Dataset

3D model related to the publication: A new species of the large-headed coastal marine turtle *Solnhofia* (Testudinata, Thalassochelydia) from the Late Jurassic of NW Switzerland

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Abstract
This contribution contains the 3D surface model of the holotype cranium of the Late Jurassic thalassochelydian turtle *Solnhofia brachyrhyncha* described and figured in the publication of Anquetin and Püntener (2020).

Keywords: cranium, Late Jurassic, *Solnhofia*, *Thalassochelydia*

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Inv nr.	Taxon	Description
BAN001-2.1_red	*Solnhofia brachyrhyncha*	Textured 3D surface model of the cranium

Table 1. 3D model of the holotype cranium of *Solnhofia brachyrhyncha*, MJSN BAN001-2.1. Collection: Jurassica Museum (formerly Musée jurassien des sciences naturelles), Porrentruy, Switzerland

INTRODUCTION

Thalassochelydian are the first turtles to diversify into marine environments. They are known mostly from the Late Jurassic of Europe (for a recent review see Anquetin et al. 2017). Among Thalassochelydia, *Solnhofia parsonsi* is a remarkable taxon characterized by a proportionally large head (representing about 40% of the carapace length), elongated snout, and an extensive secondary palate formed primarily by the maxillae (Gaffney 1975; Joyce 2000). In Anquetin and Püntener (2020), we described new material of *Solnhofia* from the Kimmeridgian of NW Switzerland. We referred this material to the new species *Solnhofia brachyrhyncha*, which is notably characterized by a cranium with a shorter snout and posteriorly broader triturating surface. We herein present the 3D surface model of the holotype of *Solnhofia brachyrhyncha* MJSN BAN001-2.1 (Fig. 1 and table 1), a relatively complete, but crushed cranium.

METHODS

The 3D surface model of the cranium MJSN BAN001-2.1 was produced by photogrammetry. The fossil was photographed in studio conditions with a 24.3 Mpx Nikon® D610 camera equipped with a 60.0 mm macro lens. A set of 174 photographs from different orientations and angles was developed in Photoshop Camera Raw 6.7 (Adobe) and contrasts were enhanced. Masks were created for each photograph with Photoshop CS5 (Adobe). Photographs and corresponding masks were processed with the photogrammetry software Photoscan 1.0.4 Standard Edition (Agisoft), following the procedures described by Mallison and Wings (2014). The 3D surface model is provided in .ply format with an associated texture file in .png format, and can therefore be opened with a wide range of freeware.

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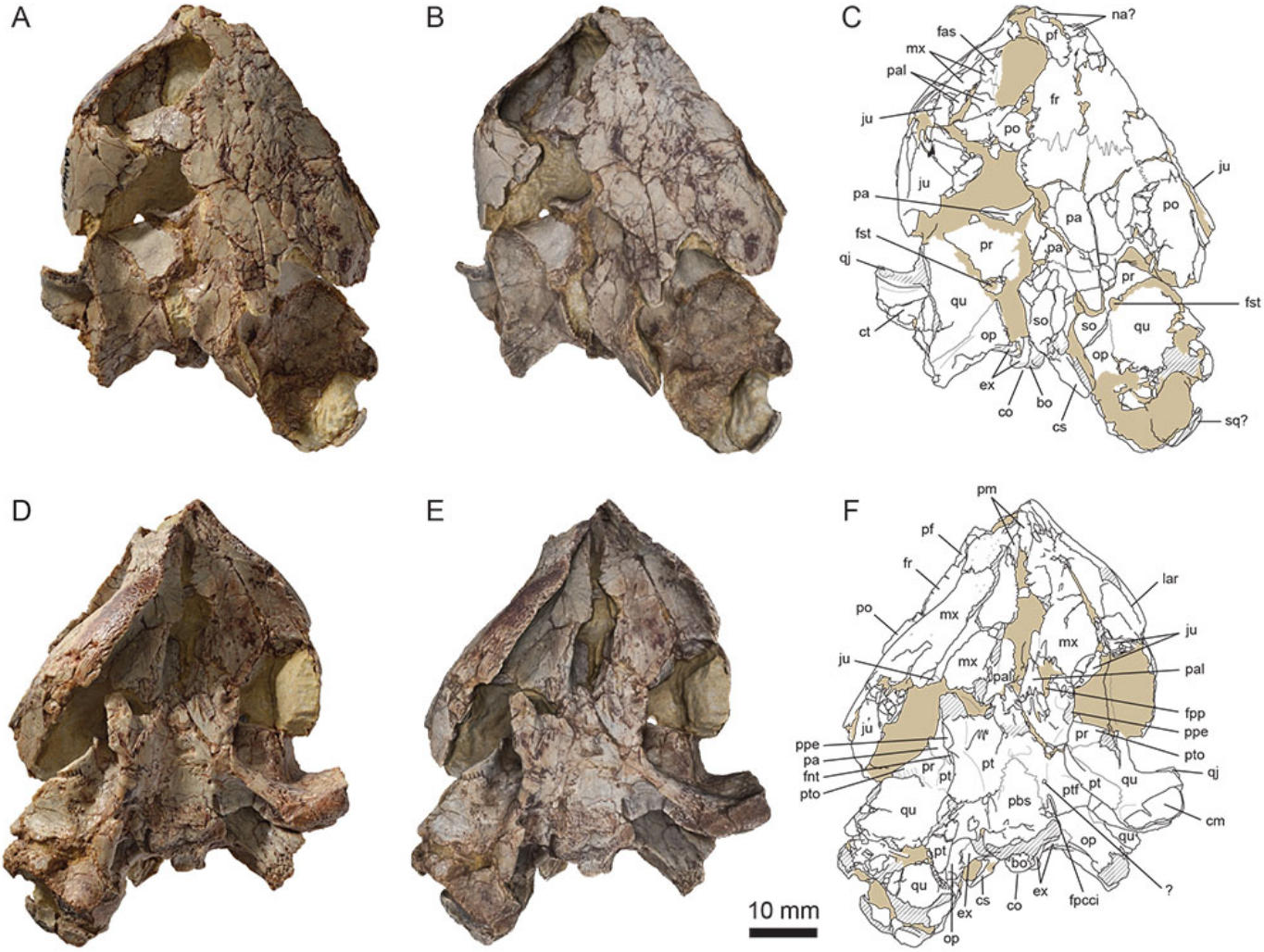

Figure 1. **MJSN BAN001-2.1, holotype of *Solnhofia brachyrhyncha* (Kimmeridgian, Porrentruy, Switzerland)**. Photograph (**A**), 3D model (**B**) and interpretative drawing (**C**) of the cranium in dorsal view; Photograph (**D**), 3D model (**E**) and interpretative drawing (**F**) of the cranium in ventral view. In the drawings, hatchings correspond to damaged areas, while the light brown color represents the remaining matrix. Abbreviations: **bo**, basioccipital; **cm**, condylus mandibularis; **co**, condylus occipitalis; **cs**, crista supraoccipitalis; **ct**, cavum tympani; **ex**, exoccipital; **fas**, foramen alveolare superius; **fnt**, foramen nervi trigemini; **fpcci**, foramen posterius canalis carotici interni; **fpp**, foramen palatinum posterius; **fr**, fontal; **fst**, foramen stapedio-temporale; **ju**, jugal; **lar**, labial ridge; **mx**, maxilla; **na**, nasal; **op**, opisthotic; **pa**, parietal; **pal**, palatine; **pbs**, parabasisphenoid; **pf**, prefrontal; **pm**, premaxilla; **po**, postorbital; **ppe**, processus pterygoideus externus; **pr**, prootic; **pt**, pterygoid; **ptf**, pterygoid fossa; **pto**, processus trochlearis oticum; **qj**, quadratojugal; **qu**, quadrate; **so**, supraoccipital; **sq**, squamosal; **?**, unnamed foramen.

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