



## Tracing the origins of life in Peninsular India

Hyderabad, 30<sup>th</sup> August, 2024: For more than 200 years, evolutionary biologists have been on a quest to understand the origins of earth's biodiversity. The tremendous species richness of the peninsular region of India, particularly within the Western and Eastern Ghats mountain chains have intrigued them. This is even more so as the Peninsular Indian landmass is extremely old. It was part of the supercontinent Gondwana (which consisted of present-day Africa, Antarctica, Australia and South America merged together) approximately 200 million years ago. Eventually, Gondwana broke into parts and the Indian landmass drifted to its current position. Where then, do all the organisms found in Peninsular India come from?



*A scutigermorph*

Dr Jahnavi Joshi's lab at CSIR-Centre for Cellular and Molecular Biology, Hyderabad sought to answer this question using one group of animals, Scutigermorpha. These are long-legged, fleet-footed centipedes often mistaken for spiders. Using specimens from across the Western Ghats and Eastern Ghats as well as a global dataset of genetic sequences, they found that the Indian scutigermorphs originated in Gondwana and continued to evolve within Peninsular India. "This is fascinating, as most of India's biodiversity has resulted from dispersal events into India from either from Asia or Africa across the last 65 million years. Only a few other burrowing animals have also been found to have Gondwanan lineages," notes Dr Joshi, Senior Scientist at CSIR-Centre for Cellular and Molecular Biology.

Furthermore, the current Australian biodiversity of Scutigermorpha is likely to have originated when the Indian ancestor dispersed from India within the last 100

million years. "Indo-Australian relationships are rare in the literature, likely because India and Australia were connected more than 130 million years ago - a date older than the origin of many studied taxa- and today are separated by thousands of kilometers of land and ocean," says Maya Manivannan, the first author of the paper. "Perhaps, the scutigermorphs took 'a passage through India' from Gondwana all the way to Australia," she added.

This paper was published in the Journal of Biogeography.

Link to the paper: <https://doi.org/10.1111/jbi.14994>

