

# Prehistoric snakes had hindlimbs, study shows

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Unlikely as it seems, all 3,400 snake species we know of today may have come from a rather unusual prehistoric forest prowler, with a sinuous body consisting of two small hind legs with toes and ankles, according to a new paper published on Tuesday.

A data analysis of fossils, genetic sequencing and anatomical comparisons from 73 different snake and lizard species has allowed a team of paleontologists at Yale University designed what is perhaps the most comprehensive snake “family tree” to date.

“Having that tree as a backbone let us draw a ton of conclusions for what the ancestral snake would have been like,” **said Daniel J. Field, who is a doctoral candidate in evolutionary biology and one of the study’s authors.** The team had determined that the most recent common ancestor of all living snakes was a nocturnal animal that thrived some 128.5 million years ago on our planet’s Southern Hemisphere during the Middle Cretaceous Period. Like many pythons today, it devoured relatively large animals whole. Unlike most snakes, however, it used sharp, hooked teeth as its primary hunting tool.

With their tree, the team members were able to determine which traits were least likely to belong to modern snakes’ most recent ancestor, while producing a model of the characteristics they did have. Unlike today’s species of boas and pythons, they did not constrict their

prey and they possessed remnants of hind legs, vestigial structures that offered no help for movement.

“I was most amazed by how strongly we inferred that the common ancestor retained hind limbs,” he said. The team published a tree of life detailing snakes for the journal BMC Evolutionary Biology.

There are some limitations to the team’s reconstruction of an ancient snake, according to Mr. Field, due to the fact that we have yet to find fossil records of modern snakes’ most recent common ancestor.

“Sometimes evolution plays out in unexpected and strange ways,” he said. “We think we’ve got a strongly supported idea, and based on the mathematical reconstruction it is what is most likely to be true.”