DINOSAUR STAMPEDE IN DOUBT

An ambling herbivore, rather than a hunting carnivore, made Australia's famous dinosaur tracks, a new paper claims.

Anthony Romilio, a PhD student at the University of Queensland's School of Biological Sciences, has examined the large dinosaur footprints at Lark Quarry in Central Queensland. In work published in Cretaceous Research he has concluded that the tracks were made by an ornithopod that is possibly related to Muttaburrasaurus rather than a terrifying theropod resembling Tyrannosaurus rex.

Dinosaur footprints are common, Romilio says, but several prints from the same individual are rare. Lark Quarry, 95 km south-west of Winton, is something else. It shows more than 3000 prints from 150–200 dinosaurs, most the size of chickens but some as large as emus. There are also 11 prints from one much larger individual.

Since the excavation of the quarry in 1976–77, the dominant theory has been that the large dinosaur was a giant theropod whose arrival caused panic among the smaller dinosaurs, creating a stampede.

"Making the distinction between the three-toed tracks of herbivorous ornithopod dinosaurs and the three-toed tracks of carnivorous theropod dinosaurs can be quite difficult," Romilio says. He points to numerous other cases where ornithopod tracks have been initially identified as being made by theropods and vice versa.

Despite considerable similarities, ornithopod feet are wider than they are long, while theropod feet are the reverse. Using such distinguishing features Romilio concluded that an ornithopod created the Lark Quarry tracks. Although he cannot rule out the possibility of a carnivorous ornithopod, none are known. He says further research is required to reveal whether the arrival of a large herbivore could have created a stampede among the smaller dinosaurs, or whether the stampede interpretation is also wrong.

Romilio doesn’t believe that the large ornithopod was doing any chasing. "It doesn’t appear to have been moving continuously. Rather, it was stopping and starting every two or three paces," he says. He notes that much of the site remains unexcavated, and there could be as many as 80,000 more footprints still under the hill.

If the Lark Quarry tracks were not made by a large theropod, the question remains open whether Australia ever hosted such a beast. The largest carnivore skeleton found in Australia is an Australovenator known as Banjo (AS, August 2009, p.4), but at no more than 6 metres long Romilio describes this as a "medium-sized carnivore".

Romilio does not rule out a larger theropod being found, however, noting that South America had predators even larger than Tyrannosaurus and was connected to Australia through Antarctica at the time.