



PHILIP J. CURRIE
DINOSAUR MUSEUM

Archosaur April Absurdity: Creature Guide

What is a Dinosaur?

Dinosaurs are a lineage of reptiles that first evolved from the same common ancestor during the Late Triassic period, about 233 million years ago. Dinosaurs are a part of a larger reptile group called the archosaurs, which also includes animals such as crocodiles, pterosaurs, and their extinct relatives.

Dinosaurs are distinct from these other animals based on a unique combination of features in their bones and joints which they inherited from their single common ancestor. While these features are quite technical, we can think of all dinosaurs as generally being upright, active, land-dwelling reptiles. Aside from the skeletal features that unite all dinosaurs together, they are a very diverse group of animals that come in an amazing variety of sizes, shapes, and lifestyles. Some dinosaurs were small and fuzzy, others covered in bony armor and weaponry, while others were scaly giants rivalling even the largest whales in size.

Palaeontologists divide dinosaurs into two main groups based on the arrangement of their hip bones. All bony land animals have three bones in their hips: the ilium, the ischium, and the pubis. Dinosaurs that have forward-pointing pubis bones belong to the group called the Saurischia, or “lizard-hipped”, called that because lizards also have forward-pointing pubis bones. There are two major saurischian groups: the two-legged, mostly meat-eating theropods, and the long-necked plant-eating sauropodomorphs. Examples of theropods include predators like *T. rex* and *Velociraptor*, as well as many other big and small carnivores and strange, feathery plant-eaters. Today’s birds are a type of theropod as well. Sauropodomorphs include famous long-necks like *Brontosaurus* and *Brachiosaurus*.

Dinosaurs with backwards-facing pubis bones are called the Ornithischia, meaning “bird-hipped”. This name can be a little confusing to some folks, because even though birds have backwards-facing pubic bones, this is a trait they evolved from the lizard-hipped condition, as they are actually saurischian or “lizard-hipped” dinosaurs as we mentioned earlier. True ornithischian dinosaurs evolved their backwards-facing pubis bones independently. There are a few “bird-hipped” dinosaur groups you might be familiar with. Most if not all were plant-eaters, and had specially evolved beaks on the tips of their jaws. There was the small, early heterodontosaurs which had strange canine-like teeth. There was the thyreophora, the bony armored dinosaurs such as the stegosaurus and ankylosaurus. There was the ornithopods, which included the ‘duck-billed’ hadrosaurs and their iguanodont relatives. Lastly, there was the marginocephalia, which included the dome-headed pachycephalosaurs and horned ceratopsians such as *Triceratops*.

Dinosaurs were some of the most common and diverse animals on Earth for over 160 million years. Their remains have been found on every continent, with different species found at different times and places. While a terrible meteor impact drove most dinosaur groups to extinction around 66 million years ago, one group, the ancestors of today’s birds, survived. Nowadays, birds continue to flourish all over the Earth, meaning that dinosaurs are still alive and well today.

North America

Eotriceratops

Horned plant-eating dinosaur from Late Cretaceous Alberta. Very large- as big as a large elephant, 9 meters long. Three long brown horns, short nasal horn, and large frill adorn its head.

Albertosaurus

Large, carnivorous tyrannosaurid. Late Cretaceous Alberta. 8.6 meters long, weighed as much as a rhino. Relatively long hind limbs, likely quite fast. Powerful jaws, crushing serrated teeth.

Hesperosaurus

Horse-sized stegosaur, Late Jurassic Wyoming. 5 meters long. Rounded plates sheathed in horn along its back, four spikes at the end of its tail.

Corythosaurus

Common plant-eating hadrosaur from Late Cretaceous Alberta. 9 meters long, weighed about as much as a rhino. Had a rounded crest containing hollow resonating chambers on its head.

Utahraptor

Large dromaeosaur from Early Cretaceous Utah. Grizzly bear-sized, 9 meters long. Heavily-built, stout proportions, relatively slow speed.

Stegoceras

Dog-sized pachycephalosaur from Late Cretaceous Alberta. 2 meter long browsing herbivore. Bony domed head may have been used for fighting with members of its own kind.

Chirostenotes

Feathered, birdlike herbivore from Late Cretaceous Alberta. 2 meters long, size of a large dog. Had a toothless beak for feeding on plants. Hind limbs were elongate, possibly adapted for running on land and/or wading through shallow water.

Hesperornis

Large marine bird from Late Cretaceous Canada and USA. Wingless, swam through inland seaway with powerful hind limbs. Toothed beak for catching fish.

Eurasia

Tarbosaurus	Large carnivorous tyrannosaurid from Late Cretaceous Mongolia and China, 10 meters long or more, weighed as much as a small elephant. Close relative of Tyrannosaurus, similar build with large powerful body and skull, crushing jaws.
Therizinosaurus	Large, bulky, herbivorous theropd from Late Cretaceous Mongolia. 9.6 meters long, weighed as much as an elephant. Long neck, small head, tail, and hind legs. Body rotund, arms long and powerful with huge, scythe-like claws. May or may not have been feathered.
Olorotitan	Very large plant-eating hadrosaur from Late Cretaceous Russia. Possibly up to 12 meters long. Flare-shaped crest on its head.
Prenocephale	Dog-sized pachycephalosaur from Late Cretaceous Mongolia. 2.4 meter-long herbivore. Domed head well suited for head-butting.
Citipati	Medium-sized herbivorous theropod from Late Cretaceous Mongolia. 2.7 meters long, about as tall as an emu. Birdlike-feathered with a toothless beak.
Liaoningosaurus	Tortoise-sized armoured dinosaur from Early Cretaceous China. Bizarre species of ankylosaur that appears to have been semiaquatic, and possibly fed on fish.
Psittacosaurus	Beaver-sized basal ceratopsian from Early Cretaceous China, Mongolia, and possibly elsewhere. 1.8 meters long. Extensively well studied from well-preserved specimens. Had parrot-like beak, short 'cheek' horns, and dappled brown colouration. Unusual keratinous bristles present on top side of tail.
Confucisornis	Abundant pigeon-sized early 'bird' from Early Cretaceous China. One of the first proto-birds with a toothless beak. Wings still bore claws. Preserved feather traces show elongate primary wing feathers, some specimens have paired, ribbon-like tail feathers.

South America

Patagotitan	Giant herbivorous long-necked dinosaur. 50-70 tons, 30-40 meters long. Early Cretaceous, Argentina. Within the top 10 largest dinosaurs known to science.
Mapusaurus	Large carnivore from Late Cretaceous Argentina. 12.6 meters long, weighed about the same as an elephant. Big triangular head, slicing teeth. May have hunted in groups, based on fossil evidence.
Carnotaurus	Large carnivore from Late Cretaceous Argentina. 8 meters long, weighed as much as a rhino. Deep, squat head shape with horns over each eye. Front limbs were extremely reduced, hind limbs elongate. Likely fast, speed powered by massive tail muscles.
Amargasaurus	Herbivorous sauropod dinosaur, Early Cretaceous, Argentina. 12 meters long, weighed as much as a rhino. Long, paired neural spines on its vertebrae, formed 'spikes' along the back of the neck.
Irritator	8 meter long carnivore from Early Cretaceous Brazil. A member of the spinosaur family, likely had a long, crocodile-like snout and conical teeth for catching fish.
Lessemsaurus	Late Triassic basal long-necked dinosaur from Argentina. 10 meters long, weighed as much as a large rhino.
Austroraptor	Large dromaeosaur from Late Cretaceous Argentina. 6 meters long, weighed as much as a lion. Long legs, probably fast runner. Long, narrow snout may have been adapted for catching fish.
Pisanosaurus	Early herbivorous dinosauriform from Late Triassic Argentina. 1 meter long, about the size of a turkey. Categorization within dinosaur family tree still debated.

Africa

Giraffatitan

Giant long-necked dinosaur from Late Jurassic Tanzania. 26 meters long, weighed about as much as six elephants. Outwardly similar to American dinosaur Brachiosaurus, with long, upright neck and front limbs.

Carcharodontosaurus

Large carnivore from Early Cretaceous North Africa. 12 meters long, weighed as much as an elephant. Big triangular with sharp, serrated teeth.

Suchomimus

Large carnivore/ piscivore from Early Cretaceous Niger. 8 meters long, rhino-sized. Like all other spinosaurs, had a crocodile-like snout and conical teeth.

Majungasaurus

Large carnivore from Late Cretaceous Madagascar. 9 meters long. Tiny arms and long legs typical of abelisaurids, Thickened, rugose skull roof with a small bony 'spike'.

Kentrosaurus

Medium-large herbivore from Late Jurassic Tanzania. 5 meters long, weighed as much as a horse. A modestly-sized stegosaur featuring an assortment of bony plates and large spikes along its back and shoulders.

Ouranosaurus

Large ornithopod herbivore from Early Cretaceous Niger. 6 meters long, rhino-sized. Elongate spines on backbones formed a dorsal sail.

Elaphrosaurus

Medium sized theropod from the Late Jurassic of Tanzania. 6.2 meters long, weighed as much as a lion. Long, low-built dinosaur in the noasaurid family. Skull is unknown, but may have been an omnivore or herbivore based related species with a toothless beak called Limusaurus.

Heterodontosaurus

Small herbivore (possibly omnivore) from Early Jurassic South Africa. Around 1 meter long, weighed as much as a small turkey. Small beak at the front of the jaws with large canine-like teeth in front of smaller chewing teeth at the back of the jaws. May have been covered with keratinous filaments or quills.