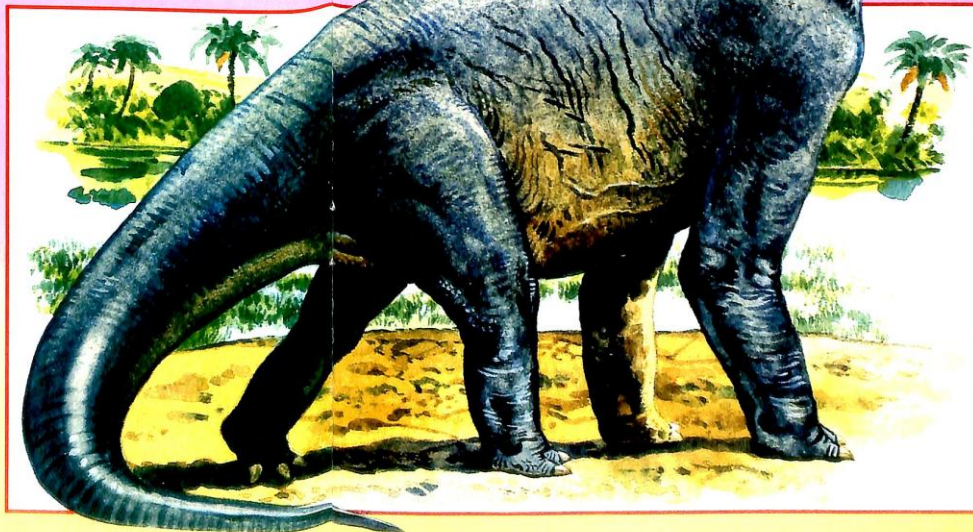
Large meat-eaters, such as *Megalosaurus*, thrived in the Jurassic.

FIRST OF THE PTEROSAURS

There were no birds at the time of the first dinosaurs, but there were pterosaurs. *Eudimorphodon* lived in Europe at the beginning of the Mesozoic and ate fishes. Puffin-headed *Dimorphodon* lived a little later.

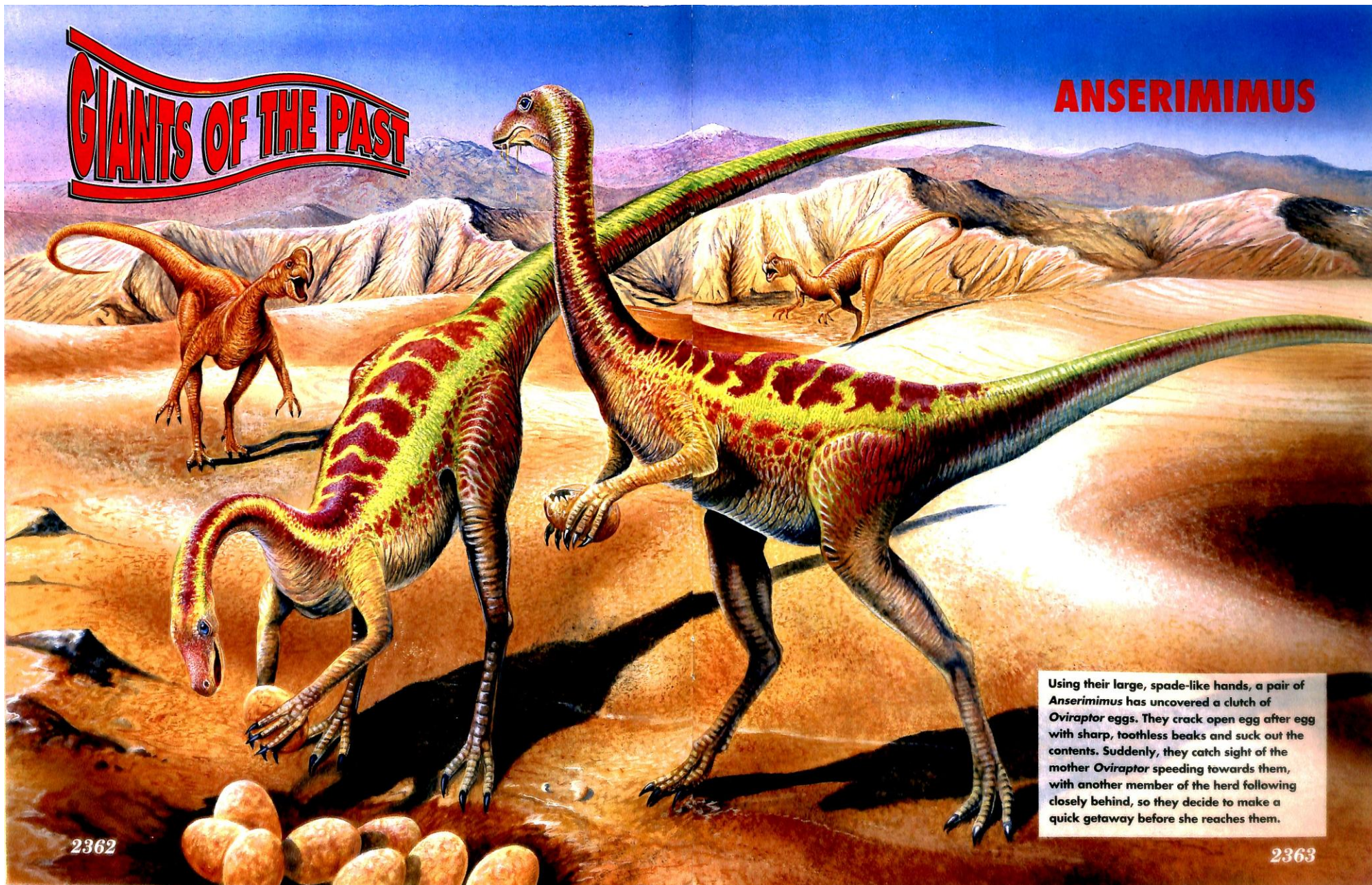
DINOSAURS RULE

Dinosaurs appeared near the beginning of the Mesozoic. *Eoraptor* is the oldest known. *Coelophysis* also lived in the Triassic. Much larger meat-eaters, such as *Dilophosaurus* and *Megalosaurus*, appeared in the Jurassic. There were small plant-eaters, such as *Scelidosaurus*, in the Early Jurassic. By the middle of the Mesozoic, the first giant sauropods, such as *Cetiosaurus*, had appeared. Even larger dinosaurs appeared in the second half of the Mesozoic.



GIANTS OF THE PAST

ANSERIMIMUS



Using their large, spade-like hands, a pair of *Anserimimus* has uncovered a clutch of *Oviraptor* eggs. They crack open egg after egg with sharp, toothless beaks and suck out the contents. Suddenly, they catch sight of the mother *Oviraptor* speeding towards them, with another member of the herd following closely behind, so they decide to make a quick getaway before she reaches them.

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3-D Gallery 108

OURANOSAURUS

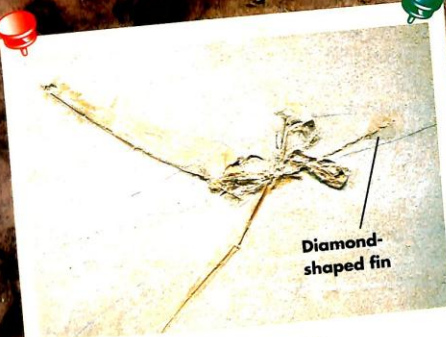
Two *Ouranosaurus* are lumbering through an Early Cretaceous forest when they find themselves splashing into deep water. They have no choice but to wade through it because the forest has flooded. As they struggle to keep their balance, the jaws of an enormous crocodile, *Sarcosuchus*, lunge greedily towards them. Will they be able to escape?





STOP PRESS...

A SPECIAL PTEROSAUR EDITION OF YOUR MESOZOIC MAGAZINE



Diamond-shaped fin

CROOKED TAIL

A new *Rhamphorhynchus* fossil, owned by the Royal Museum of Scotland in Edinburgh, clearly shows the pterosaur's diamond-shaped tail fin. It turns out not to be as symmetrical as the experts originally thought. There is a taller section above the long tail bone, and a longer section below it.

HAIR, HAIR

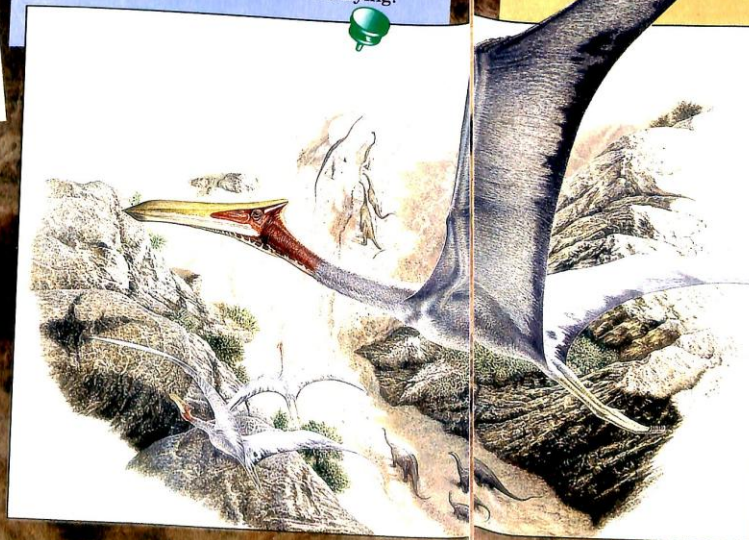
Scientists now agree that pterosaurs were covered in hair. It was thought that the first evidence for this was seen in a pterosaur found at Solnhofen in 1908. It now turns out that the strands of 'hair' in this example were actually fibres from the wing membrane. But there are fossils of pterosaurs that definitely show hair.

FAMOUS NAME

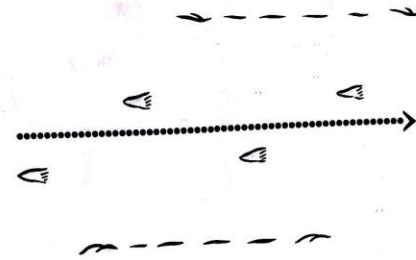
A new pterosaur discovered in Brazil has been named *Chapadactylus conandoyli*. It was given this name to honour Sir Arthur Conan Doyle. In 1912, Conan Doyle wrote 'The Lost World', an adventure story in which explorers find a plateau in Brazil still inhabited by dinosaurs and pterosaurs.

Washed away

Scientists have found a pterosaur bone bed in South America. The condition of the fossils and the surrounding rocks show that the pterosaurs were washed away in a flash flood. This suggests pterosaurs rested on the ground, not in the trees, when they were not flying.



MAKING TRACKS



The first pterosaur footprints have been found in Early Jurassic rocks in Western France. They consist of a narrow track of four-toed prints made by the feet. A wider track of prints along each side appears to have been made by sets of three fingers scraping along the ground. It seems that the pterosaur was running along a muddy beach when the tide was out.

LOOK - NO FEET!

Many of the marvellous pterosaur skeletons found in the lithographic Solnhofen limestone in Germany are missing their feet. This is probably because each dead body floated at the surface of a lagoon for some time before sinking to the bottom and fossilizing. As the pterosaur rotted, the feet would have been the first things to drop off since the ankles were not very strong.

ANOTHER QUETZALCOATLUS

A new specimen of the biggest pterosaur of all, *Quetzalcoatlus*, has been found in Texas, 50 miles from where the others were discovered. For the first time, scientists can examine parts of this pterosaur's skull. The skull is narrow and compressed, with toothless jaws. There is a crest on the snout, and the eye sockets are very low in the face.

Beneath city streets

Cities all over the world stand where prehistoric animals once roamed. Think about that when you walk down busy city streets!

Have you ever walked along, trying not to tread on the cracks in the pavement in case a bear leaps out to grab you? Now you can play an even better game – imagining the prehistoric creatures that once lived where you are walking.

IT'S A FACT

PLASTER OF PARIS

A fossil of an opossum, called the Montmartre opossum, was found in gypsum mines in the Montmartre district of Paris, France. Gypsum is used to make plaster of Paris. Fossils are laid down in different rock layers according to their age. Modern Paris is built on seven layers of fossil beds.

BENEATH PARIS

Step back in time to the Early Tertiary (66-38 million years ago) and see what lay beneath the Paris streets. A swamp would have stretched out before you with a tropical forest growing around the edges.

SWAMP LIFE

Dinosaurs were extinct, but the swamp was home to many other creatures. *Pristichampsus*, an early crocodile, prowled the shores. Hippo-like animals, such as *Coryphodon* and *Elomeryx*, waded in the swampy water, along with *Palaeotherium*, a mixture of a tapir, a rhino and a pig.

BIRDS AND BEASTS

Many different predators hunted on the muddy banks. *Hyaeonodon* probably hunted like today's hyena. But the most frightening predator was the giant bird *Diatryma*.

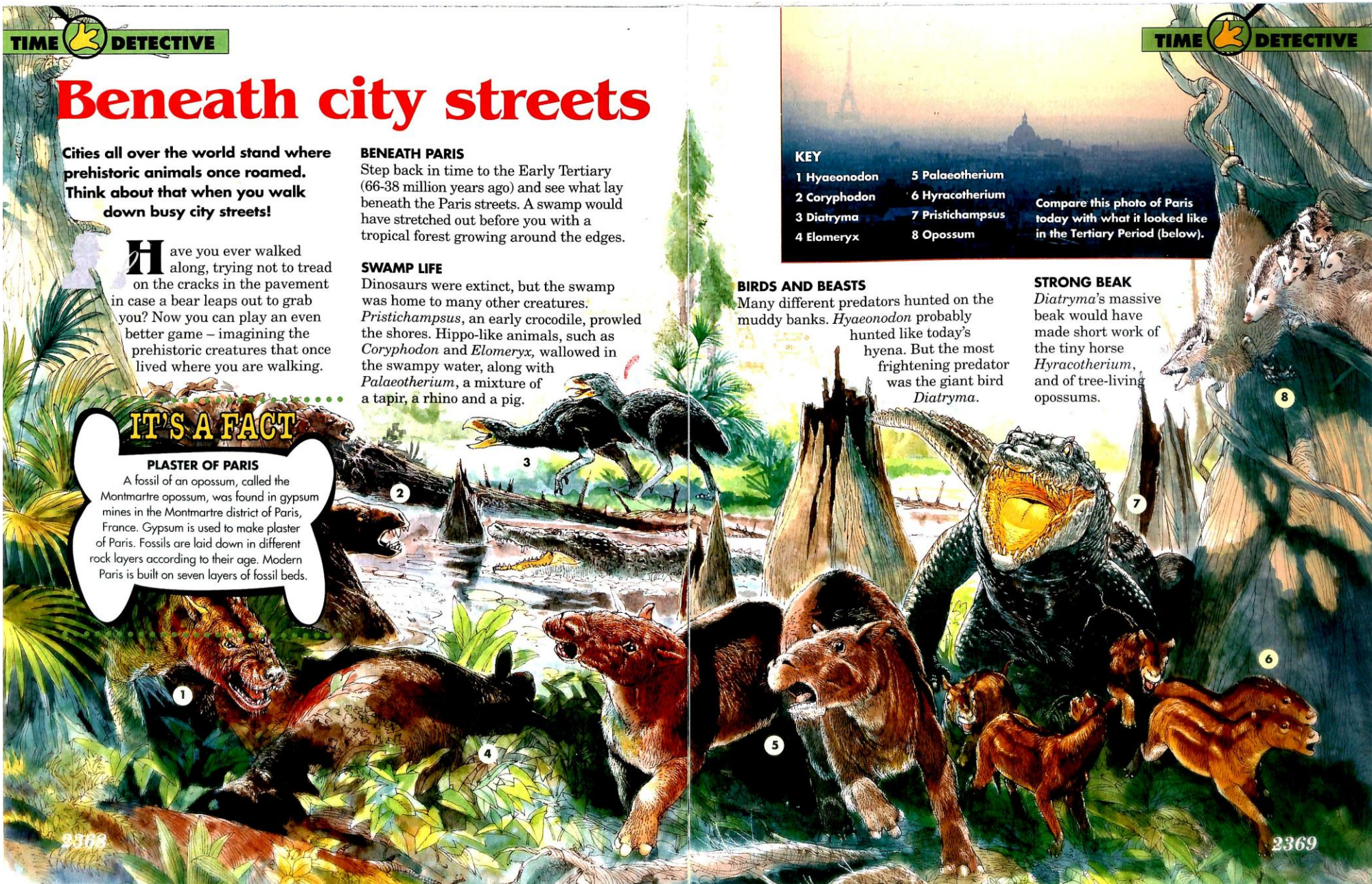
STRONG BEAK

Diatryma's massive beak would have made short work of the tiny horse *Hyracotherium*, and of tree-living opossums.

KEY

- 1 *Hyaeonodon*
- 2 *Coryphodon*
- 3 *Diatryma*
- 4 *Elomeryx*
- 5 *Palaeotherium*
- 6 *Hyracotherium*
- 7 *Pristichampsus*
- 8 *Opossum*

Compare this photo of Paris today with what it looked like in the Tertiary Period (below).



TIME TRAVEL

You are standing in Red Square in Moscow, Russia. If you could stay exactly where you are but zoom back through time to the Early Triassic, what incredible animals you'd see there!

RUSSIAN REPTILES

Among the largest of the early reptiles was *Pareiasaurus*. This squat, hefty animal was covered in bony plates. Its mouth was a grinding machine that could chew up tough plants. The great knobby, armoured beast *Scutosaurus* also lived here.

MAMMAL-LIKE IN MOSCOW

Lystrosaurus, a mammal-like reptile, wallowed in the Moscow waters about 240 million years ago. Its nostrils were close to its eyes so it could still breathe when the rest of its body was under water.

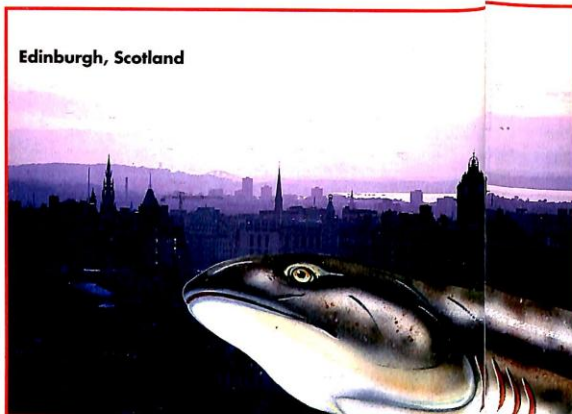
BELOW LOS ANGELES

Right in the heart of downtown Los Angeles, USA, you can visit a museum that shows the incredible variety of animals that once lived in this area. Dire wolves, sabre-toothed cats, mastodonts and vultures roamed the plains below the hills that are now home to the stars of Hollywood.

Smilodon hunted its prey, such as this ground sloth, on the plains where Los Angeles now stands.

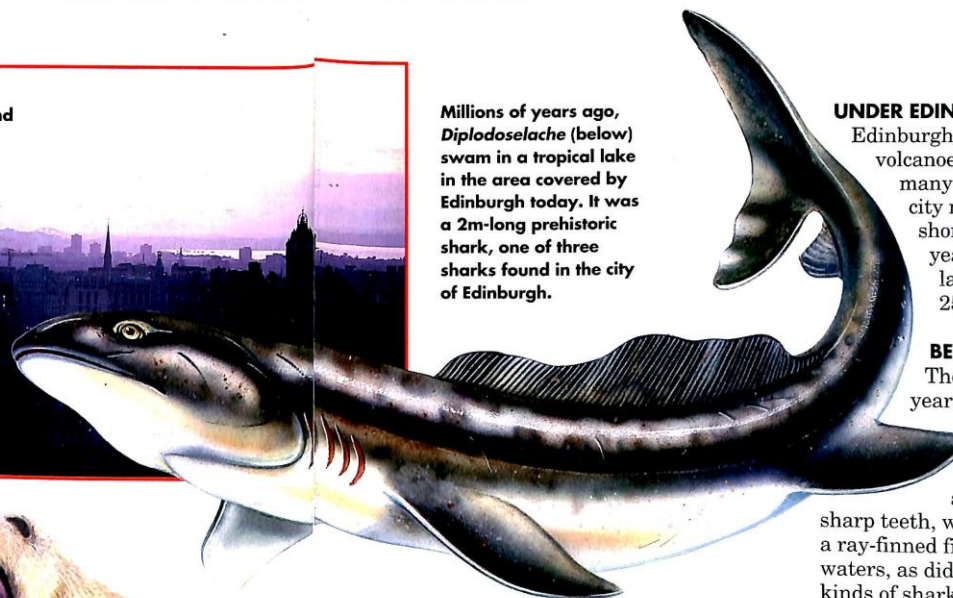


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Edinburgh, Scotland

Millions of years ago, *Diplodoselache* (below) swam in a tropical lake in the area covered by Edinburgh today. It was a 2m-long prehistoric shark, one of three sharks found in the city of Edinburgh.



UNDER EDINBURGH

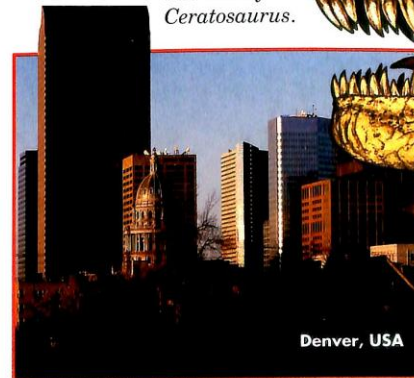
Edinburgh, Scotland, is built on extinct volcanoes. It is so hilly that from many of its streets you can see the city meeting the sea. On the shores of the sea, millions of years ago, there was a tropical lake measuring about 25 square kilometres.

BEWARE SHARKS

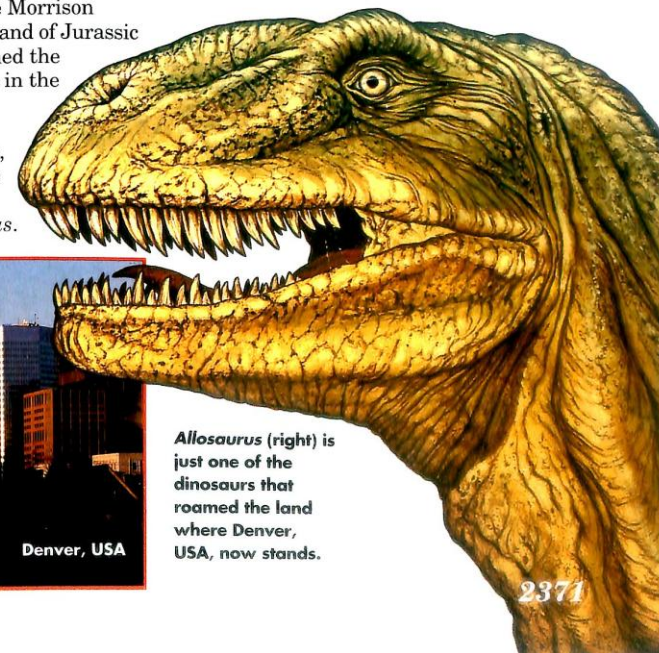
The lake existed for millions of years, so fossils found beneath this part of Edinburgh are 340 – 345 million years old. *Nematoptychius*, a fish with hundreds of tiny, sharp teeth, was found here. *Wardichthys*, a ray-finned fish, also swam in these waters, as did *Diplodoselache*, one of three kinds of shark found beneath Edinburgh.

DENVER DINOSAURS

Denver, USA, is built on the Morrison Formation, which is a long band of Jurassic rock. Lots of dinosaurs roamed the land under Denver's streets in the Jurassic. They included *Allosaurus*, *Apatosaurus*, *Barosaurus*, *Camarasaurus*, *Camptosaurus*, *Stegosaurus* and finally *Ceratosaurus*.



Denver, USA



Allosaurus (right) is just one of the dinosaurs that roamed the land where Denver, USA, now stands.

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TYRRELL'S GREAT FIND

JOSEPH TYRRELL WAS BORN IN THE 1850S IN CANADA, SON OF A WEALTHY STONEMASON. WHEN HE WAS A CHILD, HE FELL ILL...

HE HAS SCARLET FEVER?

HE SHOULD MAKE A COMPLETE RECOVERY!

WILL HE GET BETTER?

JOE TYRRELL IS SUCH A POMPFOUS ASS!

MAYBE IT'S BECAUSE HE'S SO DEAF!

THEY'RE TALKING ABOUT ME — BUT I'LL SHOW THEM! MY NAME WILL BE REMEMBERED WHEN THEY'RE FORGOTTEN.

THE DOCTOR WAS NOT QUITE RIGHT.

FINALLY, IN 1884, TYRRELL WAS PUT IN CHARGE OF A TEAM OF MEN SURVEYING AN AREA AROUND THE RED RIVER IN ALBERTA.

LET'S STUDY THOSE ROCKS UP THERE!

YOU'RE THE BOSS!

YOU'D DO WELL TO REMEMBER THAT!

AS IF I COULD FORGET IT!

THE TEAM HAD FOUND SCATTERED FOSSIL BONES BEFORE, BUT ONE DAY, WHEN TYRRELL WAS WORKING ON A CLIFF...



AAAGH!

HE QUALIFIED AS A LAWYER, BUT FOUND SCIENCE MORE TO HIS TASTE, SO HE GOT A JOB IN THE CANADIAN GEOLOGICAL SURVEY — A VERY HUMBLE JOB.

HOW MANY MORE CRATES DO I HAVE TO UNPACK BEFORE I CAN GET OUT INTO THE FIELD, AS I WAS PROMISED?

EVENTUALLY, TYRRELL WAS SENT TO HELP GEORGE DAWSON, WHO WAS SURVEYING IN WESTERN CANADA. THE TWO MEN DID NOT GET ON!

JUST BECAUSE YOU ENJOY WORKING FROM DAWN TO DUSK, YOU CAN'T EXPECT EVERYONE TO FOLLOW YOUR EXAMPLE!

I CAN — AND I DO, YOUNG TYRRELL!

THE REST OF THE DAY WAS SPENT EXCAVATING THE SKULL AND OTHER BONES FROM THE ROCK.

CAREFUL! YOU'RE BREAKING THEM!

SORRY, SIR — BUT WE'VE ONLY GOT AXES AND SMALL HAMMERS.

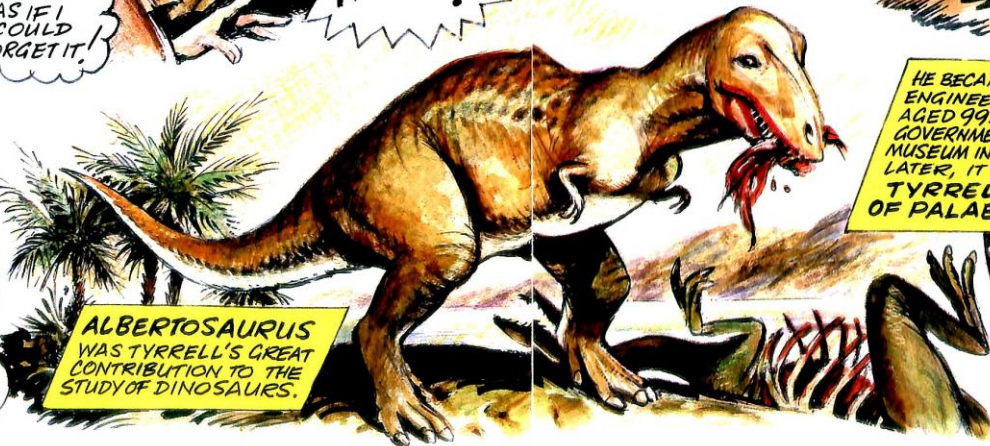
THE PRECIOUS BONES HAD LAIN THERE FOR OVER 65 MILLION YEARS. CAREFULLY, THEY PLACED THEM IN A WAGON. THE JOURNEY TO CALGARY TOOK A WEEK.

SLOWER! IF WE JAR THESE BRITTLE BONES, THEY MAY BREAK UP!

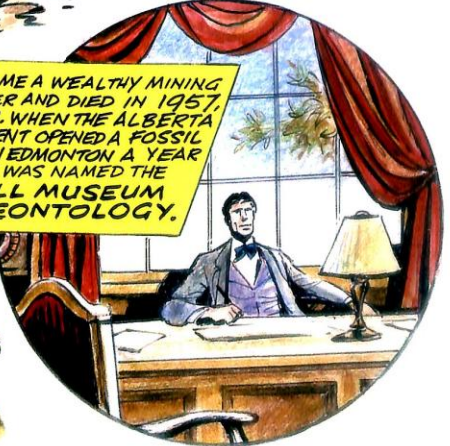
THE BONES THAT TYRRELL FOUND WERE EVENTUALLY NAMED BY THE GREAT DINOSAUR EXPERT HENRY OSBORN IN 1905...

I THINK THIS BEAST SHOULD BE NAMED ALBERTOSAURUS.

ALBERTOSAURUS WAS TYRRELL'S GREAT CONTRIBUTION TO THE STUDY OF DINOSAURS.



HE BECAME A WEALTHY MINING ENGINEER AND DIED IN 1957, AGED 99. WHEN THE ALBERTA GOVERNMENT OPENED A FOSSIL MUSEUM IN EDMONTON A YEAR LATER, IT WAS NAMED THE TYRRELL MUSEUM OF PALAEOLOGY.



Improve and test your knowledge with... FACT FILE

Follow the footprints on the mammoth's back and answer the questions posed!

Change of opinion

Megalancosaurus, from the Triassic of Italy, was once thought to have been a swimming reptile because of its deep tail. It was then thought to have been a digging reptile because of its long claws. Experts now think that it climbed trees, clinging to branches with its deep tail and long claws!

1 What kind of animal was *Diplodoseleche*?
a) a crocodile
b) a dinosaur
c) a shark

2 What was Joseph Tyrrell's great find?
a) *Tyrannosaurus rex*
b) *Albertosaurus*
c) *Brachiosaurus*

3 Which was the biggest pterosaur?
a) *Quetzalcoatlus*
b) *Pteranodon*
c) *Dimorphodon*

4 What does *Osteoborus* mean?
a) 'flesh shredder'
b) 'bone crusher'
c) 'blood guzzler'

5 *Tylocephale*'s head was shaped like:
a) a football
b) a pyramid
c) a dome

6 Which was the largest ichthyosaur?
a) *Cymbospondylus*
b) *Ichthyosaurus*
c) *Shonisaurus*

10 *Elasmosaurus* had a very long:
a) tail
b) head
c) neck

Keeping a cool head

The big nose cavity of a duckbilled dinosaur was probably filled with blood vessels. They would have acted like a car radiator and kept the brain cool.

7 *Anserimimus* looked like today's:
a) ostrich
b) parrot
c) mynah bird

8 *Tanystropheus* had a very long:
a) neck
b) life
c) nose

9 Beneath which city was the Montmartre opossum found?
a) Edinburgh
b) Paris
c) Los Angeles



Fast mover

Slender *Yandusaurus* would have covered a lot of distance as it sprinted through Mid Jurassic China. This plant-eating dinosaur, a medium-sized hypsilophodontid, was an agile mover. It was discovered in Yandum in China.

Surprise attack

Sabre-tooth cats had very flexible forelimbs, like hyenas today. They probably also hunted by ambush as modern hyenas do.

Dying for a drink

There is a whole graveyard of fossils of the Triassic plant-eating reptile *Aetosaurus* in the Stuttgart Museum in Germany. It is possible that these crocodile-like animals congregated at a drying water hole during a drought and did not survive.

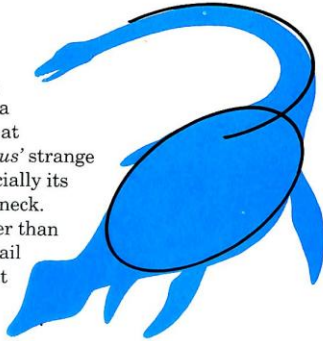
Answers to the questions on inside back cover



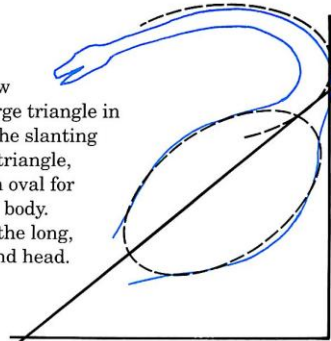
HOW TO DRAW

ELASMOSAURUS

1 First take a careful look at *Elasmosaurus*'s strange shape, especially its thin, bendy neck. This is longer than its stumpy tail and body put together.



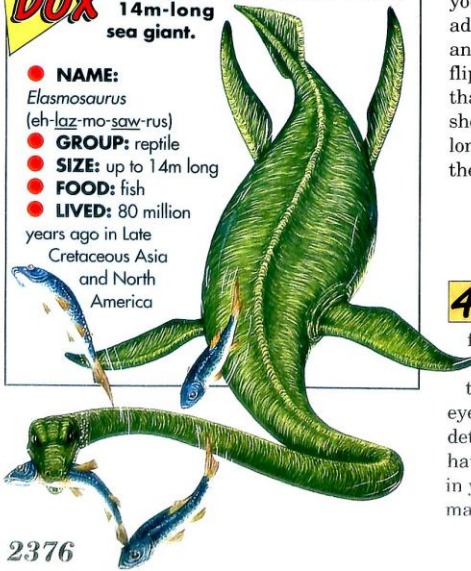
2 Draw a large triangle in pencil. On the slanting edge of the triangle, sketch in an oval for the reptile's body. Then draw the long, thin neck and head.



Fact box

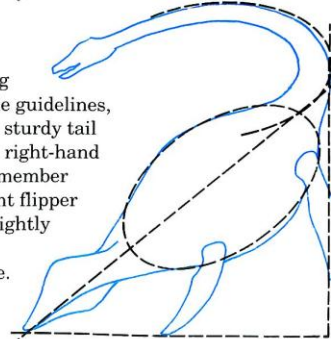
Elasmosaurus was the biggest plesiosaur. It was a 14m-long sea giant.

- **NAME:** *Elasmosaurus* (eh-laz-mo-saw-rus)
- **GROUP:** reptile
- **SIZE:** up to 14m long
- **FOOD:** fish
- **LIVED:** 80 million years ago in Late Cretaceous Asia and North America

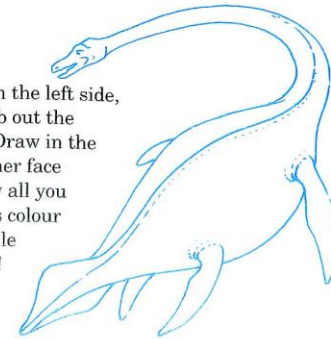


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3 Still using your triangle guidelines, add a thick, sturdy tail and the two right-hand flippers. Remember that the front flipper should be slightly longer than the back one.



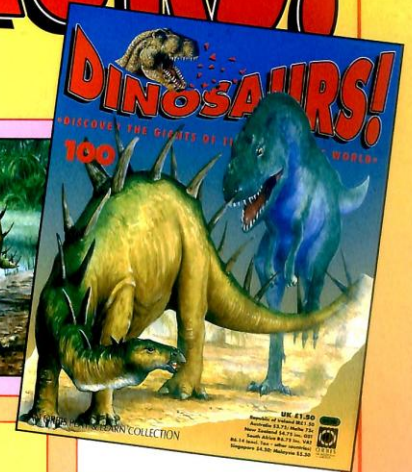
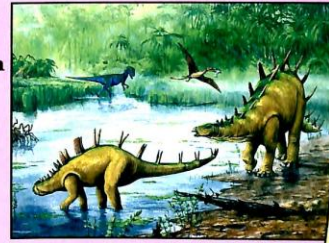
4 Add two flippers on the left side, then rub out the triangle. Draw in the eyes and other face details. Now all you have to do is colour in your reptile masterpiece!



COMING IN PART 100 OF

DINOSAURS!

Who found *T rex* difficult to live with? Find out in SPOTTER'S GUIDE. Read about the masters of the Mesozoic in PREHISTORIC WORLD.



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PLUS

Three fascinating creatures in IDENTIKIT and TIME DETECTIVE HISTORY IN PICTURES GIANTS OF THE PAST

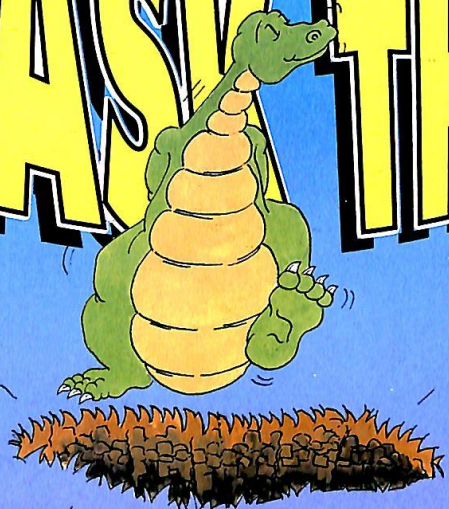
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ANSWERS TO FACT FILE QUESTIONS: 1.a 2.b 3.a 4.b 5.c 6.c 7.a 8.a 9.b 10.c



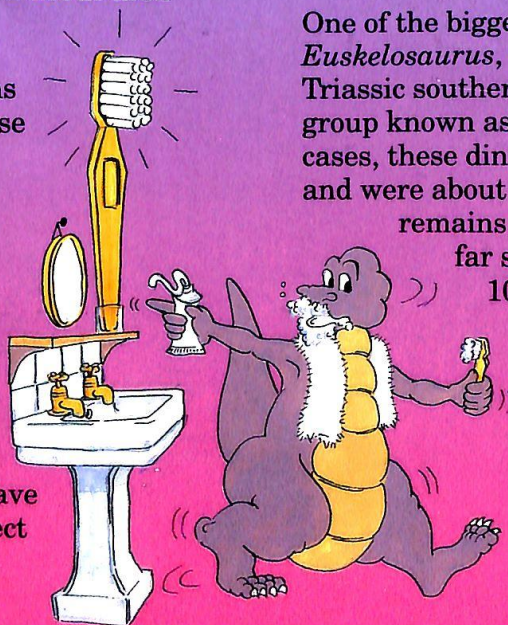
Dr David Norman of Cambridge University answers your dinosaur questions

ASK THE EXPERT



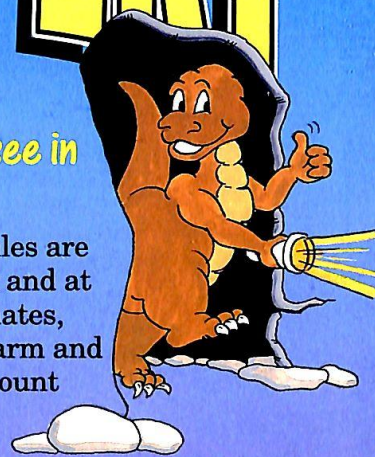
Did dinosaurs sniff the wind to detect enemies, as many animals do today?

Many years ago, Professor John Ostrom, who is famous for his discovery of *Deinonychus*, did some work on hadrosaurs (duckbilled dinosaurs). He was studying their skulls in particular, and came up with a new idea about their crests. He wondered whether they housed extra-large sense organs for smelling, giving these animals an excellent sense of smell. Other theories have been put forward about the purpose of the crests, but it is still possible that some hadrosaurs could smell well enough to distinguish between scents. So they could have sniffed the wind to detect prey and predators.



Could dinosaurs see in the dark?

Many of today's reptiles are active in the evening and at night in tropical climates, provided that it is warm and there is a certain amount of moonlight. Most reptiles have quite good eyesight and it is likely dinosaurs did too. Some people claim that dinosaurs such as *Troodon* hunted at night because they had such large eyes they could see well even in the dark.



Which was the earliest really big dinosaur?

One of the biggest early dinosaurs is *Euskelosaurus*, which lived in Late Triassic southern Africa. It belonged to the group known as the prosauropods. In most cases, these dinosaurs were lightly built and were about 2 – 5m long. The fossil remains of *Euskelosaurus* found so far suggest an animal up to 10m long and built rather like one of the later sauropods.

