

3D models related to the publication: Triassic turtles of France: the first European Rhaetian stem turtle taxon (clades *Testudinata*, *Proterochersidae*)

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Abstract

The present 3D Dataset contains the 3D models produced for the paper "Szczygielski, T., Celestin, F., Adnet, S., Guinot, G., 2026. Triassic turtles of France: the first European Rhaetian stem turtle taxon (clades *Testudinata*, *Proterochersidae*). Swiss Journal of Palaeontology". The digitized material consists of shell and appendicular skeleton fragments of the first diagnostic stem turtle from the European Rhaetian and showcases a number of autapomorphic characters.

Keywords: North Pangaea, clade *Proterochersidae*, Rhaetian, clade *Testudinata*, Triassic

Submitted: 19/04/2026, published online: 20/08/2026. <https://doi.org/10.18563/journal.m3.301>

INTRODUCTION

Since their appearance in the Norian (middle Late Triassic), turtles (clade *Testudinata*) remain a relatively constant component of continental and marine ecosystems. Already in the Norian, they attained a large taxonomic variability and a widespread distribution overlapping with the areas of modern day Americas, Europe, and Asia (e.g., Joyce, 2017; Szczygielski et al., 2026). However, the record of this initial radiation was until very recently separated from the record of their Jurassic diversity by a gap in the Rhaetian (latest Late Triassic). Only in recent years, finds from Argentina (Sterli et al., 2021) provided some data for this age, but no diagnostic evidence of turtle presence in the Rhaetian was published from the northern hemisphere. This changed with the discovery of a new genus and species of a turtle, *Bartassochersis lopezi* from the Rhaetian Formation of Pégairolles-de-l'Escalette of France (Szczygielski et al., 2026). The collected material consists of shell and appendicular skeleton fragments (Table 1) exhibiting characters typical for the clade *Proterochersidae*, such as the osseous connection between the plastron and the pelvis, or the presence of caudal and intercaudal scutes, but also a number of autapomorphic features (Fig. 1). All collected elements appear to belong to a single individual.

cropping the relevant region of the block, and then inverting its orientation in MeshLab (Filters ->Normals, Curvatures, and Orientation ->Invert Faces Orientation). The 3D surface models are provided in .ply format, and can therefore be opened with a wide range of freeware.

ACKNOWLEDGEMENTS

We thank M. Eric Roig, Mayor of Pégairolles de l'Escalette, as well as employees from the Dir A75 (M. F. Caumes, J.-P. Ayrinhac, S. Schwartzberg), who provided access to the Pégairolles locality and allowed fieldwork and sampling. Prof. Michel Lopez is thanked for the discovery of the locality and for providing useful data about the geology of the area. We wish to thank the 2020–2021 cohort of students from the Palaeontology Masters programme at the University of Montpellier who contributed to fieldwork. Monique Vianey-Liaud (University of Montpellier) is thanked for her help in the field. Anne-Lise Charruault (ISEM, University of Montpellier) also helped in the field and contributed to the preparation of some specimens. The study was supported by the National Science Centre, Poland (Narodowe Centrum Nauki) grant no. 2020/39/B/NZ8/01074 awarded to T. Sz

METHODS

Specimens were digitized with a Shining 3D EinScan Pro X2 2020 surface scanner with an automated turntable using the ExScan Pro 4.0.1.0 software. Snapshots of 3D models were captured in MeshLab 2025.07 (Cignoni et al., 2008) in orthographic view with the Radiance Scaling (Lit Sphere) shader enabled (Vergne et al., 2010). The digital positive presented in Fig. 1 was created by surface scanning the natural impression,

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Figure 1. *Bartasochersis lopezi* UM-PDE2-02, posterior plastral lobe in dorsal and ventral view and digital positive based on a natural impression of the ventral surface. Some of the diagnostic characters are marked: 1, osseous connection between the pelvis and the plastron (proterochersid synapomorphy); 2, laterally walled trough-like groove (autapomorphy); 3, reduced dorsal exposition of the anal scute, vertical edge of the posterior plastral lobe (autapomorphy); 4, presence of caudal scutes (proterochersid synapomorphy); 5, presence of the intercaudal scute (proterochersid synapomorphy); 6, probable presence of a single postintercaudal scute (autapomorphy).

Inv nr.	Region	Description
UM-PDE2-01	Plastron	Left axillary region and base of the anterior plastral lobe (left hyoplastron, small medial fragment of the right hyoplastron, part of the posterior process of the entoplastron)
UM-PDE2-02	Plastron	Posterior plastral lobe
UM-PDE2-03	Carapace	First vertebral scute region, right side
UM-PDE2-04	?Carapace	?Carapace fragment
UM-PDE2-05	Appendicular	Left scapula
UM-PDE2-06	Appendicular	Ungual
UM-PDE2-08	Plastron	Right hypoplastron
UM-PDE2-09	?Plastron	Indeterminate
UM-PDE2-10	Plastron	?Mesoplastron/hypoplastron
UM-PDE2-11	Carapace and plastron	Left inguinal periphery (peripheral, hyoplastron)
UM-PDE2-12	Carapace	?Left side of a vertebral scute area with two partial pleural scute areas
UM-PDE2-13	Carapace	?Posterior pleural and supramarginal of marginal areas
UM-PDE2-14	Carapace	Posterior peripherals
UM-PDE2-15A	?Plastron	?Left edge of the anterior plastral lobe
UM-PDE2-15B	Shell	Indeterminate
UM-PDE2-16	Shell	Indeterminate
UM-PDE2-17	?Plastron	?Bridge fragment
UM-PDE2-19	Carapace	Right bridge region
UM-PDE2-20	Plastron	Left femoral bulge
UM-PDE2-21	?Carapace	Indeterminate

Table 1. List of models of *Bartassochersis lopezi* UM-PDE2. Collection: Institut des Sciences de l'Evolution, Université de Montpellier.

Sterli, J., Martínez, R. N., Cerda, I. A., Apaldetti, C., 2021. Appearances can be deceptive: Bizarre shell microanatomy and histology in a new Triassic turtle (clade *Testudinata*) from Argentina at the dawn of turtles. *Papers in Palaeontology* 7: 1097-1132. <https://doi.org/10.1002/spp2.1334>

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