



Photographing the field frog while it croaks is difficult because of its skittish nature. PHOTO: SHIVARAM RASU



The Dumeril's monitor lizard is the rarest of Singapore's three species of monitor lizards. PHOTO: LAW INGG THONG



The twin-barred tree snake is one of 150 species detailed in the upcoming field guide. PHOTO: LAW INGG THONG



The blotchy Singapore bent-toed gecko was in 2012 ruled a unique species. PHOTO: LAW ING SIND

# Enthusiasts to launch field guide on S'pore's reptiles, amphibians

Crouched in the darkness of a forested area in Mandai, Mr Shivaram Rasu trained his camera lens on a grassy patch some 10m away, as he waited for a shy animal to call.

While the field frog (*Fejervarya limnocharis*) is a native species that is easily seen, photographing it while it croaks is difficult because of its skittish nature, said the 31-year-old doctoral student at National University of Singapore. He was documenting the creature's behaviour for an upcoming field guide dedicated to Singapore's reptiles and amphibians – the first in more than three decades.

"It's hard to get such a photo, as it will stop calling when humans are near or lights appear far off," said Mr Shivaram, who overcame the challenge by asking zoology graduate Law Ingg Thong, 27, to stand next to the palm-sized frog with a wireless flash that kicked in once the amphibian called.

Over the past seven years, the pair have been on a mission to document all of Singapore's herpetofauna, known among hobbyists as "herps", along with Mr Law Ing Sind – who is Mr Law Ingg Thong's brother – Mr Sankar Ananthanarayanan and Mr Serin Subaraj.

On Sept 20, the band of brothers will launch their guide showcasing and detailing 150 species of reptiles and amphibians for which Singapore has been home. It is a resource they hope will demystify herps for both the public and consultancies shaping the future development of the Republic.

Mr Sankar, an NUS doctoral candidate studying local reptile extinctions, said: "Reptiles and amphibians typically have a bad reputation. The five of us think they're beautiful, but the average person may disagree."

He added that they hope people can be interested in learning about

frogs and their choruses, "just like how people can actively appreciate birds and bird song".

The book adds to what the last field guide for reptiles and amphibians – a 1992 handbook published by Science Centre Singapore – offered with research on another 44 species, including rediscoveries like the Selangor mud snake that was undetected for over a century.

There is a sense of national pride that a diversity of such fauna has remained on the island, even with widespread urbanisation, said Mr Sankar, 30. He co-founded volunteer group Herpetological Society of Singapore with Mr Serin and the Law brothers – the last three working as wildlife consultants.

For example, the 304-page book features the Singapore bent-toed gecko (*Cyrtodactylus majulah*), a blotchy lizard with mahogany eyes that was in 2012 ruled a unique species, of which the first speci-

men was found in the Republic.

As Singapore relies on more environmental impact assessments (EIA) to guide development of its nature areas, the field guide was written to help consultants accurately identify species that are of conservation priority.

"At the moment, there are no comprehensive identification sources to distinguish reptile and amphibian species in Singapore," said Mr Law Ing Sind, 29. "So we hope that the book can be a resource (for conducting) EIA studies at a higher standard."

Their book comes amid the growing popularity of herpetofauna photography, a niche hobby when the writers ventured into the craft more than a decade ago. This changed with the pandemic that brought with it a boom in photos of wildlife on social media as travel-starved residents flocked to Singapore's green spaces.

Clocking the interest, the writers hope the book will help the public differentiate between native species and invasive creatures such as the greenhouse frog (*Eleutherodactylus planirostris*).

The notorious alien species – originally from the Caribbean – is of concern for Singapore, as these frogs do not need water bodies to breed, said Mr Shivaram, who is researching the invasion biology of alien amphibians in Singapore and the region.

For the writers, the book is the fruit of a combined experience of more than four decades searching for creatures that hop, slither and crawl.

Head of NUS' Lee Kong Chian Natural History Museum Darren Yeo, and the museum's herpetologists Alex Figueroa and Kelvin Lim commended the writers for their independent effort to publish an update of the classification, ecolo-

gy, distribution and conservation status of local herpetofauna.

Said Dr Figueroa: "What really makes this new book significant is that it is a comprehensive field guide that allows its users to learn to identify and distinguish species by highlighting key diagnostic features, and also learn about each species' habitat preference and behaviour."

In a similar vein, the museum's collections manager for vertebrates, Mr Lim, who co-authored the 1992 guide, said he was pleased to learn the authors had used his "ancient" guide as inspiration for their work.

Likewise, Mr Law Ingg Thong hopes that the field guide will nurture the next generation of herpetologists: "Just like how the first guidebook inspired us to venture out to find reptiles and amphibians."

**Ang Qing**