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'Birdlike' dinosaur finally has name decades after discovery
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By ANNA KUCHMENT, The Dallas Morning News
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A Convolosaurus marri dinosaur skeleton photographed at the Perot Museum of Nature and Science on Tuesday, April 2, 2019. The tiny Texas dinosaur finally has a name nearly 35 years after its discovery among fossils collected at Proctor Lake in Comanche County, Texas. The bird-like and agile Convolosaurus marri comes from the largest trove of dinosaur fossils ever discovered in Texas. (Shaban Athuman/The Dallas Morning News via AP)
Photo: Shaban Athuman, AP

DALLAS (AP) — About 120 million years ago, flocks of small dinosaurs bounded from plant to plant in an open floodplain southwest of what is now Fort Worth. They stood on two legs as they foraged for leaves and shoots. The smallest hatchlings were about the length of your hand, while the largest measured 9 feet from head to tail.

"They were birdlike and very agile, slender, fast-running dinosaurs," said Kate Andrzejewski, a postdoctoral fellow at Southern Methodist University and lead author of a highly anticipated new paper in the journal PLOS ONE that describes these creatures for the first time.

The dinosaurs, which Andrzejewski and her colleagues named Convolosaurus marri, make up the largest trove of dinosaur fossils ever discovered in Texas. Convolosaurus means "flocking lizard" in Latin, and marri honors SMU alumnus and patron Ray Marr, president of Marr Oil & Gas.

When a college student first spotted the remains in 1985, the news made headlines around the world. Rusty Branch, a sophomore geology major at Tarleton State University, came upon the remains while on an outing with friends at Proctor Lake.

The bones were lying in the red dirt like rocks, only Branch knew there was something different about them. He lifted one to his mouth. The porous nature of some fossil bones causes them to stick lightly to the tongue. When the object felt sticky, he got in his car, drove to the nearest phone, and called his adviser to tell him of his find.

Branch, who now lives in Fort Worth and works for a geoscience company, spent the summer of 1985 camped out by the lake with his adviser, Phillip Murry, and a team of researchers. Paleontologists from top institutions joined them.

"It was a great experience for a young kid in college," he told The Dallas Morning News . "I got to hang out with some of the best folks in the world and learned a huge amount."

The more they dug, the more bones they found.

Some were nearly complete skeletons and belonged to animals of all ages and sizes. From 1985 to 2017, students and staff at SMU worked to prepare the specimens, which were delicate and difficult to remove from the encasing rock.

"It was clear that this was probably a new species and that a full understanding of the skeleton in all its growth stages was what was deserved for this wonderful dinosaur," said Louis Jacobs, professor emeritus of earth sciences at SMU and co-author of the new study. Ultimately, researchers dug up 488 bones, including the remains of at least 29 dinosaurs.

Such a trove of fossils is extremely rare. "Most dinosaur species are known from one or a very small number of fossils," said Matthew Carrano, curator of dinosauria at the Smithsonian's National Museum of Natural History in Washington, D.C., who was not involved in the study. "When you talk about something where you've got dozens of individuals, that puts it in rare company among dinosaurs."

Most of the finds are housed at SMU's Shuler Museum of Paleontology, where Andrzejewski made them the focus of her dissertation. Other specimens are on display at the Perot Museum of Nature and Science, at the Fort Worth Museum of Science and History, and at the Proctor Lake Corps of Engineers office.

Convolosaurus marri probably lived in the Proctor area for hundreds if not thousands of years, Andrzejewski said. They lived in herds to protect themselves from predators, which included primitive crocodiles and dromaeosaurs, raptor-like meat-eating dinosaurs. Jacobs said he thinks of C. marri as the dinosaur equivalent of gazelles, because they were fast-moving and wary of attacks.

They were also far smaller than some of the best-known dinosaur species.

"It challenges the still-prevalent public misperception that all dinosaurs were big," said Anthony Fiorillo, a paleontologist and chief curator of the Perot Museum of Nature and Science, which houses a composite skeleton of a 3-foot-long Convolosaurus marri. It's displayed under the general label "Proctor Lake Ornithopod," which the museum will update. "I've had dogs bigger than this dinosaur."

It's unknown how they died out, but Andrzejewski said there's no evidence of an attack or natural disaster. Most likely, they perished during a period of drought, and then a flood came along and preserved their bones in mud.

Convolosaurus marri is an early relative of hadrosaurs, the common duckbill dinosaurs that emerged about 20 million years later. Their discovery helps fill a gap in scientists' knowledge of the mid-Cretaceous, an interval that spanned from around 120 million years ago to 90 million years ago and witnessed the bloom of the first flowering plants.

Northern Texas is one of the best places in the world to study that time, Jacobs said. That's because our region was part of a flat shelf area bordered by a growing ocean. As waters rolled across and receded from that shelf, they left a well-dated sequence of rocks and sediments from which dinosaur bones continue to weather out.

The Proctor Lake area has the oldest specimens from that interval, and DFW International Airport, where duckbill dinosaurs have been found, contains the youngest.

"If you want to know about that transition," Jacobs said, "one of the few places that you can go is here."

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