

# RANGE EXTENSION OF THE MOURNING GECKO (*LEPIDODACTYLUS LUGUBRIS*) IN THE CARIBBEAN VERSANT OF COSTA RICA

RANDALL R. JIMÉNEZ<sup>1,3</sup> AND JUAN G. ABARCA<sup>2</sup>

<sup>1</sup> Instituto Internacional en Conservación y Manejo de Vida Silvestre, Universidad Nacional, Apdo. 1350-3000 Heredia, Costa Rica.

<sup>2</sup> Sistema de Estudios de Posgrado. Facultad de Microbiología. Universidad de Costa Rica, San Pedro Montes de Oca, Apdo. 20-60 San José. Costa Rica.

**Abstract:** Little is known about the extent of invasion of *Lepidodactylus lugubris* in Costa Rica because the reported localities are still scarce. In this note, we provide a new range distribution record for this non-native, parthenogenetic gecko from the Caribbean versant of Costa Rica. We collected the individuals in a wood building close to the forest at Tirimbina Biological Reserve, La Virgen of Sarapiquí.

**Keywords:** Reptilia, Sauria, Gekkonidae, Sarapiquí, distribution.

**Resumen:** R. R. Jiménez and J. G. Abarca. "Extensión de rango del gecko *Lepidodactylus lugubris* en la vertiente Caribe de Costa Rica." Poco es conocido sobre el grado de invasión de *Lepidodactylus lugubris* en Costa Rica debido a que las localidades reportadas aún son escasas. En esta nota se da a conocer un nuevo registro de distribución para la vertiente Caribe costarricense de este gecko partenogenético. Los individuos fueron colectados en una edificación de madera en La Reserva Biológica La Tirimbina, La Virgen de Sarapiquí.

**Palabras Clave:** Reptilia, Sauria, Gekkonidae, Sarapiquí, distribución.

## INTRODUCTION

The mourning gecko, *Lepidodactylus lugubris* Duméril and Bibron, 1836, is native to Asia and many Pacific islands, but has been accidentally introduced to the Neotropics through the pet trade and hiding on cargo ships (Savage 2002, Bauer et al. 2007). In addition, some aspects of its biology, including parthenogenic reproduction and desiccation resistant eggs, allow this species to successfully establish in novel environments (Brown and Duffy, 1992, Hanley et al. 1994, Sierra et al. 2012). In most of its range, the species is not demonstrably native or introduced; however, in some zones (e.g. Neotropical region) is considered introduced (Lorvelec et al. 2011).

In America, *L. lugubris* has been recorded in Nicaragua, Costa Rica, Panamá, Colombia, Venezuela, Ecuador, Chile and Suriname (Savage 2002, Köhler 2003, Bauer et al. 2007, Daza et al. 2012, Uetz 2013). It is unclear when *L. lugubris* first arrived in Costa Rica, but to date it has been restricted to the Pacific coastal lowlands (Savage 2002, Abarca et al. 2012) with one recent record from the lowlands of the South Caribbean versant (Abarca et al. 2009).

## NEW RECORDS

Here we report a record that extends the distribution of *L. lugubris* by 180 km from the previous locality reported by Abarca et al. (2009) from the South Caribbean coastal area of Gandoca-Manzanillo

Wildlife Refuge, Talamanca, Limón. We collected two individuals of *L. lugubris* in a wood building close to the forest at Tirimbina Biological Reserve, La Virgen of Sarapiquí, Heredia (10.41691, -84.12477; WGS84; elevation 200 m) during the night (20:00 h) of November 9, 2013. Both specimens are deposited at the Zoology Museum of the University of Costa Rica (UCR 22042-22043) and were verified by Gerardo Chaves and Adrian Garcia. We also observed another individual on a wall of the same building during the night (19:30 h) of November 23, 2013. One female was carrying eggs (Fig. 1), which indicates population viability at this locality, but further research is required. Individuals of *L. lugubris* were found on the walls of a building in proximity to another introduced and larger gecko, *Hemidactylus frenatus*, which is very common around houses and buildings in this region. We suggest that *L. lugubris* is likely more common on the Caribbean versant around rural and urban areas. New geographical records of non-native species are important for understanding their spread and possible ecological impacts on native taxa. Therefore, the data presented here contribute to the increasing knowledge of the distribution of *L. lugubris* in Costa Rica.

## ACKNOWLEDGMENTS

We thank Mason J. Ryan for reviewing and improving this manuscript.

<sup>3</sup> Send correspondence to / Enviar correspondencia a: randall87@gmail.com.



**FIG. 1.** A Female *L. lugubris* with eggs, from Tirimbina Biological Reserve, La Virgen, Sarapiquí, Costa Rica. Photo by Randall Jiménez.  
*Hembra de L. lugubris con huevos, de la Reserva Biológica Tirimbina, La Virgen, Sarapiquí, Costa Rica. Foto por Randall Jiménez.*

#### REFERENCES

- Abarca, J.G., P. Alvarado and C.R. Knapp. 2009.** *Lepidodactylus lugubris* (Mourning Gecko). *Herpetological Review* 40:453.
- Abarca, J.G., K. González, F.G. Fernández, J.G. Franco. 2012.** *Lepidodactylus lugubris* (Mourning Gecko). *Herpetological Review* 43:618.
- Bauer, A.M., T.R. Jackman, E. Greebaum and T.J. Papenfuss. 2007.** First record of *Lepidodactylus lugubris* in Suriname. *Applied Herpetology* 4:84-85.
- Brown, S.G., P.K. Duffy. 1992.** The effects of egg-laying site, temperature, and salt-water on incubation time and hatching success in the gecko *Lepidodactylus lugubris*. *Journal of Herpetology* 26:510-513.
- Daza, J.D., S.L. Travers and A.M. Bauer. 2012.** New records of the mourning gecko *Lepidodactylus lugubris* (Duméril & Bibron, 1836) (Squamata: Gekkonidae) from Colombia. *Check List* 8:164-167.
- Hanley, K.A., D.T. Bolger and T.J. Case. 1994.** Comparative ecology of sexual and asexual gecko species (*Lepidodactylus*) in French Polynesia. *Evolutionary Ecology* 8:438-454.
- Köhler, G. 2003.** Reptiles de Centroamérica. Herpeton Verlag. Offenbach, DE.
- Savage, J.M. 2002.** The Amphibians and Reptiles of Costa Rica: a Herpetofauna Between Two Continents, Between Two Seas. The University of Chicago Press. Chicago, USA.
- Sierra, J.D.P., O.A. Gutiérrez and F.C. Herrera. 2012.** Ampliación del rango de distribución de la salamaqueja *Lepidodactylus lugubris* (Duméril & Bibron, 1836) en Colombia. *Herpetotropicos* 7:5-6.
- Uetz, P. 2013.** *Lepidodactylus lugubris*, The Reptile Database. Available from <http://www.reptile-database.org> (visited 12 December 2013).