# 15 new gecko species discovered in Myanmar

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Credit: Fauna & Flora International

With support from Fauna & Flora International (FFI), 15 karst-adapted gecko species were recently found in Myanmar within the space of just two weeks, highlighting the outstanding biodiversity of limestone ecosystems.

A team of scientists has found an astonishing fifteen new gecko species within Myanmar's karst (limestone) landscapes. The discoveries were made over a two-week period in October 2016, and included 12 new species of bent-toed gecko from the genus Cyrtodactylus and three dwarf geckos from the genus Hemiphyllodactylus.

All of the newly discovered species come from isolated limestone

habitats in east-central and southern Myanmar and are thought to be restricted to the individual limestone blocks where they were found. Karst landscapes are composed of limestone, and characterised by caves, towers, and hills and high levels of endemism, with many unusual species that are found nowhere else in the world.

"Although we already knew that some less mobile cave species such as snails and fish were restricted to just one cave or limestone hill, we now know that the same applies to some geckos," says Dr Tony Whitten, FFI's Senior Adviser.

## Documenting the findings

These exciting discoveries are due to be reported in three upcoming journal articles over the coming weeks.

Cyrtodactylus sp. Credit: Dr L. Lee Grismer

The first, in the *Journal of Natural History*, describes the three new dwarf geckos while the second, due to be published on 6th October in the *Zoological Journal of the Linnean Society*, describes the 12 new bent-toed geckos.

A third paper based on subsequent discoveries in May 2017 is currently being written and describes four more species of bent-toed geckos.

According to one of the papers these discoveries demonstrate "high localised diversity and unprecedented micro-endemism."

Dr L. Lee Grismer of La Sierra University in California, who is the senior author of all three papers, led an international team comprising karst conservationists from FFI's Myanmar team, scientists from the Universiti Sains Malaysia and Brigham Young University, and researchers from the Myanmar Forest Department. Dr Grismer's work was supported with funding from FFI, the Helmsley Charitable Trust, La Sierra University, and the Critical Ecosystem Partnership Fund.

According to Dr Grismer, this discovery is particularly significant because all 15 new species come from an endangered microhabitat in a country that, until only recently, was cut off from the world due to civil conflict and which has only a nascent conservation sector. Some of these species were found in rebel-held territory, making effective conservation even more challenging.

Cyrtodactylus sp. Credit: Dr L. Lee Grismer

**A special name for one gecko species…**

One of the species, Hemiphyllodactylus tonywhitteni, was named after FFI's Dr Tony Whitten, who has been a passionate advocate for the conservation of karst landscapes and their remarkable biodiversity. H. tonywhitteni is known only from one cave in the Taunggyi District. The other species are named after the local areas where they were found.

According to the paper, this epithet "honours Dr Tony Whitten who has championed a broad range of conservation efforts in Indonesia and Asia-Pacific for well over a quarter of a century. His tireless efforts to conserve and help manage karst ecosystems have been a great inspiration to the senior author [Dr Grismer]."

The discovery of the karst forest-adapted species "further emphasises the unrealised herpetological diversity endemic to karst ecosystems and the need for increased field work throughout such habitats in Southeast Asia," the paper argues.

"Managing and conserving these ecosystems should be given greater priority"

Hemiphyllodactylus montawaensis. Credit: Dr L. Lee Grismer

Dr Grismer has also supported FFI's wider Asia-Pacific programme by conducting biodiversity and reptile surveys of karst landscapes, which – despite increasing recognition of their importance for biodiversity – are highly threatened as a result of quarrying by the cement industry.

Drawing attention to this issue, the researchers write: "In an age of biodiversity crisis, managing and conserving these karst ecosystems throughout Southeast Asia should be given greater priority."

Dr Grismer notes the sad irony that Myanmar has some of the most extensive areas of karst in all of Southeast Asia, yet it is the least protected. "Hundreds of new species could face extinction without proper management," he says, "but this [management] cannot happen unless these species are discovered and described – hence why we are ramping up our efforts in these regions."

Provided by Fauna & Flora International