

110-Million-Year-Old Lizard Found in Burmese Amber

Feb 9, 2022 by Enrico de Lazaro

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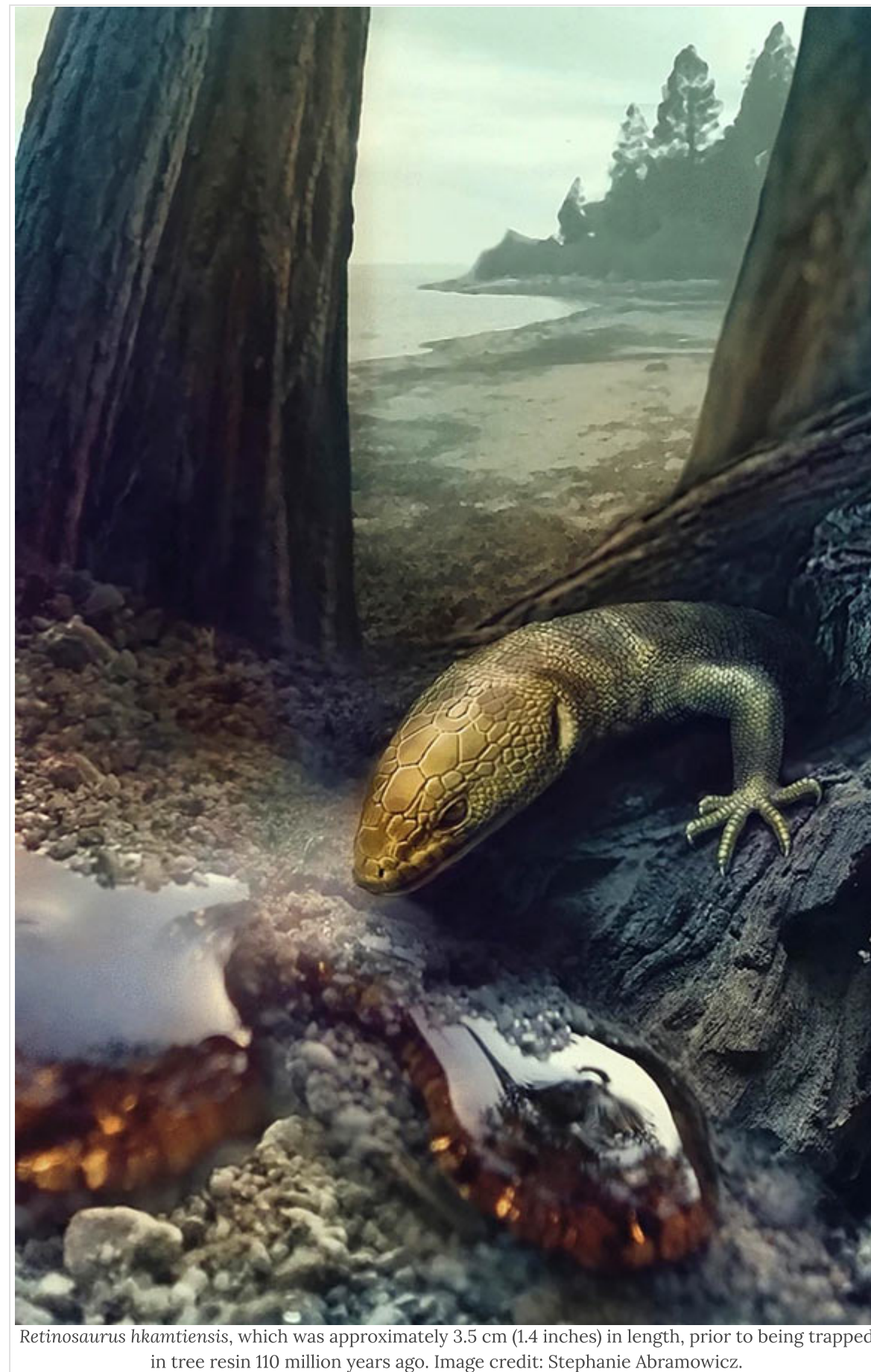


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Paleontologists have found a new species of lizard in a piece of amber excavated from a mine in Myanmar.



Retinosaurus hkamtiensis, which was approximately 3.5 cm (1.4 inches) in length, prior to being trapped in tree resin 110 million years ago. Image credit: Stephanie Abramowicz.

“Among fossils in general, those preserved in amber represent a rare and unique insight on extinct organisms,” said Dr. Andrej Čerňanský of Comenius University and his colleagues.

“Amber often contains 3D preserved animals, or their parts, frequently including soft tissues.”

“Exclusively based on such preservation, we know that the typical scaling pattern of at least some groups of lizards had already evolved by the Cretaceous, e.g., the granular head scaling and adhesive toe pads of geckos.”

The newly-identified lizard species, named *Retinosaurus hkamtiensis*, was trapped in an [araucarian tree](#) resin about 110 million years ago (Albian age of the Cretaceous period).

“You’re looking into the face of an animal that lived when the dinosaurs were roaming around,” said Villanova University’s Professor Aaron Bauer.

The piece of amber with a well-preserved juvenile *Retinosaurus hkamtiensis* was recovered from the Hkamti District at Patabum, in close proximity of the Jade mines in the northern Myanmar Central Basin.

The specimen was analyzed through a CT scan, which allowed the paleontologists to create 3D renderings of the lizard.

“We had the rare opportunity to study not only an articulated skeleton but also the external appearance of the lizard, the scales, in the same way that herpetologists study current species,” said Dr. Juan Diego Daza, a researcher at the Sam Houston State University.

“Although digital models generated from computed tomography data can never completely replace the physical objects they represent, they can increase access to museum specimens,” added Dr. Edward Stanley, a researcher at the Florida Museum of Natural History.

“We carried out multiple phylogenetic analyses to try to establish relationships between this form and others based on characters of the skeleton and the pattern drawn by the scales,” said Dr. Arnau Bolet, a researcher at the Universitat Autònoma de Barcelona and the University of Bristol.

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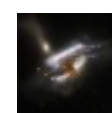
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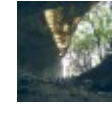
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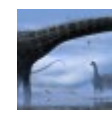
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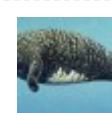
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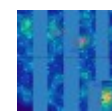
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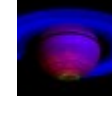
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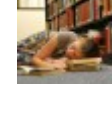
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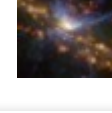
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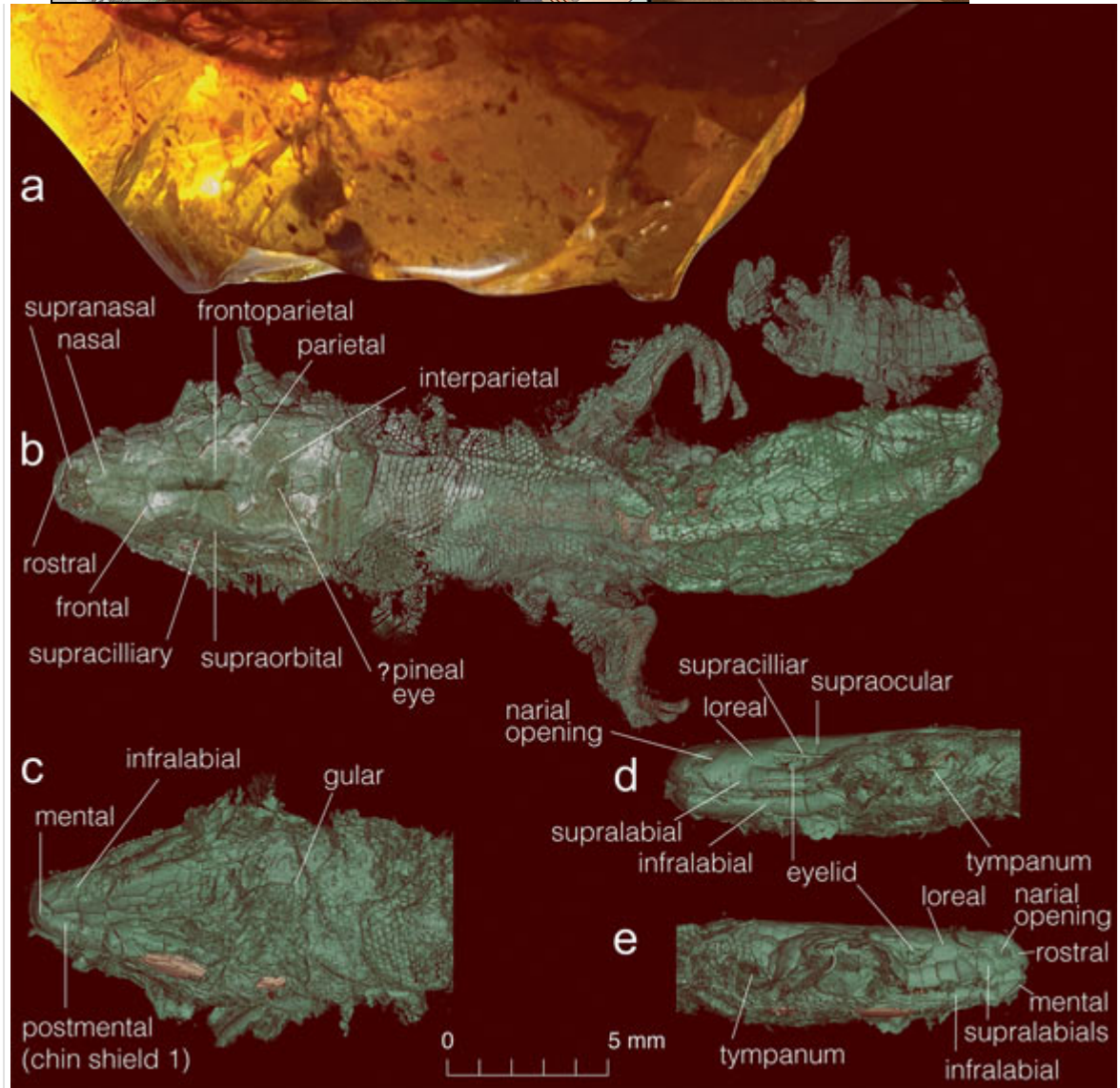
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General view of *Retinosaurus hkamtensis*: (a) photograph of the specimen — a well-preserved skull, including the mandible, part of the hyoid (ceratobranchial), and a partial postcranial skeleton, as well as well-preserved skin tissues — within the amber resin in dorsal view; (b–d) high resolution computerized scan (HRCT) rendering of the integument surface; note that the integument is not visible in the photograph, as it may be preserved as a translucent layer; greenish color indicates the skin, light brown indicates the bones preserved inside. Image credit: Čerňanský et al., doi: 10.1038/s41598-022-05735-5.

The results show that *Retinosaurus hkamtensis* is a representative of *Scincoidea*, a superfamily that today includes skinks, armored lizards and night lizards.

“The analysis of molecular data placed the reptile as a relative of *Tepexisaurus* and *Xantusiidae* lineages,” the researchers said.

“This points to an interesting hypothesis, that the present group known exclusively from North and Central America may have originated elsewhere than indicated by their hitherto known biogeography.”

“The reason could be an early split in lizard lineages during the Early Cretaceous which would have occurred, in this case, somewhere in Gondwana (the Southern continents and India).”

“The Burma Terrane microplate (today’s Myanmar) was probably not part of Asia at the time when our lizard lived.”

“Back then, the area may have been an island which separated from Australia and traveled northwest.”

“The topic is still quite controversial and leaves room for other interpretations of the origin of animal lineages occurring during the Cretaceous in this area,” Dr. Čerňanský concluded.

The discovery is described in a [paper](#) in the journal *Scientific Reports*.

A. Čerňanský et al. 2022. A new Early Cretaceous lizard in Myanmar amber with exceptionally preserved integument. *Sci Rep* 12, 1660; doi: 10.1038/s41598-022-05735-5

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