



Jack Tite

DINOSAUR DYNASTY

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DISCOVER THE RISE OF THE RULING REPTILES

COVER
NOT FINAL

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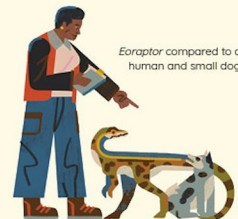


HUMBLE BEGINNINGS

The earliest dinosaurs arrived around 245 million years ago, in the Middle Triassic. Instead of toppling the ruling archosaurs, they lived alongside them, probably falling prey to the larger predators of the time. We know of a few early dinosaur species that the later giants evolved from.



This is the *Eoraptor*, discovered in Argentina, South America. It most likely used its sharp leaf-shaped front teeth and curved, saw-like back teeth to eat plants, small lizards and insects. The *Eoraptor* stood on two legs about the size of a small dog. It was built for speed, with a long neck, skinny frame, powerful back legs, and five fingered hands. Only three of these fingers had claws, the other two were basically useless. Dinosaur claws were made from a type of keratin, the same material in our hair, nails and Rhinoceros' horns.



Eoraptor compared to a human and small dog.

Brain size of a T-Rex



Dinosaurs had small brains compared to their body size. Scientists believe they behaved like today's crocodiles and lizards.

We don't know what the *Eoraptor*'s skin looked like, but it was probably scaly like many other dinosaurs. Later dinosaurs evolved bony armour plates called osteoderms, dangerous spiked spines and even funky feathers.



Eoraptor (*E. lunasis*)

Like most lizards, dinosaurs laid eggs to reproduce. The eggs varied in shell colour, size and thickness depending on the dinosaur. Some laid 1 egg whilst others popped out a whopping 40 at a time.



The hips don't lie

Dinosaurs branched out and evolved rapidly from early species like the *Eoraptor*. Later dinosaurs came in all shapes and sizes, with all kinds of diet, teeth, feet, defence mechanisms and an arsenal of weapons. They are divided into two groups based on their pelvic bones, which differed from one another. Saurischians included four-legged, long-necked dinosaurs and deadly carnivores such as the *T. Rex*. The Ornithischians included the spiky *Stegosaurus* and *Triceratops*.

Eoraptor diet



Eoraptors had hollow bones, making them incredibly light yet strong, a trait that many dinosaurs benefited from. With legs beneath their bodies, dinosaurs could grow taller and move quicker than today's reptiles, who have shorter legs pointing out sideways.



APEX

When plant eaters grow large and learn new tricks, so do predators. The Jurassic saw the rise of terrifying meat eaters. They stood on two powerful legs with a long tail for balance and hefty jaws lined with deadly teeth.

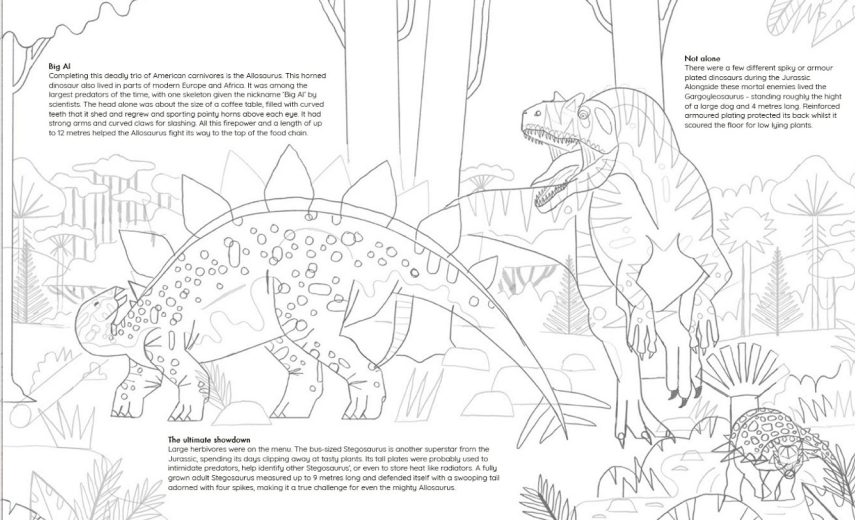


A deadly double whammy

The truck-sized, 10 metre long Tarbosaurus hunted across what is now North America and parts of Europe. A thick body, sharp teeth and huge claws helped it take down large herbivores 150 million years ago. About half its size but much more pointy, the Ceratosaurus prowled the same hunting grounds. It bore a horn above each eye and its nose with bony ridges along its back, attacking prey with long fangs, sharp claws and strong arms.

Big Al

Completing this deadly trio of American carnivores is the Allosaurus. This horned dinosaur also lived in parts of modern Europe and Africa. It was among the largest predators of the time, with one skeleton given the nickname 'Big Al' by scientists. The head alone was about the size of a coffee table, filled with curved teeth that it shed and regrew and sporting pointy horns above each eye. It had strong arms and curved claws for slashing. All this firepower and a length of up to 12 metres helped the Allosaurus fight its way to the top of the food chain.



The ultimate showdown

Large herbivores were on the menu. The bus-sized Stegosaurus is another superstar from the Jurassic, spending its days clipping away at tasty plants. Its tall plates were probably used to intimidate predators, help identify other Stegosaurus', or even to store heat like radiators. A fully grown adult Stegosaurus measured up to 9 metres long and defended itself with a swooping tail adorned with four spikes, making it a true challenge for even the mighty Allosaurus.

Not alone

There were a few different spiky or armour plated dinosaurs during the Jurassic. Alongside these mortal enemies lived the Gargoylesaurus - standing roughly the height of a large dog and 4 metres long. Reinforced armoured plating protected its back whilst it scoured the floor for low lying plants.



Two sides of the same coin

On the other side of the world, in what is now China, a very similar story took place during the Jurassic. The Yangchuanosaurus was a similar size to an Allosaurus, and spent its days hunting enormous sauropods and relatives of the Stegosaurus. These had slightly different armoured plates and builds, such as the smaller Chungkingosaurus and its cow-sized cousin, the Tuojiangosaurus.

