

3-D reconstruction of skull suggests a small crocodile is a new species

February 15 2017



Limestone slab contains the partial skeleton of *Knoetschkesuchus*. Taken from Figure 3 of the manuscript. Credit: Schwarz et al (2017)

A small crocodile discovered in Germany's Langenberg Quarry may be a new species, according to a study published February 15, 2017 in the open-access journal *PLOS ONE* by Daniela Schwarz from Leibniz

Institute for Evolutionary and Biodiversity Research, Germany, and colleagues.

The Langenberg Quarry has proven to be a rich source of marine-related fossils, including small crocodile-like atoposaurid [species](#). The fossilized remains of this crocodile were exceptionally well-preserved but were still partly in sediment, making it difficult to examine the fossils fully. After initial analysis, the crocodile was assigned to the *Theriosuchus* genus. To study this atoposaurid in more detail, Schwarz and colleagues did a 3-D reconstruction of one of the fossil skulls based on micro-computed tomography.

The researchers concluded that the atoposaurid they studied is actually a [new species](#), which they call *Knoetschkesuchus*. This conclusion is based on unique features of the skull, such as openings in the jaw bone and in front of the eye, as well as of tooth morphology. The latter may have reflected dietary specialization, and diversity of tooth morphology is thought to have been a driver of atoposaurid evolution during the Jurassic.

"The study describes a new diminutive crocodile *Knoetschkesuchus langenbergensis* that lived around 154 Million years ago in Northwestern Germany," says Schwarz. "*Knoetschkesuchus* belongs to the evolutionary lineage that leads to modern [crocodiles](#) and preserves for the first time in this group two skulls in 3D, allowing us detailed anatomical studies via micro-CT images. Our research is part of the Europasaurus-Project which studies the remains of a unique Jurassic island ecosystem in Northern Germany."

More information: Schwarz D, Raddatz M, Wings O (2017) *Knoetschkesuchus langenbergensis* gen. nov. sp. nov., a new atoposaurid crocodyliform from the Upper Jurassic Langenberg Quarry (Lower Saxony, northwestern Germany), and its relationships to *Theriosuchus*.

PLoS ONE 12(2): e0160617. [DOI: 10.1371/journal.pone.0160617](https://doi.org/10.1371/journal.pone.0160617)

Provided by Public Library of Science

Citation: 3-D reconstruction of skull suggests a small crocodile is a new species (2017, February 15) retrieved 13 May 2024 from

<https://phys.org/news/2017-02-d-reconstruction-skull-small-crocodile.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.