

# Ancient sloth found to have been bitten by ancient crocodile

31 August 2020, by Bob Yirka



Skulls in dorsal view of (a) an adult size black caiman *Melanosuchus niger* (MUSM CR); (b) a juvenile *Purussaurus neivensis* (IGM DHL45). La Venta (Colombia), facing the bite-marked tibia; (c) a fully grown *P. neivensis* (UCMP 39704), La Venta (Colombia). (d) Teeth of *P. neivensis* (MNHN n/n) from La Venta (Colombia), scale bar is 10 mm. (e) Shell of *Podocnemis* (MUSM 919) in dorsal view from the late Miocene of Iñapari, Peruvian Amazonia. The carapace bearing a bite out of approximately 60 cm is faced with DGM 527-R, a huge jaw of *Purussaurus brasiliensis* from the late Miocene of Acre, Brazil [35]. (f) Life reconstruction of the putative attack of a young to sub-adult *Purussaurus* on the ground sloth *Pseudopreotherium* in a swamp of proto-Amaozonia. Art: Jorge A. González. Credit: *Biology Letters* (2020). DOI: 10.1098/rsbl.2020.0239

A pair of researchers, one with Instituto Argentino de Nivología, the other Universidad Peruana Cayetano Heredia, has found fossil evidence of an ancient giant ground sloth living in proto-Amaozonian swamps. The fossil has shinbone bite marks from a Miocene caiman *Purussaurus*, a large crocodilian species from the period. In their paper published in the journal *Biology Letters*, François Pujos and Rodolfo Salas-Gismondi describe the fossil and what they learned about it.

The fossil was found in the rocks of a Pebas

formation (near the Napo River) of the Peruvian Amazon back in 2004, but until now, it had not been thoroughly studied. The researchers found it to have belonged to a giant ground sloth from approximately 13 million years ago. Prior research has suggested that the area where the fossil was found was a wetland system at that time. Giant sloths roamed the edges of the water, eating the grasses that grew there. Prior research has also found that there were at least seven crocodilian [species](#) in the region, though some were quite small. The size and shape of the bite marks ruled out all but *Purussaurus*.

The researchers note that during the time period of the fossil, the area had not yet been overtaken by mammals, as virtually all of the land-dwelling carnivores were marsupials. *Purussaurus*, the largest of the crocodilian species, inhabited the water and is believed to have been the largest of the species to have ever lived, growing to lengths of 20 feet and having a bite believed to have been twice as powerful as T Rex.

The researchers suggest that the *Purussaurus* sprang up out of the water, just as crocs do today, and grabbed the sloth by the hind leg. Once it had a firm grip, it likely went into a "death roll" dragging the sloth into the water and holding it there until it drowned. The researchers found evidence of 46 tooth marks in the [fossil](#), which showed that the sloth had been repeatedly bitten by the *Purussaurus* as it sought to get a firmer grip. The *Purussaurus* left behind shallow pits and scores, as well as holes that had fully penetrated the tibia. There was also no evidence of bone regeneration, strongly suggesting the [sloth](#) did not survive the attack.

**More information:** François Pujos et al. Predation of the giant Miocene caiman *Purussaurus* on a mylodontid ground sloth in the wetlands of proto-Amaozonia, *Biology Letters* (2020). DOI: 10.1098/rsbl.2020.0239

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