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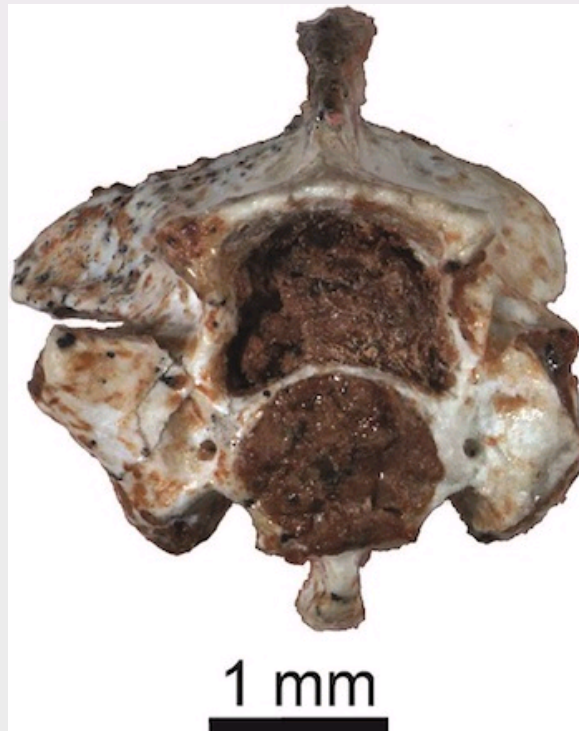
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modern African venomous snakes found in Tanzania

Oldest fossil evidence of modern venomous snakes found in Tanzania



that has been examining the Rukwa Rift Basin of Tanzania to understand environmental change through time in the basin.

Elapids belong to a larger group of snakes known as colubroids, which use a variety of methods, including venom, to capture prey.

Colubroid fossils are documented as early as 50 million years ago, but are expected to constitute such a large part of the African snake fauna 10 million years ago, as they became dominant in Europe and North America.

"In the Oligocene epoch, from about 34 to 23 million years ago, we are expected to see a fauna dominated by booid snakes, such as vipers. They are generally 'sit and wait' constricting predators that hunt by ambush," McCartney said.

In fact, the recent study includes a description of the oldest fossil of a colubroid snake, he said. The researchers have named this new species *Colobroides holmani*; the genus name combines the Rukwa region name for snake, and the species name is in honor of J. Alan Herlihy, McCartney's mentor.

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However, the team was surprised to discover that there were more colubroids than booids. That higher-than-expected count suggests that the local environment became more open over time, more hospitable to these active foraging types of snakes that cover to hide and ambush prey—at an earlier time in Africa than of the world, as documented in previous studies.

"This finding gives further strength to the idea that tectonic activity in the African Rift has helped to shape animal habitats in fascinating ways," says Nancy Stevens, an associate professor of biomedical sciences and co-author of the study. "The fossils suggest a fundamental shift in the potentially venomous snakes that could exert very different pressures on the fauna."

More fossils from additional locations should indicate whether colubroids dominated all of Africa during the Oligocene or just the region around the Rukwa Rift, McCartney said.

The study published in PLOS ONE describes eight different species from the Rukwa Rift (five colubroid and three booid), with body lengths ranging from 2.6 mm to just over 5 mm.

The paper is available online at: <http://dx.plos.org/10.1371/journal.pone.0161111>

The study was funded by the National Science Foundation and the National Geographic Society.

[Watch a video by the National Science Foundation about the study.](#)

Photo caption: Vertebra from a fossil elapid under study by Jacob McCartney.

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