

# 3D models related to the publication: Systematic and locomotor diversification of the *Adapis* group (Primates, Adapiformes) in the late Eocene of the Quercy (Southwest France), revealed by humeral remains.

Marigó J.<sup>1,2\*</sup>, Verrière N.<sup>1</sup>, Godinot M.<sup>1,3</sup>

<sup>1</sup>Centre de Recherches sur la Paléobiodiversité et les Paléoenvironnements (CR2P, UMR 7207), Sorbonne Universités (MNHN, CNRS, UPMC-Paris 6), Muséum National d'Histoire Naturelle, Paris, France

<sup>2</sup>Institut Català de Paleontologia Miquel Crusafont, Universitat Autònoma de Barcelona, Cerdanyola del Vallès, Barcelona, Spain

<sup>3</sup>Ecole Pratique des Hautes Etudes, PSL, Paris, France

\*Corresponding author: judit.marigo@icp.cat

## Abstract

The present 3D Dataset contains the 3D models analyzed in the publication "Systematic and locomotor diversification of the *Adapis* group (Primates, Adapiformes) in the late Eocene of the Quercy (Southwest France), revealed by humeral remains". In this paper, twenty humeral specimens from the old and new Quercy collections attributed to the fossil primates *Adapis* and *Palaeolemur* are described and analyzed together. In this dataset only the scans of the fossils belonging to the collections of Université de Montpellier are provided. In our paper (Marigó et al., 2019) we provide a qualitative and quantitative analysis of the different humeri, revealing that high variability is present within the "*Adapis* group" sample. Six different morphotypes are identified, confirming that what has often been called "*Adapis parisiensis*" is a mix of different species that present different locomotor adaptations.

**Keywords:** *Adapis*, humeri, locomotion, Quercy

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## INTRODUCTION

The 3D models provided here are the humeral remains attributed to the *Adapis* group that belong to the collections of the Université de Montpellier (see Fig. 1, Fig. 2, Fig. 3, Fig. 4 and Table 1). The rest of the specimens will be shared through Morphosource once all permissions from different institutions housing the specimens are obtained. The complete sample studied is composed of 20 humeral remains that prove that what is often called "*Adapis parisiensis*" is a mix of species. We tested variability within the sample through Levene's tests and obtained higher variance than in extant primates of similar size, as well as higher than in primates from the fossil site of Vastan (India), including different genera and different primate groups. Moreover, we demonstrate that the humeral proportions of *Adapis* overlap with different groups of extant strepsirrhines and platyrrhines depending on the specimen, so the popular view of *Adapis* as a loris-like slow climbing primate does not apply to the whole sample presented here. Moreover, different humeral features traditionally associated with "*Adapis parisiensis*" such as the absence of a zona conoidea and a reduced brachioradialis flange are variable depending on the sample studied. In addition, results of our analyses show that adapine and omomyid humeral morphology overlap extensively, leading us to question the accuracy of taxonomic attributions based on morphology of isolated humeri at localities where omomyids and adapines of similar size coexist. Finally, assuming that our different mor-

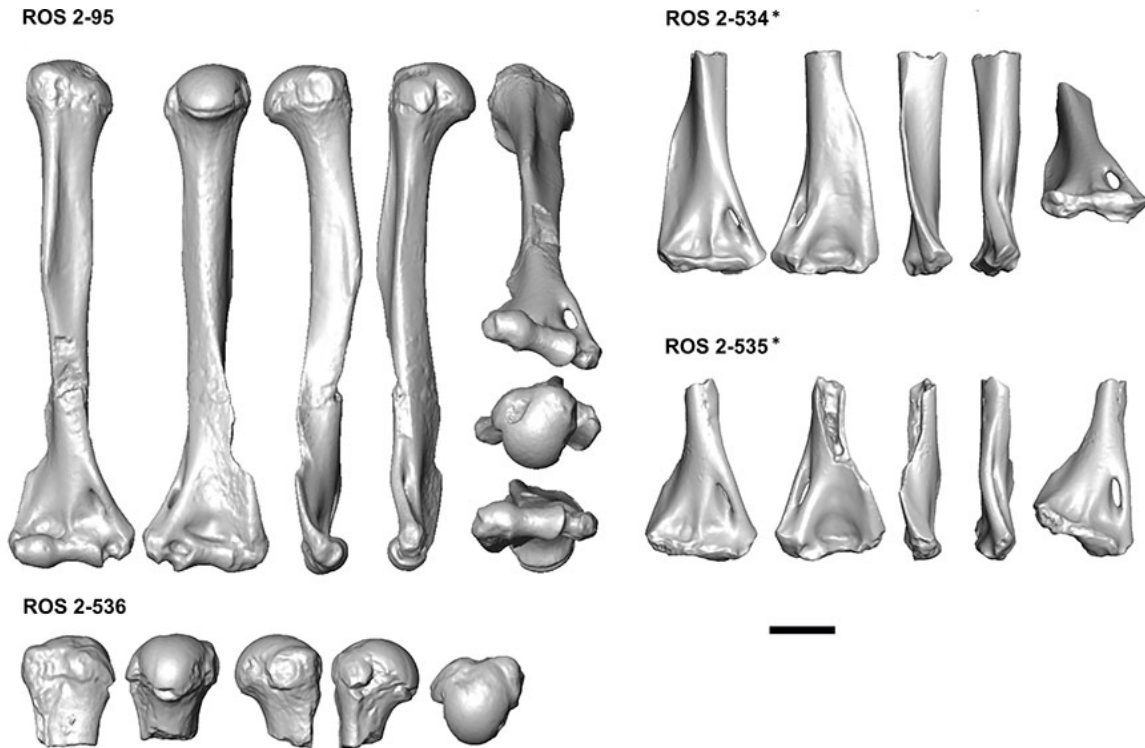
photypes represent different species within two genera, we propose a phylogenetic hypothesis relating these morphotypes, which inhabited a small geographic area.

## METHODS

All specimens were scanned from the original fossil using a Breuckmann 3D surface scanner available at the Plateforme de Morphométrie of the Muséum National d'Histoire Naturelle (UMS 2700, CNRS, MNHN, Paris) with the medium lens. This surface scanner allows the acquisition of the 3D surface of the bone at high resolution using white light fringes (StereoSCAN3D model with a camera resolution of five megapixels).

## ACKNOWLEDGEMENTS

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**Figure 1.** Humeral specimens attributed to the *Adapis* group assigned to morphotype 1 (M1). UM ROS 2-534 and UM ROS 2-535 are mirrored for comparison purposes. Locality of provenance: Rosières 2 (MP19)

”Salle d’imagerie 3D” of the CR2P (MNHN, Paris) and Anne-Claire Fabre for help and advice during surface scanning.

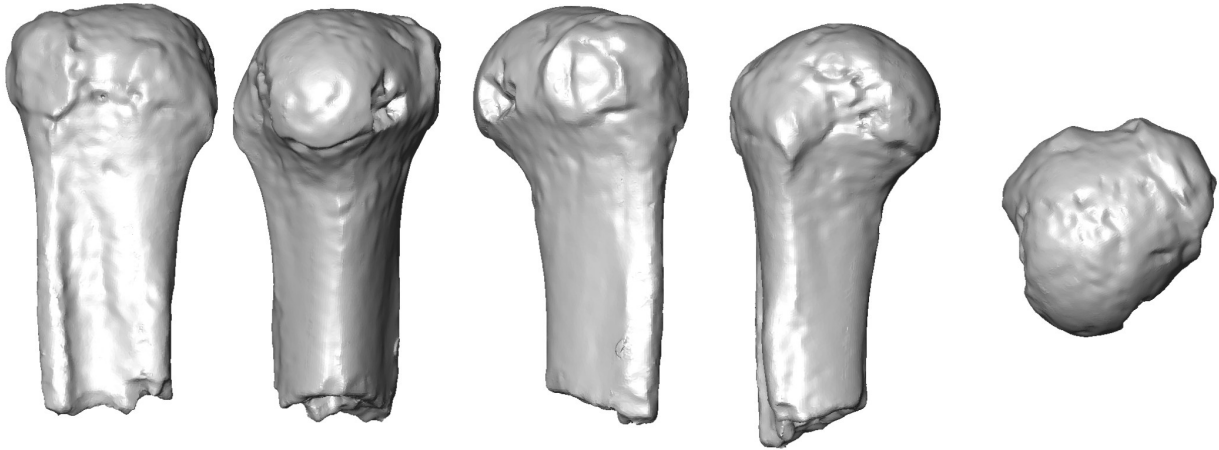
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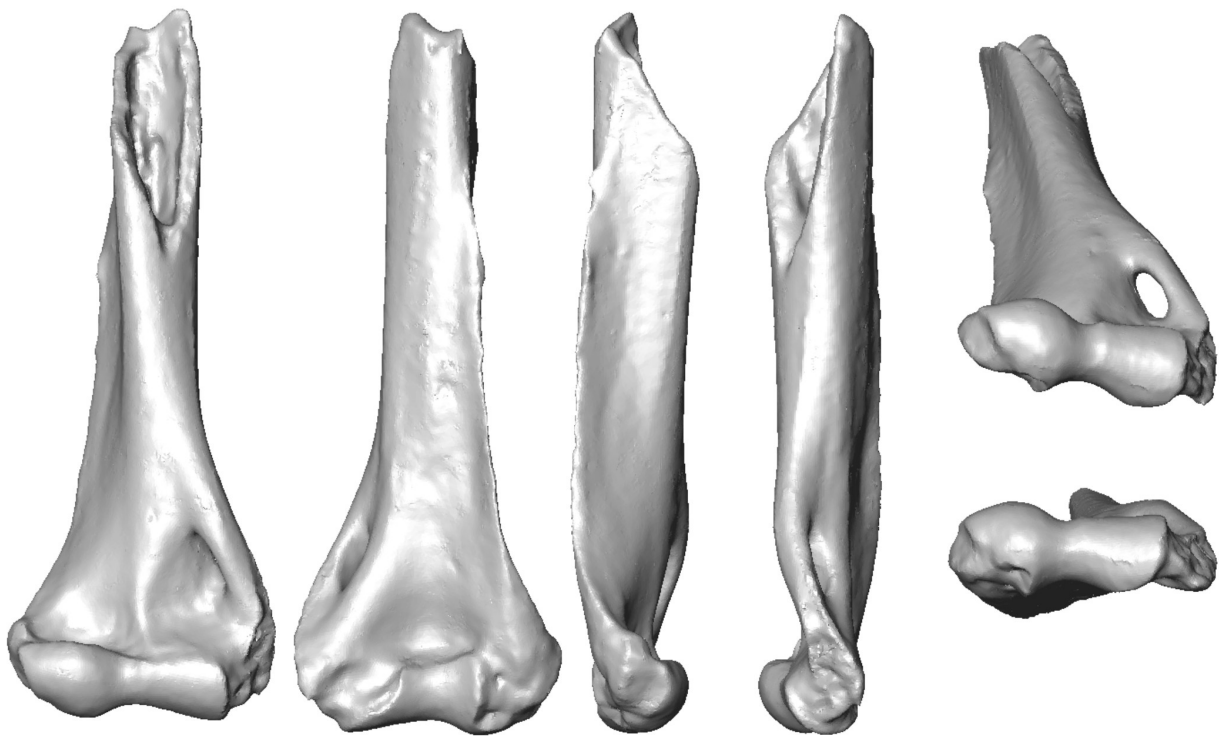
Model IDs	Taxon	Description
UMROS2-534	<i>Adapis</i> sp. morphotype 1	Distal end of left humerus
UMROS2-536	<i>Adapis</i> sp. morphotype 1	Proximal end of right humerus
UMROS2-95	<i>Adapis</i> sp. morphotype 1	Complete right humerus
UMROS2-535	<i>Adapis</i> sp. morphotype 1	Distal end of left humerus
UMROS2-80	<i>Adapis</i> sp. morphotype 2	Proximal end of right humerus
UMROS2-79	<i>Adapis</i> sp. morphotype 2	Distal end of the right humerus
UMECA1364	<i>Adapis</i> sp. morphotype 3	Distal end of left humerus
UMACQ262	<i>Adapis</i> sp. morphotype 4	Complete left humerus

**Table 1.** Specimen list

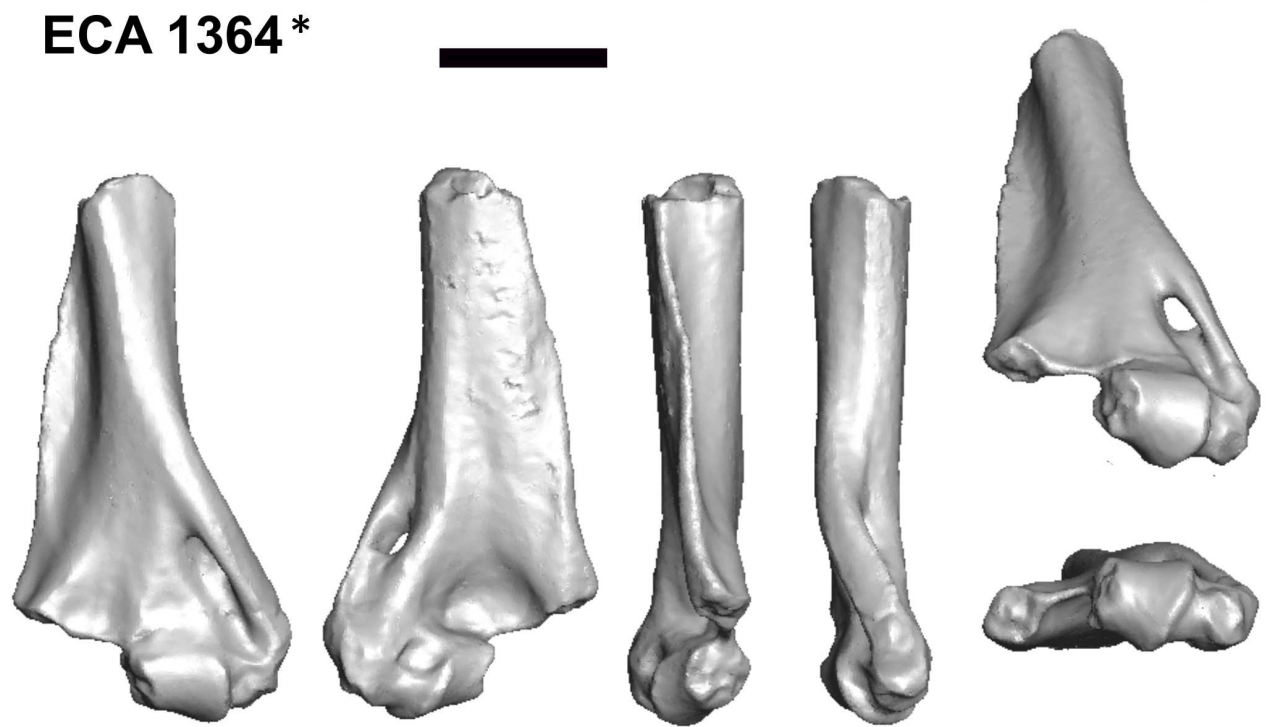
**ROS 2-80**



**ROS 2-79**

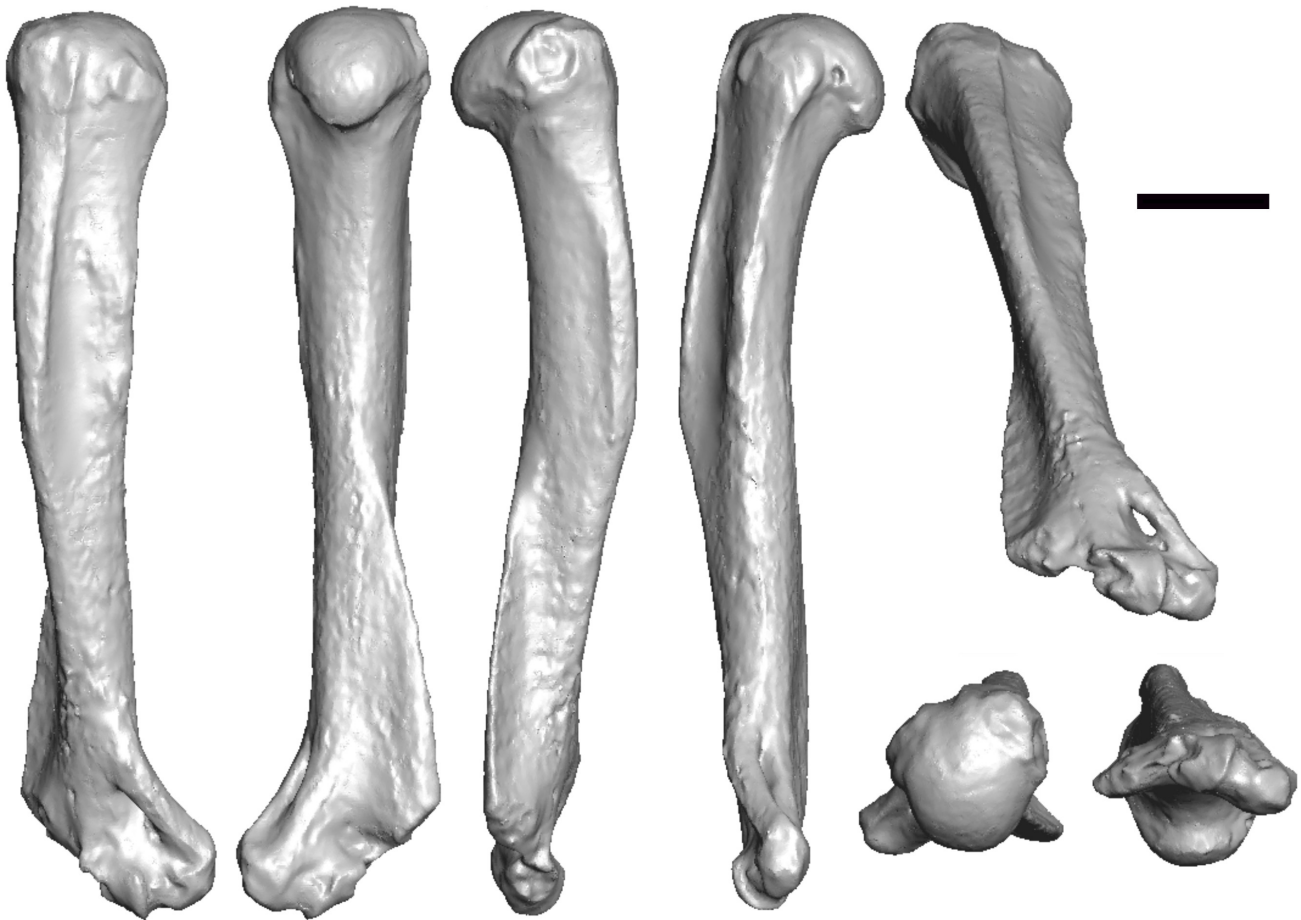


**Figure 2.** Humeral specimens attributed to the *Adapis* group, assigned to morphotype 2 (M2). Locality of provenance: Rosières 2 (MP19).



**Figure 3.** Humeral specimen UM ECA 1364 attributed to the *Adapis* group assigned to morphotype 3 (M3). This specimen is mirrored for comparison purposes. Locality of provenance: Escamps (MP19).

ACQ 262\*



**Figure 4.** Humeral specimen ACQ 226 attributed to the *Adapis* group assigned to morphotype (M4). This specimen is mirrored for comparison purposes. Locality of provenance: unknown (old phosphorite collections).