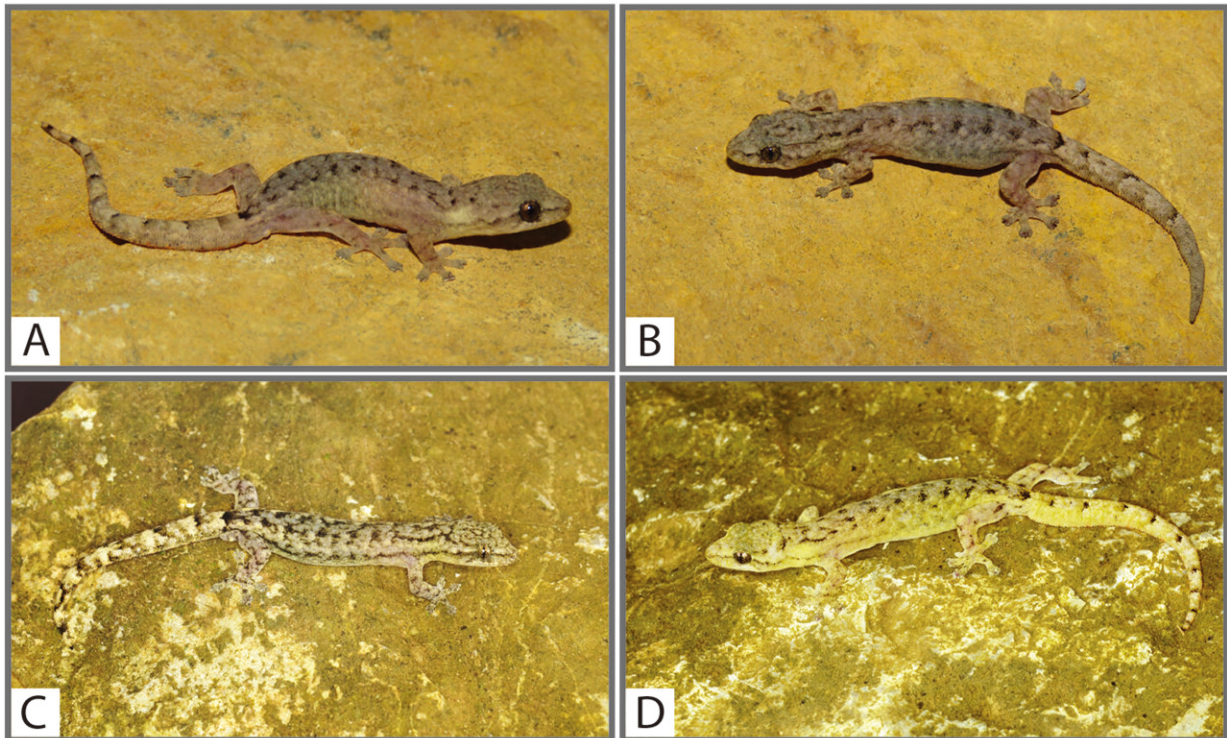


Two new species of slender gecko reported in Yunnan karsts

November 21 2022, by Zhang Nannan



Hemiphyllodactylus simaoensis. Credit: Ade Prasetyo Agung

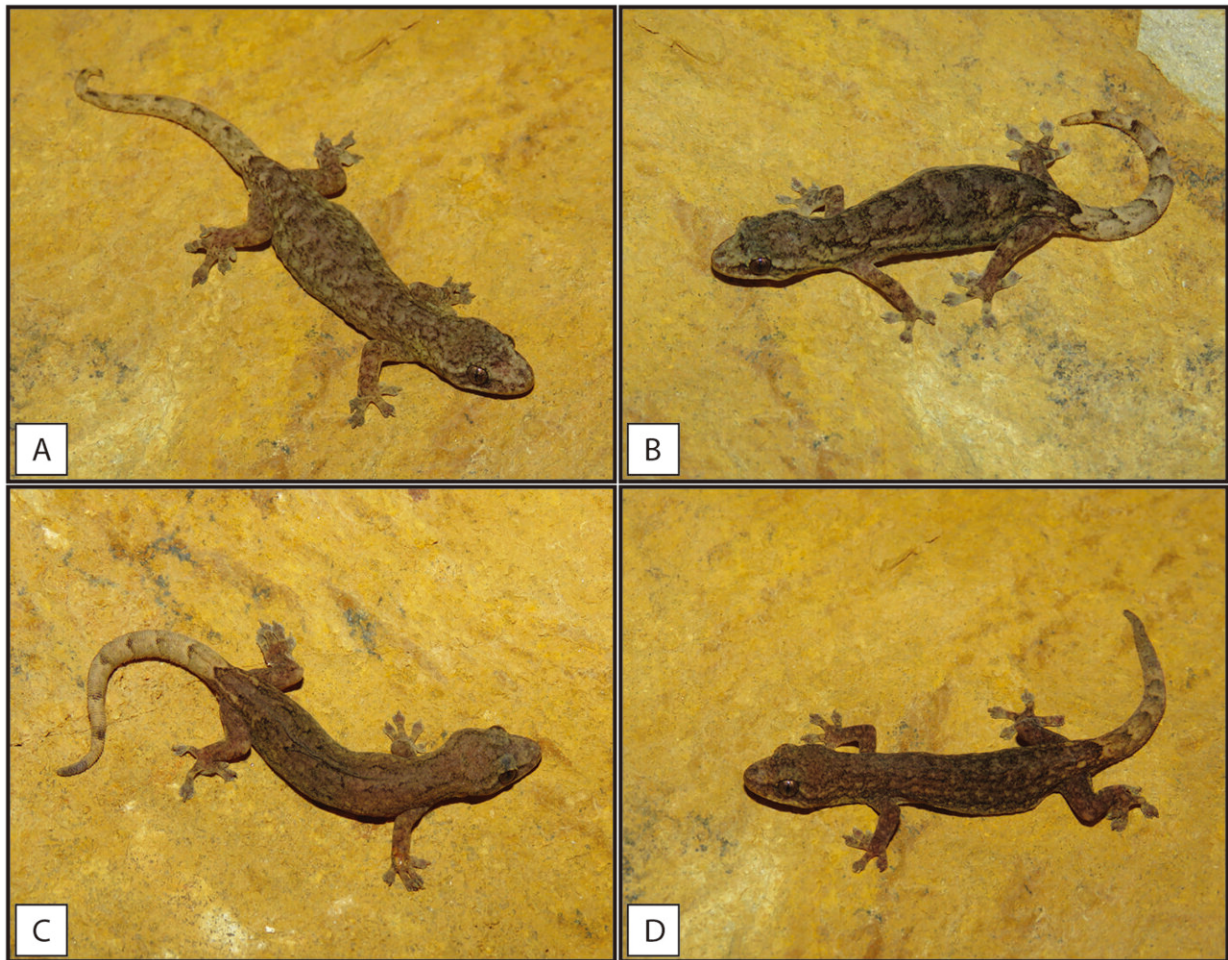
As the largest family of geckos, Gekkonidae shows high levels of endemism in karst systems. *Hemiphyllodactylus* (commonly known as half leaf-fingered geckos, dwarf geckos, or slender geckos), belongs to the family Gekkonidae. However, like other small organisms (e.g., snails, millipedes, and other invertebrates), this genus is often

overlooked, and given the highly endemic nature of the group, more targeted protection is clearly needed.

Nearly 44% of Yunnan Province is covered by Karst landscapes, which potentially harbors many slender gecko species. Previously, most slender geckos in Yunnan were identified as a single widely distributed species, *H. yunnanensis*.

However, a thorough investigation using molecular and morphological data conducted by researchers from the Xishuangbanna Tropical Botanical Garden (XTBG) of the Chinese Academy of Sciences, in collaboration with La Sierra University, has revealed that there are many cryptic and [undescribed species](#) in Yunnan under the name *H. yunnanensis*, and underscores that *Hemiphyllodactylus* diversity is underestimated.

Based on fieldwork in the karst areas of Yunnan, XTBG researchers identified several potential new species. In a study published in *Zoological Research*, they described two new species (*Hemiphyllodactylus simaoensis* and *Hemiphyllodactylus yanshanensis*). They phylogenetically delimited new evolutionary lineages based on [molecular evidence](#) and diagnosed those lineages based on morphological evidence, with descriptions of the new species.



Hemiphyllodactylus yanshanensis. Credit: Ade Prasetyo Agung

Based on phylogenetic evidence, uncorrected genetic distance, and lineage distinction from significantly different morphological characters, the Simao and Yanshan populations likely constitute new evolutionary lineages, and thus represent two new species. The newly described species differed significantly in several morphological traits from their sister species.

The researchers suggested that karst regions in Yunnan are likely to harbor additional undescribed species of *Hemiphyllodactylus*.

Given the rate of species description in this neglected taxon, as well as the high rates of habitat loss, further study is needed to describe species and map their ranges before they are protected, especially for genera with high levels of site-specific endemism in inventory-poor areas.

More information: Ade Prasetyo Agung et al, Description of two new species of *Hemiphyllodactylus* (Reptilia: Gekkonidae) from karst landscapes in Yunnan, China, highlights complex conservation needs, *Zoological Research* (2022). [DOI: 10.24272/j.issn.2095-8137.2022.105](https://doi.org/10.24272/j.issn.2095-8137.2022.105)

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