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## **Giant duck-billed Dinosaur discovery in Mexico offers a glimpse of ancient life**

*Discovery of the new species of 72-million-year-old specimen of dinosaur unearthed in Mexico is giving scientists fresh insights into the ancient history of late Cretaceous Period on the southern tip of western North America.*

13 February 2008 (Sawf News) - Discovery of the new species of dinosaur by U.S., Mexican and Canadian scientists unearthed in Mexico is giving scientists fresh insights into the ancient history of late Cretaceous Period on the southern tip of western North America.

The new creature — aptly dubbed *Velafrons coahuilensis* — was a massive plant-eater belonging to a group of duck-billed dinosaurs, or hadrosaurs.

“*Velafrons* is a combination of Latin and Spanish meaning “sailed forehead,” in reference to the large sail-like crest that grew atop the dinosaur’s head,” said Rosario Gomez, director of the paleontology program in Coahuila, Mexico. “The second part of the name honors the state of Coahuila in north-central Mexico, where the specimen was found,” said Gomez.

For most of the Late Cretaceous, high global sea levels resulted in flooding of the central, low-lying portion of North America. As a result, a warm, shallow sea extended from the Arctic Ocean to the Gulf of Mexico, splitting the continent in two. Dinosaurs living on the long, narrow, peninsula-like western landmass — known as Laramidia, or more simply, “West America,” — occupied only a narrow belt of plains that were sandwiched between the seaway to the east and rising mountains to the west. Central America had not formed at the time, which made Mexico the southern tip of the continent.

In many ways, the Late Cretaceous is the best-understood time during the Age of Dinosaurs, thanks in large part to over 120 years of dinosaur hunting in Canada, Montana, and the Dakotas. “Yet the dinosaurs from Mexico have remained a mystery,” noted Scott Sampson, a Utah Museum of Natural History paleontologist and co-author of the study.

Paleontologist Terry Gates of the Utah Museum of Natural History and University of Utah, described the arid, desert terrain where the dinosaur was recovered as nothing like Mexico during the Late Cretaceous. About 72 million years ago, this region was a humid estuary near the southernmost tip of West America, an area where salt water from the ocean mixed with fresh water from rivers. Many of the dinosaur bones are covered with fossilized snails and marine clams, indicating that these animals inhabited environments near the shore.

In addition to isolated skeletons, the researchers found large bonebeds of jumbled duck-bill and horned dinosaur skeletons. These sites appear to represent mass death events, perhaps associated with powerful storms like those that are known to occur around the southern tips of Africa and South America today.

“The region was periodically hammered by monstrous storms,” Sampson said, “devastating miles of fertile coastline, apparently killing off entire herds of dinosaurs.”

The creature comes from a rock unit known as the Cerro del Pueblo Formation, which dates to around 71.5 million to 72.5 million years ago. The skeleton was discovered in the early 1990s on the outskirts of a small town called Rincon Colorado, about 27 miles west of the city of Saltillo.

The scientists believe that this animal was still a youngster at the time of death. Nevertheless, although not yet fully grown, *Velafrons* would have been on the order of 25 feet long, suggesting an impressive adult size of 30 feet to 35 feet.

Gates explained that *Velafrons* represents the first occurrence of a crested duck-billed dinosaur in this region of North America. "The crested duck-billed dinosaurs are an extraordinary example of vertebrate evolution," he said. Unlike other animals where the nose bone lies in front of their eyes, these dinosaurs transformed their skulls so that the nose rested atop their skull. The snout extended backward, up their face, in order to fill the gap left by the relocated nose bone.

Interestingly, breathing was not straight-forward for *Velafrons* and its kin. Air flowed through a series of passages from the snout, into their crest, and finally inserting through a hole above their eyes. Scientists are uncertain what *Velafrons*' fan-shaped crest would have been used for, but a leading hypothesis suggests mate attraction, which explains the complex nasal passages as a possible musical instrument.

The skeleton was first discovered in the early 1990s by Martha Carolina Aguillon. But it was not until 2002 when the crew returned with jackhammer and shovels to dig 12 feet under the site to free the skeleton. Upon its arrival at the Utah Museum of Natural History, the skull then required another two years of meticulous preparation by Jerry Golden, a skilled volunteer at the museum.

In addition to *Velafrons*, remains of a second kind of duck-bill dinosaur, as well as a plant-eating horned dinosaur were also recovered. Like its famous cousin, *Triceratops*, the new Coahuila horned dinosaur bore a massive horn over each eye and a long bony frill projecting rearward. The Cerro del Pueblo Formation has also yielded remains of large and small carnivores, including large tyrannosaurs (though smaller, older relatives of *T. rex*), and more diminutive *Velociraptor*-like predators armed with sickle-claws on their feet.

Few dinosaurs from this time period are known in North America outside the Drumheller region of Alberta, which is where the Royal Tyrrell Museum is located. With the new discovery researchers now have two points of comparison to examine not only different dinosaurs, but also different ecologies.

Research teams want to find examples of plant life and smaller animals that co-existed with these dinosaurs. This information can be compared with collections made in other parts of North America to understand north-south variations in species and entire ecosystems.

In addition to advancing the field of paleontology, the researchers hope that this project in Coahuila may encourage more tourism to the area and bring attention to the Museo del Desierto, where the original specimen will be permanently housed.

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