

## NEW INVESTIGATIONS REVEAL ADDITIONAL MAMMAL DIVERSITY AT THE EARLY LATE MIOCENE SITE OF CARAGUA, NORTHERN CHILE

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**Abstract.** Cenozoic fossil mammals of northern Chile are still poorly known, particularly in terms of diversity and abundance. Only the early Miocene Chucal Fauna of Arica's Altiplano has been described in some detail. A second site, Caragua (Arica y Parinacota Region), has mainly been recognized based on three specimens of the endemic mesotheriine *Caraguatypotherium munozi* and an undescribed peltephilid. Fieldwork carried out by our team in this area during the last year allowed us to collect new fossils reflecting a wider taxonomic diversity. These materials come from the basal beds of the Lower Member of the mainly fluvial Huaylas Formation, constrained by dates of  $11.7\pm 0.7$  and  $10.7\pm 0.3$  Ma (Tortonian age), distributed in two localities: Caragua and the Tignamar River Valley. At Caragua, the fossils were collected in a 10-15 m thick tabular bed of poorly-sorted massive conglomeratic sandstones, probably of alluvial origin (stratigraphically ca. 90 m below the 10.7 Ma tuff), whereas in the Tignamar Valley, specimens were mainly found in cross-bedded fluvial sandstones (ca. 40 m below the tuff). Most of the remains are fragmentary bones and teeth exposed on the surface, although some partially articulated specimens were discovered *in situ*.

Overall, remains of *C. munozi* are still the most common fossils; cranial and appendicular materials comes from four different outcrops. Other ungulates include a single specimen of a small Hegetotheriidae assigned to the genus *Hegetotherium*, represented by cranial and postcranial remains, and a series of elongate articulated cervical vertebrae from a larger mammal, probably a Macraucheniiidae (Order Litopterna). Xenarthrans are represented by a Euphractinae Euphractini with osteoderms showing elongate external figures and two piliferous foramina, similar to those of unnamed Miocene forms from Bolivia and Uruguay; and a partial dentary of a Megatherioidea indet.

While the fossil record of Caragua is still scarce, it appears that mesotheriines are the most important element of the faunal assemblage. This is also observed in nearly all other Miocene mid-latitude sites (e.g., Cerdas, Nazareno, Quehua, and Achiri in Bolivia, and Chucal in Chile) as well as in sites in Argentina close in age to Caragua (e.g., the Río Mayo Formation and Arroyo Chasicó). Research on the specimens is currently underway, including dental micro- and mesowear, 3D modelling of the intracranial anatomy, paleohistology, and isotopic analysis, in order to characterize their paleobiology and paleoecology.

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