

# Researchers Identify Giant Croc With T. Rex Teeth

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By Stephanie Mlot

Paleoartistic reconstruction of *Razanandrongobe sakalavae* (via Fabio Manucci)

Contrary to popular belief, the *Tyrannosaurus rex* was not always king of the prehistoric jungle.

New fossils belonging to an extinct crocodile-like creature suggest an even more powerful adversary.

The *Razanandrongobe sakalavae*, or “giant lizard ancestor from Sakalava region,” appears to be the largest and oldest representative of ancient animals called Notosuchians.

A top predator 170 million years ago in Madagascar, the Jurassic-era brute boasts a jumbo jaw and enormous teeth—suggestive of a diet of tendons and bones.



Paleontologists Cristiano Dal Sasso (left) and Simone Maganuco (right) show off the Razana's skull bones (via Giovanni Bindellini)

*R. sakalavae*—“Razana” for short—was [first described in 2006](#) by Italian paleontologists Cristiano Dal Sasso, Giovanni Pasini, and Simone Maganuco. But only isolated teeth and a fragment of the maxillary (upper jawbone) were identified. Classified at the time as a new species of archaic reptile—*Archosauria incertae sedis*—only isolated teeth and a fragment of the maxillary bone were known.

Now, more than a decade later, the same scientists (with the help of Guillaume Fleury of the Museum of Toulouse in France) detail new skull remnants [in open access journal PeerJ](#).

“This new material greatly improves our knowledge of the cranial anatomy of this species,” according to the paper, published this week by lead researchers Dal Sasso and Maganuco, both from the Natural History Museum in Milan.

Razana, for instance, represents one of the earliest events of “exacerbated increase in body size along the evolutionary history” of the notosuchians, the researchers wrote.



Paleoartistic reconstruction of Razanandrongobe sakalavae (via Fabio Manucci)

And it has become clear that, walking tall on four paws, the seven-foot-long beast “could compete with the theropod dinosaurs [like the *Tyrannosaurus*], reaching Madagascar’s apex in the food chain, without fear of rivals,” Dal Sasso said in a translated statement.

Crocodile-esque characteristics like adjacent nostrils, strong mandibular symphysis, a robust bone palate, and serrated conical teeth set the Razana apart from bipedal carnivorous dinosaurs—as well as modern crocs, which feature tapered, smooth nashers.

Perhaps most intriguing (because discovering a primitive animal just isn’t enough) is the researchers’ use of 3D printing to replicate “identical but speculative” copies of missing bones, used to rebuild the Razana nose.

“Verifying that the occlusion of the teeth and bones was perfect ... it was clear that these bones belonged not only to the same species but also to the skull of the same individual,” the Natural History Museum announced.

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