

## A new specimen of *Microraptor* (Theropoda: Dromaeosauridae) from the Lower Cretaceous of western Liaoning, China

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### ABSTRACT

*Microraptor zhaoianus* is known from several specimens collected in western Liaoning Province, China. However, several aspects of the morphology of *Microraptor* remain unknown or ambiguous due to poor preservation of the described specimens. A well-preserved new specimen of *Microraptor zhaoianus* is described in this study. This specimen preserves significant morphological details that are not present or are poorly preserved in the other *Microraptor* specimens including aspects of the skull, the rib cage, and the humerus. These new characters corroborate *Microraptor* as a member of the Dromaeosauridae as previously suggested and support the close relationship of troodontids and dromaeosaurids (Deinonychosauria). The morphology of the rib cage also suggests *Microraptor* and the early volant avialans very likely may have shared a similar mechanism to assist respiration.

### INTRODUCTION

*Microraptor* is an important and interesting avianlike dinosaur from the Jehol Biota. It has received a lot of attention especially in regard to its possible volant activity, extensive plumage on

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