Turtles the size of a car once roamed Earth; scientists just found their fossils

By Reis Thebault, Washington Post, adapted by Newsela staff on 02.25.20
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Image 1. A reconstruction of the giant turtle Stupendemys geographicus swimming in freshwater. Image: Jaime Chirinos/University of Zurich

In the swamps of northern South America some 10 million years ago, quotidian life-or-death battles unfolded at an epic scale. Giant caimans, in the same family as alligators, stalked the wetlands of modern-day Venezuela and Colombia. They slunk along at 30 feet, snout to tail. Among their most formidable prey was the Stupendemys geographicus. The Stupendemys geographicus is a colossal turtle. Little was known about this turtle, until now.

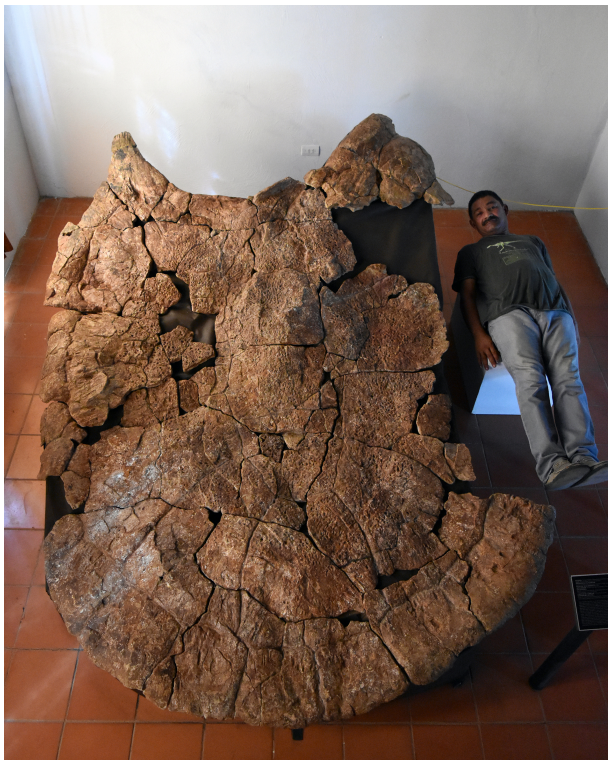
New research, published February 12 in the journal Science Advances, reveals important findings about the Stupendemys. The turtle is a now-extinct freshwater turtle. The research details the discovery of one of its shells. The shell is the largest-known turtle shell found to date. It is nearly 9 1/2 feet long. The animal would have resembled, in length and weight, a medium-sized car.

The hulking reptile was about 100 times the size of its closest living relative, the Amazon river turtle. It was twice the size of the largest living turtle, the marine leatherback, the researchers estimated. The new findings provide the most thorough accounting yet of the Stupendemys. The

findings help scientists answer crucial questions about what may have been the largest turtle to ever live.

"For almost four decades, we didn't have new and excellently preserved fossils of this turtle," said Edwin Cadena. Cadena is a paleontologist at the Universidad del Rosario in Colombia. He is one of the study's lead researchers. "Many questions - about its diet, if there were differences between males and females, and even if we were dealing with one or more giant turtle species - were completely unknown," Cadena said.

The recently unearthed fossils were dug up in northern Venezuela and Colombia's Tatacoa Desert. Thanks to the fossils, Cadena and his co-authors have been able to fill in some of the unknowns, which have lingered since the 1970s, which was when the animal was first described. It now appears likely that Stupendemys geographicus was the lone species of giant turtle living in the region at that time, he said. There were also differences between the sexes and their diet was diverse and omnivorous.



Among their most surprising discoveries, Cadena said, was the presence of sturdy, front-facing horns on the shells of the males. This was "something completely new for such a giant turtle," he said. The researchers hypothesize that the horns were used as "weapons in male-male combat behaviors." Deep scrapes in the horn of one fossil indicated they may have been used by turtles tangling over territory, they said.

Cadena and his team found more marks, too, some that told of their fearsome, frantic fights with the Purussaurus. Purussauruses were the giant caimans that roamed the northern Neotropics during the Miocene epoch, the same time and place as the Stupendemys. The scars from their skirmishes are still visible today.

Some of the Stupendemys fossils had bite marks and punctured bones. One shell had a tooth embedded in it.

Earth's landscape at the time of the Stupendemys bore little resemblance to today's topography. The turtle's habitat has turned to desert. Back then though, it was humid and swampy. The Andes weren't yet fully formed and the Orinoco and Amazon rivers cut different paths.

A sprawling wetland and lake system meant plenty of room for massive animals, especially the Stupendemys. The turtle spent most of its days at the bottom of freshwater streams and small lakes, Cadena said. They likely lived across the whole northern part of South America.

But those ideal conditions were not to last. Over time, plate tectonics pushed the Andes higher. This disrupted the water systems and drastically reduced the scope of their habitat, the researchers wrote.

At some point, their huge size, which had come to signify their success on Earth and the conquering of their environment, was no longer enough to keep them alive. In the early Pliocene, around 5 million years ago, they became extinct.