



INTRODUCED SPECIES

First Record of the Mourning Gecko, *Lepidodactylus lugubris* (Duméril & Bibron 1836), on Grand Cayman, Cayman Islands

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The Cayman Islands harbor a number of introduced alien species, including several invasive reptilian species (e.g., *Iguana iguana*, *Anolis sagrei*, *Trachemys scripta*, *Pantherophis guttatus* and *Indotyphlops braminus*; Edgar et al. 2009; Dawson et al. 2015). *Hemidactylus mabouia* is the only invasive gekotan species on record. It is established on all three Cayman Islands, whereas *Gonatodes albogularis* has been recorded on

Grand Cayman but probably is not established (Edgar et al. 2009). Here we present the discovery of a third non-native gecko, which has the potential to become established in the Cayman Islands.

The Mourning Gecko *Lepidodactylus lugubris* (Duméril and Bibron 1836) is a small, parthenogenetic, mostly nocturnal gecko widely distributed throughout much of the



Fig. 1. Google Earth[®] map showing the location on Grand Cayman, Cayman Islands, where a Mourning Gecko (*Lepidodactylus lugubris*) was captured. Map data: Google Earth, LDEO-Columbia, NSF, NOAA, SIO, U.S. Navy, NGA, GEBCO. Photograph © CNES/Airbus.

Indo-Pacific region (Bauer and Henle 1994). In the Western Hemisphere, it has been introduced into the mainland countries of Brazil, Nicaragua, Costa Rica, Panama, Venezuela, Colombia, Ecuador, Suriname, and the USA (Florida), as well as to more remote locations including the Galapagos Islands, Hawaii, and Easter Island (Hoogmoed and Avila 2015). The only Caribbean islands from which this species has been recorded to date are Guadeloupe (Lorvelec et al. 2011), The Bahamas (Krysko and MacKenzie-Krysko 2016), and Cuba (Bosch and Páez 2017).

Late in the morning of 8 September 2016, the first author observed a subadult *Lepidodactylus lugubris* on the patio doorframe of a residential house in the Cypress Pointe area of Grand Cayman (19°21'08.30"N, 81°22'52.00"W; Fig. 1). It was photographed (Fig. 2), measured (SVL 34 mm), humanely euthanized, and is now preserved in ethanol at the Cayman Islands Government, Department of Environment as a voucher specimen. The identity of the specimen was confirmed from the photograph by Dr. Arthur C. Echternacht (University of Tennessee, Knoxville).

Grand Cayman is a major tourist and business destination. People arrive by plane and cruise ships and goods are imported from various destinations, providing many opportunities for alien species to arrive undetected. This specimen was found in a residential area, about 6 km from both the

harbor and the airport. Either of these could be an entry route, the gecko likely being a stowaway in luggage (e.g., on a passenger flight from Florida or The Bahamas). However, a major building site for a new hotel complex is a mere 100 m away across a four-lane road, suggestive of another possible entry route, via building supplies shipped in from Florida or some other locality. Although we did not identify the clonal identity of the specimen, more research along those lines could shed additional light onto the distribution patterns of this recent colonizer in the Caribbean region (Ineich 1999).

As a unisexual, parthenogenetic form, *Lepidodactylus lugubris* could rapidly colonize Grand Cayman. However, the omnipresent and well-established *Hemidactylus mabouia*, a larger and more aggressive bisexual invasive competitor, might prevent range expansion (Bolger and Case 1992; Petren et al. 1993; Brown et al. 2002). Focused surveys would be required to determine whether the specimen found in 2016 was indeed the initial introduction of this species. Ongoing long-term sampling efforts across the island will be necessary to evaluate its success in colonizing this particular island ecosystem.

Acknowledgements

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Fig. 2. The subadult Mourning Gecko (*Lepidodactylus lugubris*) discovered on Grand Cayman. Photograph by F.J. Burton.