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# 3D model related to the publication: A platyrrhine talus from the early Miocene of Peru (Amazonian Madre de Dios Sub-Andean Zone)

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## Abstract

This contribution contains the 3D model of the fossil talus of a small-bodied anthropoid primate (Platyrrhini, Cebidae, Cebinae) discovered from lower Miocene deposits of Peruvian Amazonia (MD-61 locality, Upper Madre de Dios Basin). This fossil was described and figured in the following publication: Marivaux et al. (2012), A platyrrhine talus from the early Miocene of Peru (Amazonian Madre de Dios Sub-Andean Zone). *Journal of Human Evolution*. <http://dx.doi.org/10.1016/j.jhevol.2012.07.005>

**Keywords:** Cebidae Cebinae, Neogene, Primates, South America, Tarsal bone

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## INTRODUCTION

We present here the 3D digital model of a fossil ankle bone (MUSM-2024; Fig. 1; Table 1) documenting a small-bodied anthropoid platyrrhine primate. This tarsal bone was discovered at MD-61, a locality situated in the Madre de Dios river bank, near Atalaya, Peruvian Amazonia (2011 field campaign). The age of this fossil-bearing locality was considered as representing the ‘Pinturan’ biochronological unit (18.75-16.5 Ma; i.e., late early Miocene; Kramarz and Bellosi, 2005; Kramarz, 2006). Despite the presence of few cracks, MUSM-2024 is complete and undistorted, and represents a right talus. Only the dorsal aspect of the talar body is slightly damaged in the distal part of the medial trochlear rim, where a single and irregular pit may correspond to a tooth print resulting from peri-mortem predation (Fig. 1). Morphologically, this talus displays a combination of talar features primarily found among the Cebidae, and more especially in the Cebinae (see Marivaux et al., 2012). Following regressions of talar dimensions against body mass in living primates (Dagosto and Terranova, 1992), MUSM-2024 belonged to a small primate with a body mass ranging from about 250g to 500g. This morphologically *Saimiri*-like cebine from MD-61 had therefore a body size which rather approximated that of some living callitrichines (Cebidae, Callitrichinae) from the Neotropics, such as certain large marmosets (i.e., *Callithrix*) or small tamarins (i.e., *Saguinus*). Functionally, features and proportions of MUSM-2024 indicate that this small primate was arboreal and primarily quadrupedal, agile, with frequent horizontal leaping and vertical clinging in its locomotor repertoire (see Marivaux et al., 2012).

Inv. number	Taxon	Description
MUSM-2024	Cebinae indet. sp.	Right talus.

**Table 1.** The MUSM-2024 specimen figured in this paper is housed in the paleontological collections of the *Departamento de Paleontología de Vertebrados, Museo de Historia Natural - Universidad Nacional Mayor San Marcos (MUSM)*, Lima, Peru.

## METHODS

AVIZO 7.1 (Visualization Sciences Group) software was used for visualization, segmentation and 3D rendering. The teeth were prepared within a “labelfield” module of AVIZO, using the segmentation threshold selection tool. The 3D model is provided in .ply format, and then can be opened with a wide range of freeware. The .ply file was generated with MorphoDig 1.0.0., an open-source 3D freeware (Lebrun, 2018).

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**Figure 1.** Ankle bone (talus) of a platyrrhine primate (Cebidae, Cebinae) from the late early Miocene of Peru (Atalaya, Amazonian Madre de Dios Sub-Andean Zone). A-F) MUSM-2024, right talus in dorsal (A), medial (B), lateral (C), proximal (D), distal (E), and plantar (F) views.

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