

# DNA analysis of Elapidae family of snakes shows they have an Asian origin, not African

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A small team of evolutionary biologists from the University of Kansas, the American Museum of Natural History, and the University of Helsinki, has found that a family of snakes known as Elapidae originated

in Asia, not Africa, as many in the field have thought.

In their paper [published](#) in the journal *Royal Society Open Science*, the group describes how they analyzed the DNA of 65 [snake](#) species and studied DNA data from 434 additional species to create an elapoid [evolutionary tree](#) and what they found by doing so.

Elapidae are a [family](#) of snakes (there are more than 700 species) that are characterized by their permanently erect fangs situated in the top, frontmost part of their mouth—and most are venomous. Well known members include cobras, mambas, coral, mock viper and African garter snakes.

Prior research has suggested that the class first arose in Africa approximately 25 million years ago, and from there spread to Asia, and many other places. The team's new study has shown that such prior claims came about due to flawed research. The team found that Elapidae originated in Asia.

The researchers noted that not enough information had been available to prior researchers regarding the evolutionary history of the elapoid family, thus results from such studies were suspect. To gain a better perspective, the team studied the genomes of 65 snake species from 22 families, from 3,100 locations, and then added the [genetic data](#) they produced to existing DNA data from 434 more [species](#). They then used the data from all of them to build an elapoid evolutionary tree.

In looking at their evolutionary tree, the researchers found that two snakes represented on it, cyclocorids and mock vipers, were the first to diverge—and because they did so while living in Asia, it strongly suggested an Asian origin for the entire group.

The tree also showed that members of the family did not appear in

Africa for another 5 million years—and members of the family colonized Africa four different times. The researchers claim that their work effectively refutes claims of an African origin for the elapoid family of snakes—it was Asia, they insist.

**More information:** Jeffrey L. Weinell et al, Novel phylogenomic inference and 'Out of Asia' biogeography of cobras, coral snakes and their allies, *Royal Society Open Science* (2024). [DOI: 10.1098/rsos.240064](https://doi.org/10.1098/rsos.240064)

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