

MOVING CONTINENTS CREATED NEW CENTIPEDE SPECIES

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The *Ethmostigmus* in peninsular India are very unique. | Photo Credit: [Umesh Pavukandy](#)

Fossils and advanced genetic methods to study relationships between species now tell an intriguing story about a group of tropical centipedes. Continental drift (the moving apart of continents) almost 100 million years ago created many species of *Ethmostigmus* centipedes in the world's tropics. In the Indian peninsula, these centipedes first originated in the southern and central Western Ghats, and then spread across the ranges here, finds a study published in *BMC Evolutionary Biology*.

India is home to six, fairly large *Ethmostigmus* centipedes: four dwell in the Western Ghats, one in the Eastern Ghats and one in north-east India. Africa, south-east Asia and Australia are also home to other species of *Ethmostigmus* centipedes. What explains its distribution across continents and the diversity of species in peninsular India?

To find out, scientists Jahnvi Joshi and Gregory Edgecombe of the Natural History Museum (London, United Kingdom) turned to genetics. Using genetic data of 398 *Ethmostigmus* centipedes from published studies, they constructed a species 'time-tree' — a network that reveals how species are related to each other and when new species emerged — of nine species (across peninsular India, Africa, Australia and southeast Asia). They used three fossil centipedes to calibrate the DNA tree, which gave them the approximate times that the species originated in the past.

The results suggest that a single ancestor gave rise to all *Ethmostigmus* centipedes in the ancient supercontinent of Gondwana (continents including Australia, Africa and peninsular India comprised this single landmass then). The subsequent breakup of Gondwana and the drifting away of different landmasses shaped the early evolutionary history of *Ethmostigmus*. And the *Ethmostigmus* in peninsular India are very unique, says co-author Joshi.

"They started evolving at a time when peninsular India was moving towards south Asia," she says. This started around 72 million years ago, in the southern and central Western Ghats. Following this, the *Ethmostigmus* here dispersed to the Eastern Ghats (now home to *E. tristis*).

From there, *Ethmostigmus* dispersed to the southern Western Ghats. *Ethmostigmus* centipedes also reached the northern Ghats from the south-central Ghats too, and later dispersed back to the central Ghats again from there.

The formation of wet forests in these areas during this time could have aided this dispersal (for all existing peninsular Indian *Ethmostigmus* centipedes now dwell only in wet forests), write the authors in the paper.

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