

**CONSIDERATIONS ON THE PHYLOGENETIC RELATIONSHIPS OF
NEMEGTOSAURUS MONGOLIENSIS (SAUROPODA) OF THE UPPER
CRETACEOUS OF MONGOLIA[†]**

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Nemegtosaurus mongoliensis (Upper Cretaceous of Mongolia) is generally included in the family Diplodocidae for the presence of a quadrate that is strongly inclined forward, possession of strongly retracted nares, and the presence of large, narrow teeth located in the anterior portion of the mandibles. Nevertheless, postmortem deformation led to an erroneous reconstruction of the skull (Calvo, 1994; Calvo et al., this volume) and as a consequence, an incorrect systematic position. The skull of the diplodocids is highly derived in its construction, nonetheless *Nemegtosaurus* presents primitive cranial characters (this journal) that exclude it from the diplodocid pattern. The presence of the following derived characters in the primitive skull pattern in *Nemegtosaurus* relates it to titanosaurs, especially *Antarctosaurus* and *Alamosaurus*: (1) teeth cylindrical and narrow (pencil-type). (2) Teeth implanted perpendicular to the tooth row. (3) Symphysis perpendicular to the tooth row. (4) The plane that forms the surface of the teeth forms an angle less than 30 degrees with respect to the axis of the tooth. (5) Parallel mandibular rami. Characters 1 and 5 are shared with diplodocids and are considered convergent. The combination of the primitive (Calvo, 1994, this journal) and derived characters in the skull of *Nemegtosaurus* permit its reassignment to the titanosaurs and, moreover, establishes that the titanosaurids had a skull of primitive construction of the brachiosaurid type, not the diplodocid type.

The reassignment of *Nemegtosaurus* to the titanosaurids and the presence of the titanosaurid *Opisthocoelicaudia skarzynskii* clearly indicate that this family was well represented in Mongolia during the Late Cretaceous. The family Titanosauridae, therefore, is the only family that has reached the Upper Cretaceous.

[†] original reference: Calvo, J. O., L. Salgado, and R. A. Coria. 1998. Sobre las relaciones filogenéticas de *Nemegtosaurus mongoliensis* (Sauropoda) del Cretácico superior de Mongolia. Acta Geologica Lilloana 18 (1):156.