Tenzin Norden

Dinosaur

September 23, 2020

Dino teeth research prove giant predatory dinosaur lived in water

Spinosaurus was the largest carnivorous dinosaur. Its name means “spine lizard”, it was called appropriately because the dinosaur had very long spines growing off its back. These long spines are referred to as a “sail” which were as long as 2 meters. It lived during the cretaceous period, which is between 145.5 and 65.5 million years ago. There are two named species based on where they are discovered Spinosaurus aegyptiacus (Egypt), *Spinosaurus* maroccanus (Morocco). A research team from the University of Portsmouth discovered more than a thousand dinosaur teeth proving that Spinosaurus was an enormous river monster. Published on the 21st September, in the journal *Cretaceous Research* they prove that the 6 metric-ton and 15-meter-long dinosaur was in fact the most commonly found creature on the prehistoric river which flowed once through the current day Sahara Desert 100 million years ago. Which is amazing as until recently Spinosaurus was known to have lived exclusively on land.

The fossilized teeth were collected from Morocco, these fossils were distinct and easily identifiable to be Spinosaurus teeth. Arron Quigley one of the researchers from Portsmouth explained that, “The teeth of Spinosaurus have a distinct surface. They have a smooth round cross section which glints when held up to the light.” David Martill, Professor of Paleobiology at the University of Portsmouth said that, “The huge number of teeth we collected in the prehistoric riverbed reveals that Spinosaurus was there in huge numbers, accounting for 45 per cent of the total dental remains… The enhanced abundance of Spinosaurus teeth, relative to other dinosaurs, is a reflection of their aquatic lifestyle. An animal living much of its life in water is much more likely to contribute teeth to the river deposit than those dinosaurs that perhaps only visited the river for drinking and feeding along its banks… From this research we are able to confirm this location as the place where this gigantic dinosaur not only lived but also died. The results are fully consistent with the idea of a truly water-dwelling, "river monster."” (University of Portsmouth 2020). Along with Spinosaurus they also found preserved remains of other creatures from the cretaceous period sawfish, coelacanths, crocodiles, flying reptiles and other land-living dinosaurs.

It was only in April of this year that an article was published on the journal *nature* which provided irrefutable evidence for the dinosaur to have an aquatic propulsive structure. The researchers from the nature article stated that, “This dinosaur has a tail with an unexpected and unique shape that consists of extremely tall neural spines and elongate chevrons, which forms a large, flexible fin-like organ capable of extensive lateral excursion. Using a robotic flapping apparatus to measure undulatory forces in physical models of different tail shapes, we show that the tail shape of Spinosaurus produces greater thrust and efficiency in water than the tail shapes of terrestrial dinosaurs”( Ibrahim, N., Maganuco, S., Dal Sasso, C. et 2020)

these discoveries by the research team from the University of Portsmouth and the researchers behind the nature article were vital in proving that the Spinosaurus was a dinosaur that swam in the large rivers beds and lived in water for the majority of its life. Thus, making it the first known dinosaur to do so.

**Works Cited**

University of Portsmouth. "Dino teeth research prove giant predatory dinosaur lived in water: Palaeontologists establish Spinosaurus was a real life 'river monster'." ScienceDaily. ScienceDaily, 21 September 2020. <www.sciencedaily.com/releases/2020/09/200921111709.htm>.

Ibrahim, N., Maganuco, S., Dal Sasso, C. *et al.* Tail-propelled aquatic locomotion in a theropod dinosaur. *Nature* **581,**67–70 (2020). https://doi.org/10.1038/s41586-020-2190-3