

3D models related to the publication: First records of extinct kentriodontid and squalodelphinid dolphins from the Upper Marine Molasse (Burdigalian age) of Switzerland and a reappraisal of the Swiss cetacean fauna.

Gabriel Aguirre-Fernández^{1*}, Jürg Jost², Sarah Hilfiker¹

¹Palaeontological Institute and Museum, University of Zurich

²Independent researcher, Zofingen, Switzerland, 4800

*Corresponding author: gabriel.aguirre@pim.uzh.ch

Abstract

This contribution contains the 3D models described and figured in the following publication: Aguirre-Fernández G, Jost J, and Hilfiker S. 2022. First records of extinct kentriodontid and squalodelphinid dolphins from the Upper Marine Molasse (Burdigalian age) of Switzerland and a reappraisal of the Swiss cetacean fauna.

Keywords: bony labyrinth, Inner ear, Kentriodontidae, Physeteridae, Squalodelphinidae

Submitted:2022-03-29, published online:2022-04-19. <https://doi.org/10.18563/journal.m3.159>

Inv nr.	Taxon	Description
NMBE5023944	<i>Kentriodon</i> sp.	left periotic and bony labyrinth
NMBE5023945	<i>Kentriodon</i> sp.	right periotic and bony labyrinth
NMBE5023946	<i>Kentriodon</i> sp.	left periotic and bony labyrinth
NMBE5036436	<i>Kentriodon</i> sp.	right periotic and bony labyrinth
NMBE5023942	Squalodelphinidae	right periotic and bony labyrinth
NMBE5023943	Squalodelphinidae	left periotic and bony labyrinth
NMBE5036437	Physeteridae	left periotic and bony labyrinth

Table 1. Specimen list. NMBE: Natural History Museum Bern, Bern, Switzerland.

INTRODUCTION

This dataset includes the 3D models of seven periotics and bony labyrinths of cetaceans from the Swiss Upper Marine Molasse (OMM) published in Aguirre-Fernández et al. (2022). The Swiss OMM cetacean fauna was first described in Pilleri (1986) and Aguirre-Fernández et al. (2022) reassessed and updated the material found in collections, providing a focus on the taxonomically- and environmentally-informative periotics. The periotic models were used for comparisons and descriptions; the bony labyrinth models were used for comparisons and environmental interpretations. We report the presence of Kentriodontidae, Squalodelphinidae (hitherto unknown for the OMM) and Physeteridae. Table 1 details the specimen list and Figure 1 illustrates the bony labyrinth of one of the specimens in the sample (Physeteridae indet. NMBE 5036437)

METHODS

Micro-computerized tomography data were obtained at the University of Zurich using a Nikon XT H 255 ST μ CT scanner (scanning resolution of 20 μ m). Segmentation of the earbones and their bony labyrinth endocasts was performed using Mimics Innovation Suite 19.0. The 3D models are provided in .ply format, and can therefore be opened with a wide range of freeware.

ACKNOWLEDGEMENTS

This project was funded by Fonds für Lehre und Forschung (NHMB) and the Synthesys Programme (BE-TAF project 4644).

BIBLIOGRAPHY

Aguirre-Fernández G, Jost J, and Hilfiker S. 2022. First records of extinct kentriodontid and squalodelphinid dolphins from the Upper Marine Molasse (Burdigalian age) of Switzerland and a reappraisal of the Swiss cetacean fauna.

Pilleri, G. 1986. The Denticeti of the Western Paratethys (Upper Marine Molasse of Switzerland). Investigations on Cetacea 19. Brain Anatomy Institute Bern.

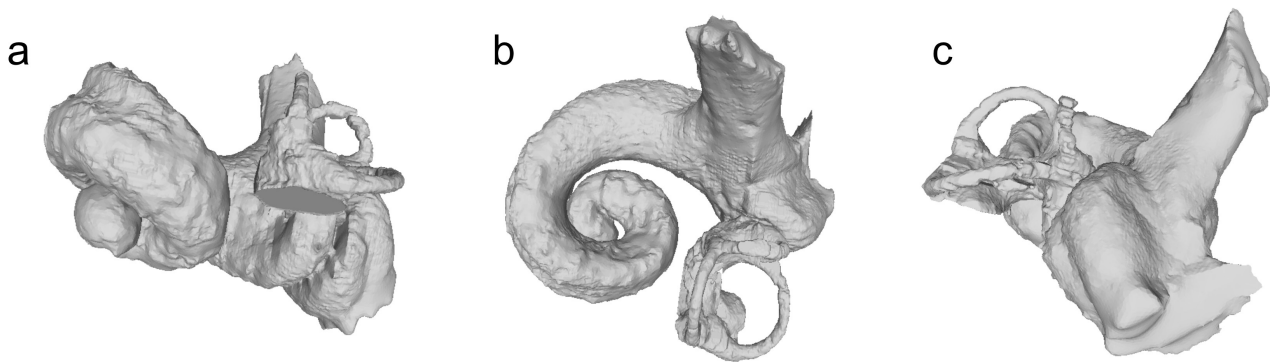


Figure 1. Bony labyrinth of *Physeteridae* indet. NMBE 5036437. Views: anterior: a; dorsal: b; lateral: c.