Students discover new species of raptor dinosaur (w/ Video)

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Linheraptor skeleton. Credit: David Hone.

(PhysOrg.com) -- A new species of dinosaur, a relative of the famous *Velociraptor*, has been discovered in Inner Mongolia by two PhD students.

The exceptionally well preserved dinosaur, named *Linheraptor exquisitus*, is the first near complete skeleton of its kind to be found in the Gobi desert since 1972, and will help scientists work out the appearance of other closely related dinosaur species.

Linheraptor is in the *Dromaeosauridae* family of the carnivorous theropod dinosaurs and lived during the Late Cretaceous period. In addition to *Linheraptor* and *Velociraptor*, theropod dinosaurs include charismatic meat-eaters like Tyrannosaurus rex and modern birds.

The two PhD students, Michael Pittman from UCL (University College London) and Jonah Choiniere from George Washington University (GWU), found the dinosaur sticking out of a cliff face during a field project in Inner Mongolia, China. Their research is published online today in the journal *Zootaxa*.

"Jonah saw a claw protruding from the cliff face. He carefully removed it and handed it to me. We went through its features silently but he wanted my identification first. I told him it was from a carnivorous dinosaur and when he agreed I'm surprised nobody in London heard us shouting," said Michael Pittman, a PhD student in the UCL Department of Earth Sciences who was the co-discoverer of the dinosaur.

"I've always wanted to discover a dinosaur since I was a kid, and I've never given up on the idea. It was amazing that my first discovery was from a Velociraptor relative. My thesis is on the evolution and biomechanics of dinosaur tails but the carnivorous dinosaurs are my favourite and my specialty," he added.

At approximately 2.5 metres long and 25 kilograms, the researchers believe *Linheraptor* would have been a fast, agile predator that preyed on small horned dinosaurs related to Triceratops. Like other dromaeosaurids, it possessed a large "killing claw" on the foot, which may have been used to capture prey. Within the Dromaeosauridae family, *Linheraptor* is most closely related to another recently discovered species Tsaagan mangas.

Linheraptor differs from all other dromaeosaurs because of a triangular

hole in front of the eye socket called the antorbital fenestra, which is a space in the skull that sinuses would have occupied. In *Linheraptor* this triangular hole is divided into two cavities - one of which is particularly big.

"This is a really beautiful fossil and it documents a transitional stage in dromaeosaurid evolution," said Dr. Xu Xing, Professor of Palaeontology at the Institute of Vertebrate Paleontology & Paleoanthropology (IVPP).

Linheraptor was found in rocks of the Wulansuhai Formation, part of a group of red sandstone rocks found in Inner Mongolia, China during a field expedition by the researchers in 2008. It is the fifth dromaeosaurid discovered in these rocks, which are famous for their preservation of uncrushed, complete skeletons.

The research was done as part of the Inner Mongolia Research project, led by Dr. Xu, which aims to better understand the Late Cretaceous ecosystem of Inner Mongolia, China which is analogous but less well-studied than the well known Late Cretaceous ecosytem of Outer Mongolia. The research was funded by the Geological Society of London, the US National Science Foundation, the Chinese National Science Foundation, and George Washington University.

More information: The article, "A new dromaeosaurid (Dinosauria: Theropoda) from the Upper Cretaceous Wulansuhai Formation of Inner Mongolia, China," is published online in *Zootaxa* today.

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