ROYAL TYRRELL MUSEUM

FOSSILS IN FOCUS

The Museum's collection of fossils is vast and diverse. The majority of specimens have been found right here in Alberta, the most remarkable place in the world to find fossils from 80 – 55 million years ago.

Only a fraction of our collection is on display throughout the Museum. This rotating exhibit will highlight some of our most remarkable and scientifically significant fossils, chosen from the tens of thousands of specimens in our collection.

New specimens reflecting current research will be added as the science of palaeontology moves forward.

2016 SPECIMEN FACT SHEET

THE FRILL OF DISCOVERY

Regaliceratops peterhewsi
(ree-GAY-lih-SER-uh-tops peter-HEWS-ee-eye)

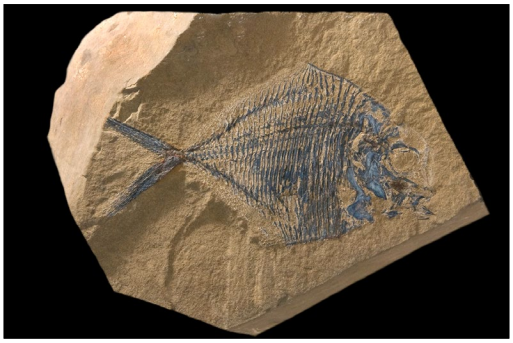
- *Regaliceratops peterhewsi* is a newly described genus and species of ceratopsid (horned dinosaur) that lived during the Late Cretaceous 68.5 – 67.5 million years ago and is a close relative of *Triceratops*
- Discovered by Calgary resident Peter Hews, a geologist in the petroleum industry, in 2005. He found the snout sticking out of a cliff along the Oldman River in southeastern Alberta, Canada where horned dinosaurs have not been found before
- Nicknamed after the comic book character "Hellboy" due to the difficulty collecting the specimen and for the challenging preparation process to remove it from the very hard rock in which it was encased
- Ceratopsids are divided into two groups: Chasmosaurines (e.g., *Triceratops*) and Centrosaurines. Centrosaurines went extinct several million years before the chasmosaurines, which went extinct at the end of the Cretaceous along with all the other dinosaurs

TRIASSIC TREASURE

Macgowania janiceps

(Mac-GOWAN-ee-ah JAN-ih-seps)

- *Macgowania janiceps* is an ichthyosaur, a dolphin-like marine reptile from the Late Triassic (228-208 million years ago)
- The skull is preserved three-dimensionally, making it a valuable discovery. Other known *Macgowania* skulls (the most data-rich part of the anatomy) are flattened from geological processes and badly affected by weathering, offering little scientific information
- The sclerotic rings (thin plates of bone) in the eye are very well-preserved and allowed the animal's eyes to maintain their shape in deep waters. Their eyes were also very large, indicating that *Macgowania* hunted by sight, not by sound as whales do



FISHING ON MOUNTAINTOPS

Triassic fish assemblage

- This assemblage features eight different fish species from the Early Triassic (250 million years ago), including bony fishes and a shark—the most nearly complete Early Mesozoic shark specimen known
- The most severe extinction event in Earth's history took place 252 million years ago at the end of the Permian Period. Up to 96% of all marine species and 70%of animals on land perished
- Fossil fishes from the Early Triassic document some of the initial recovery of vertebrates in marine environments following the mass extinction

BELLY UP TO THE SAND BAR

Atractosteus block

(AH-track-OSS-tee-us)

- This block of sandstone contained a mass-death assemblage of 25 fossil gar when it was discovered. They died together 63 million years ago
- It is unique because of the position of the fish. Most gar assemblages are preserved on their sides. These gar are preserved fully articulated in a three-dimensional, belly-up death pose, indicating rapid burial after death
- This likely happened because they became trapped in a shrinking pool of oxygen-poor water. As they suffocated and died, internal gases suspended their bodies belly-up in the hardening mud

IN-FLIGHT MENU

Rhamphorhynchus muensteri

(RAM-for-eng-kuss MUN-ster-eye)

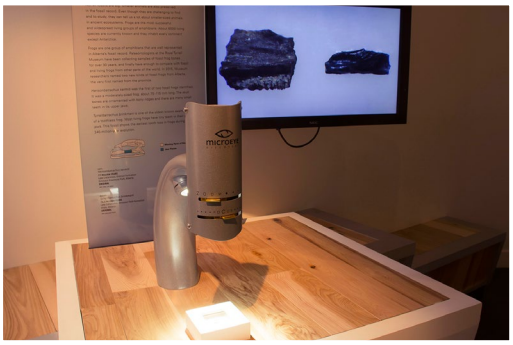
- This pterosaur (flying reptile) lived 152-145 million years ago, during the Late Jurassic
- It is an exceptional find because of the preserved stomach contents. The jumbled bones in the chest and abdomen are interpreted to be the well-digested remains of its last meal, possibly from a shark and a tetrapod (a four-legged animal)
- The diamond-shaped tail vane indicates this animal was not fully mature. A fully grown *Rhamphorhynchus* had a triangular-shaped tail vane

HOW WELL DO YOU SMELL?

Struthiomimus

(STROO-thee-oh-mime-us))

- *Struthiomimus* is an ornithomimid (ostrich-mimic dinosaur) from 72 million years ago, during the Late Cretaceous
- Although the brain is a soft tissue and doesn't normally fossilize, the chamber it is located in is preserved. Using X-ray computed tomography (CT) scanning technology and sophisticated computer software, a virtual 3D endocast (internal cast of a hollow object) of the brain can be reconstructed
- *Struthiomimus* had a proportionally small olfactory bulb so it had a poor sense of smell. However, its enlarged orbits shows it had good eyesight



THE HOPPING DEAD

Tyrrellbatrachus brinkmani* and *Hensonbatrachus kermiti

(TEER-uhl-bah-trake-us brink-man-eye and HEN-son-bah-trake-us kerr-mitt-eye)

- In 2015, Museum researchers named two new kinds of fossil frogs from Alberta, the very first named from the province
- *Tyrrellbatrachus brinkmani* is one of the oldest known examples of a toothless frog and shows the earliest tooth loss in frogs during their 240-million-year evolution
- *Hensonbatrachus kermiti* was the first of the two fossil frogs identified. It is named for Jim Henson (creator of The Muppets) and Kermit the Frog