Dataset

3D model related to the publication: A giant Eocene ischyromyid from Southeast Asia reveals the earliest evolution of rodent gigantism

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Abstract
This contribution contains the three-dimensional digital model of a lower molar of a very large-bodied rodent from the latest Eocene of Peninsular Thailand (Krabi Basin). The fossil was described, illustrated and discussed in the following publication: Chaimanee et al. (2026), A giant Eocene ischyromyid from Southeast Asia reveals the earliest evolution of rodent gigantism. Scientific Reports. https://doi.org/10.1038/s41598-026-76711-6

Keywords: Ischyromyidae, large-bodied, Paleogene, Rodentia, Southeast Asia

Submitted: 16/07/2026, published online: 04/11/2026. https://doi.org/10.18563/journal.m3.310

INTRODUCTION

We present a three-dimensional (3D) digital model of an isolated tooth referred to *Yakamys sirindhornae*, an ischyromyid rodent from the latest Eocene of the Krabi Basin, Peninsular Thailand. The TF 2942 specimen consists of an exceptionally large second lower molar (right m2; Fig. 1 and table 1) belonging to an individual with an estimated body mass of approximately 30 kg (Chaimanee et al., 2026), i.e., far exceeding that of any previously known Paleogene ischyromyid. Accordingly, *Yakamys* is the largest Paleogene member of the family and records the earliest known instance of gigantism in Rodentia. The molar combines its remarkable size with a distinctive suite of dental features, including incipient hypsodonty, a discrete anteroconid (short anterocingulid/anterolophid), a metalophulid II incomplete, a bifid hypolophid, and the absence of both the mesoconid and hypoconulid. This discovery extends the record of rodent gigantism by 15–20 Myr and demonstrates that very large body size evolved independently among basal rodents long before the rise of the giant South American caviomorphs (Hystricognathi), further underscoring the pivotal role of South Asia in early rodent diversification and evolutionary innovation.

Inv nr.	Taxon	Description
TF 2942	*Yakamys sirindhornae*	Right lower second molar (r m2)

Table 1. Related specimen. Collection: Department of Mineral Resources, Bangkok, Thailand.

METHODS

A 3D digital model of the dental specimen was obtained by X-ray micro-computed tomography (µCT). Scanning was performed at the Montpellier RIO Imaging facility (ISE-M, Montpellier, France) using an EasyTom 150/Rx Solutions µCT system, yielding a volumetric dataset with an isotropic voxel size of 9.03 µm. The tooth crown was subsequently extracted by manual segmentation in AVIZO 2020.2 (Visualization Sciences Group). Before segmentation, the specimen was preprocessed using the "Label Field" module, and the thresholding tool was applied to delineate the region of interest. The surface rendering of the 3D model is provided here in ".ply" format, and thus can be opened with a wide range of software programs (e.g., MorphoDig 1.6.7, an open-source 3D freeware (Lebrun, 2018; https://morphomuseum.com/Pages/morphodig).

ACKNOWLEDGEMENTS

We are particularly grateful to Renaud Lebrun (ISEM) for his kindness and generosity in dedicating his time to acquiring the CT scan. We would like to extend our special thanks to Vincent Lazzari (PALEVOPRIM) for kindly bringing the specimen to us for scanning. This work was supported by the CNRS UMR 7262 (PALEVOPRIM), *Université de Poitiers*, CNRS/UM/IRD UMR 5554 (ISEM), *Université de Montpellier* (France), and the Department of Mineral Resources (DMR, Thailand). ISEM publication n° 2026-250 SUD.

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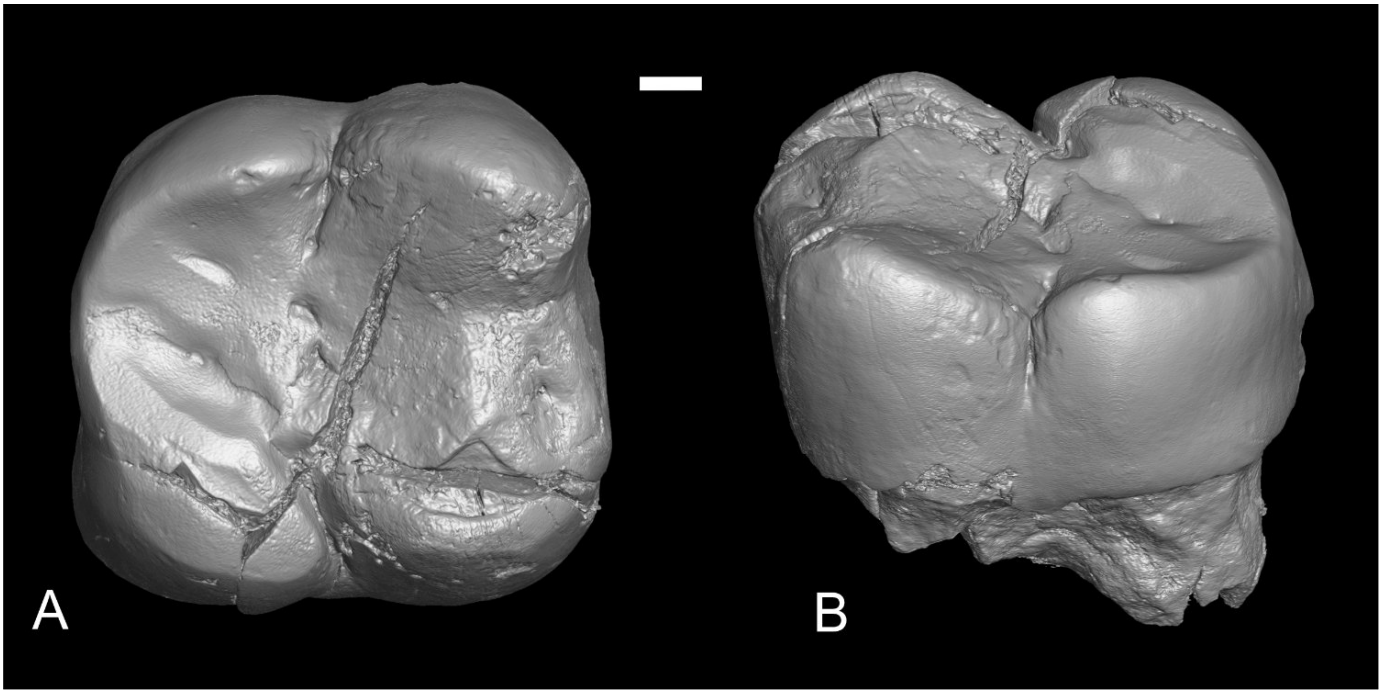


Figure 1. Fossil dental specimen documenting *Yakamys sirindhornae*. TF 2942 (Holotype), a right lower m2 in occlusal (A) and lingual (B) views. Images are renderings of the 3D digital model of the fossil specimen, obtained by X-ray μCT surface reconstructions. Scale bar = 1 mm.

ISSN: 2274-0422