



***Glishades ericksoni*, a new hadrosauroid (Dinosauria: Ornithopoda) from the Late Cretaceous of North America**

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Abstract

A new genus and species of hadrosauroid dinosaur, *Glishades ericksoni*, is described based on paired partial premaxillae collected from the Upper Cretaceous Two Medicine Formation of Montana, in the Western Interior of the United States of America. This taxon is diagnosed on the basis of a unique combination of characters: absence of everted oral margin, arcuate oral margin with wide and straight, obliquely oriented, and undeflected anterolateral corner, grooved transversal thickening on ventral surface of premaxilla posterior to denticulate oral margin, and foramina on anteromedial surface above oral edge and adjacent to proximal end of narial bar. Maximum parsimony analysis positioned *G. ericksoni* as a derived hadrosauroid. Exclusion of *G. ericksoni* from Hadrosauridae was unambiguously supported by the lack in AMNH 27414 of a dorsomedially reflected premaxillary oral margin. Furthermore, the maximum agreement subtree positioned *G. ericksoni* as the sister taxon to *Bactrosaurus johnsoni*. This position was unambiguously supported by posteroventral thickening on the ventral surface of the premaxilla (independently derived in saurolophid hadrosaurids and *Ouranosaurus nigeriensis*) and having foramina on each premaxilla on the anterior surface, adjacent to the parasagittal plane of the rostrum (reconstructed as independently derived in *Brachylophosaurus canadensis*, *Maiasaura peeblesorum*, and *Edmontosaurus annectens*).

Key words: Hadrosauroidea, Hadrosauridae, cladistics, ontogeny, Cretaceous, dinosaur

Introduction

Hadrosauroidea is a diverse clade of herbivorous dinosaurs whose remains have been found in Late Cretaceous (Barremian/Aptian through Maastrichtian) strata of Europe, Asia, the Americas, and Antarctica (Horner *et al.* 2004; Prieto-Márquez in press). Over the last century and the beginning of the present one, numerous discoveries of basal hadrosauroids have filled a gap in our understanding of the early evolution of the clade, particularly regarding the skeletal modifications that took place from basal iguanodontoideans to the Hadrosauridae, one of the most derived and abundant clades of large herbivores during the Campanian and Maastrichtian (Horner *et al.* 2004). The majority of these discoveries came from Aptian through Maastrichtian strata of Eurasia (Gilmore 1933; Rozhdestvensky 1966; Weishampel *et al.* 1993; Godefroit *et al.* 1998; Wang & Xu 2001; You *et al.* 2003; Dalla Vecchia 2009; Sues & Averianov 2009) and, with at least 13 known species, constitute most of the known diversity of basal hadrosauroids. In contrast, the fossil record of these animals in North America is relatively small, being currently restricted to a few species. According to Prieto-Márquez (in press), these include the following taxa: *Claosaurus agilis*, from the Coniacian of Kansas (Carpenter *et al.* 1995); *Lophorhothon atopus*, from the Late Santonian–Early Campanian of Alabama (Langston 1960); *Protohadros byrdi*, from the Cenomanian of Texas (Head 1998); *Eolambia caroljonesa*, from the Cenomanian of Utah (Kirkland 1998; Garrison *et al.* 2007; Gradstein *et al.* 2008); possibly *Cedrorestes crichtoni*, from the Barremian of Utah (Gilpin *et al.* 2007); and a new taxon from the Turonian of New Mexico (McDonald *et al.* in press).

Here, a new genus and species of basal hadrosauroid is described based on a fragmentary specimen collected from the Two Medicine Formation of Montana (United States of America). The new taxon is