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New Island Records for Anurans and Squamates from the Lesser Sunda Archipelago

The Lesser Sunda Archipelago, known in Indonesia as Nusa Tenggara, lies in the southeastern portion of Indonesia between Java and Bali to the west, New Guinea to the east, Australia to the south, and Sulawesi to the north (Fig. 1). This island chain, which includes the sovereign nation of Timor-Leste in the eastern half of Timor Island, is one of the most geologically active and tectonically complex regions in the world and contains portions of the Sunda Arc, the Inner and Outer Banda Arcs, as well as the geologically enigmatic Sumba Island (Spakman and Hall, 2010; Rigg & Hall, 2011). The oldest islands are those of the Sunda Arc (Lombok, Sumbawa, Flores) which are estimated to have been continuously emergent for at least 10 Myr, while the youngest islands are those of the Outer Banda Arc, including Timor and Savu, which are estimated to have been continuously

emergent for 1–4 Myr (Hall 2009; Roosmawati & Harris, 2009; Nguyen et al., 2013). None of these oceanic islands have ever been connected to a continental landmass, though channel depths suggest that certain islands (e.g., Lombok + Sumbawa; Flores + Lembata) become periodically connected when sea levels fall (Voris 2000).

Herpetofaunal species diversity within the Lesser Sundas is low relative to continental islands, such as neighboring Bali and Java, though levels of endemism are quite high. Early work established the foundational data of the region's herpetofaunal diversity (Lidth de Jeude 1895; Boulenger 1897; Rooij 1915, 1917; Kampen 1923; Dunn 1927a, 1927b, 1928; Mertens 1930), followed by the extensive survey work of Auffenberg (1980) and the Western Australian Museum (WAM) between 1987–1993, and more recent refinement of species diversity and distributions in Timor-Leste (Kaiser et al. 2011, 2013; Sanchez et al. 2012; O'Shea et al. 2015). The archipelago's species diversity is now at 18 species of frogs, 40 species of lizards, and 29 species of snakes, with many additional species as-yet unknown or undescribed (Inger 1999; Lang 2011; Reilly et al. 2019a; Uetz et al. 2020; this study).

Herpetofaunal biodiversity surveys of the Lesser Sundas were undertaken between 2010 and 2013 by biologists from the Museum of Vertebrate Zoology (MVZ), the Museum Zoologicum Bogoriense (MZB), and the Bandung Institute of Technology (ITB). In total, approximately six months were spent surveying most of the major islands including Bali (2011), Nusa Penida (2013), Lombok (2010, 2011), Sumbawa (2010, 2011), Flores (2010, 2011), Lembata (2011), Pantar (2013), Alor (2011, 2013), Wetar (2013), West Timor (2011, 2012, 2013), Rote (2012), Savu (2012), and Sumba (2012). In this report we present 26 new island records for 18 species of frogs, lizards, and snakes collected on these surveys, all of which are within the country of Indonesia. The islands of Lombok and Sumbawa belong to the province of Nusa Tenggara; Barat, Flores, Lembata, Pantar, Alor, Sumba, Savu, Rote, and West Timor are part of Nusa Tenggara Timur Province; and Wetar lies within Maluku Province. Though some of these records have been included in other studies, we include them here to present a complete record of the discoveries from these MVZ/MZB/ITB surveys and to provide further details about them. All specimens are housed at the Museum of Vertebrate Zoology (University of California at Berkeley, USA) or the Museum Zoologicum Bogoriense (Cibinong, Indonesia), though for this report we list the MVZ as the housing institution because either the specimen or a tissue subsample for each specimen is housed there. Research and specimen export permits were issued to Jimmy A. McGuire (JAM) by the Indonesian government institutions RISTEKDIKTI (Ministry of Research, Technology, and Higher Education; permit # 233/SIP/FRP/SM/2013). The work was performed under an approved Animal Use Protocol (protocol #R279) issued to JAM by the UC Berkeley IACUC. All distances represent the nearest straight-line distances between islands (Google Earth 2020), not distances between collection sites. GPS coordinates are reported based on the WGS 84 datum.

SEAN B. REILLY*

Museum of Vertebrate Zoology and Department of Integrative Biology, University of California, Berkeley, California 94720, USA

ALEXANDER L. STUBBS

Museum of Vertebrate Zoology and Department of Integrative Biology, University of California, Berkeley, California 94720, USA

EVY ARIDA

Museum Zoologicum Bogoriense, Indonesian Institute of Sciences, Cibinong, Indonesia

UMILAELA ARIFIN

*Museum of Vertebrate Zoology and Department of Integrative Biology, University of California, Berkeley, California 94720, USA
 Centrum für Naturkunde, Zoologisches Museum Hamburg, Universität Hamburg, Edmund-Siemers-Allee 1, 20146 Hamburg, Germany
 School of Life Sciences and Technology, Bandung Institute of Technology, Jalan Ganesha 10, Tamansari, Bandung 40132, Indonesia*

LUKE BLOCH

Museum of Vertebrate Zoology and Department of Integrative Biology, University of California, Berkeley, California 94720, USA

AMIR HAMIDY

Museum Zoologicum Bogoriense, Indonesian Institute of Sciences, Cibinong, Indonesia

KRISTOPHER HARMON

Museum of Vertebrate Zoology and Department of Integrative Biology, University of California, Berkeley, California 94720, USA

SARAH HYKIN

Museum of Vertebrate Zoology and Department of Integrative Biology, University of California, Berkeley, California 94720, USA

BENJAMIN R. KARIN

Museum of Vertebrate Zoology and Department of Integrative Biology, University of California, Berkeley, California 94720, USA

GILANG RAMADHAN

School of Life Sciences and Technology, Bandung Institute of Technology, Jalan Ganesha 10, Tamansari, Bandung 40132, Indonesia

DJOKO T. ISKANDAR

School of Life Sciences and Technology, Bandung Institute of Technology, Jalan Ganesha 10, Tamansari, Bandung 40132, Indonesia

JIMMY A. MCGUIRE

Museum of Vertebrate Zoology and Department of Integrative Biology, University of California, Berkeley, California 94720, USA

*Corresponding author; e-mail: sreilly@ucsc.edu

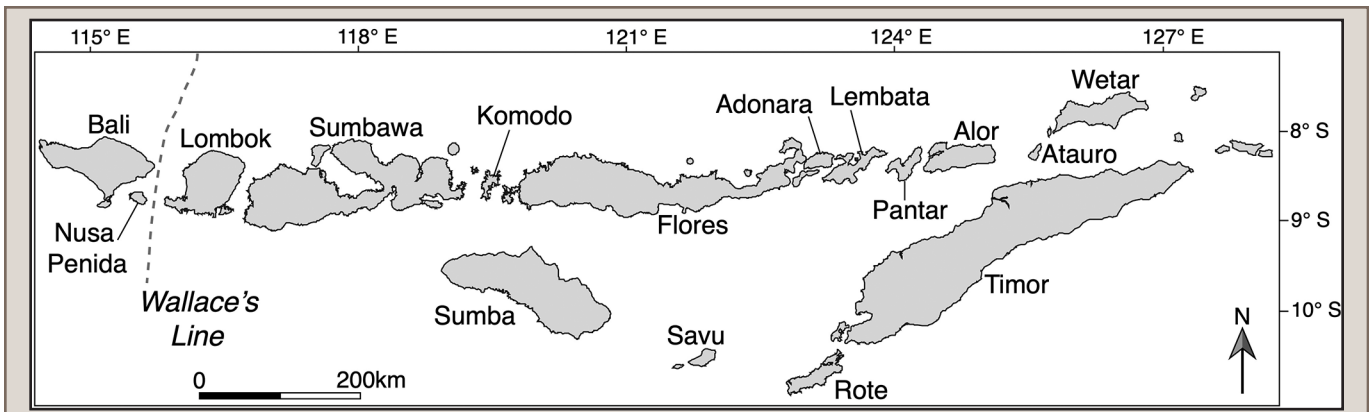


FIG. 1. Map of the Lesser Sunda Islands and Bali. Bali becomes periodically land-bridged with Java and Southeast Asia while the Lesser Sundas are oceanic islands that remain isolated by deep water channels. Within the Lesser Sundas notable island mergers during glacial maxima include Lombok + Sumbawa, and what is known as "Greater Flores" that includes Komodo + Flores + Adonara + Lembata. A number of smaller islands are not shown to simplify the figure.

ANURA — FROGS

BUFONIDAE

DUTTAPHRYNUS MELANOSTICTUS (Asian Common Toad).

SUMBA ISLAND: KABUPATEN SUMBA TIMUR: Laiwangi Wanggameti National Park, Kecamatan Tabundung, Desa Priang Kareha (10.0210°S, 120.0580°E), 348 m elev. 24 October 2012. MVZ (JAM 13156–58). Kecamatan Uluweijelu, Desa Pranda (10.2117°S, 120.6182°E), 26 m elev. 1 November 2012. Sean B. Reilly, Alexander L. Stubbs, Umilaela Arifin, Jimmy A. McGuire. Museum of Vertebrate Zoology (JAM 13298). We observed dozens of individuals of all age classes in Laiwangi Wanggameti National Park. The specimen from Desa Pranda was an adult (SVL = 100 mm). The nearest confirmed records are from the islands of Sumbawa (ca. 66 km N; McKay and Lindley 2012) and Timor (ca. 375 km E; Trainor 2009). This species was observed in amplexus with *Papurana elberti* along streams (Reilly et al. 2016). Genetic analysis confirms that this population represents a recent introduction from the same lineage that has invaded other islands in the Lesser Sundas and eastern Indonesia (Reilly et al. 2017).

INGEROPHRYNUS BIPORCATUS (Crested Toad). ROTE ISLAND:

KABUPATEN ROTE NDAO: Kecamatan Rote Barat, Desa Nemberala (10.8877°S, 122.8323°E), 19 m elev. 13 November 2012. Sean B. Reilly, Alexander L. Stubbs, Umilaela Arifin, Evy Arida. MVZ (SBR 160–161). Found near a buffalo watering hole at night in a rural village. This species had been informally reported from Rote by second-hand accounts (Trainor 2009) but ours are the first georeferenced localities or collected specimens. The nearest island records are from Sumbawa (ca. 460 km NW; see below) and Lombok (ca. 715 km NW; Boulenger 1897).

SUMBAWA ISLAND: KABUPATEN SUMBAWA BARAT: Kecamatan Lenangguar, Desa Rente (8.7575°S, 117.3499°E), 230 m elev. 14 November 2010. Sean B. Reilly, Alexander L. Stubbs, Umilaela Arifin, Gilang Ramadhan, Jimmy A. McGuire. MVZ (JAM 11723). We observed multiple individuals of *I. biporcatus* along a small stream surrounded by rural villages and agricultural activity. The collected individual measured 33 mm in SVL. This is the first confirmed record of *I. biporcatus* from Sumbawa and the closest known records are from neighboring Lombok (ca. 14 km W; Boulenger 1897). The geographic extent and abundance of *I. biporcatus* in the Lesser Sundas should be monitored because this species is toxic and could have negative effects on endemic

predators of the region (such as *Varanus komodoensis*) that are not adapted to digest bufotoxin.

MICROHYLIDAE

***MICROHYLA ORIENTALIS*. TIMOR ISLAND:** KABUPATEN KUPANG: Kecamatan Nekamese, Desa Tunfeu (10.2442°S, 123.6585°E), 380 m elev. 10 November 2012. Sean B. Reilly, Alexander L. Stubbs, Umilaela Arifin, Evy Arida, Jimmy A. McGuire. MVZ (JAM 13503–04). We observed multiple individuals of *M. orientalis* in the leaf litter of a seasonal stream bed with overhanging vegetation near rural settlements to the south (~5 km) of the city of Kupang. The specimens were both mature adults, JAM 13504 measuring 23 mm in SVL and JAM 13503 found to be a gravid female measuring 22 mm SVL. This is the first record of *M. orientalis*, or any species from the genus *Microhyla*, from the island of Timor and the first confirmed record of this species occurring anywhere other than on the island of Bali (ca. 900 km NW; Matsui et al. 2016). It is likely that it was recently introduced by human activity, though this requires confirmation.

SQUAMATA — LIZARDS

AGAMIDAE

***DRACO TIMORIENSIS* (Timor Flying Dragon). PANTAR ISLAND:** KABUPATEN ALOR: Kecamatan Pantar Timor, Desa Kaleb (8.3560°S, 124.2547°E), 16–43 m elev. 30–31 July 2013. Jimmy A. McGuire, Djoko T. Iskandar, Amir Hamidy, Sarah Hykin. MVZ (JAM 13979–87, 14053–59). Found on tree trunks along a stream. Genetic data confirm that these are *Draco timoriensis* (S. Reilly, unpubl. data). The nearest island records are from Alor (ca. 8 km E; Rooij 1915). Lembata Island (ca. 12 km W; WAM 105104) is inhabited by the closely related *Draco boschmai*.

GEKKONIDAE

***CYRTODACTYLUS* CF. *DARMANDVILLEI* (Darmandville's Bent-toed Gecko). ALOR ISLAND:** KABUPATEN ALOR: Kecamatan Alor Timor Laut, Desa Waisika (8.1886°S, 124.7521°E), 84 m elev. 5 August 2011. Sean B. Reilly, Umilaela Arifin, Evy Arida, Jimmy A. McGuire. MVZ (JAM 12967–12977). Specimens were found on large boulders and tree trunks along a large stream at night. A series of *Cyrtodactylus* specimens previously collected from

Alor by the WAM surveys (e.g. WAM 107498) are listed as “sp.”, which, along with our specimens listed above, are confirmed to belong to the *darmandvillei* lineage (S. Reilly, unpubl. data; H. Kaiser, pers. comm.). The nearest islands that this lineage is documented from are Pantar (ca. 8 km W; WAM 107868) and Ataúro (ca. 40 km E; Kaiser et al. 2013).

LEMBATA ISLAND: KABUPATEN LEMBATA: Kecamatan Nubatukan, Desa Pada (8.3818°S, 123.4020°E), 40 m elev. 6 August 2011. Alexander L. Stubbs, Benjamin R. Karin, Gilang Ramadhan. MVZ (JAM 12748). This female specimen was found alongside a rice field at night and measured 85 mm SVL and 160 mm TL. Kecamatan Nagawutun, Desa Bolibean (8.4716°S, 123.3506°E), 180 m elev. 9 August 2011. Sean B. Reilly, Alexander L. Stubbs, Evy Arida, Umilaela Arifin, Benjamin R. Karin, Gilang Ramadhan, Jimmy A. McGuire. MVZ (JAM 13039–45). Six adults (three male and three female) and one juvenile found on large boulders, cliffsides, and trees along a major stream at night. The nearest islands this lineage is recorded from are Flores (ca. 31 km W; Rooij 1915) and the newly documented population on Pantar (ca. 12 km E; WAM 107868).

PANTAR ISLAND: KABUPATEN ALOR: Kecamatan Pantar Timor, Desa Kaleb (8.3527°S, 124.2516°E), 59 m elev. 29–30 July 2013. Jimmy A. McGuire, Djoko T. Iskandar, Amir Hamidy, Sarah Hykin. MVZ (JAM 13945–67, 13988, 14040–47). Two *Cyrtodactylus* specimens previously collected from Pantar by the WAM surveys (e.g. WAM 107868–9) are listed as “sp.”, which, along with our specimens listed above, are confirmed to belong to the *darmandvillei* lineage (S. Reilly, unpublished data; H. Kaiser, pers. comm.). The nearest island records for this lineage are from Lembata (ca. 12 km W; see above) and Alor (ca. 8 km E; WAM 107498).

Specimens from Lembata, Pantar, and Alor were all confirmed to be most closely related to *C. darmandvillei* by genetic analysis, though this species is highly diversified and in need of taxonomic revision (S. Reilly, unpubl. data).

CYRTODACTYLUS CF. LAEVIGATUS (Komodo Bent-toed Gecko).

ALOR ISLAND: KABUPATEN ALOR: Kecamatan Kabola, Desa Bujanta (8.1699°S, 124.5934°E), 16 m elev. 3 August 2011. Sean B. Reilly, Umilaela Arifin, Evy Arida, Jimmy A. McGuire. MVZ (JAM 12826–27). Kecamatan Timor Alor Laut, Desa Waisika (8.1903°S, 124.7514°E), 80 m elev. 5 August 2011. Sean B. Reilly, Umilaela Arifin, Evy Arida, Jimmy A. McGuire. Museum of Vertebrate Zoology (JAM 12979–86). Specimens were found on steep, rocky stream embankments and large tree buttresses along a large stream at night. The nearest islands inhabited by this lineage are Flores (ca. 148 km W; Darevsky 1964), Timor (ca. 32 km S; Kathriner et al. 2014a), and Ataúro (ca. 41 km E; Kaiser et al. 2013).

SAVU ISLAND: KABUPATEN SABU-RAJUJA: Kecamatan Sabu Timur, Kelurahan Limaggu (10.5119°S, 121.9879°E), 40 m elev. 4–6 November 2012. Sean B. Reilly, Alexander L. Stubbs, Evy Arida, Umilaela Arifin, Jimmy A. McGuire. MVZ (JAM 13348–56, 13407–08). Kecamatan Sabu Timur, Desa Kujiratu (10.4702°S, 121.9862°E), 9 m elev. 6 November 2012. Sean B. Reilly, Alexander L. Stubbs, Evy Arida, Umilaela Arifin, Jimmy A. McGuire. MVZ (JAM 13434–37, 13445–50). Specimens were active at night on large trees and in the leaf litter both in rural settlements and around springs and rice fields. Nearest islands inhabited by this lineage are Flores (ca. 170 km N; Darevsky 1964) and Timor (ca. 145 km E; Kathriner et al. 2014a).

WETAR ISLAND: KABUPATEN MALUKU BARAT DAYA: Kecamatan Wetar Selatan, Desa Ilwaki (7.9262°S, 126.4079°E), 63 m elev. 16

July 2013. Sean B. Reilly, Evy Arida, Kristopher Harmon, Luke Bloch, Sarah Hykin, Amir Hamidy, Djoko T. Iskandar, Jimmy A. McGuire. MVZ (JAM 13699–700, 13869–72, 13880, 13915). Caught in the leaf litter and on sticky traps placed on large tree buttresses. The nearest island records for this lineage are from Timor (ca. 50 km S; Kathriner et al. 2014a) and Ataúro (ca. 22 km SW; Kaiser et al. 2013).

These island populations are part of the *C. laevigatus* species complex, which includes *C. laevigatus* (from Komodo and Flores; Auffenberg 1980), *C. tambora* (from Sumbawa; Riyanto et al. 2017), *C. celatus* (from Timor; Kathriner et al. 2014a), and *C. kimberleyensis* (an island off northern Western Australia; Bauer and Doughty 2012), and require a taxonomic revision (S. Reilly, unpubl. data).

CYRTODACTYLUS CF. WETARIENSIS (Wetar Bent-toed Gecko).

SUMBA ISLAND: KABUPATEN SUMBA TIMUR: Laiwangi Wanggameti National Park, Kecamatan Tabundung, Desa Priang Kareha (10.0210°S, 120.0580°E), 348 m elev. 24–29 October 2012. Sean B. Reilly, Alexander L. Stubbs, Umilaela Arifin, Jimmy A. McGuire. MVZ (JAM 13108–25, 13146–47, 13154–55, 13176–77, 13250, 13252, 13257–58, 13262). Specimens were found throughout the dense rainforest at night on tree buttresses and limestone rocks and cliff faces. Kecamatan Uluweijelu, Desa Pranda (10.2117°S, 120.6182°E), 26 m elev. 1 November 2012. Sean B. Reilly, Alexander L. Stubbs, Umilaela Arifin, Jimmy A. McGuire. MVZ (JAM 13294–13297). Specimens were found under fallen wood in disturbed forest during the day. This population is most closely related to *C. wetariensis* from Wetar Island (ca. 600 km NE; Dunn 1927b), though further examination of morphological characters and levels of genetic divergence may prove it to be a unique species (S. Reilly, unpubl. data).

HEMIDACTYLUS GARNOTII (Indo-Pacific Gecko).

SUMBA ISLAND: KABUPATEN SUMBA TIMUR: Laiwangi Wanggameti National Park, Kecamatan Tabundung, Desa Priang Kareha (10.0210°S, 120.0580°E), 348 m elev. 24–29 October 2012. Sean B. Reilly, Alexander L. Stubbs, Umilaela Arifin, Jimmy A. McGuire. MVZ (JAM 13135, 13178–79). Found on rocks and trees along a stream. The nearest island records for this species are from Sumbawa (ca. 66 km NW; Mertens 1930) and Flores (ca. 47 km NE; Mertens 1930).

HEMIPHYLLODACTYLUS TYPUS (Indopacific Tree Gecko).

SUMBA ISLAND: KABUPATEN SUMBA TIMUR: Laiwangi Wanggameti National Park, Kecamatan Tabundung, Desa Priang Kareha (10.0383°S, 120.0578°E), 607 m elev. 27 October 2012. Sean B. Reilly, Alexander L. Stubbs, Umilaela Arifin, Jimmy A. McGuire. MVZ (JAM 13200). Caught on a sticky trap set at the base of a large tree buttress in primary rainforest. The specimen measured 26 mm SVL but had an incomplete tail. The nearest island records for this species are from Sumbawa (ca. 66 km NW; Mertens 1930), Komodo (ca. 68 km N; Auffenberg 1980), and Flores (ca. 47 km NW; Auffenberg 1980). Closer comparison of morphological and molecular data between this population and others is warranted.

LEPIDODACTYLUS INTERMEDIUS (Komodo Mourning Gecko).

ALOR ISLAND: KABUPATEN ALOR: Kecamatan Timor Alor Laut, Desa Waisika (8.1903°S, 124.7514°E), 80 m elev. 5 August 2011. Sean B. Reilly, Umilaela Arifin, Evy Arida, Jimmy A. McGuire. MVZ (JAM 12987). The nearest islands that *L. intermedius* is known from are Flores (ca. 170 km W; McKay and Lindley 2012) and Pantar (ca. 8 km W; see below).

PANTAR ISLAND: KABUPATEN ALOR: Kecamatan Pantar Timor, Desa Kaleb (8.3559°S, 124.2546°E), 32 m elev. 30 July 2013. Jimmy A. McGuire, Djoko T. Iskandar, Amir Hamidy, Sarah Hykin. MVZ (JAM 14014). This individual measured 18 mm SVL and 33 mm TL. This specimen was found on wood debris on a beach. The nearest island records for this species are from Flores (ca. 100 km W; McKay and Lindley 2012) and Alor (ca. 8 km E; see above). A closer examination of morphological and molecular divergence of the Pantar and Alor populations is needed to determine if they represent distinct species.

LEPIDODACTYLUS LOMBOCENSIS (Lombok Mourning Gecko). SUMBAWA ISLAND: KABUPATEN SUMBAWA: Kota Sumbawa Besar, Hotel Sari (8.4961°S, 117.4206°E), 15 m elev. 13 November 2010. Sean B. Reilly, Alexander L. Stubbs, Umilaela Arifin, Gilang Ramadhan, Jimmy A. McGuire. MVZ (JAM 11725). The female specimen measured 40 mm SVL. Found on the wall in a hotel in an urban area. The nearest island record for this species is Lombok (ca. 14 km W; Mertens 1929, Ota et al. 2000).

LEPIDODACTYLUS LUGUBRIS (Mourning Gecko). PANTAR ISLAND: KABUPATEN ALOR: Kecamatan Pantar Timor, Desa Kaleb (8.3559°S, 124.2546°E), 32 m elev. 30 July 2013. Jimmy A. McGuire, Djoko T. Iskandar, Amir Hamidy, Sarah Hykin. MVZ (JAM 13989). The specimen measured 31 mm SVL and 65 mm TL. The specimen fell from a tall tree landing on a member of our field team. The nearest island record for this species is from Flores (ca. 100 km W; reptile-database.org).

SCINCIDAE

CARLIA PERONII (Timor Rainbow Skink). PANTAR ISLAND: KABUPATEN ALOR: Kecamatan Pantar Timor, Desa Kaleb (8.3559°S, 124.2546°E), 32 m elev. 30 July 2013. Jimmy A. McGuire, Djoko T. Iskandar, Amir Hamidy, Sarah Hykin. MVZ (JAM 14012). This individual measured 40 mm SVL and 114 mm TL and was found in the leaf litter near a stream. The nearest island with a confirmed population of this species is Alor (ca. 8 km E; WAM 107932).

CRYPTOBLEPHARUS BURDENI (Burden's Snake-eyed Skink). LEMBATA ISLAND: KABUPATEN LEMBATA: Kecamatan Wadondani, Desa Lamalera (8.5369°S, 123.4481°E), 1 m elev. 5 August 2011. Alexander L. Stubbs, Benjamin R. Karin, Gilang Ramadhan. MVZ (JAM 12676–716). Specimens were found on intertidal rocks and exposed reef features in high abundance. They would run out onto the reef between waves to catch small invertebrates and flies. The nearest islands that this species has been recorded from are Pantar (ca. 12 km E; WAM 107795) and Flores (ca. 31 km W; Auffenberg 1980). Some of these specimens were recently included in a phylogenomics study (Blom et al. 2019).

SPHENOMORPHUS MELANOPOGON. LOMBOK ISLAND: KABUPATEN LOMBOK TENGAH: Kecamatan Pujut, Desa Rambitan (8.8564°S, 116.2829°E), 155 m elev. 10 November 2010. Sean B. Reilly, Umilaela Arifin, Gilang Ramadhan, Djoko T. Iskandar, Jimmy A. McGuire. MVZ (JAM 11614–20). KABUPATEN SELONG: Kecamatan Aikmal, Desa Kembang Kerang (8.5391°S, 116.5396°E), 378 m elev. 7 July 2011. Sean B. Reilly, Umilaela Arifin, Benjamin R. Karin, Gilang Ramadhan, Djoko T. Iskandar, Jimmy A. McGuire. MVZ (JAM 11902). Specimens were found in leaf litter and on tree trunks. The nearest island record for this species is from Sumbawa (ca. 14 km E; Mertens 1930). There are at least two species of *Sphenomorphus*

on Lombok and genetic data confirm that the specimens listed above belong to the *S. melanopogon* complex (Reilly 2016).

SQUAMATA — SNAKES

HOMALOPSIDAE

CERBERUS SCHNEIDERII (Dog-faced Water Snake). ALOR ISLAND: KABUPATEN ALOR: Kecamatan Lembur, Desa Tuleng (8.1648°S, 124.7484°E), 23 m elev. 4 August 2011. Sean B. Reilly, Umilaela Arifin, Evy Arida, Jimmy A. McGuire. MVZ (JAM 12955–57). Found in a flooded rice field at night, presumably hunting the many *Fejervarya* sp. that were present. This species is found throughout the Lesser Sundas including the nearest documented islands of Timor (ca. 31 km S; WAM 106946), Lembata (ca. 49 km W; WAM 105284), and Wetar (ca. 75 km E; Lang 2011).

TYPHLOPIDAE

INDOTYPHLOPS BRAMINUS (Brahminy Blind Snake). ALOR ISLAND: KABUPATEN ALOR: Kecamatan Kabola, Desa Bujanta (8.1699°S, 124.5934°E), 15 m elev. 8 August 2011. Sean B. Reilly, Umilaela Arifin, Evy Arida, Jimmy A. McGuire. MVZ (JAM 13038). Found under fallen wood in dry coastal scrub forest. This species is found throughout the Lesser Sundas including the nearest inhabited islands of Timor (ca. 31 km S; Lidth de Jeude 1895) and Lembata (ca. 49 km W; Lang 2011).

SAVU ISLAND: KABUPATEN SABU-RAJUA: Kecamatan Sabu Timur, Kelurahan Limaggu (10.5119°S 121.9879°E), 40 m elev. 4 November 2012. Sean B. Reilly, Alexander L. Stubbs, Umilaela Arifin, Evy Arida, Jimmy A. McGuire. MVZ (JAM 13340–41). Found at night under palm leaves surrounding a spring. JAM 13340 measured 141 mm SVL and 145 mm TL, and JAM 13341 measured 144 mm SVL and 147 mm TL. The nearest known populations occur on the islands of Sumba (ca. 110 km W; Lidth de Jeude 1895), Timor (ca. 160 km E; Lidth de Jeude 1895), and Flores (ca. 170 km N; Mertens 1930).

COLUBRIDAE

LYCODON SUBCINCTUS (Malayan Banded Wolf Snake). LEMBATA ISLAND: KABUPATEN LEMBATA: Kecamatan Nubatukan (8.3818°S, 123.4020°E), 40 m elev. 6 August 2011. Alexander L. Stubbs, Benjamin R. Karin, Gilang Ramadhan. MVZ (JAM 12747). A female specimen found at night in a rice field, measuring 555 mm SVL and 683 mm TL. The nearest islands from where this species is known are Flores (ca. 31 km W; WAM 105019, Baker 2014) and Pantar (ca. 12 km E; see below).

PANTAR ISLAND: KABUPATEN ALOR: Kecamatan Pantar Timur, Desa Kaleb (8.3539°S, 124.2535°E), 43 m elev. 30 July 2013. Jimmy A. McGuire, Djoko T. Iskandar, Amir Hamidy, Sarah Hykin. MVZ (JAM 14037). Found 4 m from a stream at night. Specimen measured 800 mm SVL and 972 mm TL. This species is found throughout the Lesser Sundas including the neighboring islands of Alor (ca. 8 km E; Lang 2011) and Lembata (ca. 12 km W; see above). These specimens were included in a genetic analysis that showed low divergence between islands (Reilly et al. 2019b).

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LITERATURE CITED

- AUFFENBERG, W. 1980. The herpetofauna of Komodo, with notes on adjacent areas. *Bull. Florida State Mus. (Biol. Sci.)* 25:39–156.
- BAKER, N. 2014. Geographic distribution: *Lycodon subcinctus* (banded wolf snake). *Herpetol. Rev.* 45:285.
- BAUER, A. M., AND P. DOUGHTY. 2012. A new bent-toed gecko (Squamata: Gekkonidae: *Cyrtodactylus*) from the Kimberley region, Western Australia. *Zootaxa* 3187:32–42.
- BLOM, M. P. K., N. J. MATZKE, J. G. BRAGG, E. ARIDA, C. C. AUSTIN, A. R. BACKLIN, M. A. CARRETERO, R. N. FISHER, F. GLAW, S. A. HATHAWAY, D. T. ISKANDAR, J. A. MCGUIRE, B. R. KARIN, S. B. REILLY, E. N. RITTMAYER, S. ROCHA, M. SANCHEZ, A. L. STUBBS, M. VENCES, AND C. MORITZ. 2019. Habitat preference modulates trans-oceanic dispersal in a terrestrial vertebrate. *Proc. R. Soc. B* 286:20182575.
- BOULENGER, G. A. 1897. A list of the reptiles and batrachians collected by Mr. Alfred Everett in Lombok, Flores, Sumba, and Savu, with descriptions of new species. *J. Nat. Hist.* 19:503–509.
- DAREVSKY, I. S. 1964. Two new species of gekkonid lizards from the Komodo Island in Lesser Sundas Archipelago [sic]. *Zool. Anz.* 173:169–174.
- DUNN, E. R. 1927a. Results of the Douglas Burden expedition to the island of Komodo: II—Snakes from the East Indies. *Am. Mus. Nov.* 287: 1–7.
- . 1927b. Results of the Douglas Burden expedition to the island of Komodo: III—Lizards from the East Indies. *Am. Mus. Nov.* 288: 1–13.
- . 1928. Results of the Douglas Burden expedition to the island of Komodo: IV—Frogs from the East Indies. *Am. Mus. Nov.* 315:1–9.
- HALL, R. 2009. Southeast Asia's changing paleogeography. *Blumea* 54:148–161.
- INGER, R. F. 1999. Distribution of amphibians in southern Asia and adjacent islands. In W. E. Duellman (ed.), *Patterns of Distribution of Amphibians: A Global Perspective*, pp. 445–482. Johns Hopkins University Press, Baltimore, Maryland.
- KAISER, H., V. L. CARVALHO, J. CEBALLOS, P. FREED, S. HEACOX, B. LESTER, S. J. RICHARDS, C. T. TRAINOR, S. C. SANCHEZ, AND M. O'SHEA. 2011. The herpetofauna of Timor-Leste: a first report. *ZooKeys* 109:19–86.
- , C. SANCHEZ, S. HEACOX, A. KATHRINER, A. V. RIBEIRO, Z. A. SOARES, L. L. DE ARAUJO, S. MECKE, AND M. O'SHEA. 2013. First report on the herpetofauna of Ataúro Island, Timor-Leste. *Check List* 9:752–762.
- KAMPEN, P. N. VAN. 1923. *The Amphibia of the Indo-Australian Archipelago*. E. J. Brill Ltd., Leiden. xii + 304 pp.
- KATHRINER, A., A. M. BAUER, M. O'SHEA, C. SANCHEZ, AND H. KAISER. 2014a. Hiding in plain sight: A new species of bent-toed gecko (Squamata: Gekkonidae: *Cyrtodactylus*) from West Timor, collected by Malcolm Smith in 1924. *Zootaxa* 3900:555–568.
- , M. O'SHEA, AND H. KAISER. 2014b. Re-examination of *Hemidactylus tenkatei* van Lidth de Jeude, 1895: Populations from Timor provide insight into the taxonomy of the *H. brookii* Gray, 1845 complex (Squamata: Gekkonidae). *Zootaxa* 3887:583–599.
- LANG, R. DE. 2011. *The Snakes of the Lesser Sunda Islands (Nusa Tenggara)*, Indonesia. Edition Chimaira, Frankfurt am Main. 359 pp.
- LIDTH DE JEUDE, T. W. VAN. 1895. Reptiles from Timor and neighbouring islands. *Notes from the Leiden Museum* 16:119–127.
- MATSUI, M., A. HAMIDY, AND K. ETO. 2013. Description of a new species of *Microhyla* from Bali, Indonesia (Amphibia, Anura). *Zootaxa* 3670:579–590.
- MCKAY, J. L., AND R. LILLEY. 2012. New distributional records from the Lesser Sundas, Indonesia. *Herpetol. Rev.* 43:109–111.
- MERTENS, R. 1929. Zwei neue Haftzeher aus dem Indo-Australischen Archipel (Rept.). *Senckenbergiana* 11:237–241.
- . 1930. Die Amphibien und Reptilien der Inseln Bali, Lombok, Sumbawa und Flores. *Abh. Senckenberg Naturforsch. Ges.* 42:117–344.
- NGUYEN, N., DUFFY, B., SHULMEISTER, J., AND M. QUIGLEY. 2013. Rapid Pliocene uplift of Timor. *Geology* 41:179–182.
- O'SHEA, M., C. SANCHEZ, A. KATHRINER, S. MECKE, V. L. CARVALHO, A. V. RIBEIRO, Z. A. SOARES, L. L. DE ARAUJO, AND H. KAISER. 2015. Herpetological diversity of Timor-Leste: Updates and a review of species distributions. *Asian Herpetol. Res.* 6:73–131.
- OTA, H., I. S. DAREVSKY, I. INEICH, AND S. YAMASHIRO. 2000. Reevaluation of the taxonomic status of two *Lepidodactylus* species (Squamata: Gekkonidae) from the Lesser Sunda Archipelago, Indonesia. *Copeia* 2000:1109–1113.
- REILLY, S. B. 2016. *Historical biogeography of reptiles and amphibians from the Lesser Sunda Islands of Indonesia*. Ph.D. Dissertation, University of California, Berkeley. 183 pp.
- , A. L. STUBBS, J. A. MCGUIRE, U. ARIFIN, E. ARIDA, AND D. T. ISKANDAR. 2016. *Papurana elberti* and *Duttaphrynus melanostictus* (Asian common toad): Interspecific amphexus. *Herpetol. Rev.* 47:114–115.
- , G. O. U. WOGAN, A. L. STUBBS, E. ARIDA, D. T. ISKANDAR, AND J. A. MCGUIRE. 2017. Toxic toad invasion of Wallacea: A biodiversity hotspot characterized by extraordinary endemism. *Glob. Chang. Biol.* 23:5029–5031.
- , A. L. STUBBS, B. R. KARIN, K. BI, E. ARIDA, D. T. ISKANDAR, AND J. A. MCGUIRE. 2019a. Leap-frog dispersal and mitochondrial introgression: Phylogenomics and biogeography of *Limnonectes* fanged frogs in the Lesser Sundas Archipelago of Wallacea. *J. Biogeogr.* 46:757–769.
- , A. L. STUBBS, B. R. KARIN, E. ARIDA, D. T. ISKANDAR, AND J. A. MCGUIRE. 2019b. Recent colonization and expansion through the Lesser Sundas by seven amphibian and reptile species. *Zool. Scr.* 48:614–626.
- RIGG, J. W., AND R. HALL. 2011. Structural and stratigraphic evolution of the Savu Basin, Indonesia. In R. Hall, M. A. Cottam, and M. E. J. Wilson (eds.), *The SE Asian Gateway: History and Tectonics of the Australia–Asia Collision*, pp. 225–240. Geological Society, London, Special Publications.
- RIYANTO, A., MULYADI, J. A. MCGUIRE, M. D. KUSRINI, FEBILASMA, I. H. BASYIR, AND H. KAISER. 2017. A new small bent-toed gecko of the genus *Cyrtodactylus* (Squamata: Gekkonidae) from the lower slopes of Mount Tambora, Sumbawa Island, Indonesia. *Zootaxa* 4242:517–528.
- ROOIJ, N. DE. 1915. *The Reptiles of the Indo-Australian Archipelago*. Vol. 1. Lacertilia, Chelonia, Emydosauria. E. J. Brill, Leiden. xiv + 384 pp.
- . 1917. *The Reptiles of the Indo-Australian Archipelago*. Vol. 2. Ophidia. E. J. Brill, Leiden. v + 334 pp.
- ROOSMAWATI, N., AND R. HARRIS. 2009. Surface uplift history of the incipient Banda arc-continent collision: Geology and synorogenic foraminifera of Rote and Savu Islands, Indonesia. *Tectonophysics* 479: 95–110.
- SANCHEZ, C., V. L. CARVALHO, A. KATHRINER, M. O'SHEA, AND H. KAISER. 2012. First report on the herpetofauna of the Oecusse District, an exclave of Timor-Leste. *Herpetol. Notes* 5:137–149.
- SPAKMAN, W., AND R. HALL. 2010. Surface deformation and slab-mantle interaction during Banda Arc subduction rollback. *Nat. Geosci.* 3:562–566.
- TRAINOR, C. R. 2009. Survey of a population of black-spined toad *Bufo melanostictus* in Timor-Leste: Confirming identity, distribution, abundance and impacts of an invasive and toxic toad. Charles Darwin University. 46 pp.
- UETZ, P., P. FREED, AND J. HOŠEK. 2020. The Reptile Database, <http://www.reptile-database.org>, accessed 5 August 2020.