



**HAL**  
open science

## **3D fossil reconstruction related to the publication: Body shape and life style of the extinct rodent *Canariomys bravoii* from Tenerife, Canary Islands.**

Jacques Michaux, Lionel Hautier, Rainer Hutterer, Renaud Lebrun, Franck Guy, Francisco Garcia-Talavera

### **► To cite this version:**

Jacques Michaux, Lionel Hautier, Rainer Hutterer, Renaud Lebrun, Franck Guy, et al.. 3D fossil reconstruction related to the publication: Body shape and life style of the extinct rodent *Canariomys bravoii* from Tenerife, Canary Islands.. MorphoMuseum, 2015, 1 (1), pp.e3. 10.18563/m3.1.1.e3 . hal-01923073

**HAL Id: hal-01923073**

**<https://hal.science/hal-01923073>**

Submitted on 20 Feb 2019

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

## 3D fossil reconstruction related to the publication: Body shape and life style of the extinct rodent *Canariomys bravoii* from Tenerife, Canary Islands

MICHAUX J.<sup>a</sup>, HAUTIER L.<sup>a</sup>, HUTTERER, R.<sup>b</sup>, LEBRUN R.<sup>a\*</sup>, GUY F.<sup>c</sup> and GARCIA-TALAVERA F.<sup>d</sup>

<sup>a</sup> Laboratoire de Paléontologie, Institut des Sciences de l'Évolution de Montpellier (ISE-M, UMR 5554, CNRS, UM2, IRD), c.c. 064, Université Montpellier 2, place Eugène Bataillon, F-34095 Montpellier Cedex 05, France

<sup>b</sup> Zoologisches Forschungsmuseum Alexander Koenig, Adenauerallee 160, 53113 Bonn, Germany

<sup>c</sup> Université de Poitiers - UFR SFA, iPHEP UMR CNRS 7262, Bât B35 - TSA 51106, 6 rue Michel brunet, 86073, Poitiers Cedex 9, France

<sup>d</sup> Museo de Ciencias Naturales de Tenerife, 38080 Santa Cruz de Tenerife, Islas Canarias, Spain

\* corresponding author: renaud.lebrun@univ-montp2.fr

**Abstract:** This contribution contains the 3D reconstruction of *Canariomys bravoii*, described and figured in the following publication: Michaux J., Hautier L., Hutterer R., Lebrun R., Guy F., García-Talavera F., 2012 : Body shape and life style of the extinct rodent *Canariomys bravoii* (Mammalia, Murinae) from Tenerife, Canary Islands (Spain). *Comptes Rendus Palevol* 11 (7), 485-494. doi:10.1016/j.crpv.2012.06.004

**Key words:** Canari Islands, Fossil reconstruction, Insularity, Rodentia

Submitted 12.12.2014, Accepted 05.01.2015. doi: [10.18563/m3.1.1.e3](https://doi.org/10.18563/m3.1.1.e3)

© Copyright Renaud Lebrun January 2015

### TECHNICAL AND SPECIMEN-RELATED PARAMETERS

Specimen inventory number	TFMVCV872	TFMVCV873
Species	<i>Canariomys bravoii</i>	<i>Canariomys bravoii</i>
Repository institution	Museo de la Naturaleza y el Hombre, Santa Cruz	Museo de la Naturaleza y el Hombre, Santa Cruz
3D data acquisition institution	Université de Poitiers, France	ISE-M, Université Montpellier 2, France
3D data acquisition method	X-ray $\mu$ CT	X-ray $\mu$ CT
3D data acquisition facility model	Viscom X8050-16	SkyScan 1076
3D data acquisition operator	Franck Guy	Renaud Lebrun
Voxel size of original dataset	0,079 mm	0,036 mm
Author of derived 3D surface model	Renaud Lebrun and Mikaël Antioco	Renaud Lebrun and Mikaël Antioco
Model ID	<a href="#">M3#6_TFMCV872-873</a>	<a href="#">M3#6_TFMCV872-873</a>

### METHODS

The present three-dimensional reconstruction of the skeleton of the Holocene giant rat of Tenerife (Canary Islands, Spain) was obtained by computerized microtomography reconstruction. Two distinct specimens were used in this reconstruction, TFMVCV872 and TFMVCV873 (Museo de la Naturaleza y el Hombre, Santa Cruz). TFMVCV872 is an almost complete but disarticulated skeleton of *C. bravoii*. As the mandibles and the cranium of this specimen were not well preserved, a complete skull of *C. bravoii* (TFMVCV873) was added to this reconstruction.

All the bones were extracted within a “labelfield” module of AVIZO 6.3, using the segmentation threshold selection tool. The 3D model is provided in a series of .vtk format, and the whole reconstruction can be opened with ISE-MeshTools (Lebrun, 2014).

### DISCUSSION

Murinae rodents observed by Owen (1853) always possess a total amount of 19 thoraco-lumbar vertebrae, most often divided in 13 thoracic and 6 lumbar vertebrae (he also observed at least one specimen of *Rattus norvegicus* possessing 12 thoracic and 7 lumbar vertebrae). This number of 19 thoraco-lumbar vertebrae is observed very often in mammals and is thought to be a plesiomorphic condition for eutherians and metatherians mammals (for a review, see for instance Sánchez-Villagra et al., 2007). The present fossil of *C. bravoii* exhibits a number of 17 thoraco-lumbar vertebrae, so it is likely that 2 vertebrae (either 1 thoracic and 1 lumbar, or 2 lumbar) are missing. Furthermore, the number of caudal vertebrae in Murinae rodents observed by Owen (1853) is often greater than the 21 presented in this reconstruction. The present reconstruction of

*Canariomys bravo* does not take into account these potentially missing thoraco-lumbar and caudal vertebrae.

## ACKNOWLEDGEMENTS

We are grateful to María Esther Martín González, curator of the Museo de la Naturaleza y el Hombre, Santa Cruz, for her enthusiasm regarding the diffusion of the present model. Data presented in this work were produced through the technical facilities of the MRI platform and of the labEx CeMEB, and at the Centre de Microtomography of the University of Poitiers. The present work developed results of a preliminary study initiated by Mikaël Antioco during the academic year 2010–2011, at the Paleontology Department, University of Montpellier-2. This is ISE-M publication 2015-004.

## BIBLIOGRAPHY

- Lebrun R., 2014. ISE-MeshTools, a 3D interactive fossil reconstruction freeware. 12th Annual Meeting of EAVP, Torino, Italy.
- Michaux J., Hautier L., Hutterer R., Lebrun R., Guy F., García-Talavera F., 2012. Body shape and life style of the extinct rodent *Canariomys bravo* (Mammalia, Murinae) from Tenerife, Canary Islands (Spain). *Comptes Rendus Palevol* 11, 485-494.  
<http://dx.doi.org/10.1016/j.crpv.2012.06.004>
- Owen R., 1853. Descriptive Catalogue of the Osteological Series contained in the Museum of the Royal College of Surgeons of England.  
<http://dx.doi.org/10.5962/bhl.title.23768>
- Sánchez-Villagra M.R., Narita Y., Kuratani S., 2007. Thoracolumbar vertebral number: the first skeletal synapomorphy for afrotherian mammals. *Systematics and Biodiversity* 5 (1), 1–7.  
<http://dx.doi.org/10.1017/S1477200006002258>