

Bigger Than T. Rex

Michael D. Lemonick, Times Magazine
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I'm old enough to remember when *Tyrannosaurus rex* was the biggest, baddest dinosaur in pre-history. But paleontology doesn't stand still. A decade or so ago, scientists unearthed a slightly larger cousin of T. Rex they called *Giganotosaurus* (confusingly, since unless you read slowly the name looks like the more sensible "Gigantosaurus"). And today, they're announcing another cousin that was slightly bigger still. Called *Mapusaurus roseae*, this 40-ft.-long, two-legged meat-eater stalked the ground in what's now Argentina some 100 million years ago.

The discoverers, Rodolfo Coria of the Museo Carmen Funes in Plaza Huincul, Argentina and Philip Currie of the University of Alberta, Canada, didn't just find one of these giants, either: they dug up bones from at least seven, and maybe nine different animals, suggesting they lived--and maybe even hunted--in packs. This isn't the first hint that carnivorous dinosaurs hung out together; the idea that T. rex and its various relatives were solitary animals, like tigers or bears, ceased being the conventional wisdom years ago. But it's still new enough that the image of a dozen 40-ft-long, razor-toothed giants on your tail is refreshingly horrifying, and must have been so even to the 125-ft-long *Argentinosaurus*, a plant-eater that might have been its prey.

The discovery of *Mapusaurus* only emphasizes what's been apparent for some time now: despite the impressive finds paleontologists have made over the past decade or two--dinosaurs with feathers, signs of social behavior, the idea that birds are not just the descendants of but a living form of dinosaur--we're still at the early stages of understanding these remarkable creatures. The only thing we've gotten worse at is naming them: "*Mapusaurus*" comes from the word for earth in the language of the indigenous Mapuche people, and "*roseae*" refers both to the red rocks that housed the fossils and the first name of a donor to the fieldwork. Both very thoughtful, to be sure, but neither has quite the bite of *Tyrannosaurus rex*, the tyrant lizard king.



Argentinosaurus
Meaning: Argentina reptile
Pronounced: AR-gent-eeno-sore-us

The largest land animal ever found, it belongs to a family that originated in the southern continents of Gondwana.

Taxonomy: Saurischia, Sauropodomorpha, Sauropoda, Titanosauridae, *Argentinosaurus*

Type species: *huinculensis*
Length: up to 35 m
Diet: herbivorous
Period: Upper Cretaceous
Time span: 90 mya
Found in: Argentina

Giganotosaurus

Found in Argentina, Giganotosaurus (right) currently holds the title as world's heavyweight champion in the category of largest meat-eating dinosaur. The animal has never before been fully articulated, mounted and presented to the public. Both taller and longer than T. rex, Giganotosaurus measures in at a tremendous 45 feet in length--as large as a Septa bus. Its head alone is six feet long and its jaws are lined with teeth as big as steak knives--large enough to slice up and swallow a human.

Natural History Museum (U.K.)



Tyrannosaurus Rex

Almost everything about this dinosaur -- the four-foot-long jaw, the six-inch-long teeth, and the huge thigh bones -- bespeaks the enormous power of Tyrannosaurus rex, one of the largest theropod (or meat-eating) dinosaurs that ever existed. Most of the bones here are real, fossilized Tyrannosaurus bones. They are from two specimens discovered in Montana by Museum paleontologist Barnum Brown in 1902 and 1908.

These 65-million-year-old bones were once arranged so that the dinosaur stood upright, propped on its tail. Based on new research, however, Museum scientists determined that it was

more accurate to show Tyrannosaurus rex mounted on two feet, in a stalking position, with its head low, tail extended, and one foot slightly raised. The dinosaur in this position is equally if not more terrifying than before, with implications of speed added to its obvious strength and size.

While the Tyrannosaurus rex is posed as if it is stalking prey, we do not in fact know for sure whether meat-eating dinosaurs such as this were active hunters -- tracking down, attacking, and killing prey -- or scavengers, feeding on the carcasses of other dinosaurs. While its huge jaws and its strong legs would certainly be forceful hunting weapons, Tyrannosaurus rex's arms were too short to reach its mouth, and its hands had only two fingers instead of three, making it unable to grasp. The fossils discovered thus far offer some evidence about whether theropods were hunters or scavengers, but not enough to answer the question.

In order to reassemble the Tyrannosaurus rex, a wide array of professionals, with skills ranging from vertebrate paleontology to metallurgical analysis, structural engineering, and blacksmithing, was needed. Together they created the new display, with its vivid evocation of the fearsome power of the most famous of all dinosaurs.

American Museum of Natural History