

SHORT COMMUNICATION

Rediscovery of the Honduran endemic *Diploglossus scansorius* (Squamata: Diploglossidae), with description of the first known juvenile specimen from a new locality in north-central Honduras

Erich P. Hofmann,¹ Luis Herrera-B.,² Emmanuel O. Murillo,² Jocelyn A. Castro,² Andrew J. Mason,¹ Christopher L. Parkinson,^{1,3} and Josiah H. Townsend⁴

¹Department of Biological Sciences, Clemson University. Clemson, South Carolina, 29634, USA. E-mail: ehofman@clemson.edu.

²Departamento de Biología, Universidad Nacional Autónoma de Honduras en el Valle de Sula. San Pedro Sula, Honduras.

³Department of Forestry and Environmental Conservation, Clemson University. Clemson, South Carolina, 29634, USA.

⁴Department of Biology, Indiana University of Pennsylvania, Indiana, Pennsylvania. 15705-1081, USA.

Keywords: Chortis Block, diploglossid, geographic distribution, Mesoamerica, morphology.

Palabras Clave: Bloque de Chortís, diploglossid, distribución geográfica, Mesoamerica, morfología.

Palavras-chave: América Central, Bloco de Chortis, diploglossídeo, distribuição geográfica, morfologia.

McCranie and Wilson described the lizard *Diploglossus* (= *Celestus*) *scansorius* (McCranie and Wilson, 1996) (Squamata: Diploglossidae) based on two adult females collected nearly a decade apart. The paratype, collected in 1983, initially was assigned to *Celestus bivittatus*, but after a second specimen (the holotype) was collected in 1993, these specimens were described as a new taxon based on ventral coloration and the number of fourth-toe and third finger lamellae (McCranie and Wilson 1996). The type series, collected from two isolated localities at 1550 and 1590 m a.s.l. in

Premontane Moist and Lower Montane Wet Forest in Depto. Yoro, Honduras, represents the only material of this species ever collected (McCranie 2018).

On 11 June 2017, nearly 24 years after the species was last known to have been collected, we found a juvenile *Diploglossus scansorius* (Figure 1) in the late afternoon outside a house above El Zapote, near the southwestern edge of Parque Nacional Pico Pijol, Depto. Yoro, Honduras. This locality (15°10'09.08" N, 87°37'26.29" W, WGS84 datum; 1246 m a.s.l.) was next to a *cafetal* on the edge of Premontane Moist Forest near a small, rocky stream, and extends the known distribution of the taxon approximately 42 km SW of the type locality and 35 km WNW of the paratype locality (Figure 2).

Received 07 May 2019
Accepted 31 July 2019
Distributed December 2019

Additionally, this record is more than 300 m lower in elevation than had been recorded previously for this species. Other reptiles found in sympatry that night included *Anolis* (= *Norops*) *yoroensis* (McCranie, Nicholson and Köhler 2001), *Leptodeira septentrionalis* (Kennicott, 1859), *Rhadinella kinkelini* (Boettger, 1898), and *Sceloporus hondurensis* McCranie, 2018. The specimen was deposited in the Carnegie Museum of Natural History Section of Herpetology Collection, Pittsburgh, PA, USA (CM 163365; field ID CLP2542).

CM 163365 is the first juvenile and third known specimen of *Diploglossus scansorius*. In terms of head and body scalation, it is consistent with the original description of McCranie and Wilson (1996). Snout–vent length is 38 mm and the tail was 45 mm at capture for a total length of 83 mm; however, 20 mm of the tail tip was removed for tissue samples prior to formalin-fixing the specimen. There is a single prefrontal that is broader than long; two rows of internasals, with anterior pair in contact with the nasal and upper postnasal, and posterior pair in contact with the upper postnasal and first two loreals; the nasal is in contact with the rostral; the narrow frontal is approximately 2.5 times longer than wide, in contact with two medial supraoculars, the frontoparietals, and the interparietal; paired parietals are separated by the interparietal and interoccipital; the interparietal is about the same size as the parietal, slightly larger than interoccipital. There are 3–3 loreals; 5–5 supraoculars; 12–11 supralabials, with supralabials 7 and 8 directly below the orbit on both sides; and 10–10 infralabials. There are 69 dorsal scales along the dorsal midline from the interoccipital to the level of posterior edge of thigh; 46 scales along the dorsal midline from level of axilla to level of groin; approximately 67 ventral scales along midline from first pair of chin shields to the anterior edge of vent; 42 ventral scales along midline between the axilla and groin. Digital claws unsheathed; third finger with 16–15 subdigital lamellae, fourth toe with 20–20 subdigital lamellae.



Figure 1. Juvenile *Diploglossus scansorius* (CM 163365) in life.

Color in life is shown in Figure 1. The color after 13 months in preservative is, as follows: middorsal surfaces dark grayish-brown, with a pair of well-defined, pale bluish gray dorsolateral stripes originating on the first pair of internasals and extending onto the tail, where they fade and blend into the yellow-orange tail coloration; upper 50–90% of most supralabials dark gray-brown, irregularly bordered with pale cream towards lower edges, with a darker gray border along posterior edges of each scale; supralabials 7 and 8 almost completely cream colored, with dark gray surrounding intervening sutures; lateral surfaces dark gray-brown, slightly lighter than middorsum, with scattered pale bluish-gray spots becoming more abundant ventrally and anteriorly, appearing most profuse anterior of forelimbs and adjacent to ventral coloration; infralabials 25–50% dark gray on white ground color and dark pigment centered around sutures between scales; ventral coloration immaculate cream-white; limbs brownish-gray along most dorsal portions, mottled laterally, and yellowish-white ventrally; ventral surfaces of hind limbs somewhat darker yellow than forelimbs, intermediate in color to forelimbs and tail; middorsal and lateral dark coloration extending onto tail forming a tapered grayish middorsal stripe and shorter midlateral stripes.

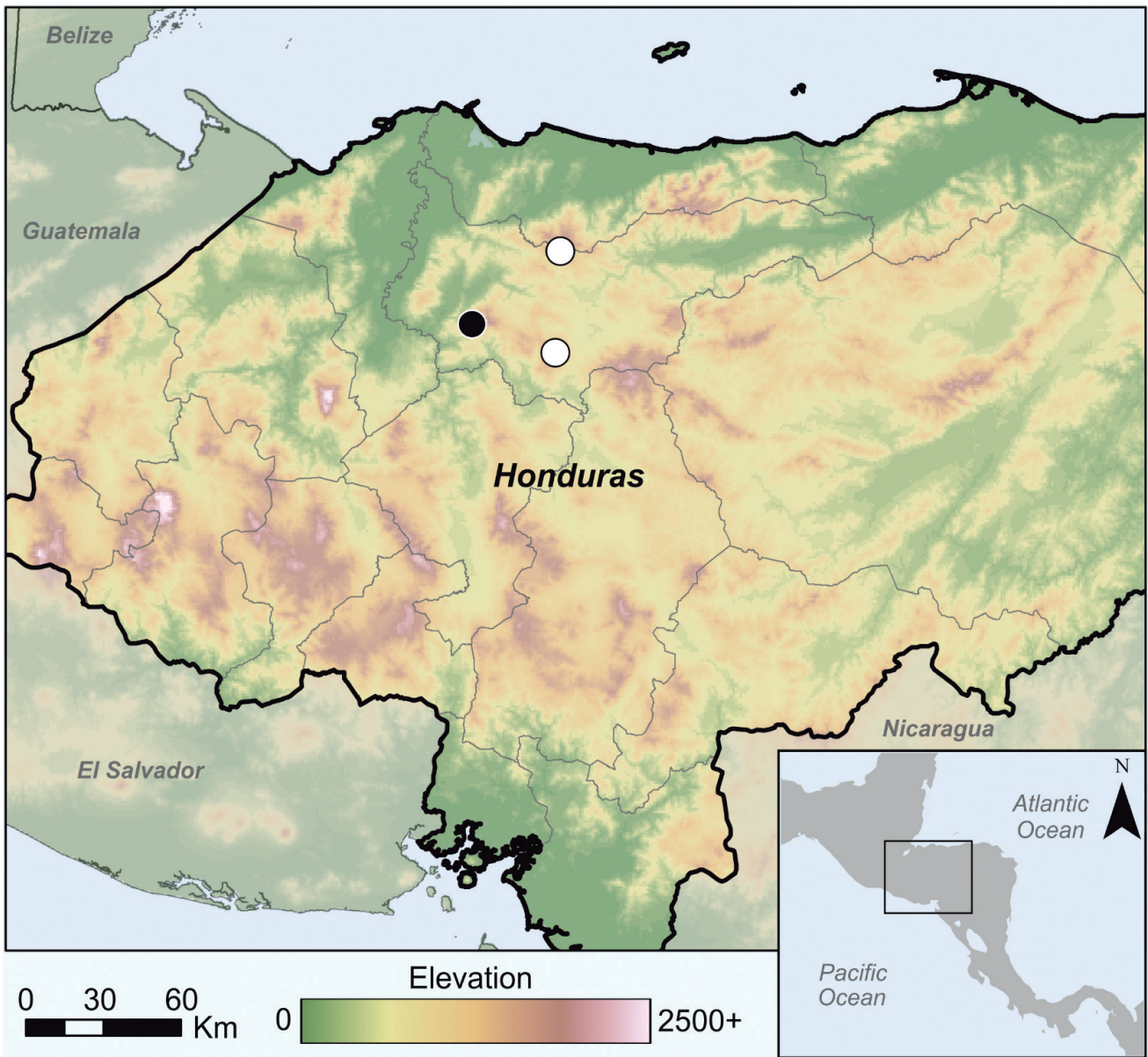


Figure 2. Map of the known distribution of *Diploglossus scansorius*. Open white circles indicate the type series (based on locality data from McCranie and Wilson 1996); solid black circle indicates the new record reported herein.

Whereas both the holotype and paratype were collected at least 2 m above the ground on trees, we found CM 163365 active on the ground. This is the first report of terrestrial activity for this species, the specific epithet of which, “*scansorius*,” means “of climbing” (McCranie and Wilson 1996: 262). Townsend *et al.* (2005) reported terrestrial activity in a juvenile

Diploglossus montanus (Schmidt, 1933), a species also previously considered solely arboreal. It is plausible that diploglossine species considered arboreal might have a tendency towards terrestrial habits as juveniles, or perhaps the paucity of observations of these rarely encountered species has biased our understanding of their behavior (Vaughan and Brown 2004).

Debate continues about the classification of diploglossids in the wake of Pyron *et al.*'s (2013) finding that the subfamily Diploglossinae is paraphyletic, as *Celestus* and *Diploglossus* are paraphyletic with respect to both each other and the genus *Ophiodes*. Although this work is the most comprehensive molecular dataset of diploglossids to date, there were sequence data for only 6 of the 52 described species of Diploglossinae (Uetz *et al.* 2019). Based on this finding, McCranie (2015, 2018) considered *Celestus scansorius* to be in the family Diploglossidae and the genus *Diploglossus*, noting that *Diploglossus* is an older available name. Meanwhile, other workers have retained the use of Anguidae and *Celestus* (e.g., Bochaton *et al.* 2016, Lotzkat *et al.* 2016, Mesoamerican Herpetology Taxonomic Board 2019). Uetz *et al.* (2019) follows McCranie (2018) in assigning all Honduran diploglossids to *Diploglossus*, a decision we accept here.

Acknowledgments.—Fieldwork was conducted with support from the National Science Foundation (DEB #1638879 and #1822417 to CLP). All specimens were collected under permit no. ICF RESOLUCIÓN-DE-MP-067-2018 in accordance with approved animal care and use protocols (UCF 13-17W; ASIH, 2004). Linda Trueb and two anonymous reviewers provided careful review and comments that improved this work. We thank Stephen Rogers and Kaylin Martin (CM) for accessioning the specimen. Finally, we especially thank Arístides Euceda for his local expertise and assistance in the field. 🐸

References

- Bochaton, C., R. Boistel, F. Casagrande, S. Grouard, and S. Bailon. 2016. A fossil *Diploglossus* (Squamata: Anguidae) lizard from Basse-Terre and Grane-Terre Islands (Guadeloupe, French West Indies). *Scientific Reports* 6: 28475.
- Lotzkat, S., A. Hertz, and G. Köhler. 2016. A new species of *Celestus* (Squamata: Anguidae) from western Panama. *Mesoamerican Herpetology* 3: 962–975.
- McCranie, J. R. 2015. A checklist of the amphibians and reptiles of Honduras, with additions, comments on taxonomy, some recent taxonomic decisions, and areas of further studies needed. *Zootaxa* 3931: 352–386.
- McCranie, J. R. 2018. The lizards, crocodiles, and turtles of Honduras. Systematics, distribution, and conservation. *Bulletin of the Museum of Comparative Zoology* 15: 1–129.
- McCranie, J. R. and L. D. Wilson. 1996. A new arboreal lizard of the genus *Celestus* (Squamata: Anguidae) from Northern Honduras. *Revista de Biología Tropical* 44: 259–264.
- Mesoamerican Herpetology Taxonomic Board (ed.). 2019. Herpetofaunal List for Mesoamerica. Electronic Database accessible at <http://www.mesoamericanherpetology.com/taxonomic-list.html> Mesoamerican Herpetology, Eagle Mountain, UT, USA. Captured on 06 May 2019.
- Pyron, R. A., F. T. Burbrink, and J. J. Wiens. 2013. A phylogeny and revised classification of Squamata, including 4161 species of lizards and snakes. *BMC Evolutionary Biology* 13: 93.
- Townsend, J. H., S. M. Hughes, J. J. Hines, D. J. Carter, and G. Sandoval. 2005. Notes on a juvenile *Celestus montanus* Schmidt, 1933, a rare lizard from Parque Nacional El Cusuco, Honduras. *Herpetozoa* 18: 67–68.
- Uetz, P., P. Freed, and J. Hošek (eds.). 2019. The Reptile Database. Electronic Database accessible at <http://www.reptile-database.org>. Captured on 06 May 2019.
- Vaughan, A. and J. Brown. 2004. *Celestus cyanochloris* (NCN). Arboreal behavior. *Herpetological Review* 35: 387.

Editor: Jaime Bertoluci