



A new eucryptodiran turtle from the Early Cretaceous Jiufotang Formation of western Liaoning, China

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Abstract

A new eucryptodiran turtle from the Jiufotang Formation of Lamadong, Jianchang County, represents the third turtle taxon, *Liaochelys jianchangensis* **gen. et sp. nov.**, from the Jehol Biota of western Liaoning Province, China. This taxon is diagnosed by a character combination including a midline contact of the prefrontals, vertebrals wider than long, third costals strongly expanded distally, and a medial contact of the eighth costals. A preliminary cladistic analysis places *Liaochelys jianchangensis* along the phylogenetic stem of Cryptodira in a position more derived than the taxa, *Manchurochelys manchoukuoensis* and *Ordosemys liaoxiensis*, known from the underlying Yixian Formation. This discovery opens a new window into the osteology and evolution of primitive eucryptodiran turtles.

Key words: Eucryptodira, "Macrobaenidae", *Liaochelys jianchangensis*, Jiufotang Formation, western Liaoning, Jehol Biota

Introduction

Numerous vertebrate fossils are known from the Early Cretaceous Jiufotang Formation of Lamadong, Jianchang County, western Liaoning Province (Fig 1), including the birds *Jianchangornis microdonta* and *Zhongjianornis yangi* (Zhou *et al.* 2009, 2010), fishes, turtles, choristoderans, lizards, pterosaurs, and dinosaurs, and this site represents a new vertebrate assemblage within the Jehol Biota of northwestern China. Here, a new eucryptodiran turtle is described from this area on the basis of two skeletons. The new taxon is characterized by a medial sutural contact of the prefrontals, vertebral scutes that are wider than long, third costal plates that are strongly expanded distally, and a medial contact of the eighth costal plates. *Manchurochelys manchoukuoensis* and *Ordosemys liaoxiensis* are the only two turtles previous known from the Jehol Biota, but both originate from the underlying Yixian Formation (e.g. Ji 1995; Li & Liu 1999; Liu 2003; Tong *et al.* 2004; Zhou 2010). Consequently, the discovery of the new turtle not only expands the temporal distribution of eucryptodiran turtles from the Yixian Formation to the Jiufotang Formation, but also enriches the total known turtle diversity of the Jehol Biota.

Systematic Paleontology

Testudines Batsch, 1788

Cryptodira Cope, 1868

Eucryptodira Gaffney, 1975