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the NEWS SAUR

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- proudly in print -
SINCE 2011

Dinosaur-hunting in the Arctic

By Dr. Matthew Vavrek

Giant redwood trees, swimming turtles and herds of dinosaurs might evoke an image of ancient southern Alberta, but during the Late Cretaceous (about 100 to 66 million years ago), this same scene was playing out in the Arctic. Because of a number of different factors, the earth was much warmer during the Late Cretaceous, with temperatures up to 15°C higher on average compared to today. The Cretaceous Arctic represents a unique environment that no longer exists in our modern world, where warm temperatures were combined with extreme fluctuations in the amount of light through the year.

Over the past decade, I've been lucky enough to travel to all three Canadian territories in search of dinosaurs. On my first trip to the Arctic in 2006, we travelled to a place called Melville Island. The island, even though it is the 33rd largest in the world, has no permanent inhabitants. Needless to say, it was isolated, requiring a two hour bush plane ride from what is already one of the most remote settlements in North America. As well, the trip reinforced the fact that, even though you put in a lot of planning and effort in to getting somewhere to look for dinosaurs, there is still



photo by Hans Larsson



photos by Matthew Vavrek

Left to right clockwise: The dinosaur hunters on Melville Island, Nunavut; paralava; end of a hadrosaur humerus.

an element of luck involved; while we were there, we did not find a single dinosaur bone (although we did find some other interesting things).

The second area in the Arctic I visited was a few years later, in northern Yukon. We visited an area that had produced three dinosaur bones in the past, thinking that if someone else had luck, we were sure to be lucky too. It took us two trips, but we almost doubled the number of dinosaur fossils from the Yukon when we found two additional bones.

It was in 2012, travelling to the Northwest Territories that we had the most success in finding dinosaurs. In an area near the Mackenzie River, we pulled out a few dozen indi-

vidual bones, including some from duck-billed, horned, and large carnivorous dinosaurs.

Through all these trips, we've had to deal with working in remote, isolated areas, where we have little contact with anyone from the outside world. We've had to contend with bears (black, grizzly and polar), as well as much smaller, but more maddening mosquitos. The weather is always unpredictable, and in some cases was rarely above freezing even during August. So why do I go back every year, to a place that's hard to work in and where sometimes we don't even find many fossils?

Because so few fossils are known from the Arctic, every trip that I have been on, even

relatively unsuccessful ones, have given us new information about the kinds of animals and plants that once inhabited these areas.

Even a fragment of bone can contain an incredible wealth of information, especially if it comes from a place where we know next to nothing to start. The only way to understand the Arctic is to go there, be on the ground, and look for fossils. Not only that, but the Arctic itself has its own strange beauty. There is something surreal and wonderful about being able to collect fossils at 3:00 a.m. by the light of the midnight sun, and it's these great experiences and new discoveries that keep me going back year after year.



Executive Director's Note

Greetings from all of us at the PCDI.

It's been another successful month as the PCL construction crew copes with the bitter cold weather and yet stays on schedule.

We successfully completed the process to identify and engage our project dinosaur fossil caster and the award went to Research Casting International of Trenton, ON.

Our crew attended the Growing the North Conference where we met many new supporters and had the chance to present a set of our dino coins to astronaut Chris Hadfield.

We also engaged the Mighty Peace Harley Davidson as a sponsor. They are donating a motorbike that will be customized into a Dino Bike and then raffled off with 600 tickets at \$100 each.

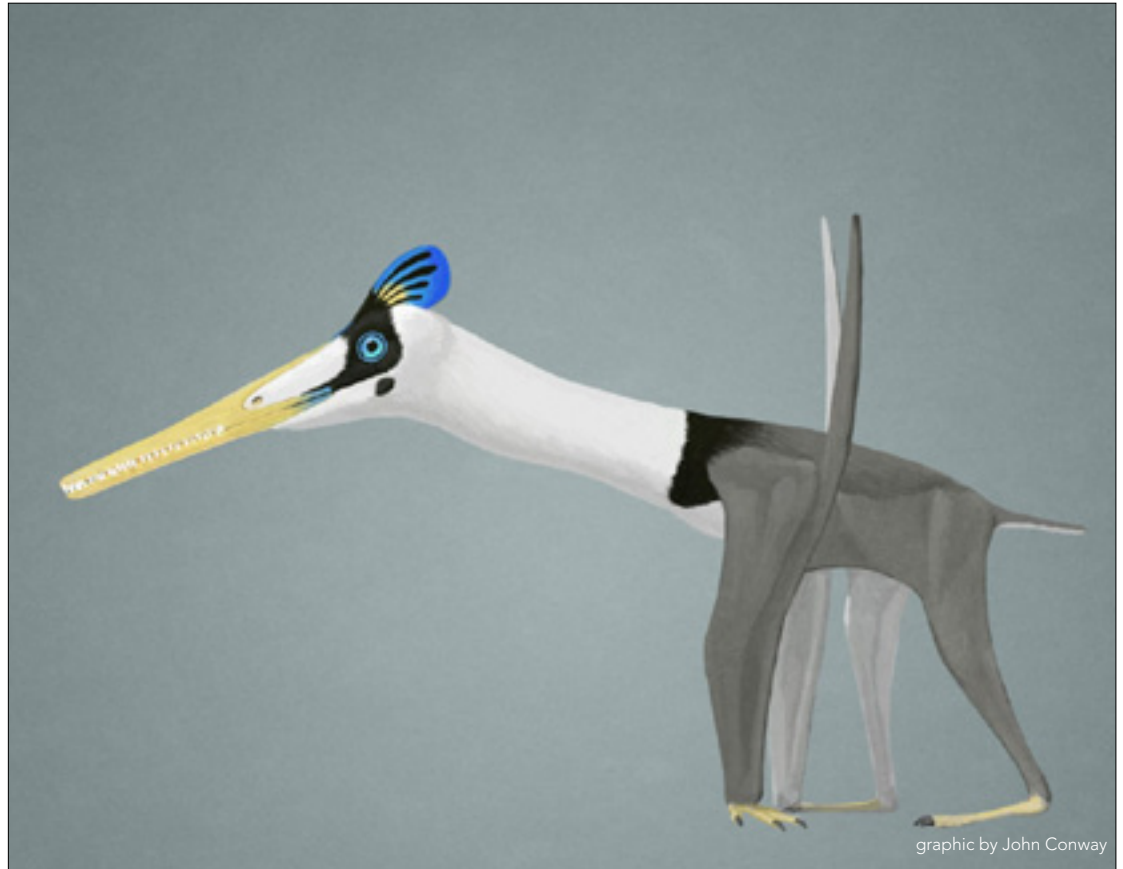
The draw will occur during the Amber Ball on August 9. They will also create an annual ride as a fundraiser for the museum. The inaugural ride will take place on August 9 and will be led by Dan Aykroyd on the Dino Bike. We are expecting up to 1,000 riders. Come out and join us.

It is hard to believe that we are only months away from opening. There are still tickets available for the ball.

Call today to book yours (780) 532-2362. Have a great dino day.

Brian Brake
Executive Director
Pipestone Creek Dinosaur Initiative

Are pterodactyls dinosaurs?



graphic by John Conway

You may need to prepare for a shock but pterodactyls just aren't dinosaurs.



There are some prehistoric creature names that most people know, such as *Tyrannosaurus rex*, *Triceratops*, *Stegosaurus*, and pterodactyl.

While the first three are dinosaurs, 'pterodactyl' is a term commonly used by people to refer to the group of flying

reptiles called pterosaurs.

The Pterosauria are a group of reptiles who lived at the same time as, and whose fossils we find with dinosaurs, but which are not dinosaurs themselves.

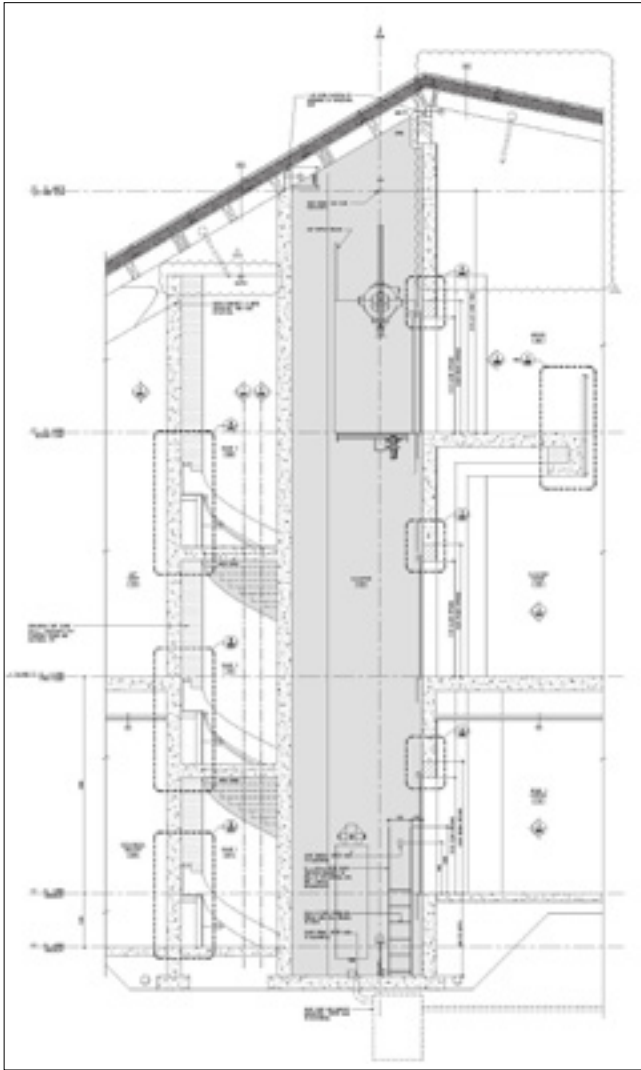
One such pterosaur species is called *Pterodactylus*, which is where the term 'pterodactyl' comes from. Other non-dinosaur groups whose fossils we also find alongside dinosaurs include the plesiosaurs, ichthyosaurs, and mosasaurs, all marine reptiles. These flying and swimming reptile

groups are all extremely interesting, with many varied species being represented by fossils from around the world.

They are all distinct groups, quite different from dinosaurs, although they lived alongside them during the Mesozoic, with many palaeontologists specializing in studying these groups, just as others focus on various dinosaurs.

Ask a Paleo! by Robin Sissons.
Have a question for Robin?
Visit curriemuseum.ca

Getting inside the museum



Clockwise, left to right: The inner structure of the concrete stairwell, the core in mid-January and then in late February.

By Karla Horcica,
PCL Construction

The Philip J. Currie Dinosaur museum incorporates all kinds of unique features. One of these features is a circular concrete stairwell that starts in the basement and rises three storeys to the top of the building.

Inside of the circular stairwell there is a circular elevator core that the stairwell wraps around. If you look closely at the

picture you'll notice that this circular elevator core is made out of concrete.

To form this circular concrete core, steel beams were rolled to the required radius and used as the framework to hold together the vertical elements of the formwork.

Once this was complete, the inside of the formwork was lined with plywood. This took lots of screws

to force and hold the plywood in the curved shape.

The sections for the circular core were built on the ground, then craned into place and locked together.

Four circles of formwork were built for the inner and outer shape of the stair and elevator. The construction of the stairwell and elevator core took many hours, as the

stair and elevator walls had to be poured in three lifts. The first lift was the basement level to main floor, the second was the main floor to second floor, and the third was the second floor to the roof.

Right now, the circular core stands alone in the middle of the building, but soon wood roof panels will be placed on top of the concrete.

DINOSAUR OF THE MONTH

Gorgosaurus



graphic by Melnik Vitaliy

By Robin Sissons

Gorgosaurus is a large theropod dinosaur closely related to *Albertosaurus* and *Tyrannosaurus*. It was a top predator in its ecosystem, and would have interacted with other dinosaurs such as *Centrosaurus* and *Parasaurolophus*, as well as the similarly-sized tyran-

nosaur *Daspletosaurus*. At 8 to 9 meters long, a smaller animal than its more famous cousins, *Gorgosaurus* was nonetheless still a formidable carnivore who would have prowled the ancient ecosystems of Alberta 76 million years ago during the Cretaceous.

Ancient Earth Partnership



photo by Erika Sherk

There are all sorts of clues to our prehistoric past buried deep under the ground. Ancient worlds are linked to our modern way of life and it is the evolution of these ancient ecosystems that has given Alberta its rich oil and gas resources.

To help explore this, Seven Generations Energy Ltd. has entered into a partnership with the Pipestone Creek Dinosaur Initiative to provide core samples and expertise for the Oil and Gas Wing of the dinosaur museum.

Three Seven Generations representatives came to tour the museum in late February to get a feel for its future displays and exhibits. Left to right, Pat Carlson, CEO, Seven Generations Energy Ltd., Susan Targett, Vice President, Land, Seven Generations, Steve Haysom, Senior Vice President, Seven Generations, Dr. Matthew Vavrek, Head Palaeontologist, Pipestone Creek Dinosaur Initiative, Tim Powell, local philanthropist, and Brian Brake, Executive Director, Pipestone Creek Dinosaur Initiative.

Thank you to our funding partners, donors and sponsors!



Ken and Teresa Sargent Family Foundation

