

3D model related to the publication: Niche partitioning of the European carnivorous mammals during the paleogene

Solé Floréal^{1*}, Dubied Morgane^{2,3}, Le Verger Kévin⁴, Menecart Bastien^{3,5}

¹D.O. Earth and History of Life, Royal Belgian Institute of Natural Sciences, Rue Vautier 29, B-1000 Brussels, Belgium.

²Université de Bourgogne, 6 boulevard Gabriel, 21000 Dijon, France.

³Natural History Museum Basel, Augustinergasse 2, 4001 Basel, Switzerland.

⁴CR2P-MNHN, CNRS, UPMC-Paris 6 (Sorbonne Universités)-Museum National d'Histoire Naturelle, CP 38, 8 rue Buffon, 75005 Paris, France.

⁵Natural History Museum Vienna, Burgring 7, 1010 Vienna, Austria.

*Corresponding author: fsole@naturalsciences.be

Abstract

The present 3D Dataset contains the 3D model analyzed in the following publication: Solé et al. (2018), Niche partitioning of the European carnivorous mammals during the paleogene. *Palaios*. <https://doi.org/10.2110/palo.2018.022>

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Inv Nr.	Taxon	Description
FSL848325	<i>Hyaenodon leptorhynchus</i>	Anterior and posterior parts of a cranium bearing teeth.

Table 1. Information related to the 3D model, a fragmented cranium separated in two parts. The 3D surface files of the specimen FSL848325 include the reconstructions of the two cranium fragments. Some of the 3D surface files correspond to the teeth segmented separately.

INTRODUCTION

We describe the first partial cranium of *Hyaenodon leptorhynchus*, the type species of the taxonomically diverse and widely distributed hypercarnivorous genus *Hyaenodon* (Hyaenodontia) (Fig. 1 and table 1). The cranium is from the Séon Saint-André deposits (Marseille, France; Chattian, MP26). It is preserved in dense red marl matrix that obscures key morphological features (Fig. 1A). CT-scans were used to reconstruct the specimen (Fig. 1B). The fossil corresponds to a juvenile: it preserves its deciduous canines, and the P3 is almost fully erupted (Fig. 1C). This dental eruption pattern is a common trait in the North American and European *Hyaenodon* evolution (Bastl & Nagel, 2014). This discovery is the second occurrence of this species in the early Chattian: indeed only one occurrence (Rigal-Jouet, MP25) (Lange-Badré, 1995) was reported until now for a period of 6 My (from MP23 to MP28).

METHODS

The X-ray microtomography acquisition was performed using a nanoCT® system nanotom® (phoenix x-ray, GE Sensing & Inspection Technologies GmbH, Wunstorf, Germany) hosted at the Department of Biomedical Engineering, University

of Basel. 1440 equiangular radiographs were taken. The scanning parameters are 180kV and 30 µA for a resolution of 50 µm (voxel size). We digitally segmented the bone and teeth of FSL848325 using AVIZO LITE 9.0. This method permits access to both sides of the specimen and to the inner structures such as the permanent canines (Fig. 1).

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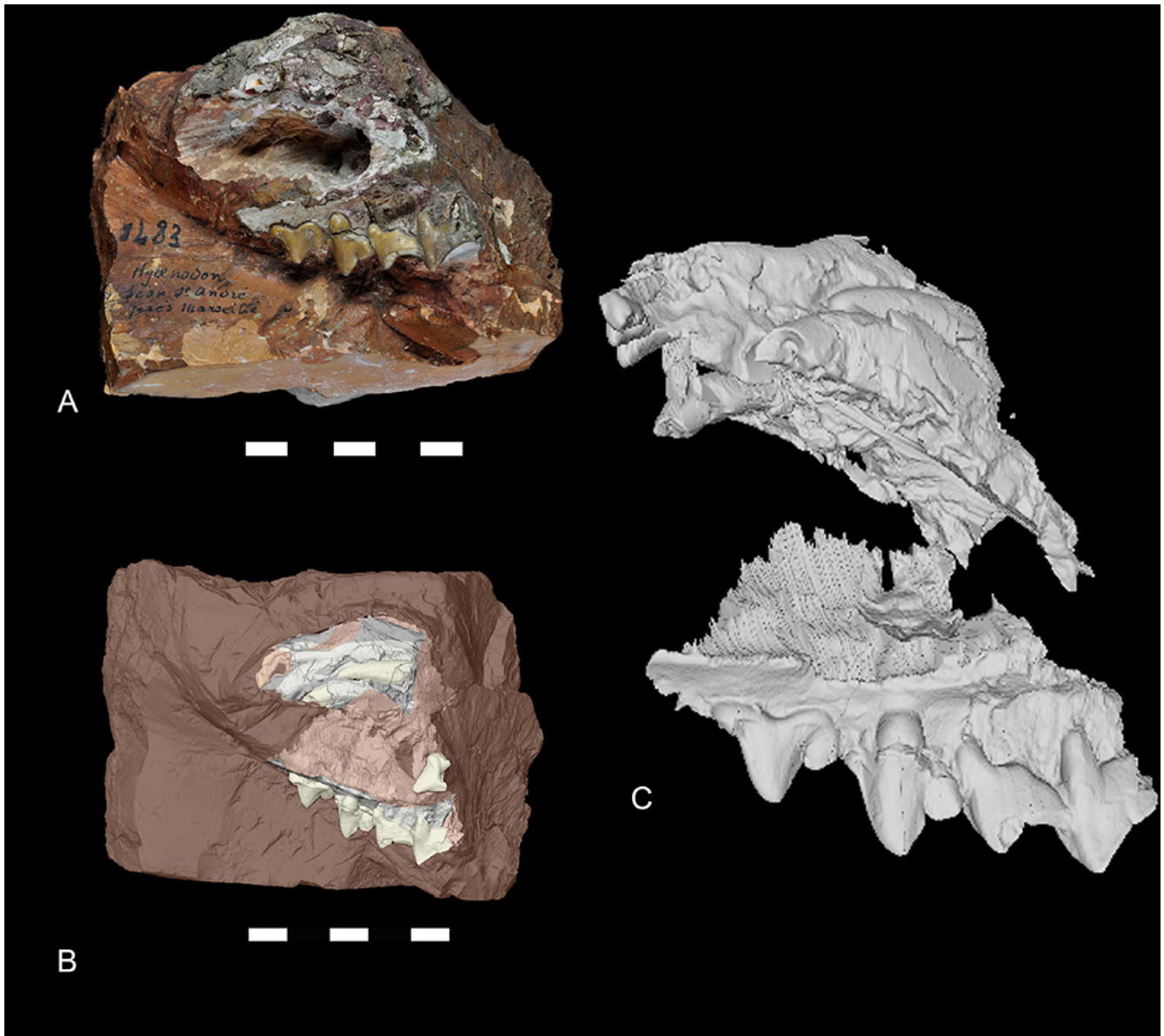


Figure 1. *Hyaenodon leptorhynchus*, FSL848325, partial cranium. A, original specimen in lateral view (left) (photograph realized by E. Robert); B, digitalized specimen with transparency of the sediment in lateral view (left); C, digitalized specimen without sediment in lateral view (left). Scale bar (A-B): 5 cm

during the paleogene. Palaios. <https://doi.org/10.2110/palo.2018.022>