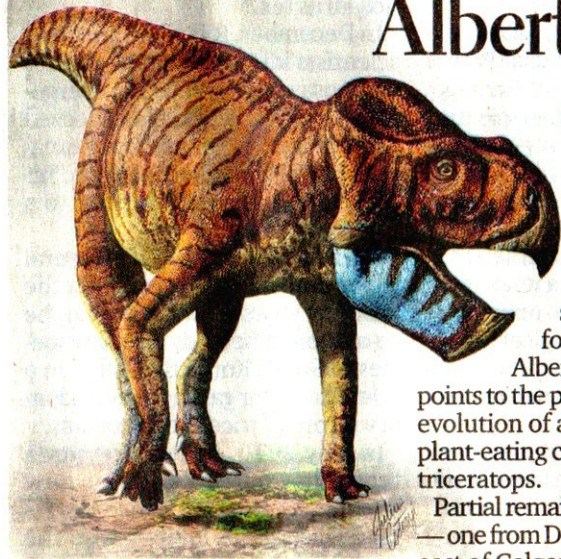


Alberta mini-dinosaurs fill large evolutionary gap



SUPPLIED: JULIUS CSOTONYI

Photo illustration of a Gryphoceratops

RANDY BOSWELL
Postmedia News

A team of five Canadian scientists has identified two new species of dinosaurs from the famous fossil beds of southern Alberta, including one that points to the pivotal North American evolution of a family of pint-sized, plant-eating creatures related to the triceratops.

Partial remains of the two creatures — one from Dinosaur Provincial Park east of Calgary and the other from a site near the Alberta-Montana

border — were unearthed years ago.

But researchers led by Canadian scientist Michael Ryan, now curator of vertebrate paleontology at the Cleveland Museum of Natural History, recently distinguished the two fossils from similar “leptoceratopsid” species known from Canada and Asia.

They concluded the borderland specimen — a two-metre-long, 90-kilogram animal, *Gryphoceratops morrisoni*, which lived about 83 million years ago — is one of the oldest of its kind, suggesting that key evolutionary developments and a major diversification in the

leptoceratopsid family unfolded in Cretaceous-era Canada.

“These dinosaurs fill important gaps in the evolutionary history of small-bodied, horned dinosaurs that lack the large horns and frills of relatives like triceratops from North America,” said Ryan, an Ottawa-born scientist affiliated with Carleton University and the Canadian Museum of Nature, in a summary of the study.

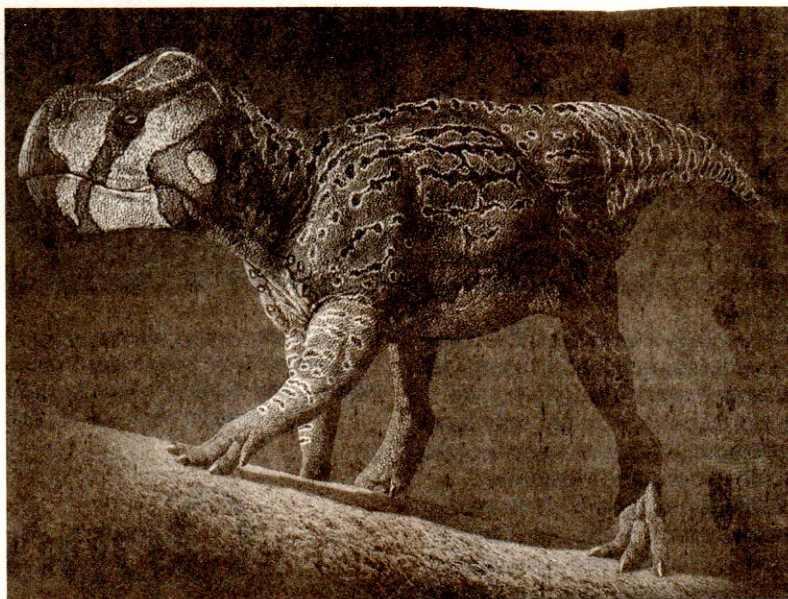
“Although horned dinosaurs originated in Asia, our analysis suggests that leptoceratopsids radiated to North America and diversified here, with the new species, *gryphoceratops*, being the earliest record of

the group on this continent.”

Other researchers involved in the discoveries are paleontologist David Evans of the Royal Ontario Museum and University of Toronto, legendary dinosaur hunter Philip Currie of the University of Alberta, University of Toronto scientist Caleb Brown, and Don Brinkman of Alberta’s Royal Tyrrell Museum of Palaeontology.

It was Currie who, in 1995, discovered the fossilized jaw of a previously unknown species of horned dinosaur at a site in Dinosaur Provincial Park.

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HANDOUT: JULIUS CSOTONYI

This photo illustration shows a Unescoceratops, named in part for Alberta's Dinosaur Provincial Park, a UNESCO World Heritage Site.

New species fill in fossil record gaps

DINOSAURS

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First described by Currie and Ryan in 1998, the specimen has now been identified as a separate species and named *Unescoceratops koppelhusae*.

The herbivorous dinosaur, which would have been less than two metres long and weighed around 90 kg, inhabited ancient Alberta about 75 million years ago.

The name of the new species celebrates Dinosaur Provincial Park's status as a UNESCO World Heritage Site and honours Canadian scientist Eva Koppelhus, a University of Alberta palynologist and Currie's wife.

The fossil remains of *Gryphoceratops morrisoni* were found in 1950 along the Milk River in southern Alberta by Levi Sternberg, a renowned ROM scientist. The name references the gryphon, a mythological figure with the body of a lion and the head of an eagle, and ROM technician Ian Morrison.

The identification of the two new species is detailed in the latest issue of the scholarly journal *Cretaceous Research*.

"Small-bodied dinosaurs are typically poorly represented in the fossil record," said co-author Evans, "which is why fragmentary remains like these new leptoceratopsids can make a big contribution to our understanding of dinosaur ecology and evolution."

Ryan told Postmedia News the "scrapy little jaw" found 62 years

ago by Sternberg offers "a key insight to the start of dinosaur diversification that was underway 83 million-plus years ago," but which is poorly preserved in the global fossil record.

"That's one of the reasons," said Ryan, "that David Evans and I have been working so hard with our students in this part of Alberta for the past eight years — to shed some light on the world that eventually gave rise (and ended) with *Tyrannosaurus rex*."

In December, Ryan and six other scientists identified a new species of dinosaur — *Spinops sternbergorum* — from a set of long-overlooked Alberta fossils that had been excavated in 1916 by Sternberg and his father, Charles, and shipped to a British museum.

Ryan has been involved in several other dinosaur discoveries in the past few years. Last December, he co-authored the study on a new species in South Korea that filled in a 20-million-year gap in the evolutionary record of triceratops' cousins.

In May 2010, he led a research team that named another new species of horned dinosaur — *Medusaceratops lokii* — after the snake-haired Greek monster Medusa and the comic-book villain Loki, inspired by the Norse god of mischief.

Also in 2010, Ryan was part of a team that documented the world's earliest-known mammal bite marks, found on 75-million-year-old dinosaur bones and other fossilized remains dug up in southern Alberta.