

# A new thalattosaurian (Reptilia: Diapsida) from the Upper Triassic of Guizhou, China

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## Abstract

A new thalattosaurian, *Miodentosaurus brevis* (短吻貧齒龍) gen. et sp. nov., is established on the basis of the fairly preserved skull, with the mandible, of a skeleton from the Triassic Falang Formation (法郎組) near Chajiang River, Xingyi (興義), Guizhou province (貴州省). According to conodonts from the corresponding horizon of the fossil bearing bed in Yunnan side of the Chajiang River, the new taxon is early Late Triassic (Carnian) in age. *M. brevis* is a relatively large thalattosaurian, with a total length of more than four meters. The very short snout, with a straight profile, is the most striking of the diagnostic characters of the new taxon. Other diagnostic features include the presence of a crest along the anterodorsal midlines of the premaxillae, the edentulous maxilla, the presence of a groove-like trough along with the anterolateral margin of the maxilla on the ventral surface, the presence of six conical premaxillary teeth, and no more than six conical dentary teeth which are restricted to the anterior portion of the dentary. The absence of the vomer and pterygoid teeth, the anterior shift of the large pineal foramen, and the elongation of the neck indicate that *M. brevis* may have had a close relationship with the Askeptosauroidae, to which a Chinese genus, *Anshunsaurus* is referred.

## Introduction

Thalattosaurians (thalattosauriforms of Nicholls, 1999; Müller, 2005; and Müller et al., 2005) has been known for more than one century since the first genus *Thalattosaurus* was described (Merriam (1904) but, until recently, they were only discovered from the Triassic in North America and Europe (Nicholls, 1999). *Anshunsaurus huangguoshuensis* Liu, 1999 from Guizhou province is the first true thalattosaurian known from China (Rieppel et al., 2000). Up to the present, additional five non-problematic thalattosaurian species have been discovered from the Triassic of Guizhou and the neighbouring Yunnan provinces. They are *Xinpusaurus suni* Yin et al., 2000 (see Liu and Rieppel [2001] for systematic correction); *Xinpusaurus bamaolinensis* Cheng, 2003; *Xinpusaurus kohi* Jiang et al., 2004; cf. *Askeptosaurus* Sun et al., 2005; and *Anshunsaurus wushaensis* Rieppel et al., 2006. As with other known taxa, all of these Chinese species show typical thalattosaurian features (such as

a long and slender snout/rostrum) and can be referred to two subgroups (Müller, 2005). *Anshunsaurus* and cf. *Askeptosaurus* belong to a clade with a snout which is straight and elongate, has parallel lateral edges, and terminates in a blunt tip, while *Xinpusaurus* belongs to a clade with a snout which is straight and elongate, has lateral edges converging anteriorly, and terminates in a pointed tip (Rieppel et al., 2005; Müller, 2005).

We report here a new thalattosaurian *Miodentosaurus brevis* gen. et sp. nov. from Chajiang, Xingyi, Guizhou province. This taxon is represented by a virtually articulated skeleton embedded in a limestone slab from the Falang Formation (Upper Middle to Lower Upper Triassic). *M. brevis* is at least more than four meters in total length, with a skull about 33 cm long. Its straight snout/rostrum is very short and its maxilla is edentulous, showing a previously unknown morphotype very different from other thalattosaurians. Because of its uniqueness within the Thalattosauria, we are providing this preliminary study of the skull and mandible while the postcranial skeleton waits for further preparation and subsequent full description, with which a phylogenetic analysis of the new thalattosaurian will be conducted too.

## References

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- Rieppel O, Müller J, Liu J, 2005. Rostral structures in thalattosauria (Reptilia: Diapsida). *Can J Earth Sci*, **42**:2081~2086.
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Figure 1. A nearly complete skeleton of the *Miodentosaurus brevis* (catalogue no. NMNS-004727/F003960)

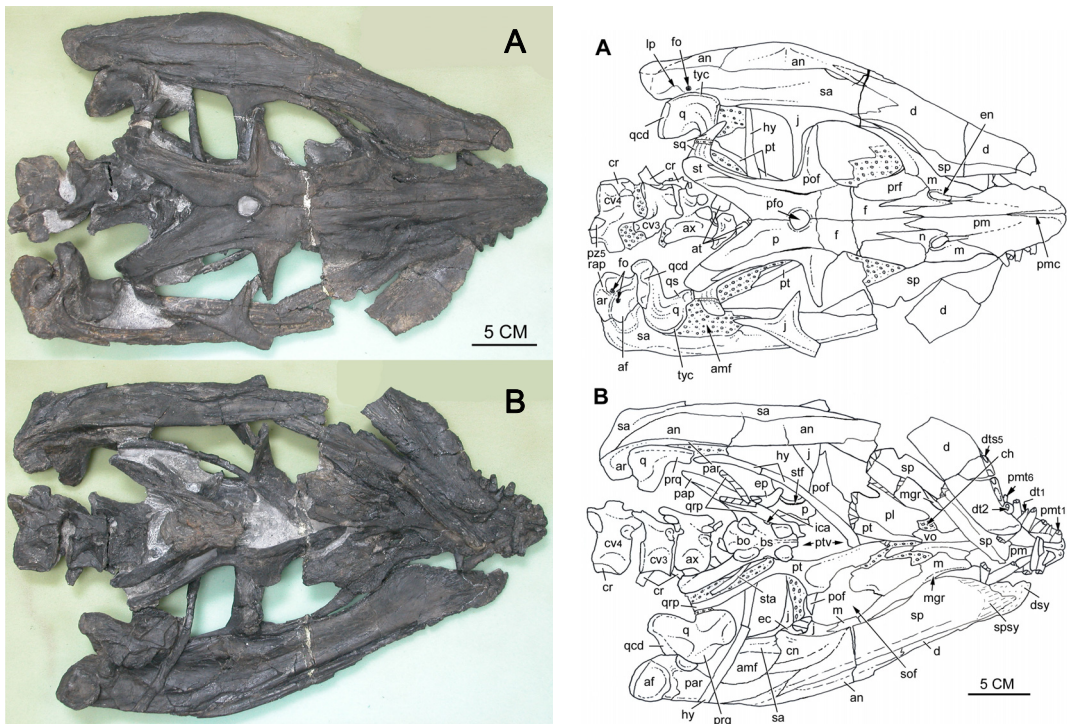


Figure 2 (L). Photos of the skull and mandible of *Miodentosaurus brevis* gen. et sp. nov. A, Skull in dorsal view, with the left and right rami of the mandible in lateral and medial views, respectively. B, Skull in ventral view, with the left and right rami of the mandible in medial and lateral views, respectively.

Figure 3 (R). Outlines of the skull and mandible of *Miodentosaurus brevis* gen. et sp. nov. A and B, derived from A and B of figure 2.