



Illustration, Robert Brunke, QM

Muttaborrasaurus langdoni roamed the Australian landscape about 100 million years ago. The dinosaur is known from three specimens from central and northern Queensland and is believed to have been quite common during early Cretaceous Period.

Bones from *Muttaborrasaurus* were first discovered in 1963 by grazier, Mr P. Langdon. The discovery site was in the channel country of the Thomson River, about 5 km south-east of the town of Muttaborra and about 1.5 km north-west of *Roseberry Downs* homestead.

A museum team collected five tonnes of rock material from the site. This was transported to Brisbane, first by truck to Longreach and then south by train. It took many years of painstaking work for museum scientists to piece the bones together and study of the animal is still not complete. From the reconstruction we have deduced that *Muttaborrasaurus* was about 7 m long from snout to tail. It was able to walk on its hind legs, but probably spent most of its time browsing and resting on all fours.

Muttaborrasaurus belonged to the ornithomimid group of dinosaurs, although the detail of its relationship to other members of this group is not yet clear.

Ornithomimids have been found on all continents and lived from about 210 to 65 million years ago. In general, they were plant-eating dinosaurs that moved on their hind legs (bipedal). The ornithomimids were also known as beaked dinosaurs because they usually had horny beaks, instead of teeth, at the front of their mouths.

Muttaborrasaurus had a 15 cm long spiked thumb on each hand and may have used this as a defensive weapon.

One of the most distinctive features of *Muttaborrasaurus* was an inflated, hollow bony chamber on the animal's snout. The bones in this area were much thinner than the rest of the skull and there were probably internal partitions inside the chamber - at least two, one on each side of the head. Scientists do not know why the hollow chamber existed or what function the partitions may have had but, there are several possibilities:

- the chamber may have enhanced the animal's sense of smell; and
- it may have been a resonating chamber, enabling the animal to make a lot of noise.

Scientists have no real idea of the environment in which *Muttaborrasaurus* lived because all three specimens from Queensland have been found in an area that was once covered by a vast inland sea. The rainfall on the land where they lived was about 1 m per year.

One feature that set *Muttaborrasaurus* apart from other ornithomimids was its distinctive teeth. In other dinosaurs, and many reptiles such as crocodiles today, the teeth are replaced one by one so that the bite line is uneven on either jaw.

In *Muttaborrasaurus* the teeth were all replaced at the same time,

so the upper and lower jaws fitted together evenly. When the animal's mouth was closed, the teeth came together in such a way that they acted like a pair of shears.

The back of the skull was also significantly larger than other related dinosaurs. This increased area would have been covered with a correspondingly larger amount of muscle tissue, which probably gave *Muttaborrasaurus* a stronger bite.

The increased musculature, together with the shearing action of the teeth, suggests *Muttaborrasaurus* may have fed on tougher plants than other herbivorous dinosaurs. Perhaps it ate the spiky fronds of cycads.

The locations where *Muttaborrasaurus* fossils have been found extend over a wider area than any other known Australian dinosaur. Although three specimens have been found in Queensland (two others near the town of Hughenden), two teeth have also been recovered from Lightning Ridge in NSW.

Further Information

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September 2000