



MIDDLE MIOCENE MESOTHERIINE DIVERSITY AT CERDAS, BOLIVIA AND A RECONSIDERATION OF *PLESIOTYPOTHERIUM MINUS*

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ABSTRACT

We describe a large collection of mesotheriid notoungulate specimens, including a well-preserved cranium, from the early to middle Miocene locality of Cerdas, Bolivia. We attempt to classify the specimens into dental wear groups (i.e., ontogenetic groups) based on tooth size, morphology, and position of the posterior mental foramen, and we compare these specimens to those from other middle-latitude localities in Chile (Chucal) and Bolivia (Achiri, Choquecota, Quebrada Honda, and Nazareno). Our metric analyses, using bivariate plots and coefficients of variation (CVs), indicate that nearly all Cerdas specimens pertain to a single species. Our phylogenetic analysis indicates that this species, '*Plesiotypotherium*' *minus* Villarroel 1978, should be referred to a different genus, more closely related to *Altitypotherium* Croft et al. 2004 (Chucal) and/or *Microtypotherium* Villarroel 1974b (Choquecota). We do not refer '*P.*' *minus* to a new genus at this time, pending revision of other early to middle Miocene mesotheriids from Bolivia. A smaller species, represented by two specimens, may also be present at Cerdas.

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INTRODUCTION

The middle Miocene fossil mammal record of Bolivia is incredibly rich, yet numerous localities have received little detailed investigation. Due to its central position in South America, Bolivia today is an important biogeographical transition area that encompasses varied ecozones (Altiplano, Amazon rainforest, Andean range, and Chaco) that shelter a great deal of biodiversity. In the past, Bolivia and other middle latitude areas may have been a center of diversity and/or origin for certain

mammal groups including mesotheriid notoungulates (Marshall and Sempere 1991; Flynn and Wyss 1998; Cerdeño and Montalvo 2001; Croft et al. 2004, 2007, 2008; Flynn et al. 2005; Croft and Anaya 2006; Croft 2007).

Among notoungulates, mesotheriids are grouped within the suborder Typotheria, though their precise relationships within that clade are unclear (Simpson 1945; Cifelli 1993; Croft et al. 2004; Reguero and Castro 2004; Billet et al. 2008). Most typotheres are small notoungulates (< 10 kg;

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