

KING OF THE CROCS

“**S**arcosuchus is cool, but *Deinosuchus* is the supercroc that started it all.”

–Amazon.com reviewer

Supercroc *Sarcosuchus* is coming to the Museum of Natural Sciences March 15! But “King of the Crocodylians” *Deinosuchus* is already here (and has been for ages). Two ancient crocs vie for supremacy (and research funding, see sidebar) in the world of paleontology. It all started in North Carolina.

“The teeth are only gently curved; they are very strong and robust,” wrote North Carolina’s first State Geologist, Ebenezer Emmons, in an 1858 report to the General Assembly. Emmons believed the fossil crocodilian teeth collected in Bladen County, N.C., and brought for study to the state capital belonged to a new species of *Polyptochodon* (a now-discarded catch-all genus for giant crocodilians). He proposed the species name *rugosus* for the animal, based on the “remarkable rugose [ridged] enamel” of its teeth. He actually had in hand a *Deinosuchus* fossil, the first of



Sarcosuchus imperator

many to be documented from North America, especially from the Southeast. A warm, humid climate coupled with abundant river and swamp habitat allowed *Deinosuchus* populations to proliferate in this region, according to David Schwimmer, paleontologist at Columbus State University, Georgia.

In the Sahara desert in 2000, paleontologist Paul Sereno discovered the fossil remains of *Sarcosuchus*, an earlier croco-

dilian whose six-foot-long jaws were studded with more than 100 teeth, including a row of enlarged, bone-crushing incisors. “The teeth are incredibly stout,” he said. “They are crushing, penetrating teeth.” Biologist Greg Erickson figures from tests he has done with Florida alligators that getting trapped by *Sarcosuchus*’ powerful, toothy jaws would be equivalent to being trapped underneath a Mack truck.

<i>Sarcosuchus</i>	<i>Deinosuchus</i>
“Supercroc”	“King of the Crocs”
up to 40 feet long	up to 40 feet long
6-foot-long skull	6-foot-long skull
likely ate dinosaurs	likely ate dinosaurs
long, narrow snout	broad snout
Early Cretaceous (110 million years ago)	Late Cretaceous (80 million years ago)
North Africa	North America

Ancient crocs in action

Sereno surmises that *Sarcosuchus* behaved much like crocodiles living in today's African rivers. It hid underwater with only its eyes exposed, waiting for an animal to get a drink at the water's edge. Then with massive jaws erupting from the water, it locked on to the animal's leg or neck, dragged it underwater, and tore it apart after it drowned. He thinks a 40-foot crocodile like *Sarcosuchus* could have tackled even the giant long-necked sauropod dinosaurs that gathered at African waterholes. A North American crocodylian contemporary of *Sarcosuchus* left its tooth in the upper right jaw of the carnivore *Acrocanthosaurus* on display in

the Museum. A relatively small crocodile, it was probably being eaten alive when it lost its tooth.

Deinosuchus, which lived 30 million years after *Sarcosuchus*, may have preyed on carnivorous dinosaurs, according to Schwimmer. Crocodile teeth marks are still visible on chunks of dinosaur bone. In fact, *Deinosuchus*' success as a predator may have thwarted carnivorous dinosaurs from dominating the food chains on the shores of the Gulf of Mexico.

Schwimmer thinks that in North Carolina's sounds, *Deinosuchus* would have been as common as alligators are now in Florida. It fed mostly on big, thick-shelled turtles, and it may have pre-

ferred saltier water than does today's alligator. Most of the state's *Deinosuchus* fossils have been found in the ancient delta region of the late Cretaceous Cape Fear Formation.

Just as North Carolina's alligators are smaller than those further south, *Deinosuchus* was smaller here than in the Gulf of Mexico region. Schwimmer thinks it probably reached "only" 28 to 30 feet in North Carolina. Emmons described pieces of Cape Fear *Deinosuchus* skull in his 1858 report: "They are thick and strong, and were no doubt sufficiently so to resist the entrance of a musket ball." *Deinosuchus* was built like an ironclad.

