

3D models related to the publication: The pharynx of the iconic stem-group chondrichthyan *Acanthodes* Agassiz, 1833 revisited with micro computed tomography.

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Abstract

This contribution contains 3D models of the cranial endoskeleton of three specimens of the Permian ‘acanthodian’ stem-group chondrichthyan (cartilaginous fish) *Acanthodes confusus*, obtained using computed tomography. These datasets were described and analyzed in Dearden *et al.* (2024) “3D models related to the publication: The pharynx of the iconic stem-group chondrichthyan *Acanthodes* Agassiz, 1833 revisited with micro computed tomography.” *Zoological Journal of the Linnean Society*

Keywords: acanthodian, branchial skeleton, chondrichthyan, Permian, pharynx

Submitted:12/03/2024, published online:25/06/2024. <https://doi.org/10.18563/journal.m3.226>

Inv nr.	Taxon	Description
MNHN-F-SAA20	<i>Acanthodes confusus</i>	head
MNHN-F-SAA21	<i>Acanthodes confusus</i>	head
MNHN-F-SAA24	<i>Acanthodes confusus</i>	head

Table 1. List of models. Collection : Muséum National d’Histoire Naturelle, Paris, France.

INTRODUCTION

As the only stem-chondrichthyan ‘acanthodian’ known from extensive endoskeletal remains, the Permian *Acanthodes confusus* from Lebach, Germany has long been a key taxon in efforts to understand the anatomy of the endoskeleton in the earliest jawed vertebrates. Nonetheless its endoskeletal anatomy, particularly that of the pharynx, remains poorly characterized and subject to several conflicting interpretations. In the associated study (Dearden *et al.* 2024) we sought to determine the anatomy of the pharynx of *A. confusus* by using computed tomography to image three specimens (Table 1) from the collections of the Museum national d’histoire naturelle (MNHN), Paris. This study resulted in detailed 3D models of the pharyngeal anatomy of these three specimens (Figure 1 and Table 1).

METHODS

The 3D surfaces were extracted in Materialise Mimics 19.0 by thresholding with a combination of manual segmentation and interpolation. Models were imported into Blender 3.30 (blender.org) to make images for figures. Here we provide the models as .vtp files, which can be opened in freeware Morphodig. These can be exported from Morphodig as .ply, .stl, and .obj files

which can be opened in other freeware such as Blender and Meshlab. We have also provided each specimen’s models in .blend files which can be opened in the freeware Blender. From Blender they can be exported as a combined .obj, .stl, or .ply file, or as individual .stls (by selecting Batch Mode during export).

ACKNOWLEDGEMENTS

This work was funded by a Paris Île-de-France Region grant (Domaine d’intérêt majeur [DIM] “Matériaux anciens et patrimoniaux”) awarded for the DIM PHARE (Pharyngeal Evolution: illuminating its function in early jawed vertebrates) project. R.P.D. is now supported by the Marie Skłodowska-Curie Action DEADSharks (Grant Agreement number 101062426). A.P. is supported by the Agence nationale de la recherche (Grant CE02 Terre vivante, jeunes chercheurs ou des jeunes chercheuses, MACHER (Mechanical Adaptation to Crushing in the Holocephalan Evolutionary Radiation).

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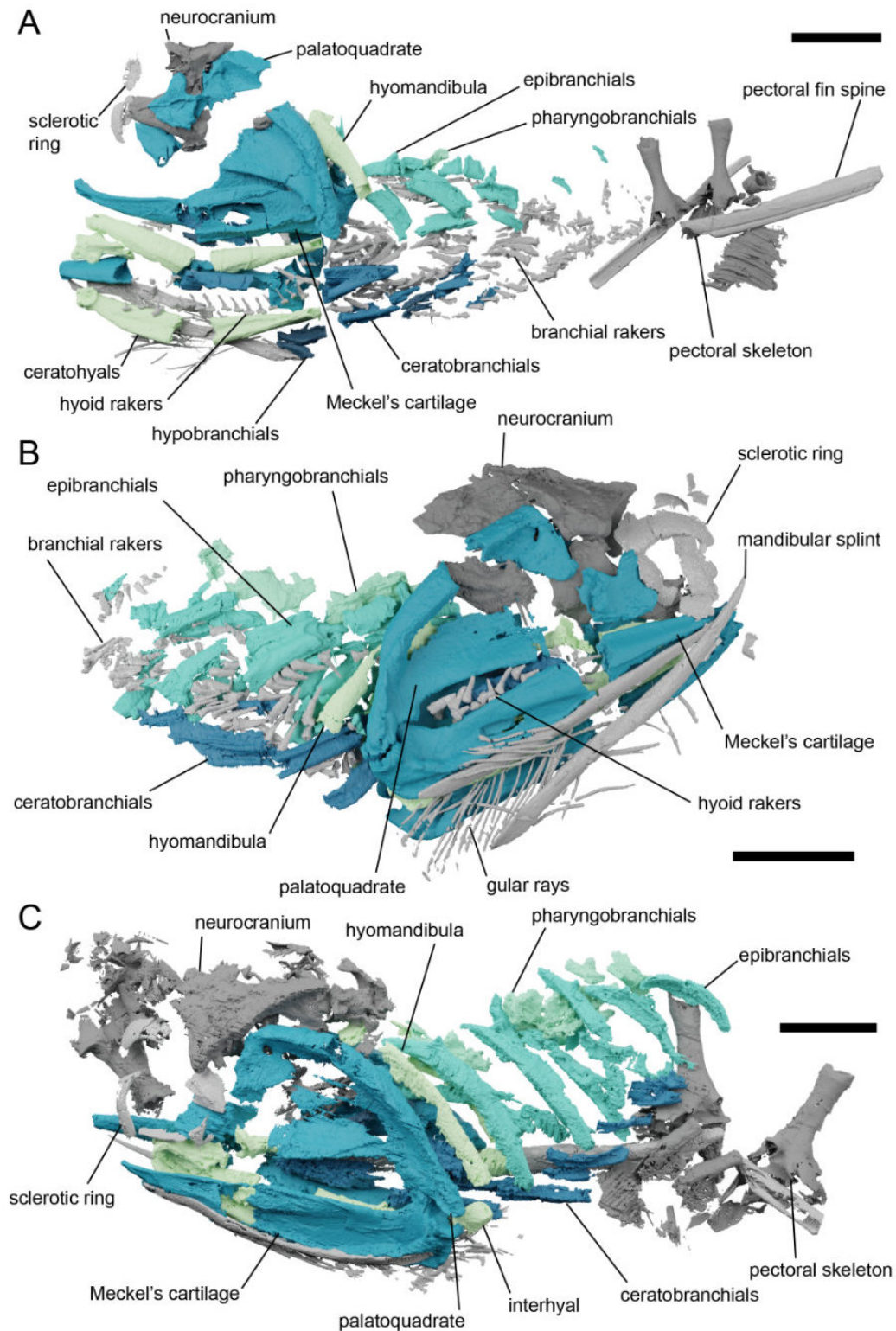


Figure 1. The pharyngeal and cranial skeleton of *Acanthodes confusus*, based on the data published herein. A, MNHN-F-SAA20 in left lateral view; B, MNHN-F-SAA21 in right lateral view; and C, MNHN-F-SAA24 in left lateral view. Scale bars = 20 mm.