



APRIL ARCHOSAUR ABSURDITY 2024



CREATURE GUIDE



#AAA2024

Welcome to the AAA 2024 Creature Guide!

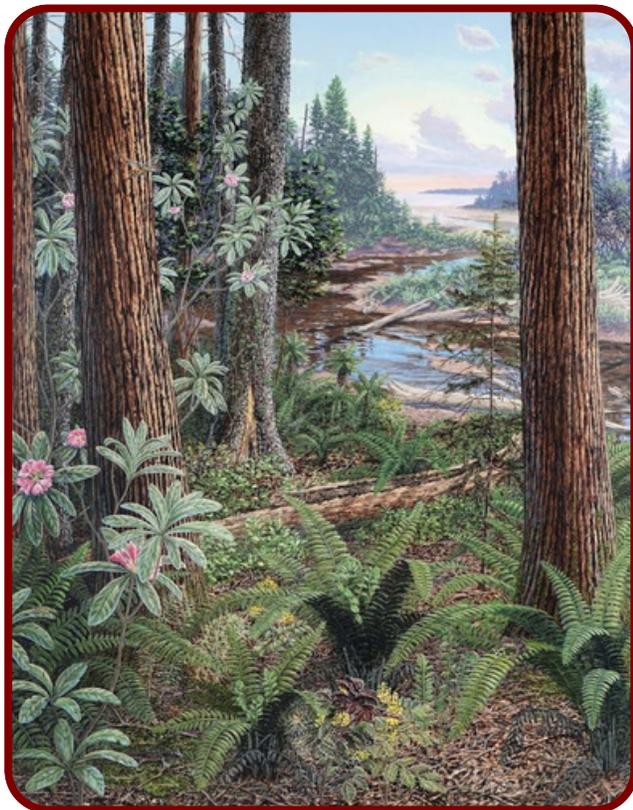
Specially curated by our palaeontologist, Dr. Bamforth, this guide will provide you with everything you need to know about the eight archosaur competitors before the battles start. Look out for **underlined red words**; these terms are defined in the glossary at the end.

For example...

Archosaur:

A large group of reptiles that include dinosaurs, pterosaurs, crocodilians, and birds.

THE BATTLEGROUND: LATE CRETACEOUS GRANDE PRAIRIE



Painting by Marlon Jansen

All of our AAA 2024 will be set in Late Cretaceous Grande Prairie. During the Late Cretaceous, the Grande Prairie area looked very different than today. To the west, there was an inland seaway called the Western Interior Sea. This sea, which stretched from the Arctic Circle to the Gulf of Mexico, cut North America in half. At the time, there was no connection between the western North American microcontinent, known as Laramidia, from the eastern one, known as Appalachia.

The environment around Grande Prairie would have been a coastal lowland, not far from the shore of the Western Interior Sea. In the Late Cretaceous, the world was in a 'Greenhouse Period', meaning that global temperatures were much warmer. The climate of the Grande Prairie area would have been warm-temperate,

and snow and ice would have been rare. However, as Grande Prairie was even further north than it is today, the winters would still have been very dark, with long nights and short days.

The land would have been heavily forested, with the forest canopy made up of giant redwood trees and swamp cypresses, and the understorey being a riot of flowering plants, ferns, mosses, Ginkgoes, and cycads. There would have been no grass, as grass hadn't evolved yet in North America. Most of the flowering trees and shrubs would have been deciduous (lost their leaves in the fall) because of the dark winter months.

A Late Cretaceous scene around Grande Prairie might have looked like a cross between the Florida Everglades, the Mississippi Delta, and the giant redwood forests of California, all set at a northern latitude. It is an environment that has no modern equivalent.

COMPETITOR #1



by KT Lindblad

Competitor:

Tyrannosaurus rex

Home Range:

Canada and USA

Home and Geologic Time Period:

Late **Cretaceous** (73 - 66 Ma)

Home Geologic Formations:

Frenchman Formation (Saskatchewan)

Willow Creek Formation (Alberta)

Hell Creek Formation (Montana)

Type of Archosaur:

Dinosaur (Tyrannosaurid)

What's in a Name?

Name means 'Tyrant lizard king'

Size:

Up to 13 m long, weighing up to 8 tons

Diet:

Carnivore

CLAIM TO FAME!

The largest of all tyrannosaurs, *T. rex* is considered to be the largest land predator that ever lived. It is also the most famous dinosaur of all time.

DID YOU KNOW?

- *T. rex* is the provincial fossil emblem of Saskatchewan, in recognition of the fact that the world's largest *T. rex* was collected near Eastend, SK in 1991.
- Palaeontologists think *T. rex* may have been a pursuit predator as a juvenile and an ambush predator as an adult.
- Due to its immense size as an adult, *T. rex* likely could not have run very fast. Rather, it was adapted for walking long distances in search of territory, mates, prey, and food to scavenge.

COMPETITOR #2



by Jessy Dion

Competitor:

Concavenator

Home Range:

Spain

Home and Geologic Time Period:

Early Cretaceous (130 Ma)

Home Geologic Formations:

La Huérguina Formation

Type of Archosaur:

Dinosaur (Carcharodontosaurid)

What's in a Name?

Name means 'Cuenca hunter with a hump'

Size:

Up to 5 m long

Diet:

Carnivore

CLAIM TO FAME!

Concavenator has a unique double 'hump' on the back of its hips. The **neural spines** of the vertebrae in that region of the spinal cord are unusually tall.

DID YOU KNOW?

- Palaeontologists are not sure what the *Concavenator*'s hump was for. Some possible suggestions have been that it is a **display feature** or as a **thermoregulatory structure** used for cooling. Only one specimen of *Concavenator* has ever been found.
- Concavenator* had knobs along its forearms, which some palaeontologist believed may have anchored quill-like feathers.

COMPETITOR #3



by Jessy Dion

Competitor:

Jakapil

Home Range:

Argentina

Home and Geologic Time Period:

Early Cretaceous (97-94 Ma)

Home Geologic Formations:

Candeleros Formation

Type of Archosaur:

Dinosaur (Thyreophoran?)

What's in a Name?

Name means 'shield bearer' in Puelchean

Size:

Up to 1 m long

Diet:

Herbivore

CLAIM TO FAME!

Jakapil was a small, herbivorous, bipedal dinosaur covered with bony scutes (plates). It could have been an early relative of either the armored dinosaurs or the horned dinosaurs; palaeontologists aren't sure.

DID YOU KNOW?

- *Jakapil* likely lived in the Kokorkom Desert, a Late Cretaceous desert that covered much of western South America.
- *Jakapil* is weird enough that palaeontologists can't decide what other group of herbivorous dinosaurs it is related to. Some suggest it could belong to a hitherto unknown group of dinosaurs.

COMPETITOR #4



by Jessy Dion

Competitor:

Tarchia

Home Range:

Mongolia

Home and Geologic Time Period:

Late Cretaceous

Home Geologic Formations:

Barun Goyot Formation

Type of Archosaur:

Dinosaur (Ankylosaurid)

What's in a Name?

Name means 'brainy one'

Size:

Up to 7m long, weighed up to 5 tons

Diet:

Herbivore

CLAIM TO FAME!

This **ankylosaur** from the Gobi Desert in Mongolia had an impressive tail club, extensive body armor made up of bony plates, and a broad snout.

DID YOU KNOW?

- *Tarchia* was likely preyed on by an Asian version of *T. rex* called *Tarbosaurus*.
- *Tarchia* was adapted to living in a desert environment.
- Ankylosaurs were common in Mongolia but by the time *Tarchia* appeared, they were disappearing. *Tarchia* appears to be the last of the Asian ankylosaurs.

COMPETITOR #5



by KT Lindblad

Competitor:

Kelenken

Home Range:

Patagonia

Home and Geologic Time Period:

Miocene (15 Mya)

Home Geologic Formations:

Collon Cura Formation

Type of Archosaur:

Bird (**Phorusrhacid**)

What's in a Name?

Named after a spirit in Patagonian mythology

Size:

Up to 3m tall, weighed up to 250 lbs

Diet:

Carnivore, scavenger

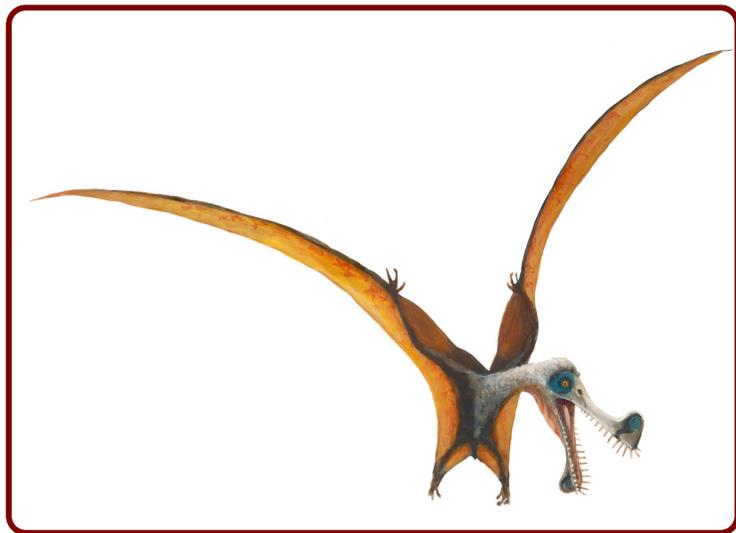
CLAIM TO FAME!

This huge carnivorous bird from Patagonia is among the largest known 'terror birds' – giant flightless birds that temporarily filled the niche of **theropod** dinosaurs after the dinosaur mass extinction.

DID YOU KNOW?

- The long slender legs of *Kelenken* would have made it a fast running, though not as fast as an ostrich.
- The razor-sharp beak of *Kelenken* made it a formidable predator. It may have preyed upon medium-sized mammals, including armored armadillos.
- *Kelenken* would have lived in open forests and brushlands, an environment that was ideal for a cursorial (fast running) animal.

COMPETITOR #6



by Jessy Dion

Competitor:

Ornithocheirus

Home Range:

United Kingdom, possibly Morocco

Home and Geologic Time Period:

Early Cretaceous (110 Ma)

Home Geologic Formations:

Cambridge Greensand Formation (UK)

Type of Archosaur:

Pterosaur

What's in a Name?

Name means "bird hand"

Size:

Wingspan up to 5 m wide

Diet:

Piscivorous (ate fish)

CLAIM TO FAME!

This medium-sized pterosaur was one of the very first **pterosaurs** to ever be found and described.

DID YOU KNOW?

- Some palaeontologists believe that *Ornithocheirus* might have been **sexually dimorphic**, where the males have a small crest at the tip of its beak and the females lack one.
- Pterosaurs like *Ornithocheirus* were not dinosaurs. Though they lived at the same time as dinosaurs, they belonged to a different group of reptiles.
- The first fossils of *Ornithocheirus* were discovered and described in the 1800s, before dinosaurs were even discovered in Alberta.

COMPETITOR #7



by KT Lindblad

Competitor:

Anchiceratops

Home Range:

Alberta, Wyoming

Home and Geologic Time Period:

Late Cretaceous (72-71 Ma)

Home Geologic Formations:

Horseshoe Canyon Formation (Alberta) Almond Formation (Wyoming)

Type of Archosaur:

Dinosaur ([ceratopsian](#))

What's in a Name?

Name means 'near horned-face'

Size:

Up to 4.5 m long

Diet:

Herbivore

CLAIM TO FAME!

This medium-sized horned dinosaur was first found in southern Alberta in 1912. It has three facial horns and a distinctive frill, with two forward facing hornlets at the midline.

DID YOU KNOW?

- More than a dozen skulls of *Anchiceratops* have been found in southern Alberta (which is a lot for any dinosaur!). Hundreds of other fossils have been found in Alberta and Wyoming.
- The name *Anchiceratops* ('near horned-face') doesn't have to do with the dinosaur's horns. The palaeontologist who described *Anchiceratops* thought it looked similar to a dinosaur then known as '*Ceratops*', later renamed *Triceratops*. 'Near Ceratops' means the dinosaur 'looks like *Triceratops*.'

COMPETITOR #8

Competitor:

Borealosuchus

Home Range:

Colorado, Montana, North Dakota, South Dakota, Wyoming, Alberta, and Saskatchewan

Home and Geologic Time Period:

Late Cretaceous to **Eocene** (70 – 47 Ma)

Home Geologic Formations:

Frenchman and Ravenscrag formations
(Saskatchewan)

Scollard Formation (Alberta)

Type of Archosaur:

Crocodylian

What's in a Name?

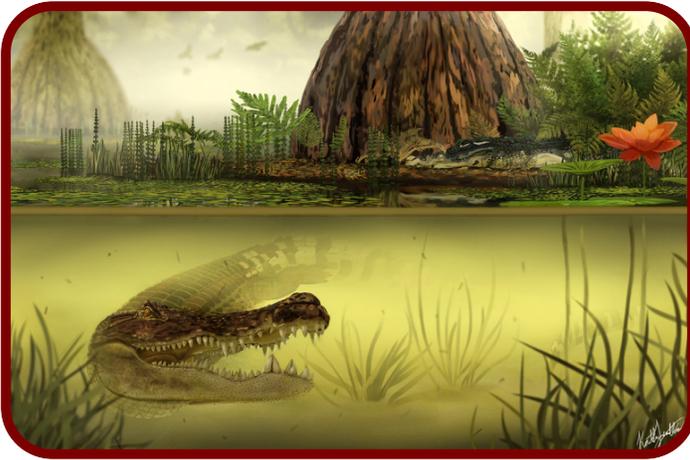
Name means "northern crocodile"

Size:

Up to 3-4.5 m long

Diet:

Carnivore



by KT Lindblad

CLAIM TO FAME!

This medium-sized, geographically widespread crocodylian survived the dinosaur mass extinction almost unscathed.

DID YOU KNOW?

- There are six species of *Borealosuchus*. The most recent species was described in 2012 and named after a turnpike in New Jersey.
- *Borealosuchus* lived in similar environments to crocodiles and alligators today. It likely went extinct when the global climate began cooling around 38 million years ago and its northern environment became too cold to sustain large reptiles.

GLOSSARY

Ankylosaur: An armored dinosaur, such as Ankylosaurus.

Archosaur: A large phylogenetic (see '**phylogeny**' below) group of reptiles that includes crocodiles, dinosaurs, pterosaurs (see '**pterosaur**' below), and birds.

Ceratopsian Dinosaur: A horned dinosaurs, such as Triceratops

Cretaceous: A geologic period of time during the Mesozoic ('Age of the Dinosaurs'), starting 145 million years ago and ended 66 million years ago with the dinosaur mass extinction.

Crocodylian: The group of reptiles that includes crocodiles, alligators, and their allies (including extinct forms).

Display Feature: A part of the body that is designed for attracting mates or intimidating competitors e.g. a peacock's tail.

Eocene: A geologic period in the Cenozoic ("Age of Mammals") from 56 – 34 million years ago.

(Geologic) Formation: A package of rocks representing a continuous period of geologic time.

Neural spine (of the vertebra): The thin, body spine that extends upwards from the body of a vertebra in most animals. It is generally used for muscle attachment.

Phorusrhacid Birds: Also known as 'Terror Birds'. This group of large, flightless, predatory birds lived for 20 million years after the extinction of the dinosaurs, possibly filling in niches left by the extinction of carnivorous dinosaurs.

Phylogeny/Phylogenetic: The relationships between different groups of animals based on common ancestry and shared traits. E.g.) Humans and chimpanzees are in the same phylogenetic group called Primates.

Pterosaurs: Flying reptiles that lived during the Mesozoic ('Age of Dinosaurs'). The term 'flying dinosaurs' is a misnomer - while pterosaurs are reptiles, they are not dinosaurs.

Sexual Dimorphic/Dimorphism: The distinctive differences in appearance between male and female animals within a species.

Thermoregulatory Structure: A body part that is specifically designed to help regulate body temperature. E.g. an African elephant's large ears

Theropod Dinosaur: A bipedal, carnivorous dinosaur, such as T. rex or Velociraptor.

Thyreophoran Dinosaurs: The large phylogenetic (see 'phylogeny' above) group of armoured dinosaurs that includes ankylosaurs (see 'anklyosaur' above) and stegosaurus (e.g. Stegosaurus)