



# **3D models related to the publication: Neotropics provide insights into the emergence of New World monkeys: new dental evidence from the late Oligocene of Peruvian Amazonia**

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# 3D models related to the publication: Neotropics provide insights into the emergence of New World monkeys: new dental evidence from the late Oligocene of Peruvian Amazonia

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## Abstract

This contribution contains the 3D models of the isolated teeth of *Canaanimico amazonensis*, a new stem platyrrhine primate, described and figured in the following publication: Marivaux et al. (2016), Neotropics provide insights into the emergence of New World monkeys: new dental evidence from the late Oligocene of Peruvian Amazonia. Journal of Human Evolution. <http://dx.doi.org/10.1016/j.jhevol.2016.05.011>

**Keywords:** Homunculidae, Paleogene, Peru, Soriacebinae, South America

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## INTRODUCTION

We present here the 3D digital models of the fossils documenting *Canaanimico amazonensis* Marivaux et al. 2016, a medium-sized platyrrhine monkey, recently found in Peruvian Amazonia (Contamana, Loreto Department) from fluvial deposits (CTA-61) dating from the late Oligocene (ca. 26.5 Ma; i.e., Deseadan South American Land Mammal Ages [SALMA]; Antoine et al., 2016). This anthropoid primate is known by only two isolated upper teeth (Fig. 1; Table 1) recovered after wet-screening of more than 800 kg of sediment. MUSM-2500 is the lingual part of a pristine left M1, which was probably broken during the fossilization process. MUSM-2499 is a complete left M2, which is particularly well-preserved aside from minor wear to the apices of the main cusps due to occlusal attrition during the life of the animal. From our comparative dental analysis, we have seen that *Canaanimico* exhibits a few upper molar characters that are otherwise found only in a limited group of platyrrhines. However, most other characters may be found individually in extinct or/and living taxa belonging either to the Pitheciidae, Cebidae or Atelidae. In order to investigate and formalize the phylogenetic position of *Canaanimico* in a high-level platyrrhine phylogeny, we have performed a cladistic assessment of the dental evidence. The results strengthen support for the soriacebine affinities of *Canaanimico* among the early Miocene 'Homunculidae', a group of stem platyrrhines placed outside the crown platyrrhine radiation. *Canaanimico* therefore extends back the soriacebine lineage to 26.5 Ma. This discovery adds to the evidence that platyrrhines were well established in western Amazonia during mid-Cenozoic times (see Marivaux et al., 2016).

| Model IDs | Taxon                          | Description                  |
|-----------|--------------------------------|------------------------------|
| MUSM-2499 | <i>Canaanimico amazonensis</i> | Left upper M2 (Holotype)     |
| MUSM-2500 | <i>Canaanimico amazonensis</i> | left upper M1 (lingual part) |

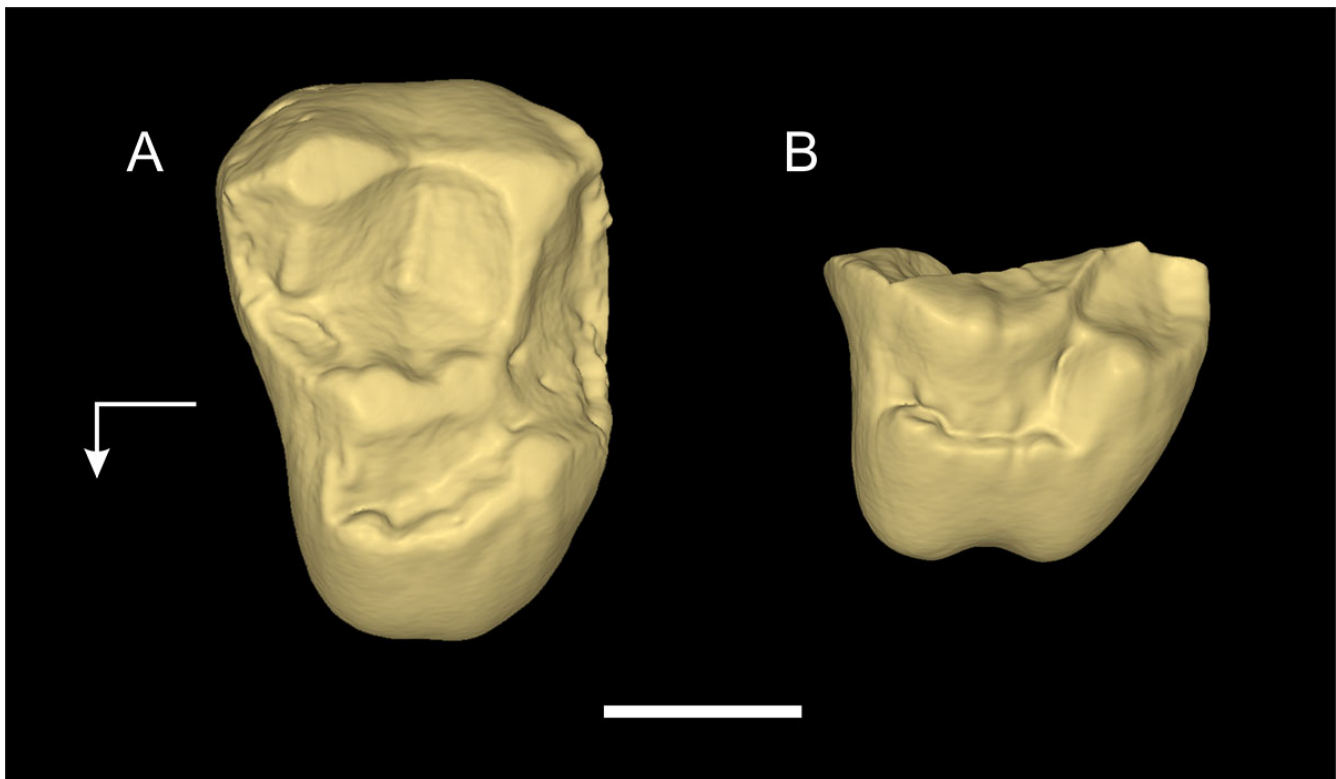
**Table 1.** List of models. All specimens come from the Museo de Historia Natural - Universidad Nacional Mayor San Marcos (MUSM), Lima, Peru.

## 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 models are provided in .ply format, and then can be opened with a wide range of freeware.

## ACKNOWLEDGEMENTS

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**Figure 1.** Fossil dental specimens of *Canaanimico amazonensis* Marivaux et al. 2006, from the late Oligocene (Deseadan SALMA) of Contamana locus n°61 (CTA-61), Peruvian Amazonia. A) MUSM-2499, left M2 in occlusal view; B) MUSM-2500, left M1 in occlusal view. The white arrow situated on the left indicate the orientation of the teeth on the jaws (i.e., mesiolingual). Scale bar = 2 mm.

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