

Weird fossil sheds light on dinosaurs' lost continent

July 17 2013



A Triceratops greets visitors at the Natural History Museum of Los Angeles on July 7, 2011. Palaeontologists in Utah on Wednesday said they had found the fossil of a strange horned dinosaur which roamed an island continent known as Laramidia. It belonged to the family of herbivore ceratops dinos, of which the famous triple-horned triceratops was a member.

Palaeontologists in Utah on Wednesday said they had found the fossil of a strange horned dinosaur which roamed an island continent known as Laramidia.

Dubbed *Nasutoceratops titusi*, the creature lived during the Late Cretaceous about 76 million years ago.

It belonged to the family of herbivore ceratops dinos, of which the famous triple-horned [triceratops](#) was a member.

N. titusi is "remarkable" even for a ceratops, according to the researchers.

Its skull—uncovered nearly intact—comprised an oversized snout, extraordinarily long, blade-like horns that pitched forward over the eyes, and a trademark bony frill at the base of the head.

From horntip to tailtip, it was about four metres (14 feet) long.

All ceratopsids have greatly enlarged nose regions, but *Nasutoceratops* is a champion.

Why, though, is unclear.

"The jumbo-sized schnoz of *Nasutoceratops* likely had nothing to do with a heightened sense of smell, since [olfactory receptors](#) occur further back in the head, adjacent to the brain," said Scott Sampson of the University of Utah.

"The function of this bizarre feature remains uncertain."

His colleague, Mark Loewen, said the dino's "amazing horns" "were most likely used as visual signals of dominance and, when that wasn't enough, as weapons for combatting rivals."

The evidence provides more tantalising details about a 27-million-year spell in the Late Cretaceous when high temperatures melted global

icecaps and forced up sea levels, says the study.

The ocean spilled into central North America, leaving two big landmasses riding above a warm, shallow sea.

One, in the east, has been called Appalachia, while an Australia-sized landmass in the west, running from Alaska all the way down to Mexico, has been named Laramidia, according to a 17-year-old theory.

Laramidia was a stomping ground for dinosaurs. Tyrannosaurs, hadrosaurs, dromaeosaurids and troodontids have all been found there. Alberta, Montana and Alaska have provided rich finds of ceratopses.

The unusual shape of *N. titusi* shows how giant species differentiated to fit in to a local habitat, a process called provincialism, says the study.

At present, there are five giant (rhino-to-elephant-sized) mammals on the entire continent of Africa.

But in the late Cretaceous, there may have been more than two dozen huge species of dinosaurs living on a landmass about one-quarter that size.

"We're still working to figure out how so many different kinds of giant animals managed to co-exist on such a small landmass," noted Loewen. *N. titusi*'s monicker is a hybrid of Greek and Latin meaning large-nosed and horned-faced.

It also honours Alan Titus, a pioneer in palaeontology at the Grand Staircase-Escalante National Monument, comprising 760,000 hectares (1.9 million acres) of high desert terrain in south-central Utah, where the fossil was found in 2006.

The research is published in the British journal, *Proceedings of the Royal Society*.

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Citation: Weird fossil sheds light on dinosaurs' lost continent (2013, July 17) retrieved 6 August 2024 from <https://phys.org/news/2013-07-weird-fossil-dinosaurs-lost-continent.html>

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