

# XXXII JAM

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## New insights into the mammalian association from the Huayquerías and Tunuyán formations (Late Miocene-Pliocene): enamel structure in mesotheriids

*Mamíferos  
cenozoicos de  
Argentina:  
filogenia e  
historia  
evolutiva*

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Systematic fieldwork initiated in 2013 in Huayquerías del Este (Mendoza, Argentina), in the Huayquerías and Tunuyán formations (Late Miocene - Pliocene), resulted in more than 800 mammal specimens. The ~300m exposed sedimentary sequence is predominantly formed by pale-red sandstones from an alluvial system, associated with aeolian and fluvial deposits, and developed under arid environment. Most of the fossils are mammals, and among them, the majority are notoungulates (40.3%), followed by rodents (38%). Most of the taxa (97.74%; Xenarthra, Notoungulata, Rodentia) have ever-growing (euhypsodont) cheek teeth, while few (1.73%; Litopterna) have high-crowned (protohypsodont) or (0.53%; Didelphidae, Sparassodonta, Procyonidae) brachydont cheek teeth. The Mesotheriinae (Mesotheriidae, Notoungulata) are medium-sized native ungulates characterized by euhypsodont cheek teeth with enamel principally distributed in the labial and lingual sides (in the mesial and distal surfaces, the enamel layer is very thin or absent). We identified two taxa: *Pseudotypotherium subinsigne* and *Thyotheriopsis* sp. The p4 and m1 of *P. subinsigne* (IANIGLA-PV 198) was sectioned for enamel analysis. The enamel-dentine junction (EDJ) is smooth but the outer-enamel surface forms longitudinal ribs, which are larger in the labial surface (maximum enamel thickness, 0.57mm; maximum enamel thickness between ribs, 0.39mm). From the EDJ to the enamel-cementum junction the schmelzmuster is characterized by modified radial enamel, which includes a thick layer of interprismatic matrix, Hunter-Schreger bands (HSB), and radial enamel. The distribution of the ribs predominantly in the labial side of the lower molars (opposite in the upper) agrees with ectental jaw movements as already suggested for mesotheriids. The euhypsodonty, the radial enamel, which is more resistant to abrasion than other enamel types, and the HSB, that provides resistance to crack propagation, perhaps coped with the xerophytic plants of the arid environments that became common in the Late Miocene of South America.

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