3D models related to the publication: Virtual brain endocast of *Antifer* (Mammalia: Cervidae), an extinct large cervid from South America

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Abstract

The present 3D Dataset contains the 3D models of the brain endocast analyzed in "Virtual brain endocast of Antifer (Mammalia: Cervidae), an extinct large cervid from South America".

Keywords: *Antifer* ensenadensis, brain endocast, Cervidae, late Pleistocene

Inv nr.	Collection
U-4922	UNISINOS
MCN-PV943	MCN-PV

Table 1. List of brain endocasts of *Antifer ensenadensis*. **MCN-PV**: paleontological collection of the Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, Brazil; **UNISINOS**: paleontological collection of the Universidade do Vale do Rio dos Sinos, São Leopoldo, Brazil.

INTRODUCTION

A diverse fossil record of Cervidae (Mammalia) has been recorded in South America since the early Pleistocene after these animals arrived during the Great American Biotic Interchange. With the advent of the CT-Scanning techniques, it is now possible to access the endocranial morphology of extinct species. *Antifer ensenadensis* is an extinct South American cervid characterized by the wide and robust antlers lateralized on the skull when compared to other Odocoileini. Foutoura et al. (2020) analyzed the brain endocast of this extinct cervid generated using computed tomography scan data. This contribution contains the 3D models studied by them (Fig. 1 and table 1; Fontoura et al. 2020).

METHODS

Two specimens of *Antifer ensenadensis* from the late Pleistocene of southern Brazil were studied. The specimens (U-4922 and MCN-PV 943) were analyzed using a Philips Brilliance 16-Slice CT Scanner. The analysis (parameters: voltage 120 kV; amperage 356.67 mAs; pixel size 0.62 µm) generated a total of 498 slices for U-4922, and 216 slices (parameters: voltage 120 kV; amperage 171.17 mAs; pixel size 0.46 µm) for MCN-PV 943. The tomograms were imported into software Avizo for virtual reconstruction and virtual segmentation of structures. After applying the methodology to reconstruct the brain endocast of *Antifer ensenadensis*, two endocasts were generated. From specimen U-4922, it was possible to reconstruct the entire endocast (although it was not possible to reconstruct the dorsal surface precisely due to the preservation of the specimen), while for specimen MCN-PV 943, which does not preserve the basicranial region, only the dorsal portion of the endocast was reconstructed. Casts of the olfactory bulbs and cerebral hemispheres were reconstructed, but not the cerebellar region and nerves on the ventral portion of the endocast. Although MCN-PV 943 lacks some regions, the neopallium morphology was better preserved in this specimen (see Fontoura et al. 2020 for details). The 3D surface models are provided in .ply format, and can therefore be opened with a wide range of freeware.

ACKNOWLEDGEMENTS

BIBLIOGRAPHY

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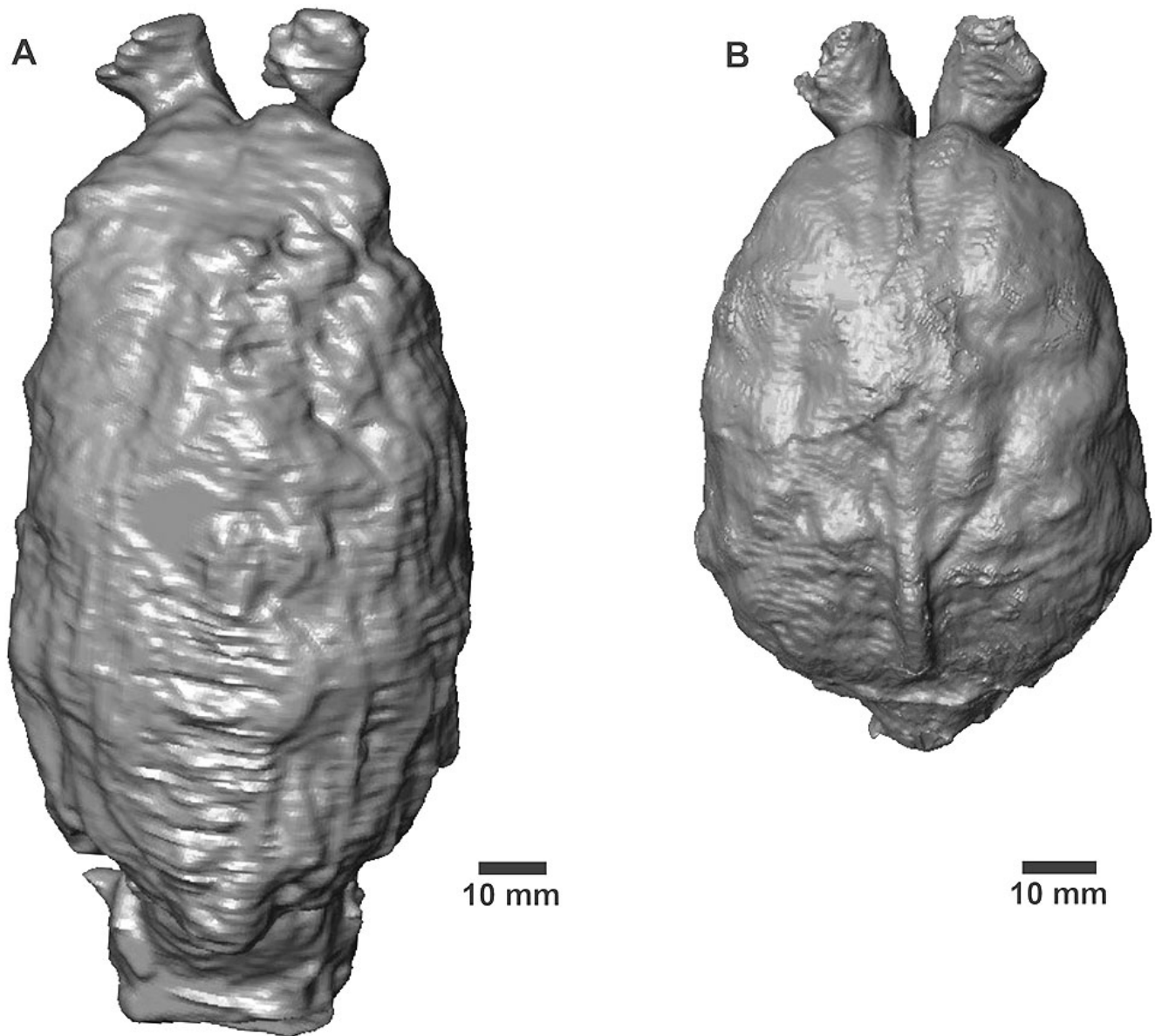
Figure 1. 3D models of the brain endocast of *Antifer ensenadensis* from the late Pleistocene of southern Brazil. Brain endocast of U-4922 (A) and MCN PV 943 (B), in dorsal views.