Scientists get a clue about the evolution of T. rex

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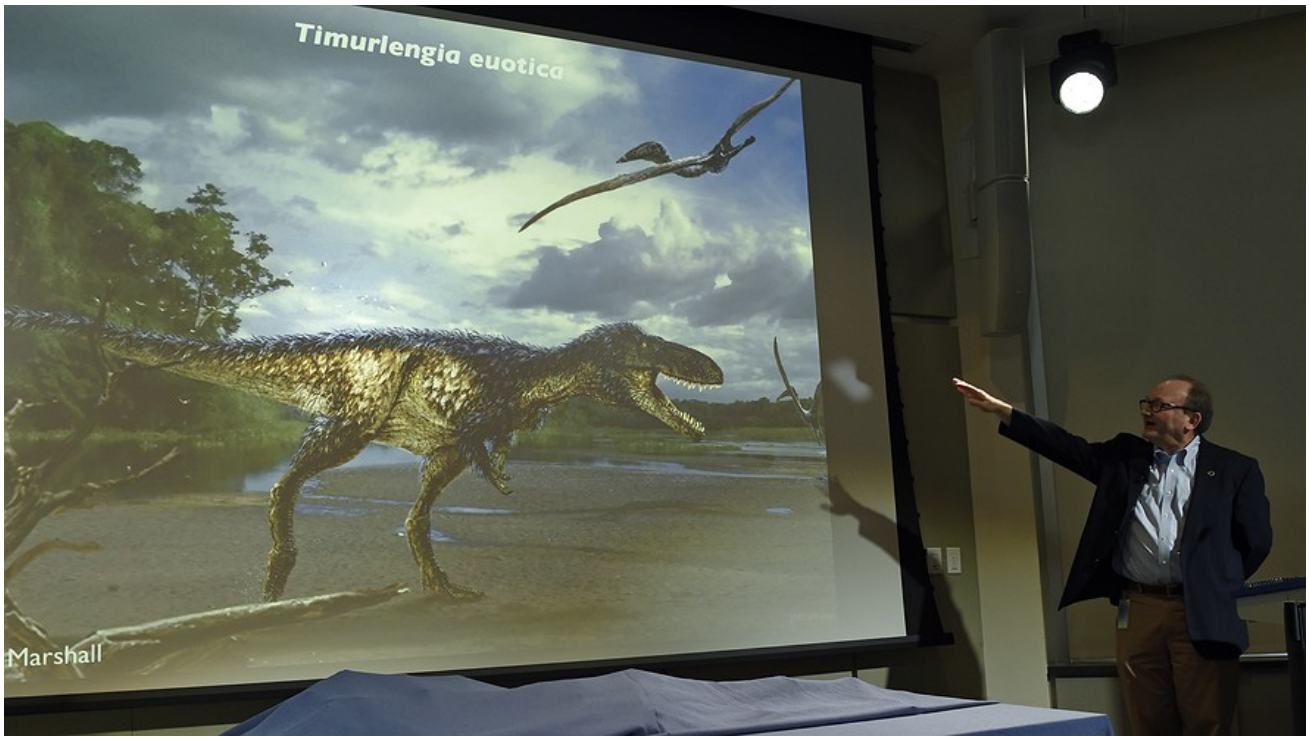

Hans-Dieter Sues, chair of the Department of Paleobiology at the Smithsonian's National Museum of Natural History in Washington, D.C., unveils a new dinosaur, Timurlengia euotica, during a news conference, March 14, 2016. Photo: AP/ Susan Walsh

NEW YORK, N.Y. — How did evolution create an extraordinary killer like T. rex? Evolution is the theory that species evolve — or change — to become better at living in their environment. A fossil find in Central Asia is giving scientists a glimpse of how the change happened.

T. rex and other tyrannosaurs were huge, powerful predators, but they evolved from much smaller ancestors. The new discovery in Asia indicates that this supersizing happened quickly. These were changes that may have helped the monster tyrannosaurs hunt so effectively.

The finding was reported by Hans-Dieter Sues of the Smithsonian's National Museum of Natural History in Washington, D.C., Stephen Brusatte of the University of Edinburgh in Scotland, United Kingdom, and others in a paper released by the Proceedings of the National Academy of Sciences.

Finding An Unknown Dinosaur

They report finding bones of a previously unknown member of the evolutionary branch that led to the huge tyrannosaurs. This earlier dinosaur lived about 90 million years ago, south of what is now the Aral Sea. It looked roughly like a T. rex, but was only about 10 to 12 feet long and weighed only about 600 pounds at most, Sues said. T. rex grew about four times as long and weighed more than 20 times as much.

A Puzzling Gap In The Record

The discovery helps fill in a puzzling gap in the tyrannosaur fossil record. Before that gap, which began some 100 million years ago, the ancestral creatures were only about as big as a horse. Right after the gap, at about 80 million years ago, tyrannosaurs were multiton giants like T. rex. The new finding shows the forerunners were still relatively small even just 90 million years ago. So the size boom happened pretty quickly.

Good Ears For The Hunt

The inner ears of the newfound beast already had features associated with good agility and hearing low-pitched sounds, which might have helped it detect prey at a distance. But the creature lacked the massive, bone-snapping teeth and large sinuses found in T. rex.

Not A Direct Ancestor Of T. Rex

The creature was dubbed Timurlengia euotica (TEE'-mer-len-GEE'-uh yoo-OH-tih-kuh). The name honors the ancient Central Asian ruler Tamerlane and the large inner ears of the beast. The fossils include a braincase and bones from the neck, back, tail, feet and hands. The creature wasn't a direct ancestor of T. rex, but it indicates what such ancestors looked like, Brusatte said.

"Path To T-Rex-Hood"

The discovery helps scientists understand how "the (anatomical) parts got put together ... on the path to T. rex-hood," said Thomas R. Holtz Jr. of the University of Maryland, who didn't participate in the study. It suggests where to dig for more fossils to further investigate the transition, or changes, in these dinosaurs, he said.

Quiz

1 Which sentence from the article contains an idea that MUST be included in a summary?

(A) The newly discovered fossil was found in Central Asia.

(B) Members of the tyrannosaur family were powerful predators.

(C) The newly discovered dinosaur existed about 10 million years before T. rex.

(D) The fossil included bones of the braincase, neck bones, feet and hands of the dinosaur.

2 Which sentence BEST captures a main idea of the article?

(A) Timurlengia euotica, a newly discovered dinosaur, lived about 90 million years ago.

(B) A recently discovered dinosaur provides key information in the evolution of the T. rex.

(C) Timurlengia euotica, a newly discovered dinosaur, is not actually a direct ancestor of T. rex.

(D) A recently discovered dinosaur contradicts earlier theories about the evolution of the T. rex.

3 How does the article develop the idea that the discovery of the Timurlengia euotica fossil is valuable to scientists?

(A) by discussing key similarties and differences between T. rex and Timurlengia euotica

(B) by describing how this discovery is changing scientists' thoughts about evolution

(C) by including comments from the researchers who studied the fossil

(D) by describing how the discovery has helped scientists understand a variety of other dinosaurs

4 What do scientists hope to learn from Timurlengia euotica?

(A) why Timurlengia euotica had smaller teeth than T. rex

(B) how carnivores like T. rex hunted their prey

(C) why Timurlengia euotica ultimately disappeared

(D) how the ancestors of T. rex eventually became T. rex

Answer Key

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