



<http://dx.doi.org/10.11646/zootaxa.3900.4.6>

<http://zoobank.org/urn:lsid:zoobank.org:pub:A07309FC-02DC-4742-84C2-317ADFF99449>

## Hiding in plain sight: a new species of bent-toed gecko (Squamata: Gekkonidae: *Cyrtodactylus*) from West Timor, collected by Malcolm Smith in 1924

ANDREW KATHRINER<sup>1</sup>, AARON M. BAUER<sup>2</sup>, MARK O'SHEA<sup>3</sup>,  
CAITLIN SANCHEZ<sup>4</sup> & HINRICH KAISER<sup>4,5,6</sup>

<sup>1</sup>Department of Biology, Villanova University, 800 Lancaster Avenue, Villanova, Pennsylvania 19085, USA; present address: Department of Herpetology, Bronx Zoo, 2300 Southern Boulevard, Bronx, New York 10460, USA

<sup>2</sup>Department of Biology, Villanova University, 800 Lancaster Avenue, Villanova, Pennsylvania 19085, USA

<sup>3</sup>Faculty of Science and Engineering, University of Wolverhampton, Wulfruna Street, Wolverhampton, West Midlands, WV1 1LY, United Kingdom; and West Midland Safari Park, Bewdley, Worcestershire, DY12 1LF, United Kingdom

<sup>4</sup>Department of Biology, Victor Valley College, 18422 Bear Valley Road, Victorville, California 92395, USA

<sup>5</sup>Department of Vertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, DC 20013, USA

<sup>6</sup>Corresponding author. E-mail [hinrich.kaiser@yvc.edu](mailto:hinrich.kaiser@yvc.edu)

### Abstract

We describe a new species of bent-toed gecko from a single specimen initially collected in 1924 by Malcolm Smith on Timor Island in the Lesser Sunda Archipelago of Indonesia. *Cyrtodactylus celatus* **sp. nov.** is distinguished from all other congeners by the following combination of characters: small adult size; without spinose tubercles on the ventrolateral body fold and along the lateral margin of the tail; 16 longitudinal rows of tubercles at midbody; 42 ventral scales between the ventrolateral folds at midbody; no transversely enlarged, median subcaudal scales; 17 subdigital lamellae (seven basal + ten distal) under the fourth toe; no abrupt transition between postfemoral and ventral femoral scale series. The specimen is the earliest confirmed record of the genus *Cyrtodactylus* for Timor, and it is the first putatively endemic gecko species described from this island.

**Key words:** Gekkonidae, *Cyrtodactylus*, new species, Lesser Sunda Archipelago, West Timor, Indonesia, description, taxonomy, osteology, Malcolm Smith

### Introduction

The genus *Cyrtodactylus* is the most diverse gekkonid genus with 196 species (Uetz 2014) and recent studies on the genus have improved our ability to define species boundaries (e.g., Rösler & Glaw 2008, Grismer *et al.* 2012b), as the pace of herpetological fieldwork in Southeast Asia has accelerated (e.g., Bauer 2002, 2003—Myanmar; Das 2004—Borneo; Grismer *et al.* 2011—Indochina and Malaysia; Kaiser *et al.* 2011—Timor; Linkem *et al.* 2008, Iskandar *et al.* 2011—Sulawesi; Setiadi *et al.* 2011—Indonesia). *Cyrtodactylus* is a geographically wide-ranging genus with species occupying diverse ecological niches. Species of *Cyrtodactylus* are found in mainland Asia, as far northwest as northern India, Nepal, and Tibet, and members of the genus are more-or-less continuously distributed eastwards throughout Southeast Asia and the Indo-Australian Archipelago, reaching the Philippines, New Guinea, northern Australia, and the Solomon Islands (Rösler & Glaw 2008; Uetz 2014; Wood *et al.* 2012). In view of this broad distribution, the relative paucity of known forms from the ecologically diverse Lesser Sunda Archipelago (Fig. 1), currently limited to *C. darmandvillei* (Weber, 1890), *C. gordongekko* (Das, 1993), *C. laevigatus* Darevsky, 1964 and its subspecies *C. l. laevigatus* and *C. l. uniformis* Auffenberg, 1980, and *C. wetariensis* (Dunn, 1927), is intriguing.

Known for a turbulent and sometimes violent political history ever since the arrival of European colonizers in the early 1500s, the island of Timor plays a particularly interesting biogeographic role in the region. Whereas the Lesser Sunda Islands in the Inner Banda Arc (including Bali, Lombok, Sumbawa, Flores, and Wetar) are volcanic

Bauer & Doughty 2012) that our understanding of their true biodiversity is still incomplete. The discovery of *Cyrtodactylus* in Timor, the southeasternmost island record in Asia, provides an opportunity to take a closer look at the diversity of bent-toed geckos in the Lesser Sunda Islands, of which Timor is the largest (30,777 km<sup>2</sup>). Recent survey work (Kaiser *et al.* 2011, 2013; O'Shea *et al.* 2012; Sanchez *et al.* 2012) has shown that the eastern half of Timor, within the borders of the sovereign nation of Timor-Leste, harbors at least four new species of *Cyrtodactylus*. Together with the recent description of *C. kimberleyensis* from northern Australia (Bauer & Doughty 2012), it therefore appears that, with five presumably endemic species, Timor may represent a regional center of *Cyrtodactylus* diversity, as well as a potential stepping-stone for the colonization of the northwestern regions of Australia. Some preliminary molecular work incorporating sequence data of specimens from several putative new species of *Cyrtodactylus* from Timor into a larger data set suggests that the biogeography of this archipelago does not conform to a simple dispersal pattern beginning on mainland Asia and progressing through the Indonesian Archipelago, but that there may have been several colonizations of *Cyrtodactylus* from mainland Asia and back in the opposite direction (Kathriner *et al.* in prep).

*Cyrtodactylus celatus* is described from a single specimen from Tjamplong, West Timor. Malcolm Smith recorded that the region was "well wooded, with numerous small streams" (Smith 1927:202), which is similar to habitat composition observed on other nearby Lesser Sunda Islands. For example, Flores (area 13,540 km<sup>2</sup>), an island less than half the size of Timor, falls within the distribution of *C. darmandvillei* and *C. laevigatus* (Zug & Kaiser 2014). Both these species have been recorded in tropical deciduous forest, under rotten trees during daylight hours or on tree stumps at night (Auffenberg 1980). Unfortunately, whereas Smith's description of Tjamplong describes a woodland, recent Google Earth images of the type locality show a significantly degraded, barren habitat in which the native forest appears to have been removed and replaced by rice paddies and human habitations.

In light of the most recent reports on the herpetofauna of Timor (Kaiser *et al.* 2011; O'Shea *et al.* 2012; Sanchez *et al.* 2012), it is somewhat surprising that Smith stated that, "From a herpetological point of view, Timor is one of the most disappointing places that one can visit." (Smith 1927:199). Claiming that "there is probably no other island [in the tropics] so barren in reptilian and batrachian life" (Smith 1927:200), we counter his observation by making note of the cryptic diversity in scincid and amphibian species collected during recent survey work (Kaiser *et al.* 2011; O'Shea *et al.* 2012). We conclude that the herpetological diversity on Timor, and in the Lesser Sundas in general, is still woefully underestimated due to the logistical difficulty with conducting fieldwork there. Because Timor is the largest of the Lesser Sundas it provides the most niche space, and thus it might be considered a logical place for the evolution of significant levels of lizard diversity, particularly for geckos and skinks. It appears that at the beginning of the 21<sup>st</sup> Century there still is plenty of opportunity in the Indonesian Archipelago to uncover new species, even through specimens that have hidden in a museum for nearly a century.

## Acknowledgements

We very much appreciate the help of Patrick Campbell (BMNH) for producing x-rays of Malcolm Smith's specimen, for facilitating the use of the BMNH collections, and for the loan of this single valuable specimen. We thank Jeremy Jacobs, Robert Wilson, and Kenneth Tighe of the United States National Museum of Natural History for their help in arranging the loan of Smith's specimen, and Sandra Raredon for her assistance with the USNM digital x-ray setup. Partial financial support for surveys in Timor-Leste and for a visit to the BMNH by CS and HK came from a Title V Grant to the Department of Biology at Victor Valley College. This paper is Contribution No. 13 from the Tropical Research Initiative at Victor Valley College. Support for this research was provided by NSF grants DEB 0844523 and EF 1241885 (subaward 13-0632) to AMB.

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<http://dx.doi.org/10.2988/0006-324x-126.4.379>