

***Hegetotherium cerdasensis* (MAMMALIA, NOTOUNGULATA, HEGETOTHERIIDAE)  
IN THE EARLY LATE MIOCENE OF NORTHERN CHILE**

Enrique Bostelmann<sup>1\*</sup>, Karen Moreno<sup>1</sup> and Darin Croft<sup>2</sup>

1: Instituto de Ciencias de la Tierra, Laboratorio de Paleontología, Facultad de Ciencias, Universidad Austral de Chile, Los Laureles s/n, 5090000, Valdivia, Chile.

2: Department of Anatomy, Case Western Reserve University, 10900 Euclid Ave., Cleveland, Ohio 44106-4930, U.S.A.

\* email: [ebostel@yahoo.com](mailto:ebostel@yahoo.com)

**Abstract.**

The Caragua fossil fauna (Arica y Parinacota Region) is the only fossil mammal assemblage from the late Miocene in northern Chile. This fauna is mostly known from three different specimens of the endemic notoungulate *Caragatypotherium munozi*. Fieldwork conducted during the 2015 summer in the Tignamar River Valley allowed us to collect fragmentary remains of a diverse array of species, including a small Hegetotheriidae. The bearing levels are composed by fine to medium-grained sandstones lacking apparent stratification, deposited at the basal portion of the Lower Member of the Huaylas Formation that represent predominantly fluvial/alluvial environments. <sup>40</sup>Ar/<sup>39</sup>Ar dates taken from biotite on the Caragua-Tignamar tuff, which immediately overlies the fossiliferous levels, indicate a mean upper age of 10.7±0.3 Ma (early late Miocene, Tortonian age). An andesitic lava underlying the base of the Huaylas Formation in discordant contact provides a maximum age of 11.7±0.7 Ma.

The fossil remains belong to a single individual and include isolated vertebral bodies, the distal portion of a right femur, a patella, part of the right maxilla (bearing M1-3), and two mandibular fragments, one bearing left m1-3. Based on its small size (nearly 25% smaller than *Hegetotherium mirabile*) and the absence of an external talonid sulcus on m3, we refer this specimen to *Hegetotherium cerdasensis* Croft et al. 2016, from the Cerdas beds in south central Bolivia. This material allows us to describe the maxillary molar series of this species for the first time. All teeth are hypselodont, M1 and M2 are subtriangular, and M3 is rhomboidal. M1 (MD 5.65 mm) is slightly smaller than M2 (MD 6.10 mm), but both teeth are larger than M3 (MD 4.05 mm). A thick layer of dental *cementum* covers the lingual faces of all the molars, but its extension into the labial region (ectoloph) is uncertain, most probably due to diagenetic alteration.

The occurrence of *Hegetotherium cerdasensis* at the base of the Huaylas Formation enables us to extend its biochron, as well as that of the genus *Hegetotherium*, by several million years: from the early middle Miocene (> 15.0 Ma; Langhian age) into the late Miocene (probably < 12 million years). Additionally, the discovery of a hegetotheriine rather than a pachyrukhine at Caragua is noteworthy given that pachyrukhines are the dominant hegetotheriids in roughly contemporaneous faunas in southern Chile and Argentina.

The present work is funded by the FONDECYT Project 1150879 “Skeletal morpho-function of Caragua's Miocene Fauna” awarded to KM.

**Key words:** Caragua, Huaylas Formation, Central Andes.