



The Rote leaf-warbler is found only on the Indonesian island of Rote, a mere 12km from neighbouring Timor. It is completely new to science and was announced as a new species only this year. PHOTO: PHILIPPE VERBELEN

Indonesian isle surprises with new bird species

Rote was not thought to have its own unique species until recently

Jose Hong

A high-pitched, five-note whistle pierces the woodlands of Rote, an island in Indonesia's easternmost and southernmost province of East Nusa Tenggara.

The bird it comes from is small, barely 10cm from tip to tip, but eye-catching, with a bright yellow belly topped by olive green, a colour it wears like war paint.

Called the Rote leaf-warbler, it is also completely new to science, and until recently flew undetected under the radar of ornithologists.

"Rote island is very small, about 1,200 sq km, and only 12km off the southernmost tip of Timor," said Assistant Professor Frank Rheindt, head of the Avian Evolution Lab.

"It was previously overlooked because it's so close to Timor and so there was not thought to be endemism," said Prof Rheindt, who is from the department of biological sciences at the National University of Singapore (NUS).

Endemism refers to the situation in which an organism is naturally found only in one specific place. Koalas, for example, are endemic to Australia.

A team from NUS and the Indonesian Institute of Science described the Rote leaf-warbler as a new species in a paper published on Tuesday in the journal *Scientific Reports*.

The bird, and the fact that it was of an unknown species, was first noticed in 2004. Five years later, Belgian birdwatchers Philippe Verbeelen and Veerle Dossche made detailed observations and photographed it. Mr Verbeelen said: "Alarm bells went off when we realised how strikingly different the bill shape and the colouration of the Rote bird were compared with all other leaf-warblers."

Compared with the Timor leaf-warbler, the Rote leaf-warbler has a significantly longer beak.

The researchers involved in the study surmise that the bird's longer beak is probably an adaptation to the drier climate of its native island.

Prof Rheindt said that most other leaf-warblers pick their food, mainly insects, off leaves and



The Timor leaf-warbler sports a smaller beak than the Rote leaf-warbler. Professor Frank Rheindt believes the deep sea trench between the islands of Timor and Rote prevents the small woodland bird from ever crossing it. PHOTO: DUBI SHAPIRO

branches in humid forests. However, in the drier woodlands of Rote, there is relatively less available food exposed in the open. The longer beak could allow it to find food in the bark of trees, he said.

The Rote leaf-warbler was conclusively proven to be of a different species through a type of genetic analysis known as next-generation sequencing.

"In the old days, using traditional methods, people would have compared at most two genes between suspected different species to see how many differences they could find," said Prof Rheindt, adding that this process left much room for uncertainty.

"Now with next-generation sequencing, we can compare thousands of genes of this warbler with other warblers and show that it isn't a variant of the Timor leaf-warbler but truly, deeply diverged."

This announcement comes soon after the 2017 description of another bird species also found only on Rote – the Rote Myzomela, which belongs to the honeyeater

family. Prof Rheindt said these birds could evolve independently in Rote even though it is only 12km away from Timor thanks to the deep sea trench that lies between the two.

"There's never been a land connection between both islands, even a few thousand years ago when sea levels were lower," he said, adding: "The 10km or so of sea back then would still have been an impenetrable barrier for woodland birds that shy away from flying across large bodies of water."

Researchers do not have an estimate of how many of these birds there are, but have recommended that they be listed as vulnerable as habitats on the island are destroyed by the growing human population.

Dr Dewi Prawiradilaga, from the Indonesian Institute of Sciences, said of the island's new find: "Given the recent discovery of multiple new, endemic birds on Rote, its habitat must be protected from the effects of destruction."

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TELLTALESIGN

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BELGIAN BIRDWATCHER PHILIPPE VERBELEN, on the Rote leaf-warbler.