Tree Frog Study Offers New Insights to India-Asia Collision Theory

By studying the diversification of rhacophorid frogs, scientists in China and the US have provided new evidence for accelerated faunal exchange between the Indian and Eurasian Plates during the Oligocene.

The accretion of the Indian subcontinent to Eurasia once triggered a massive faunal and floral exchange. The traditional view on the India-Asia collision assumes a contact of the continental plates during the Early Eocene. However, the exact mode and timing of this geological event is still unclear.

Dr. LI Jiatang and coworkers from the Chengdu Institute of Biology, in cooperation with Prof. ZHANG Yaping from the Kunming Institute of Zoology and Dr. David M. Hillis from the University of Texas, Austin constructed an extensive phylogenetic and biogeographic analysis of rhacophorid tree frogs, revealing an early dispersal of the animals from India to Asia between 46 and 57 Ma as reconstructed from the fossil record. During the Middle Eocene, however, faunal exchange ceased, followed by an increase in rhacophorid dispersal events between Asia and the Indian subcontinent during the Oligocene that continued until the Middle Miocene.

Their study supported recent geological models that argue for a much later final collision between the continental plates. It also predicted that the Oligocene faunal exchange between the Indian subcontinent and Asia, as shown for rhacophorid frogs, could also apply for other non-volant organisms with an Indian-Asian distribution, and suggested that previous studies dealing with this faunal interchange should be carefully reinvestigated.

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1. *Rhacophorus rhodopus*. 2.*Rhacophorus puerensis*. 3. A *Rhacophorus omeimontis* laying eggs. 4. Dr. LI Jiatang is collecting frogs. (Photos by Dr. LI Jiatang)