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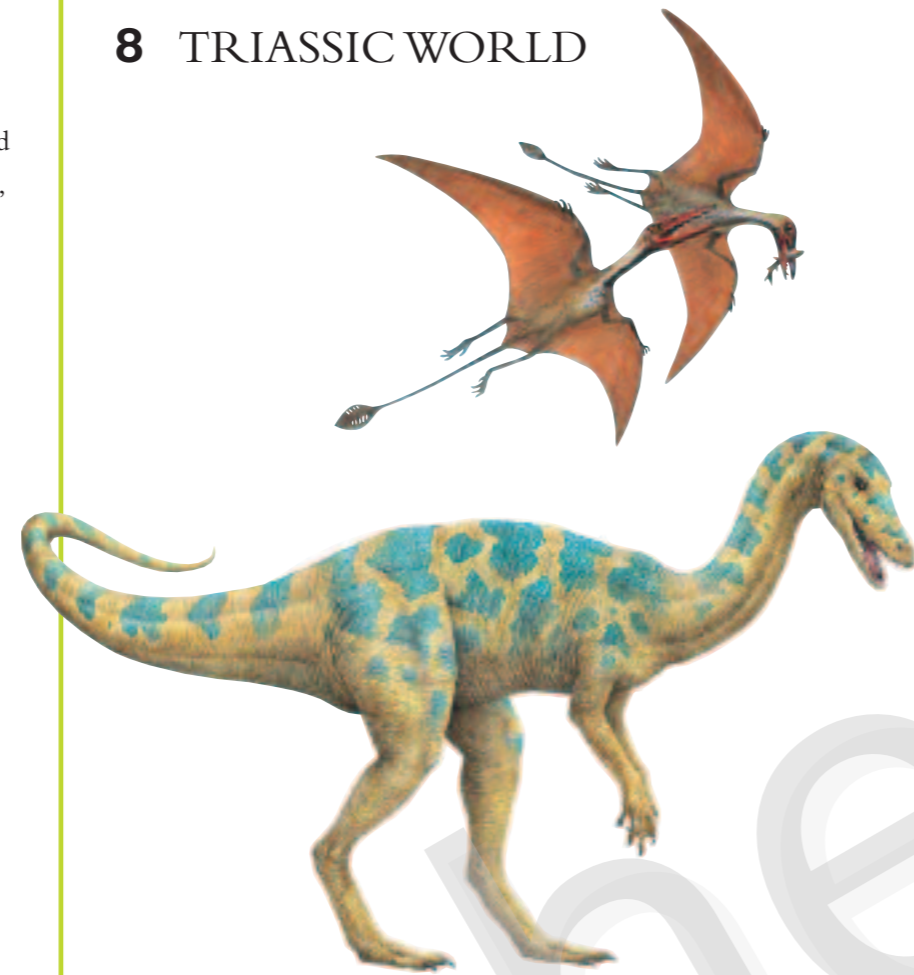
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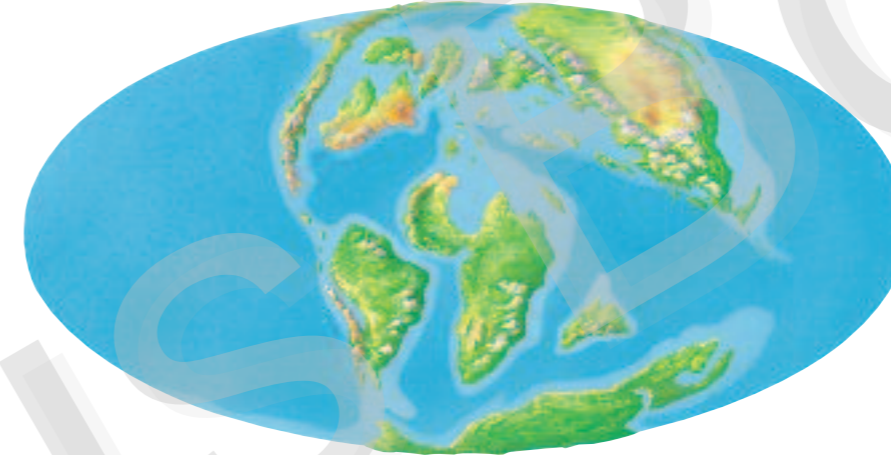
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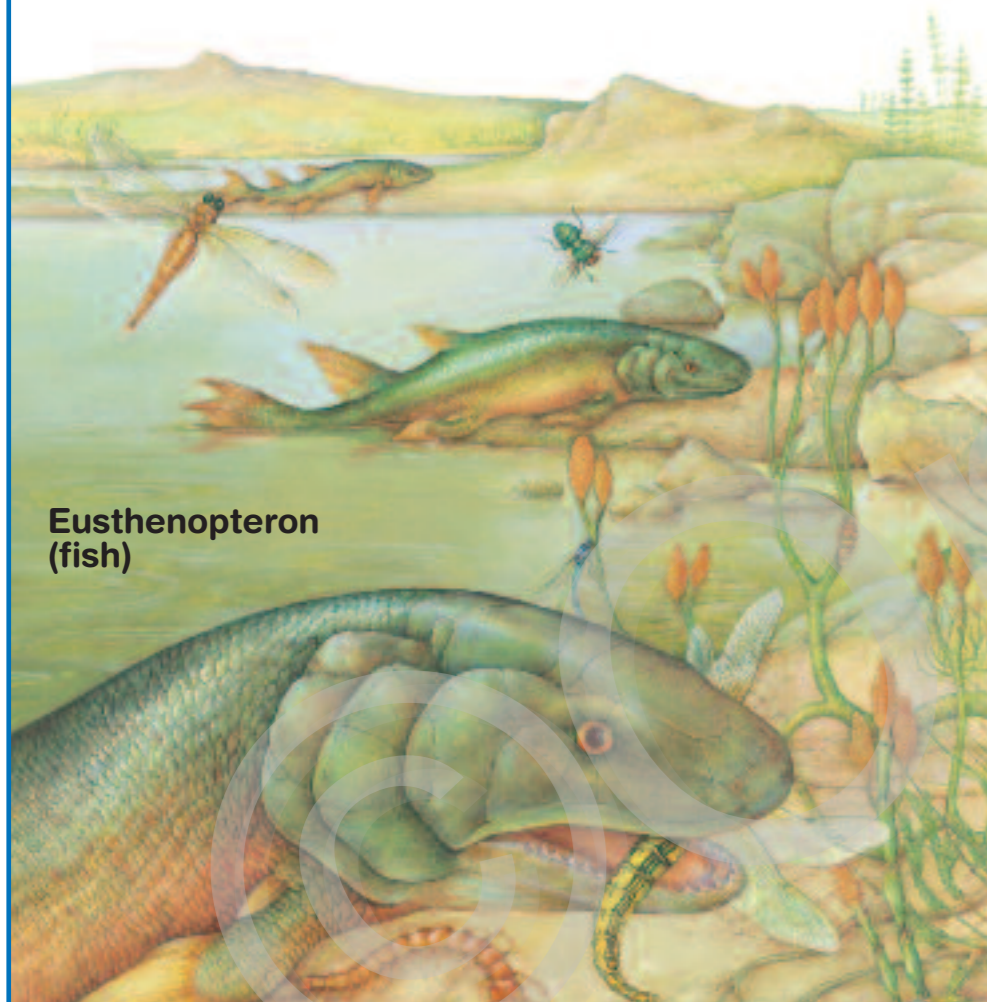
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# THE COMING OF THE DINOSAURS

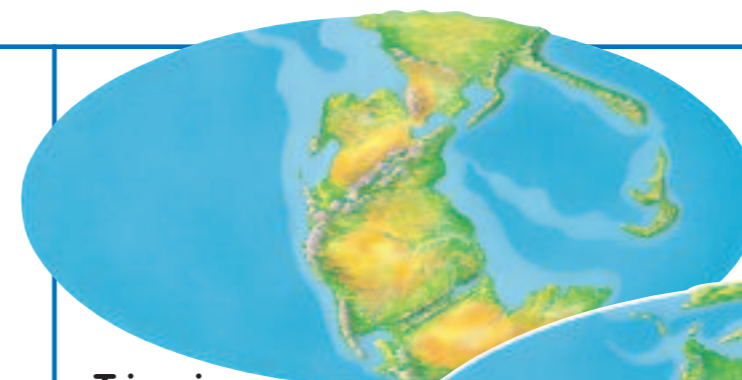
The dinosaurs were not the first animals on Earth. They first appeared about 230 million years ago, but life began more than 3000 million years ago. Different kinds of plants and animals have evolved and died out. This huge amount of time is divided into periods (right). The dinosaurs lived during three periods—Triassic, Jurassic and Cretaceous.

During all of this time, the Earth itself has changed too. Mountains have grown up and worn down. Seas and oceans flooded the land, then disappeared. Even the great land-masses, called continents, have moved—very slowly—around the globe.



**Eusthenopteron (fish)**

million years ago	QUATERNARY	First modern humans
1.8	TERTIARY	
65	CRETACEOUS	Dinosaurs extinct First flowering plants
144	JURASSIC	First birds
200	TRIASSIC	First mammals First dinosaurs
251	PERMIAN	
286	CARBONIFEROUS	First reptiles
360	DEVONIAN	First amphibians First insects
408	SILURIAN	
438	ORDOVICIAN	First land plants First fishes
505	CAMBRIAN	First shellfish
530	PRECAMBRIAN	
3500		Oldest fossils
4600		Formation of Earth



**Triassic**

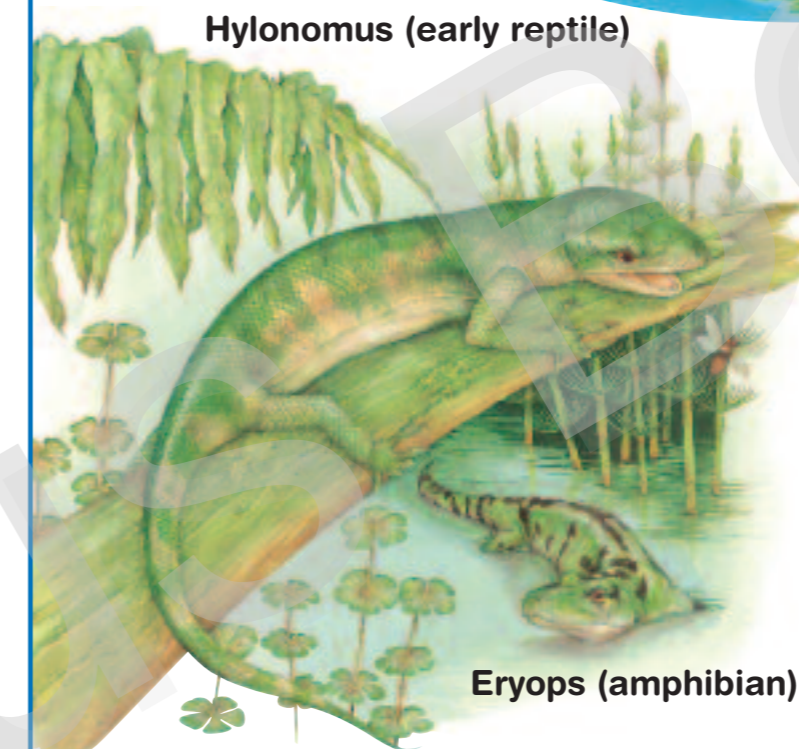


**Jurassic**



**Cretaceous**

These three maps show what the world looked like through the Age of Dinosaurs, and how it changed. At first, in the Triassic Period, all of the main continents were joined together as one vast mass of land, known as Pangaea. During the Jurassic Period, the continents began to move apart. This drift continued through the Cretaceous Period. Sometimes sea levels rose and flooded land, then they fell to leave it dry again. So the shapes of the continents changed too.



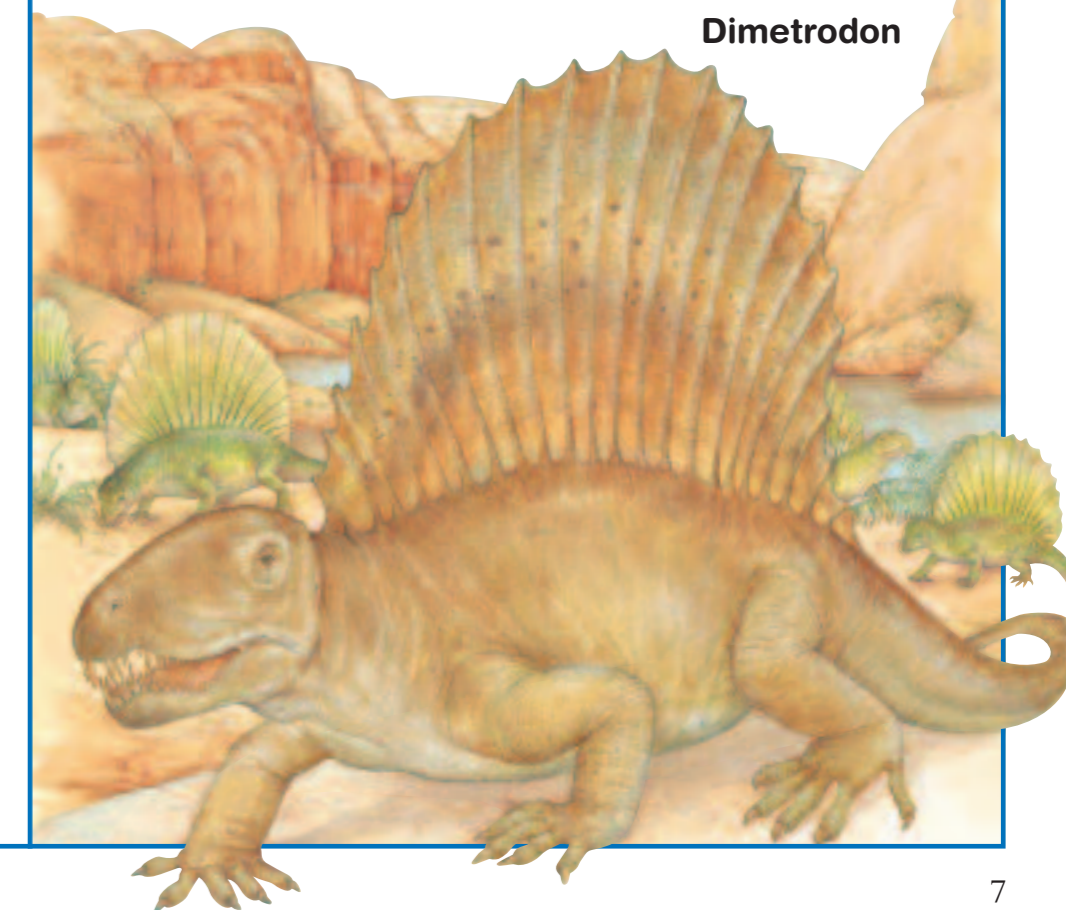
**Hylonomus (early reptile)**

**Eryops (amphibian)**

At first, there was life only in the ocean. The early plants and animals were small and simple, such as seaweeds and jellyfish. Fish appeared about 500 million years ago. Then a few plants around the water's edge managed to survive in the air, and spread onto the land. Small animals followed them, such as ancient types of millipedes and insects.

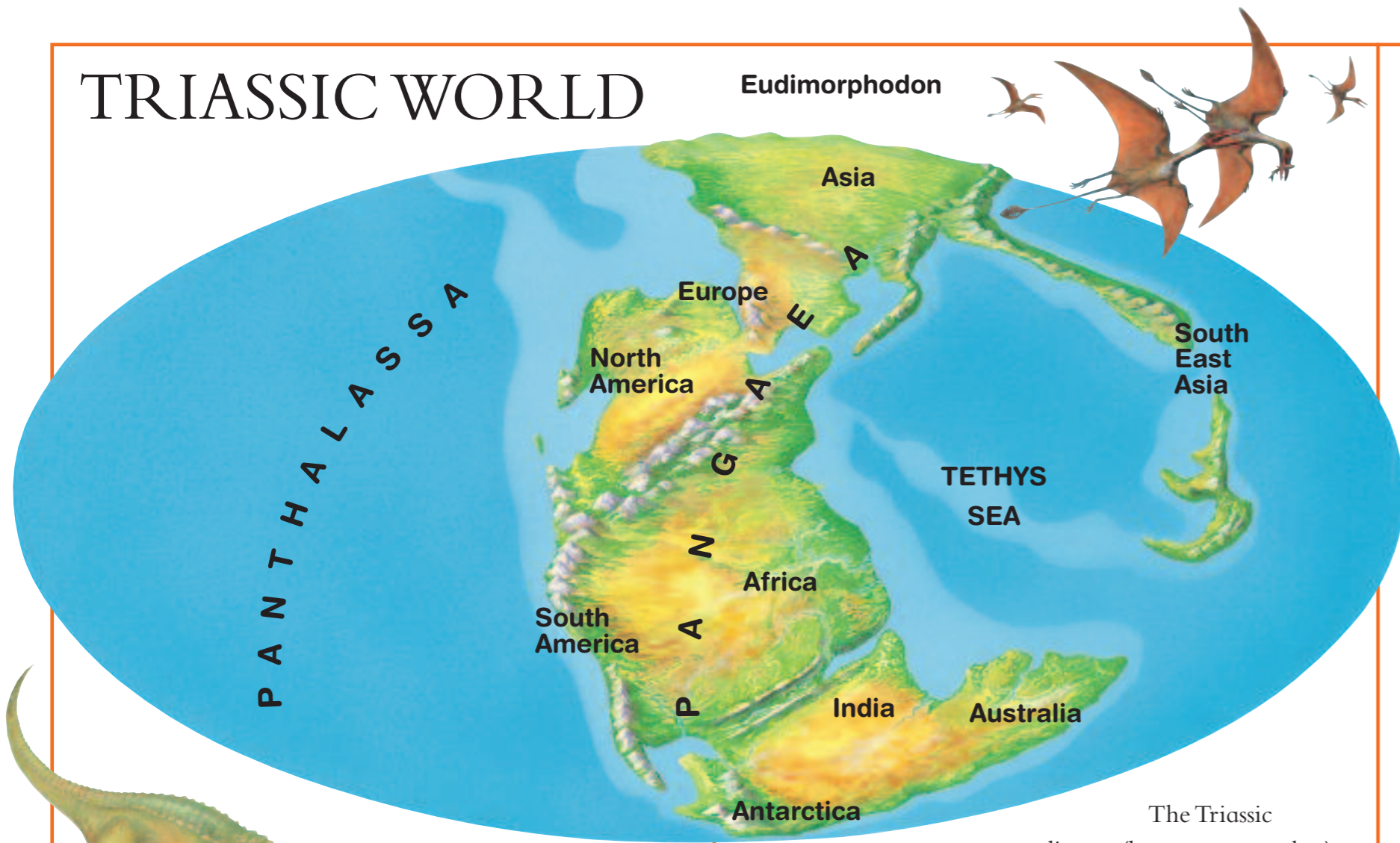
By 370 million years ago the first four-legged animals, amphibians, waddled on to the land. Their limbs had evolved from the strong fins of certain fish (opposite). But amphibians had to keep their skin moist, and go back to water to lay their eggs (as frogs and toads still do today). About 300 million years ago, another new group of creatures appeared. They had scaly skin and laid tough-shelled eggs. They could live on land all the time. They were the reptiles.

By the time of the Permian Period, just before the dinosaurs, reptiles had spread around the world. There were many shapes and sizes. *Dimetrodon* (die-MEET-row-don) was a fierce hunter 3 m long. It had a tall flap of skin on its back, held up by bony rods. It was a type of reptile called a pelycosaur.



**Dimetrodon**

# TRIASSIC WORLD

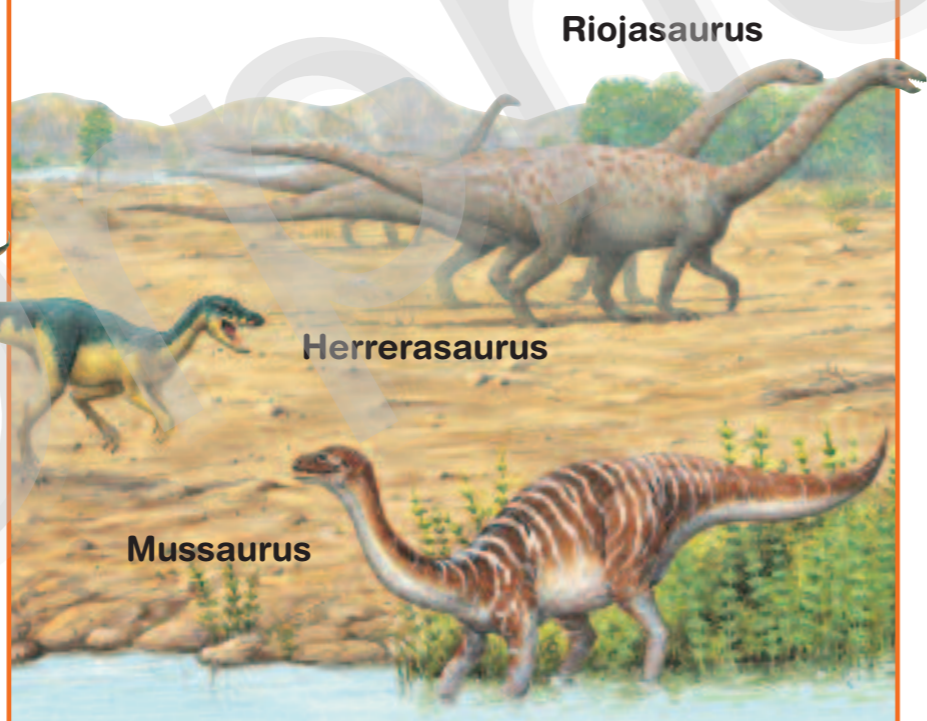


Euparkeria

**T**he Age of Dinosaurs began with the Triassic Period, 251–200 million years ago. At this stage all lands of Earth were joined together as the vast supercontinent of Pangaea. Around it there was a large ocean, called Panthalassa.

As the waters rose and fell, they changed the outlines of the coast. So the continents looked different to their shapes on our modern maps. India was far away from the south of Asia, where it lies today. In Triassic times, it was situated between Africa and Antarctica.

The Triassic climate (long-term weather) was warm and dry nearly everywhere. Many places were sandy or rocky, with tough plants. Into this world came the first dinosaurs. Perhaps they evolved from small reptiles like *Euparkeria* (YOU-park-EER-ee-ah). In South America almost 230 million years ago, the dinosaur *Herrerasaurus* (hair-AIR-ah-SORE-us) was a fast, sharp-toothed, 3-metre predator. *Riojasaurus* (REE-owe-jah-SORE-us) was a one-tonne plant-eater.



Riojasaurus

Herrerasaurus

Mussaurus

Dinosaurs lived in Europe in the Late Triassic Period, 220 million years ago. One of the largest was *Plateosaurus* (plat-EE-owe-SORE-us), measuring 8 m from nose to tail. *Plateosaurus* was a long-necked herbivore (plant-eater), peaceful unless attacked by the fearsome *Ornithosuchus* (or-NITH-owe-SOOK-us). This creature

was not a dinosaur, but from another prehistoric reptile group called the thecodonts (see page 4). *Saltopus*, just 60 cm long, was too tiny to worry *Plateosaurus*. But it was still a hungry hunter of insects and worms. Flying reptiles called pterosaurs, such as *Eudimorphodon* (opposite), first appeared during the Triassic Period.

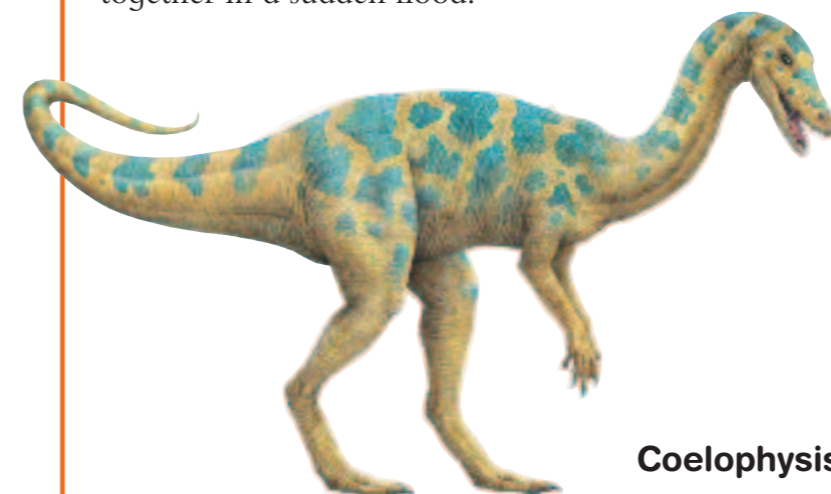


Plateosaurus

Ornithosuchus

Saltopus

North America was already busy with dinosaurs 225 million years ago. At 3 m long, *Coelophysis* (SEEL-owe-FIE-sis) would have stood waist-high to a person. It was very slim and a fast runner on its strong back legs. Fossils of hundreds of these dinosaurs were found at a place called Ghost Ranch, in New Mexico, USA. They were probably part of a large herd that died together in a sudden flood.



Coelophysis

## DID YOU KNOW?

In the past few years, dinosaur fossils have been found in Madagascar, a large island to the west of Africa. They are as old as the fossils of early dinosaurs from South America. It seems that even by 228 million years ago, dinosaurs were already taking over!



Madagascar

This map shows the continents and oceans of the world as they are positioned today.

TRIASSIC PERIOD