Agile 'roadrunner' dinosaur fossil discovered in China

By Matt Walker
Editor, Earth News

Roadrunning, in the late Cretaceous

One the most agile dinosaurs so far discovered has been unearthed in China.

The tiny dinosaur, dubbed a "roadrunner" by the scientists who found it, is also one of the smallest dinosaurs known.

Measuring just half a metre long, the fleet-footed theropod named*Xixianykus zhangi* was likely to have used a huge claw to dig for termites and ants.

It then used its speed to efficiently move between ant mounds and avoid the attentions of larger predators.

Details of the discovery are published in the journal Zootaxa.

***Xixianykus* was a highly efficient runner**
Fossil co-discoverer Dr Corwin Sullivan

"The limb proportions of*Xixianykus* are among the most extreme ever recorded for a theropod dinosaur," says Dr Corwin Sullivan, a Canadian palaeontologist based at the Chinese Academy of Sciences in Beijing and one of the authors of the study.
For example, the small theropod's upper leg, or femur or thigh bone, is particularly short in comparison to its lower leg and foot.
A similar pattern is seen in many running animals today.
"This doesn't provide a basis for estimating its top speed, but it does show that *Xixianykus* was a highly efficient runner," says Dr Sullivan.

Fast digger

An international team of researchers discovered the dinosaur fossilised in the Upper Cretaceous Majiacun Formation of Xixia County in Henan Province, China.
It is the first dinosaur of its type, known as an alvarezsaurid theropod, found in China, with just tiny fragments of its relatives previously being found further north in Inner Mongolia, Asia.

DINO DISCOVERIES

Dr Xing Xu and colleagues earlier this month announced the discovery of a close relative of the swift, predatory dinosaur Velociraptor
The oldest fossilised dinosaur burrows were unearthed last year
A dinosaur-eating snake has recently been found

The researchers, led by Dr Xing Xu of the Chinese Academy of Sciences, uncovered an incomplete skeleton of *Xixianykus,*which included seven vertebrae, the synsacrum, which is formed from fused vertebrae and helps carry the weight of the hind part of the animal, a few ribs, parts of the pelvic girdle and most of the right hindlimb.
Several of the skeleton's characteristics have reinforced the impression that *Xixianykus* was a highly efficient runner, adds Dr Sullivan.
Features of the hind limb, pelvis and backbone would have promoted stability and reduced superfluous, energy-wasting movements as*Xixianykus* dashed across prehistoric landscapes, he says.
The "roadrunning" dinosaur, as its discoverers describe it, probably hunted small insects, such as termites and ants.
Its forelimbs were not preserved, but other alvarezsaurids related to*Xixianykus* possessed large single claws at the end of short, strong forelimbs, which scientists believe they used to dig into ant nests and termite mounds.
The researchers believe that *Xixianykus* fed in the same way.
Some of the adaptations that helped to stabilise the body when running could also have braced it when digging.

"It may sound odd, but digging and running actually work quite well together," says study co-author Dr David Hone of the Chinese Academy of Sciences.
"Some modern termite-eating species travel long distances between colonies of their prey, so as an efficient runner *Xixianykus* would have been able to follow this pattern.
"Any small dinosaurs would be vulnerable to predators too and the ability to make a speedy exit if danger threatened would be valuable to an animal like this."