

A revision of "pediomyid" marsupials from the Late Cretaceous of North America

Brian M. Davis


Acta Palaeontologica Polonica 52 (2), 2007: 217-256

'Pediomyids' are a diverse group of small- to medium-sized marsupials which comprise a significant portion of many Late Cretaceous North American mammalian faunas. Known almost exclusively from isolated teeth and jaw fragments, 'pediomyids' exhibit far more diversity than any other contemporaneous group of North American mammals. This has led some to suggest that the family 'Pediomyidae' is an artificial, polyphyletic assemblage composed of multiple lineages that independently acquired various traditionally-recognized 'pediomyid' molar characters, such as a reduction of the anterior styler shelf, reduction of the stylocone and a labial shift in the attachment of the cristid obliqua. The present study seeks to elucidate the interrelationships of 'pediomyid' marsupials and test the monophyly of the group using cladistic methodology, including a broad sampling of Late Cretaceous North American taxa and a comprehensive set of qualitative molar characters. Results suggest that the family 'Pediomyidae' and the genus '*Pediomys*' are both polyphyletic and are in need of systematic revision. *Iqualadelphis lactea* (Aquilan) appears to be unrelated to the 'pediomyid' radiation, and rests as a stem taxon near the base of the cladogram. The large Aquilan *Aquiladelphis* nests in a trichotomy with a strictly-defined 'Pediomyidae' and the enigmatic Lancian taxon *Glasbius*, suggesting the possibility of a distant relationship (above the familial level). Three clades are recognized within the 'Pediomyidae': a restricted *Pediomys*, *Leptalestes* gen. nov. (containing the three smallest species), and *Protolambda* (containing the remaining three larger species). Results suggest that '*Pediomys*' *exiguus* is a stem taxon lacking a close relationship to *Pediomyidae sensu stricto*, and is removed to permit recognition of the family as monophyletic. The results carry implications for the role 'pediomyids' might have played in the initial North American marsupial radiation sometime prior to the Campanian, and the pattern of molar evolution throughout major Late Cretaceous lineages.

Key words: Marsupialia, Pediomyidae, systematics, Late Cretaceous, United States, Canada

Brian M. Davis bmdavi@ou.edu, Sam Noble Oklahoma Museum of Natural History and Department of Zoology, University of Oklahoma, 2401 Chautauqua Ave., Norman, OK 73072, USA.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (for details please see creativecommons.org), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

 [Full text \(1,759.1 kB\)](#) |

 [Erratum \(14.3 kB\)](#)