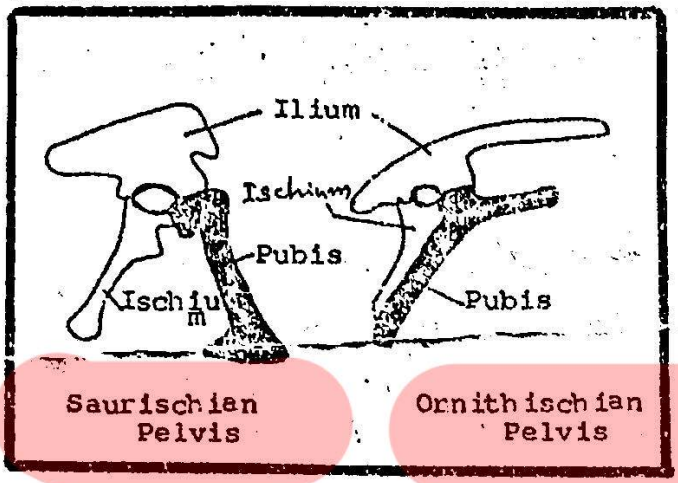
DINOSAURS

The word "dinosaur" was invented by Sir Richard Owen more than a century ago. Dinosaurs means "terrible lizards" (Gr. dino, terrible + saurus, lizard). The dinosaurs were the most spectacular amongst the extinct animals. They arose from thecodonts in the Triassic. They flourished well in Mesozoic era and became extinct at the close of Cretaceous. Their fossil remains have been found in Europe, Asia, Madagascar, South Africa, Australia and North and South America. The habits of dinosaurs were varied. Some were herbivorous and others carnivorous. Some were terrestrial, some amphibious and others aerial.

In reality the dinosaurs did not constitute a single group. They were divided into two great orders, the Saurischia (lizard pelvis) and the Ornithischia (bird pelvis). The differences in the pelvic girdle is that Saurischian pelvis has a forwardly directed pubis, but in the Ornithischian pelvis, the pubis occupied a position parallel to the ischium. Each of the two orders of dinosaurs may be divided into suborders that indicate the evolutionary divergence.



CLASSIFICATION OF DINOSAURS

Order Saurischia

Suborder Theropoda

The first known dinosaurs, carnivorous, bipedal mode of locomotion.
Period : Upper Triassic through Cretaceous
Eg. Coelophysis, Allosaurus & Tyrannosaurus

Suborder Sauropoda

Giant, semi-aquatic herbivorous saurischians, secondarily quadrupedal mode of locomotion. The largest of the dinosaurs.
Period : Jurassic and Cretaceous
Eg. Brontosaurus, Diplodocus & Brachiosaurus

Order Ornithischia

Suborder Ornithopoda

The most primitive ornithischians, large semi-aquatic herbivores, dominantly bipedal.
Period : Jurassic and Cretaceous
Eg. Camptosaurus, Iguanodon etc.

Suborder Stegosauria

Heavy, quadrupedal herbivores, hindlegs longer, heavier, plates, spikes, scutes on body & tail
Period : Jurassic through lower Cretaceous
Eg. Stegosaurus

Suborder Ankylosauria
Heavy, quadrupedal herbivores, similar to stegosaurs, very strongly armored with thick bony plates.
Period : Cretaceous
Eg. Ankylosaurus

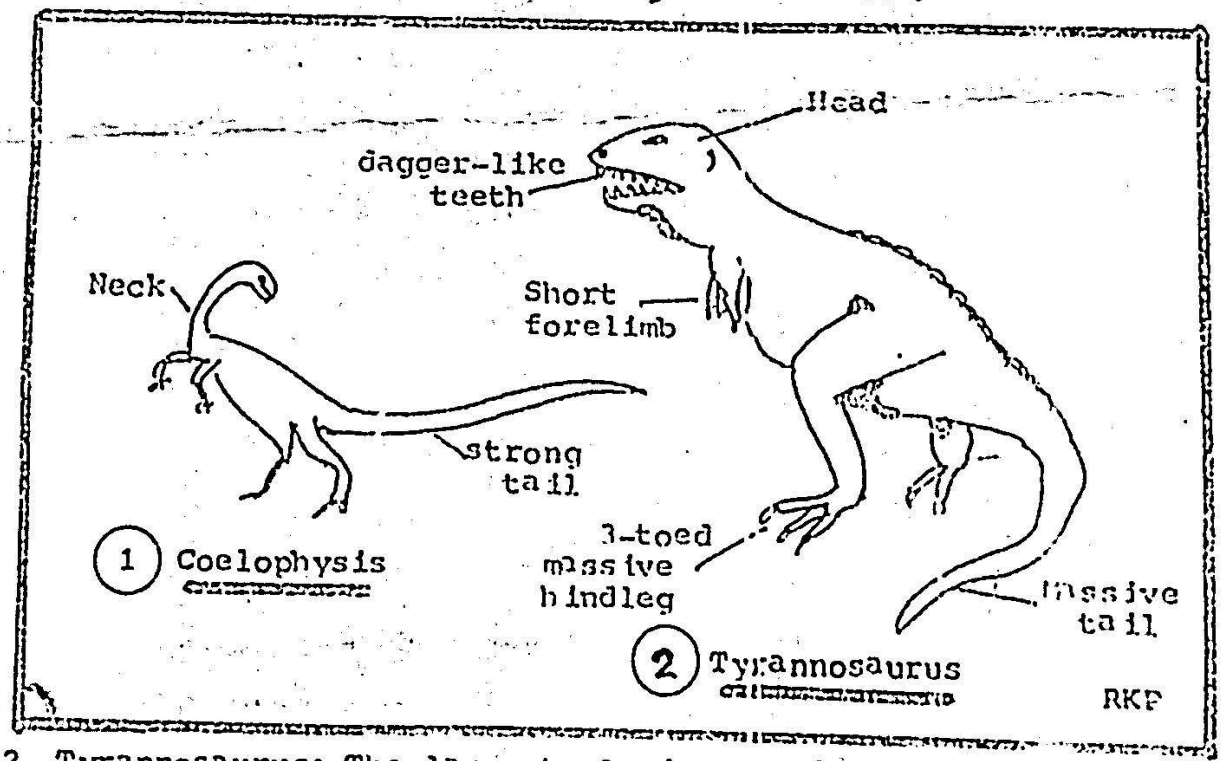
Suborder Ceratopsia

Quadripedal herbivores with subequal development of fore and hind limbs. Front of skull narrow and deep like a parrot's beak. Horns on nose, above eyes or in both locations
Period : Upper Cretaceous
Eg. Triceratops

SAURISCHIA

1. The Carnivorous Theropods

1. Coelophysis : It is a theropod dinosaur of late Triassic age. Small, hollow-boned lightly built dinosaur having a bipedal pose. The strong bird-like hind limbs supported the body at the hips. There was a strong tail to counterbalance the body in front of pelvis The neck was rather long and flexable.

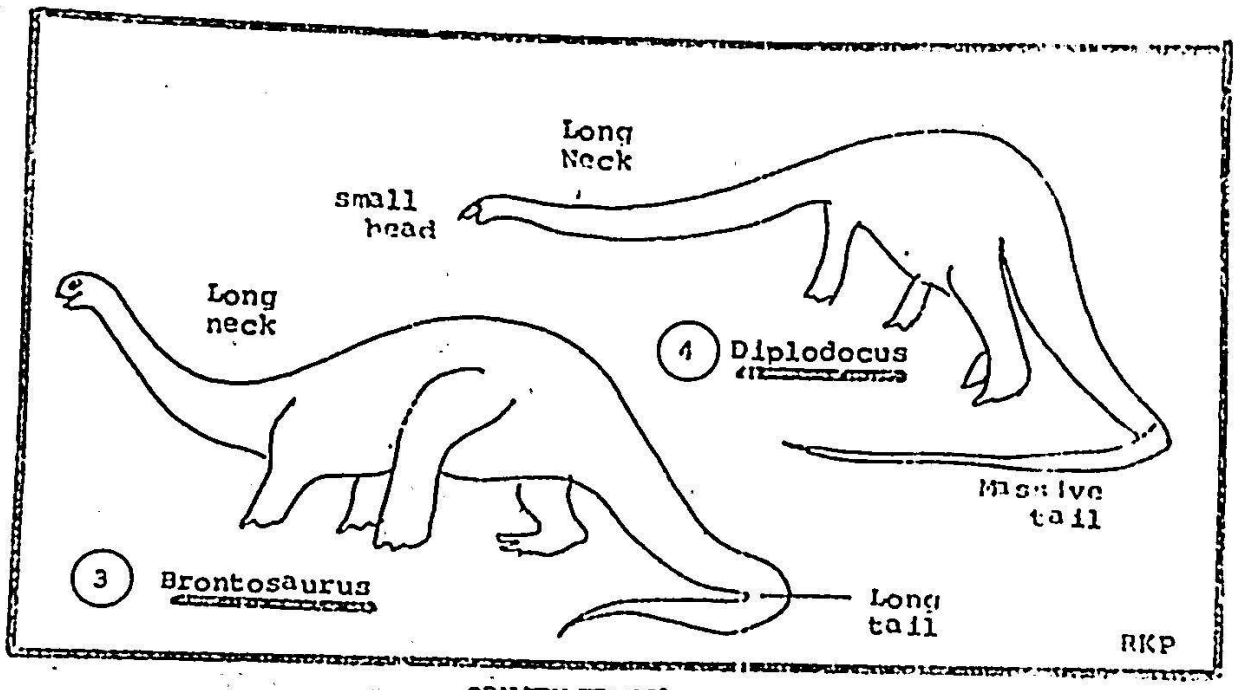


2. Tyrannosaurus: The largest carnivorous land animal we know. It was about 47 ft long and 19 ft tall, it stood on tremendous hind legs. The fore legs were tiny. Weight 8 to 10 tons.

The giant Sauropods

3. Brontosaurus : Brontosaurus was one of the heaviest and largest dinosaurs, reached a length of about 67 feet and weighed 30 tons. Much of the length is attributed to the long neck and tail. The small head contained a brain disproportionately small even for a reptile.

4. Diplodocus : Diplodocus was the longest dinosaur, attaining length of about eighty feet . These Jurassic forms lived in swamps where their body would be supported partly by the buoyancy of water. They had long necks and tails, small heads with exceedingly small brains and weak jaws. The teeth were surprisingly weak for so large an animal.

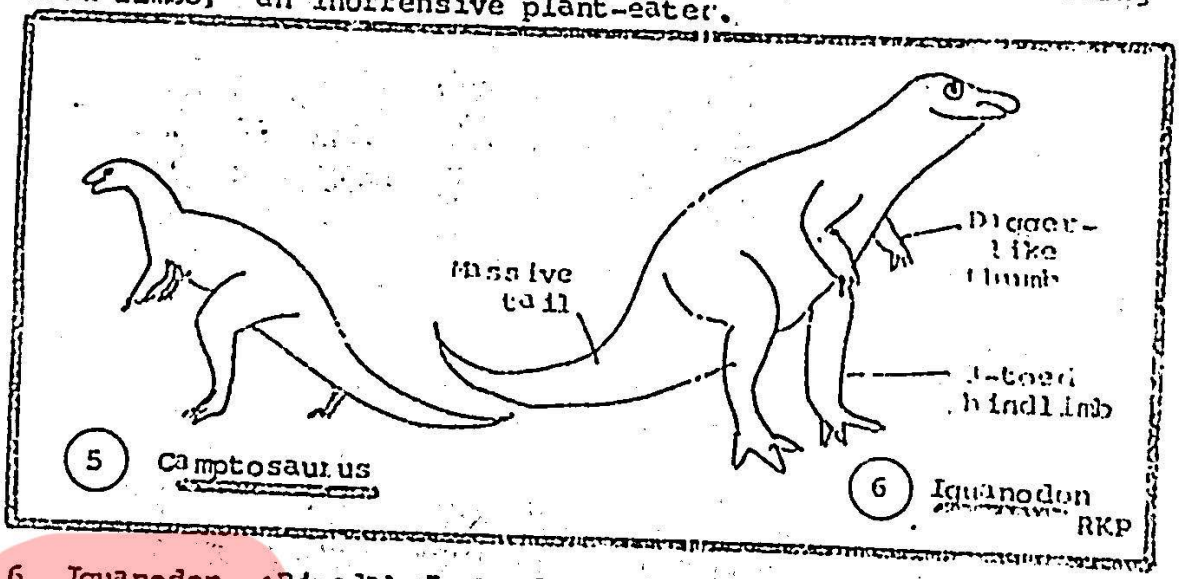


ORNITHISCHIA

The Ornithischia were more specialized than Saurischia. All were herbivorous. Their teeth were somewhat leaf-shaped, with serrated edges. Most of the Ornithischia lacked teeth in the front of the mouth.

1. The Ornithopods

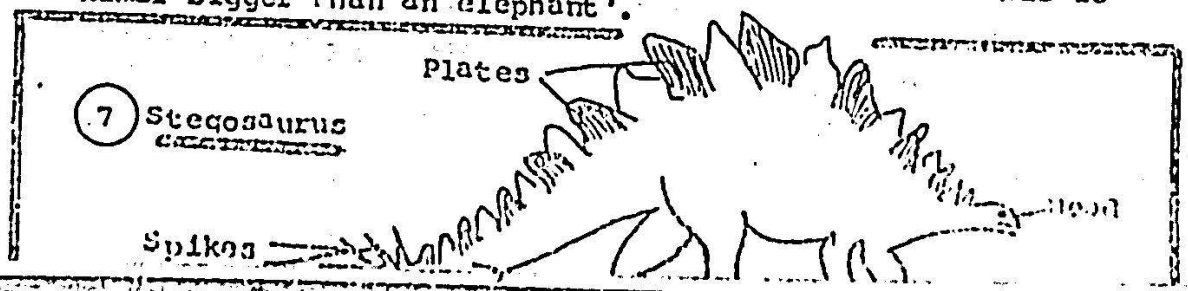
5. Camptosaurus ; The most primitive ornithischian dinosaur occurring in upper Jurassic. Small to medium-sized, sometimes no more six or seven feet in length, bipedal animal with strong hind limbs, an inoffensive plant-eater.



6. Iguanodon :Bipedal Iguanodon of lower Cretaceous, it was first dinosaur to be scientifically described, look like an enlarged Camptosaur. In this reptile the thumb was enlarged into a sharp spike that may have been used as a weapon for defence.

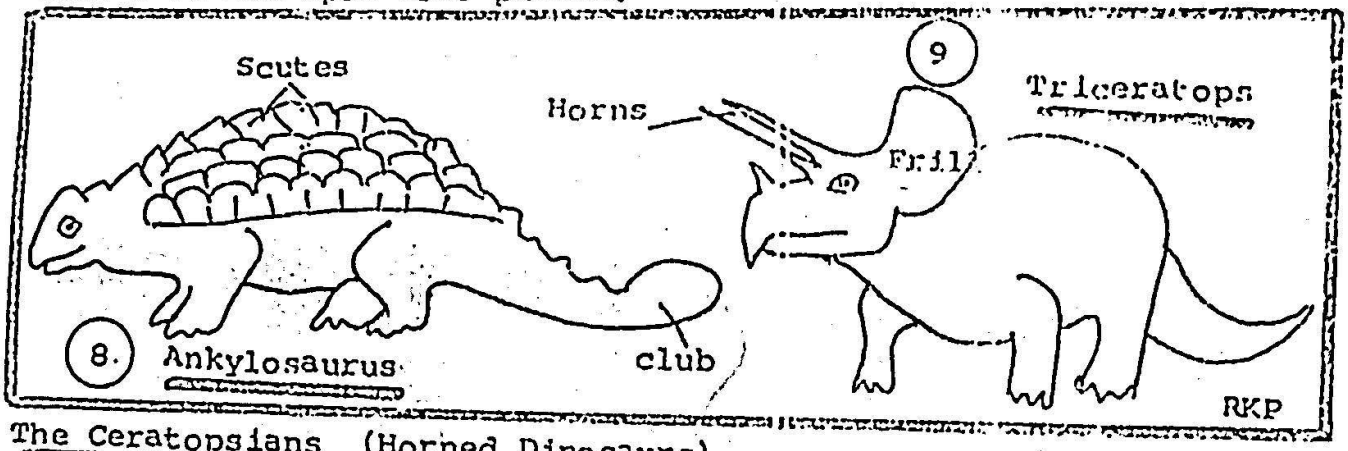
2. The Stegosaurs

7. Stegosaurus ; Upper Jurassic forms, measured about 25 ft and ♂ weighed 10 tons. Four-footed mode of locomotion, developed peculiar plates on the back and spikes on the tail. The skull was small housing a brain about the size of a walnut. This is an animal bigger than an elephant'.



3. The Ankylosaurs (Armored Dinosaurs)

8. Ankylosaurus : These were armored dinosaurs of Cretaceous age, showing specializations for defense that were imitated by some of the edentates among mammals. Ankylosaurus was a bulky, quadrupedal reptile, some twenty feet in length, not very high at the back and very broad. Its legs were heavy, the skull was very broad as compared with its length. The top of the head and the entire back were completely covered by continous armor of heavy polygonal, bony scutes. Along the sides of the body there were long bony spikes. The armored tail terminated in a great mass of bone that formed a club. The teeth were singularly small and weak, indicating that the ankylosaurs must have fed upon soft plants.



4. The Ceratopsians (Horned Dinosaurs)

9. Triceratops : The last of the dinosaurs to evolve appearing in late Cretaceous . Thy possessed two horns over eye and a horn on the nose. The beak was parrot-like and a great frill of bone projecting backward over the neck. This doubtless served to protect the neck. It was 20 feet long and stood 10 feet high.

CAUSES OF EXTINCTION OF THE DINOSAURS

For at least 140 million years the dinosaurs were "lords of all they surveyed". Then "suddenly" in the geological sense, they all became extinct. Not one dinosaur fossil has found in deposits after Mesozoic age.

Dinosaur extinction is one of the great unanswered questions of palaeontology. According to Colbert (1965) the final disappearance was preceded by fall in the number of herbivorous dinosaurs. There was a climatic change after Mesozoic, either (1) high temperature or (2) low temperature, to which dinosaurs could not adjust. Epidemics, the eating of dinosaur eggs by mammals, food poisoning, racial senescence, overspecialization, interspecific warfare or competition and harmful effects of radiation are among suggested reasons for dinosaur extinction. None of these has been accepted as being completely satisfactory. Probably a combinations of several factors was responsible for their extinction.