



PERMIAN MONSTERS

Life Before the Dinosaurs

EARLY PERMIAN LANDSCAPE

by Julius Csotonyi



Introducing the bizarre creatures of the Permian

Traveling exhibition combining art and current science with amazing fossils and life-like sculptures from a relatively unknown time in Earth's history.

The Permian Period ended 252 million years ago when global warming caused the extinction of 80% of all species on earth!

This made room for the NEXT rulers, THE DINOSAURS.

Exhibition Size: Flexible up to 7000 sq ft
USA tour contact: exhibits@stonecompany.com



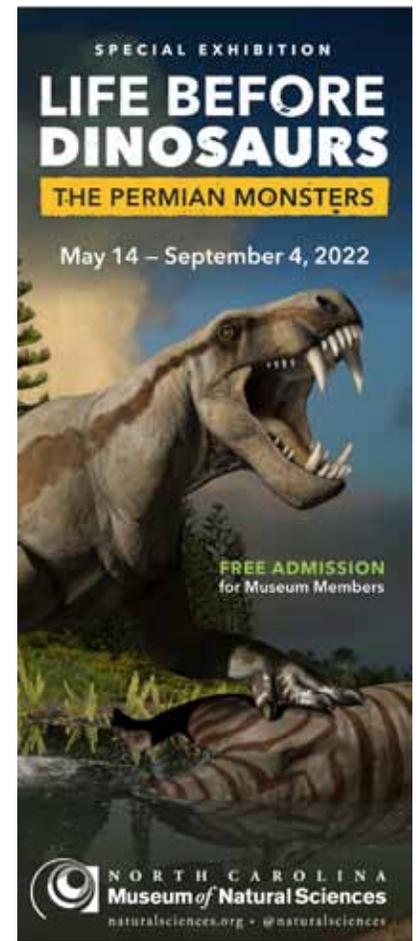
Past Participant Referrals

Some hosts chose to emphasize
“Life Before Dinosaurs”

North Carolina Museum of Natural Sciences
Raleigh, North Carolina
14 May 2022 – 4 September 2022

“This exhibit has been extremely popular and has far exceeded our expectations. We’re still two weeks from closing, but our attendance numbers are currently 180% projected, with total revenue exceeding 145%. Our capture rate for this exhibit was 15%, almost double our average of 8%. This makes Permian Monsters one of the best performing exhibits we’ve had in years.”

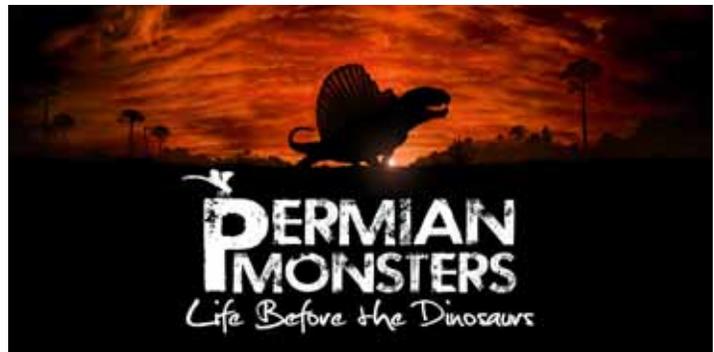
Javan Sutton, Head of Exhibits
Email: javan.sutton@naturalsciences.org
Office Tel: 919-707-9863



Sam Noble Oklahoma Museum of Natural History, Norman, Oklahoma
01 August 2020 – 08 November 2020

Tom Luczycki, Head of Exhibits
Email: toml@ou.edu
Tel: 405-325-1723

Academy of Natural Sciences of Drexel University, Philadelphia, Pennsylvania
21 November 2020 – 17 January 2022



We have been receiving a lot of praise from staff including the President who walked through last week and really enjoyed the exhibit. Opening weekend went well with great visitor numbers.

Jason Farris, Manager of Exhibit Projects
Email: ANS_specialexhibits@drexel.edu
Tel: 215-299-1074



The Permian is a geological period that began 299 million years ago, long before the age of dinosaurs. It was a time when bizarre-looking animals, few people have ever heard of, ruled the world.

The Permian Period ended when a huge volcanic eruption set off a chain of events that led to the greatest extinction Earth ever experienced.

This unique exhibition blends an extensive collection of high quality fossil reproductions with scientifically accurate sculptures and vivid artwork by world renowned paleo-artist, Julius Costonyi. It features recently updated science and the latest technology in electric animatronics.

Quick Look

Thanks to the North Carolina Museum of Natural Sciences, Raleigh, North Carolina for interpretive panels in English and Spanish.

Shipping and Installation

- Participation fee includes freight costs
- Installs in 4-5 days
- Minimal security when open to visitors

Services included

- Technician on-site for install and strike

Special requirements

- 110 Electric for touch screens & animatronics
 - Minimal crate storage
-

Exhibition Produced by:

Gondwana Studios
Launceston, Australia

Contributing Scientists:

Robert T. Bakker, Ph.D.
Colorado, USA

Ron Blakey
Colorado Plateau Geosystems
Colorado, USA

Richard L. Cifelli, Ph.D.
Kyle Davies
Richard Lupia, Ph.D.
Steve Westrop, Ph.D.
Oklahoma Museum of Natural History
University of Oklahoma
Norman, Oklahoma, USA

Ted Daeschler, Ph.D.
Academy of Natural Sciences of Drexel University
Philadelphia, Pennsylvania, USA

Christian Kammerer, Ph.D.
NC Museum of Natural Sciences
Raleigh, North Carolina, USA

Prof. Paul Wignall
University of Leeds
Leeds, UK

Contributing Artists:

Julius Costonyi
Manitoba, Canada

Staab Studios
Missouri, USA

Computer Interactive:

Tasmanian Polytechnic
Launceston, Australia

Production Support:

Academy of Natural Sciences of Drexel University
Philadelphia, Pennsylvania, USA

Artco Services
Launceston, Australia

Exhibits and Digital Media Team
NC Museum of Natural Sciences
Raleigh, North Carolina, USA

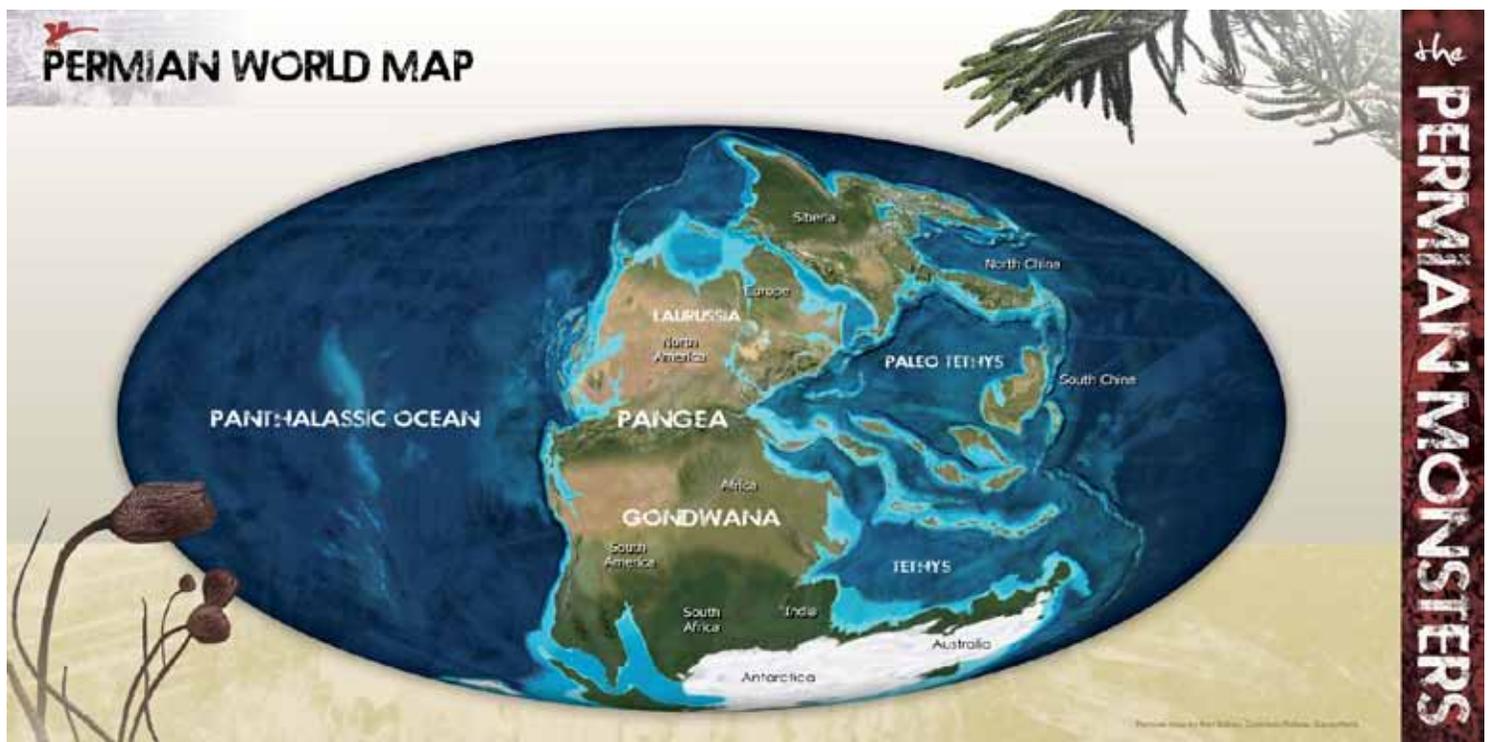
Sam Noble Oklahoma Museum of Natural History
Norman, Oklahoma, USA

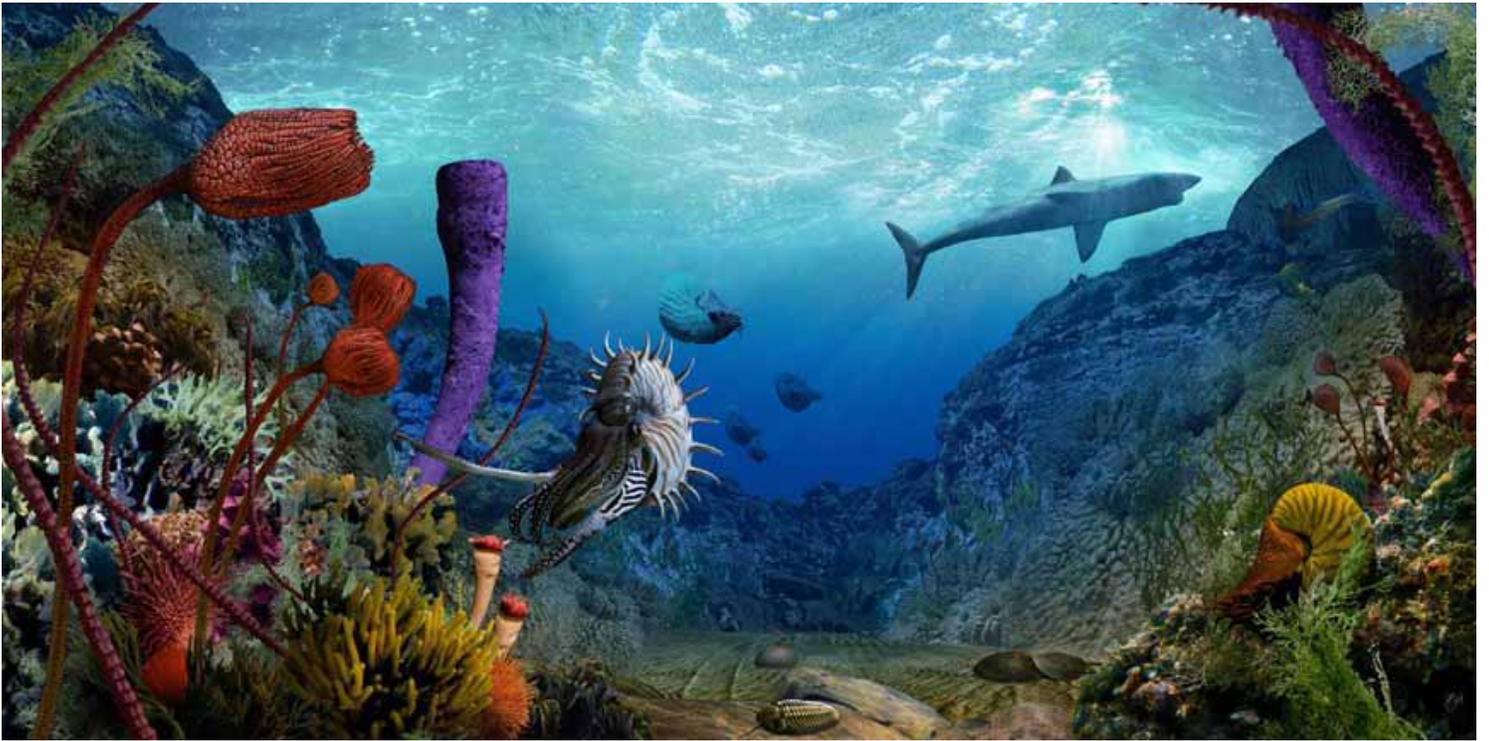
The Stone Company
Colorado, USA

EXHIBITION
PRODUCTION



During the Permian, all land on Earth was joined together in an enormous supercontinent called Pangea. Though the period began with an ice age, over time, global temperatures slowly increased, and the planet became warmer.





Panthalassa was an enormous ocean that covered almost 70% of the Earth's surface. Life thrived in the warm coastal waters around the continental shelf. However, over time, sea-levels fluctuated drastically in response to changes in climate, leading to the extinction of many species.



Florida Museum of Natural History
Gainesville, Florida



EARLY PERMIAN LANDSCAPE

Pangea was a gigantic land mass that covered over 30% of the planet. The climate was subject to abrupt and violent changes, and in some parts of the continent average temperatures could fluctuate over 90°F between winter and summer.



Giant Dragonfly Model
by Gary Staab

Sternberg Museum of Natural History
Hays, Kansas



Neville Public Museum
Green Bay, Wisconsin

For most of the Permian, the waters of Pangea were filled with a wide variety of amphibians. These fascinating creatures laid their eggs in water much like their fish ancestors, but also spent at least part of their time on land.



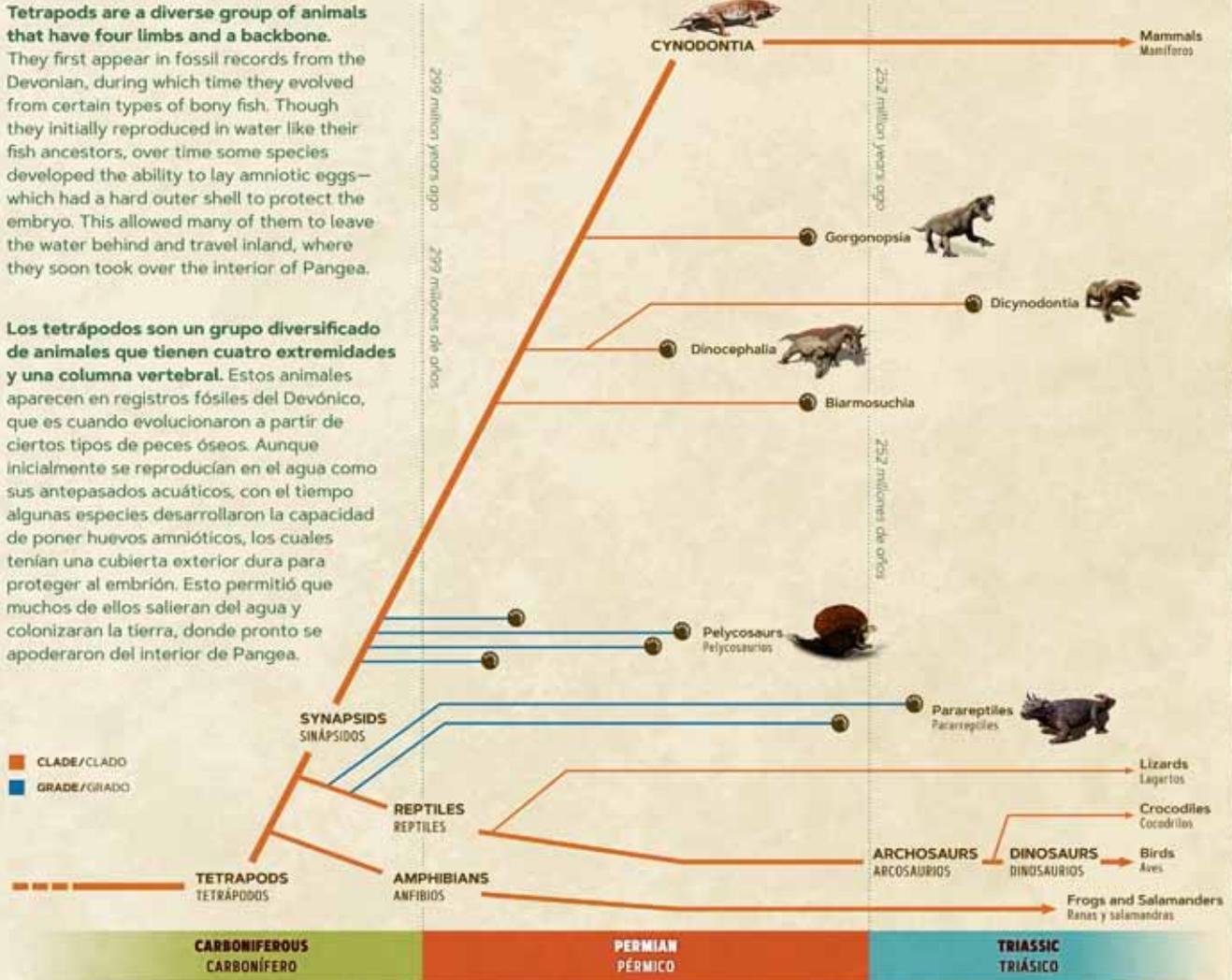
AMPHIBIANS

Interpretive panels in English and Spanish recently updated in collaboration with:
 North Carolina Museum of Natural Sciences, Raleigh, North Carolina
 Oklahoma Museum of Natural History, University of Oklahoma, Norman, Oklahoma
 Academy of Natural Sciences of Drexel University, Philadelphia, Pennsylvania

PERMIAN TETRAPOD EVOLUTION

Tetrapods are a diverse group of animals that have four limbs and a backbone. They first appear in fossil records from the Devonian, during which time they evolved from certain types of bony fish. Though they initially reproduced in water like their fish ancestors, over time some species developed the ability to lay amniotic eggs—which had a hard outer shell to protect the embryo. This allowed many of them to leave the water behind and travel inland, where they soon took over the interior of Pangea.

Los tetrápodos son un grupo diversificado de animales que tienen cuatro extremidades y una columna vertebral. Estos animales aparecen en registros fósiles del Devónico, que es cuando evolucionaron a partir de ciertos tipos de peces óseos. Aunque inicialmente se reproducían en el agua como sus antepasados acuáticos, con el tiempo algunas especies desarrollaron la capacidad de poner huevos amnióticos, los cuales tenían una cubierta exterior dura para proteger al embrión. Esto permitió que muchos de ellos salieran del agua y colonizaran la tierra, donde pronto se apoderaron del interior de Pangea.



EVOLUCIÓN DE LOS TETRÁPODOS DEL PÉRMICO

THE PERMIAN MONSTERS

LOS AMONSTRUOS PÉRMICOS

Earth's first land animals included amphibians, reptiles, and synapsids—a group that included the ancestors of mammals. During the Permian, a startling new group of organisms known as amniotes emerged. These adaptable creatures laid their hard-shelled eggs on land, allowing them to take over the interior of the continent.



Early Permian Monster
Informal group - Pelycosaur
Dimetrodon Animatronic and Skeleton

Academy of Natural Sciences
of Drexel University
Philadelphia, Pennsylvania



Academy of Natural Sciences
of Drexel University
Philadelphia, Pennsylvania



Mid-Permian Monsters

Florida Museum of Natural History
Gainesville, Florida



Mid-Permian Monsters

North Carolina Museum of Natural Sciences
Raleigh, North Carolina



Late-Permian Monster
Gorgonopsid Model

Late-Permian Reptile
Scutosaurus Model

Academy of Natural Sciences
of Drexel University
Philadelphia, Pennsylvania



Late-Permian Monster
Gorgonopsid Skeleton

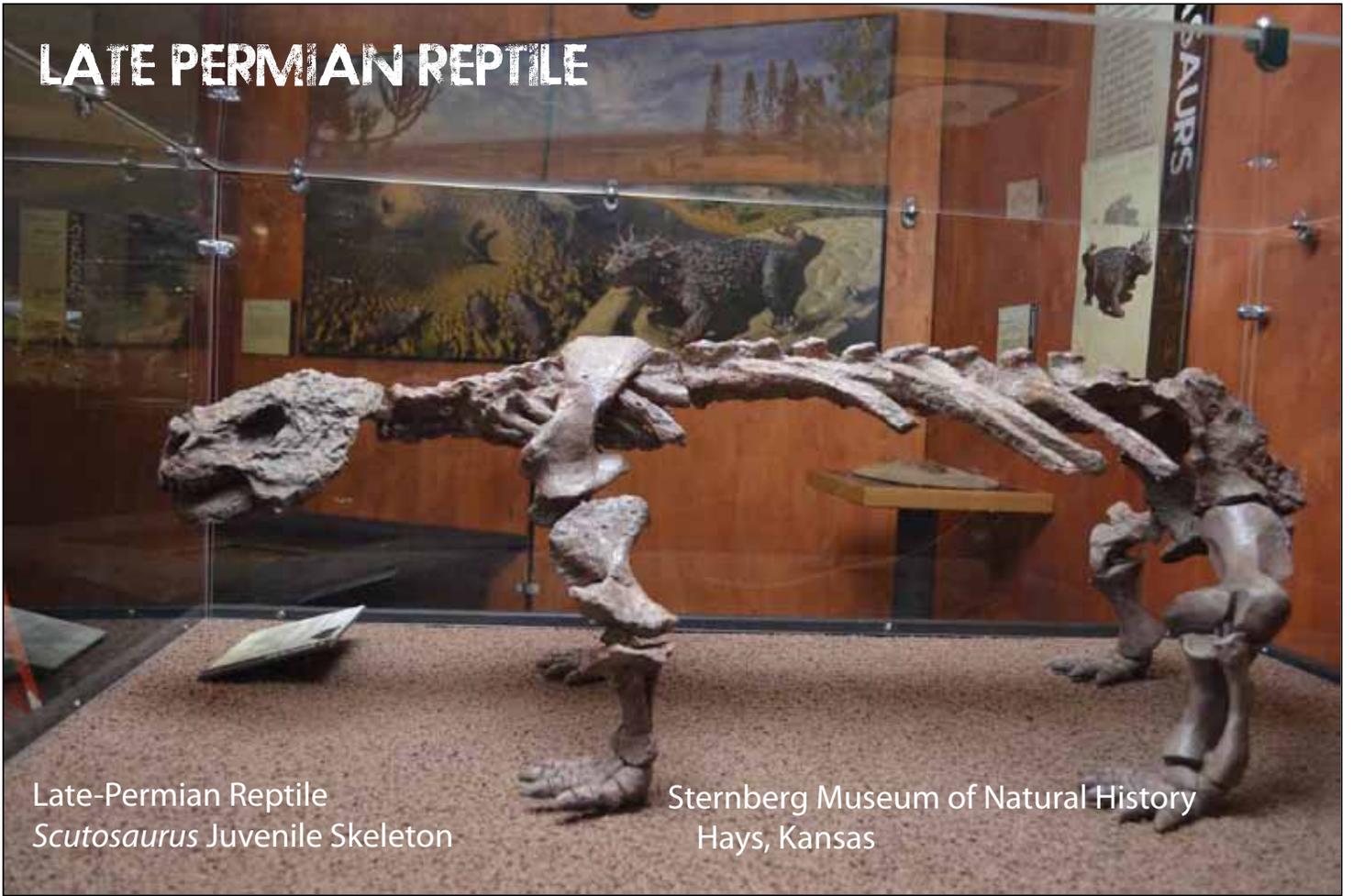
Florida Museum of Natural History
Gainesville, Florida



Gorgonopsians were a group of saber-toothed synapsids that became the top land predators of the late Permian. They had powerful jaws and blade-like teeth. When they first evolved in the middle Permian, they were about the size of a dog. Over time, a few species grew much larger, until by the end of the period some of them could reach more than 13 feet long.



LATE PERMIAN REPTILE



Late-Permian Reptile
Scutosaurus Juvenile Skeleton

Sternberg Museum of Natural History
Hays, Kansas



Late-Permian Reptiles

North Carolina Museum of Natural Sciences
Raleigh, North Carolina



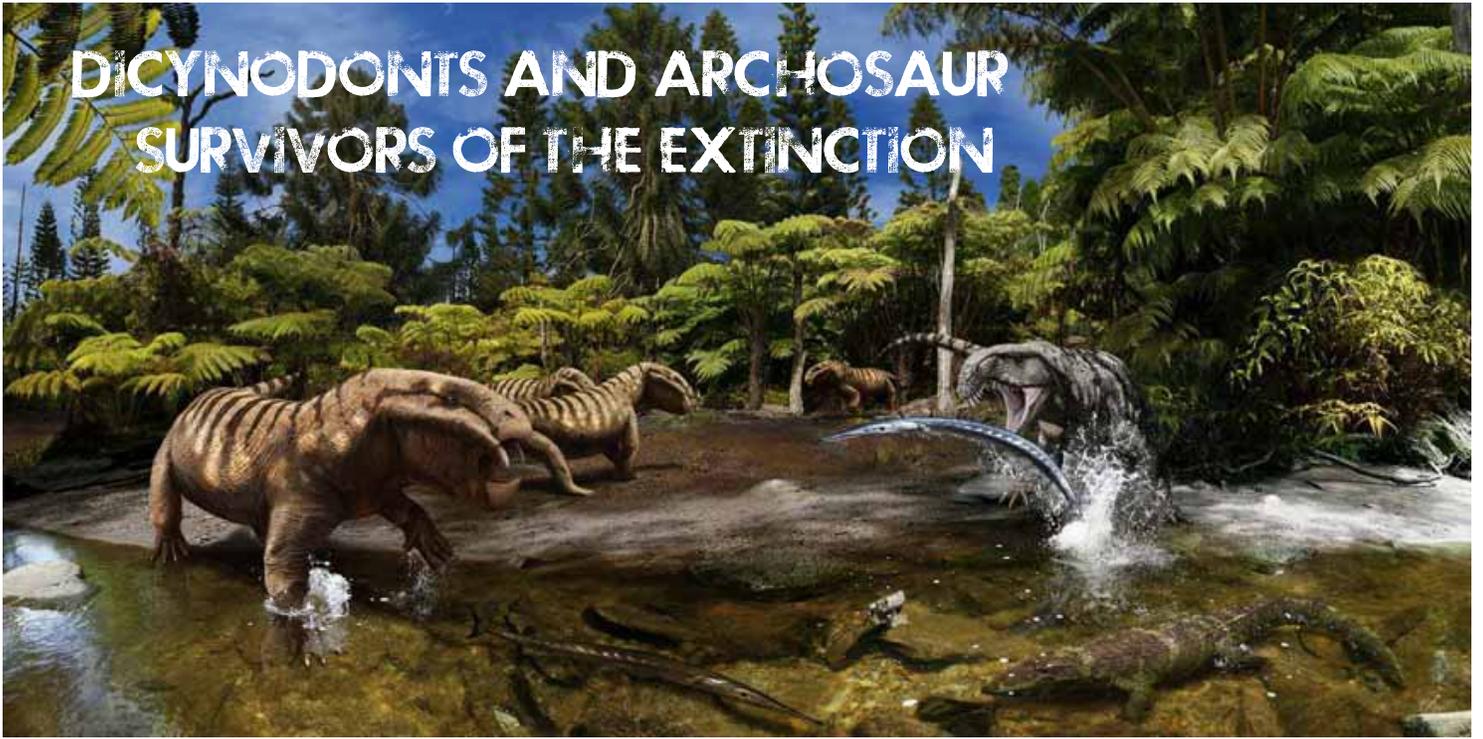
North Carolina Museum of Natural Sciences
Raleigh, North Carolina

Cynodonts survived the Permian-Triassic mass extinction and may have adopted a nocturnal lifestyle in the following period to escape from predators and avoid the daytime heat. Over time, these creatures gave rise to mammals, including our own ancestors.



Sam Noble Museum of Natural History
Norman, Oklahoma

DICYNODONTS AND ARCHOSAUR SURVIVORS OF THE EXTINCTION



Dicynodonts were a group of synapsids that first appeared in the middle Permian. They had tortoise-like beaks and protruding tusks, and varied in size from as small as a mouse to as large as an elephant. Some species could tunnel underground, which may have helped them to avoid the worst of the daytime heat during the Permian-Triassic mass extinction.



North Carolina Museum of Natural Sciences
Raleigh, North Carolina



The Permian ended with the largest mass extinction in Earth's history, known as the Permian-Triassic extinction or the "Great Dying." Over the course of around 80,000 years, over 80% of marine species and more than 70% of all life on land went extinct.





Though dicynodonts never regained their former levels of diversity, they remained abundant for much of the Triassic period.



Sternberg Museum of Natural History
Hays, Kansas

Elements Include:

- 30 resin cast fossil skeletons and/or skulls
- 10 scientifically accurate 3-D sculpture models
- 7 electric motor driven life-like animatronics
- 18 wall mounted interpretive panels
- 26 secure display cases and/or touch stands
- 2 computer game stations
- 11 framed artworks by Julius Csotonyi
- 6 mural size artwork prints
- 4 dig pits (optional)
- 1 introductory film (optional)
- technician on-site during installation and strike

Exhibition Modules:

- Introducing the Permian
- Permian Sea
- Tetrapods
- Amphibians
- Early Permian Land Monsters
- Middle Permian Land Monsters
- Late Permian Land Monsters
- Reptiles - Ancestors of Lizards, Crocs, Dinos and Birds
- Dicynodonts - Thrived in the Early Triassic
- Cynodonts - Ancestors of Mammals
- Permian-Triassic Mass Extinction
- Survivors of the Extinction



Produced by:

GONDWANASTUDIOS 
www.permianmonsters.com