ACTA PALAEONTOLOGICA POLONICA

A new ornithomimid dinosaur with gregarious habits from the Late Cretaceous of China

Yoshitsugu Kobayashi and Jun-Chang Lü
Acta Palaeontologica Polonica 48 (2), 2003: 235-259

At least fourteen ornithomimid skeletons were recovered from the Upper Cretaceous Ulansuhai Formation in Nei Mongol (Inner Mongolia) Autonomous Region of China. They are assigned to a new genus and species, *Sinornithomimus dongi*. The anatomy of the species is described. Comparative and phylogenetic studies of ornithomimosaurs prove that these skeletons represent a new taxon that is more derived than *Archaeornithomimus* and more basal than the clade of [(*Anserimimus* + *Gallimimus*) + [*Struthiomimus* + (*Dromiceiomimus* + *Ornithomimus*)]]. The phylogenetic analysis suggests that the structure of the hand is similar to Archaeornithomimus and represents an intermediate condition between the primitive (*Harpymimus*) and the derived (*Anserimimus, Gallimimus, Struthiomimus, Dromiceiomimus*, and *Ornithomimus*) conditions. The monophyly of Ornithomimidae is supported by a single synapomorphy (arctometatarsalian condition) in this analysis, indicating that the family is not as strongly supported as previously suggested. The analysis also implies that the shape of the rhamphotheca in North American taxa may have been different from that in Asian taxa. Previous study suggests herbivorous habits of this dinosaur based on characteristics of the gastroliths. The skeletons of *Sinornithomimus* were collected from a single monospecific bonebed with a high ratio of juvenile individuals (11 of the 14), suggesting gregarious behavior for protection from predators. The abundance of juveniles indicates high mortality of juveniles or a catastrophic mass mortality of a population with a high proportion of juveniles. An increase in the relative ratio of the tibia to femur through the ontogeny of *Sinornithomimus* suggests higher cursoriality in adult individuals than in juveniles.

Key words: Dinosauria, Theropoda, Ornithomimosauria, Ornithomimidae, Late Cretaceous, China.

Yoshitsugu Kobayashi [ykobayashi@dinosaur.pref.fukui.jp], Fukui Prefectural Dinosaur Museum, Katsuyama, Fukui 911−8601 JAPAN; Jun−Chang Lü [junchang@mail.smu.edu], Department of Geological Sciences, Southern Methodist University, Dallas Texas 75275 USA.

Full text (2,659.6 kB)