

3D model related to the publication: A find from the Ladakh Himalaya reveals a survival of madtsoiid snakes (Serpentes, Madtsoiidae) in India through the Late Oligocene

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Abstract

The present 3D Dataset contains the 3D model analyzed in Wazir, W. A., Sehgal, R. K., Čerňanský, A., Patnaik, R., Kumar, N., Singh, A. P. and Singh, N. P. 2022. A find from the Ladakh Himalaya reveals a survival of madtsoiid snakes (Serpentes, Madtsoiidae) in India through the late Oligocene. *Journal of Vertebrate Paleontology*, 41(6), e2058401. <https://doi.org/10.1080/02724634.2021.2058401>

Keywords: Himalaya, Ladakh Molasse, Oligocene, Snake, Vertebra

Submitted: 12/04/2025, published online: 24/04/2025. <https://doi.org/10.18563/journal.m3.271>

Inv nr.	Taxon	Description
WIMF/A 4816	Madtsoiidae Indet.	Vertebra

Table 1. 3D model of the vertebra WIMF/A 4816. Collection: Wadia Institute of Himalayan Geology, India

INTRODUCTION

We reported the first madtsoiid snake from the Late Oligocene of India (the molasse deposits of Ladakh Himalaya; see also fig. 1). Madtsoiidae is an extinct group of medium sized to gigantic snakes, members of which were mostly distributed across Gondwana. They first appeared during the Late Cretaceous. In India, the record of madtsoiids includes *Madtsoia pisdurensis* and *Sanajeh indicus*, both from the Upper Cretaceous, *Platyspondylophis tadmekshwarensis* from Cambay Shale Formation of the lower Eocene, Gujarat, Madtsoiidae indet. from the early Eocene of Vastan Lignite Mine, Gujarat and possibly a madtsoiid (or boid) from the early Eocene of Panandhro Mine, Kutch, Western India. The occurrence of madtsoiids from the Oligocene of Ladakh indicates their continuity at least to the end of the Paleogene and shows that the members of this snake group were successful in this subcontinent for a much longer time than previously thought. The global climatic shifts and the prominent biotic reorganization across the Eocene–Oligocene boundary (which correlates to the European Grande Coupure), did not cause the extinction of this important group of snakes in India.

METHODS

The vertebra WIMF/A 4816 is housed at the Wadia Institute of Himalayan Geology (WIHG) Dehradun. Micro-CT scanning of the sample was done at the Department of Mechanical Engineering, Indian Institute of Technology Ropar (IIT Ropar) Rupnagar,

Punjab, India. The samples were imaged using high resolution micro computed tomography system (Phoenix Nanotom S, GE sensing & Inspection Technologies Wunstorf, Germany). Projection images on CCD camera were obtained at 70kV and 200µA with resolution of 10 µm. 1600 image projections were acquired during 360° rotation of sample. The software Phoenix Datasx 2 (Phoenix Nanotom S, GE sensing & Inspection Technologies Wunstorf, Germany) was used to construct a stack of 2-D sections from this series of projection images. The 3D surface of the vertebra and the sediment were extracted semi-automatically within AVIZO 9.0 using the segmentation threshold selection tool. The 3D surface model is provided in .ply format (see table 1) and can therefore be opened with a wide range of freeware.

ACKNOWLEDGEMENTS

W. A. Wazir thanks CSIR India for providing the fellowship (file no. 09/135(0815)/2018-EMR-I) and the Chairperson, Department of Geology, Panjab University, Chandigarh for needful assistance. N. P. Singh and R. K. Sehgal, thank the Director, Wadia Institute of Himalayan Geology for the research facilities (contribution no. WIHG/0202).

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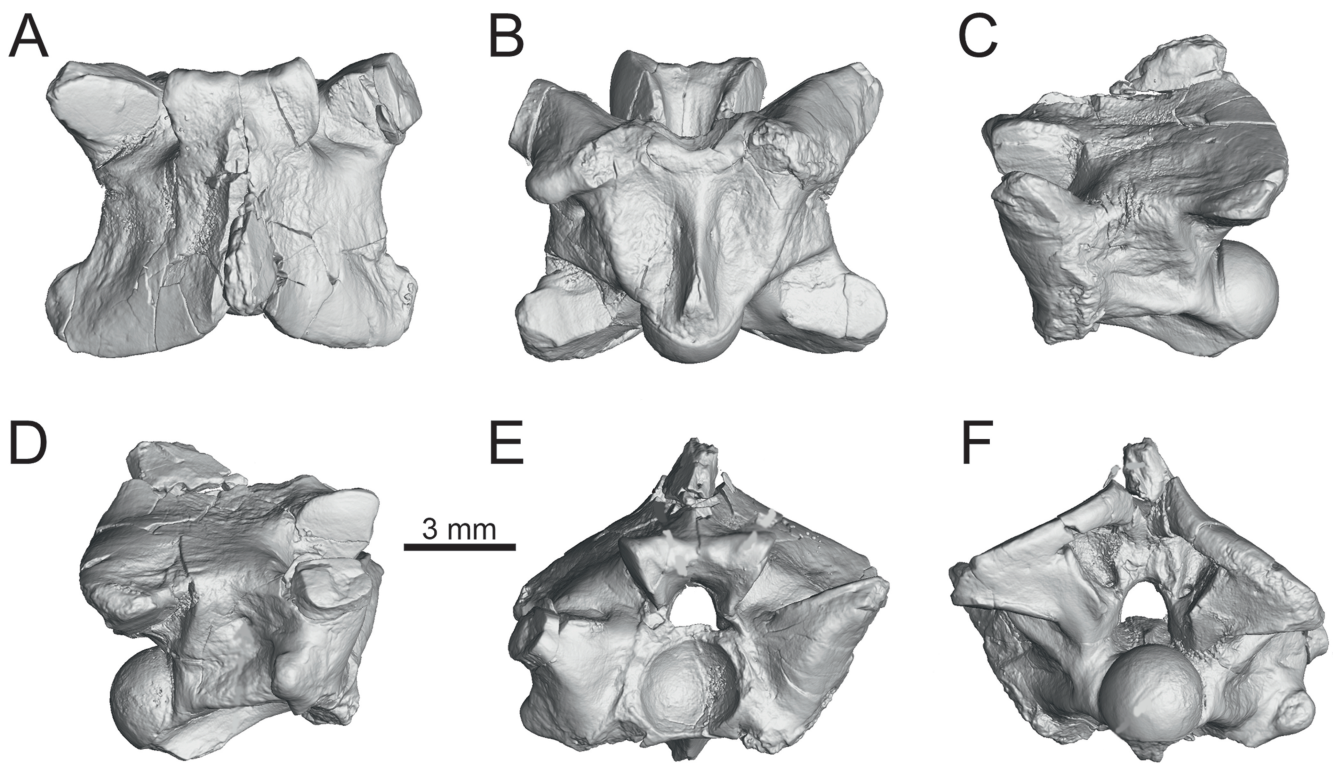


Figure 1. Madtsoiidae indet. from Ladakh Himalaya. The specimen WIMF/A 4816 in **A**, dorsal; **B**, ventral; **C**, **D**, lateral; **E**, anterior; **F**, posterior views.