



Third Locality Record of the Rare Canasi Trope, *Tropidophis celiae* (Squamata: Tropidophiidae), with Comments on its Conservation Status

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With 17 species, all of which are endemic, Cuba contains the highest diversity of snakes in the genus *Tropidophis* (Tropidophiidae) (Hedges 2002; Díaz and Cádiz 2020; Uetz et al. 2022). Nine of these species have restricted distributions and are listed in some threatened category on the IUCN Red List (<https://www.iucnredlist.org>). Such is the case with the Canasi Trope (*T. celiae*), which has been regarded as the rarest species of *Tropidophis* in Cuba (Torres et al. 2016). It was originally described by Hedges et al. (1999), based on a single specimen collected on the eastern side of the mouth of the Canasí River at the northern coast of Mayabeque Province. Only four additional specimens have been collected after the original description, including a gravid female that gave birth to two newborn in captivity (Torres et al. 2013, 2016). Photographs of a sixth individual were posted on Instagram on 15 April 2020, but no additional information

was provided except the species name, the country (“Cuba”), and “March 2020,” which might refer to its collection date (https://www.instagram.com/p/B_AflvugwS3/). All known individuals come from only two localities, the type locality and ca. 3 km SE of Carbonera Village in northern Matanzas Province (Hedges et al. 1999; Torres et al. 2013, 2016).

Because of its rarity, the species was first assessed as Critically Endangered in the “Libro Rojo de los Vertebrados de Cuba” (Rodríguez Schettino 2012) based on IUCN criterion D, which refers to the number of mature individuals (IUCN Standards and Petitions Subcommittee 2019). Torres et al. (2016) reaffirmed that conservation status based mainly on a very low encounter rate and a very small area of occupancy (estimated at 8 km²). However, it was downgraded to Endangered when first assessed by the IUCN Red List (Fong 2019), seemingly based on criterion B1ab(iii), which specifi-



Fig. 1. Adult Canasi Trope (*Tropidophis celiae*) when first seen in La Pluma Cave, Matanzas Municipality, Matanzas Province, Cuba (left, KUDA 013754; right, KUDA 013757). Photographs © R. Teruel.

cally refers to the extent of occurrence (IUCN Standards and Petitions Subcommittee 2019). Herein we report *T. celiæ* from a new locality and comment on its conservation status.

At 1039 h on 7 May 2022, we observed and photographed an adult *T. celiæ* (ca. 450 mm total length) (Fig. 1) in La Pluma Cave, Matanzas Municipality, Matanzas Province (cave's main entrance: 23.13201, -81.59352; elev. 60 m asl; WGS 84) (Fig. 2). This locality is 18.8 km E of the type locality and 19.4 km NW of Carbonera and represents the first record for Matanzas Municipality. We did not collect the snake because of the critical conservation status of the species, instead we deposited a photographic voucher in the Herpetology Digital Archives of the University of Kansas (KUDA 013754–57). The identity of the species was confirmed by Javier Torres.

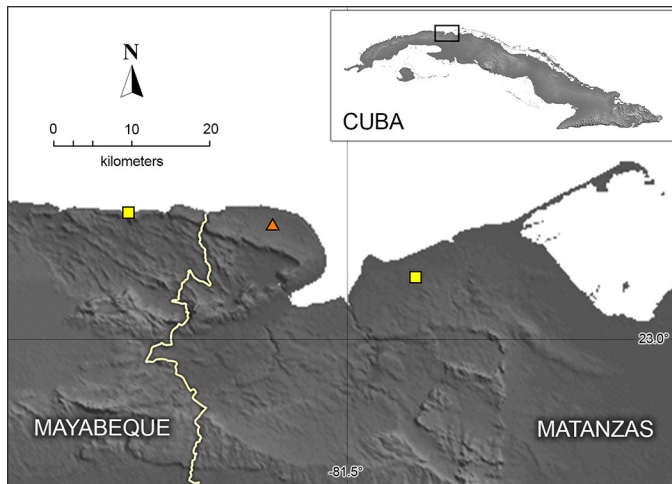


Fig. 2. Known distribution of the Canasí Trope (*Tropidophis celiæ*) in northwestern Cuba, including records from the literature (yellow squares) and this paper (orange triangle). From left to right: the mouth of the Canasí River, La Pluma Cave, and Carbonera. The white line depicts the provincial border.



Fig. 3. Habitat of the Canasí Trope (*Tropidophis celiæ*) in La Pluma Cave, Matanzas Municipality, Matanzas Province, Cuba. Photograph © R. Teruel.

When first observed, the snake was active and partially hidden under a small flat rock on damp clay in complete darkness about 100 m into the cave. La Pluma Cave is a large (ca. 3,000 m long), phreatic, and hence mostly horizontal cave (Núñez Jiménez et al. 1973; Orghidan et al. 1977) located on the coastal limestone terrace (main entrance 2 km from the shoreline) surrounded by mesophyllous semi-deciduous forest, thorny shrubwoods, and secondary vegetation (see Borhidi 1991 for descriptions of the vegetation in the area) (Fig. 3). The air temperature and relative humidity in the cave (measured in April between 1969 and 1973), varied from 22.5–24.6 °C and from 97–98%, respectively (Núñez Jiménez et al. 1973; Orghidan et al. 1977).

Other reptiles and amphibians reported for this cave include unidentified geckos; the Cuban Pale-necked Galliwasp, *Diploglossus delasagra* (Diploglossidae); the Cuban White-fanned Anole, *Anolis homolechis* (Dactyloidae); the Spotted Red Trope, *T. maculatus*; and the Cuban Flat-headed Frog, *Eleutherodactylus planirostris* (Eleutherodactylidae) (Orghidan et al. 1977; Silva Taboada 1988; Díaz and Fong G. 2001). We corroborated the occurrence of *A. homolechis* around the cave's main entrance, also observed the Cuban Twig Anole (*A. angusticeps*) and the Blue-eyed Twig Anole (*A. alutaceus*), and noted that the Cuban Pineland Frog (*E. pinarensis*) was very abundant in the cave (Fig. 4) near the site where we observed the *T. celiæ*. Since *T. celiæ* is a confirmed frog predator (Estrada et al. 1997; Hedges et al. 1999), we presume that these frog species inhabiting La Pluma Cave represent potential prey for this snake (see Torres et al. 2016 for similar criteria regarding Canasí).

In the most recent assessment of the conservation status of *T. celiæ* (Fong 2019), the justification given is that “its extent of occurrence is less than 555 km², and it occurs at two locations affected by habitat loss and habitat fragmenta-



Fig. 4. Adult Cuban Pineland Frog (*Eleutherodactylus pinarensis*) observed near the Canasí Trope (*Tropidophis celiæ*) in La Pluma Cave, Matanzas Municipality, Matanzas Province, Cuba. This and other species of frogs inhabiting this cave represent potential prey for *T. celiæ*. Photograph © R. Teruel.

tion due to deforestation for urban and tourism development and livestock farming.” We found that after adding the new record and using the convex hull method (IUCN Standards and Petitions Subcommittee 2019), its extent of occurrence is less than 100 km², specifically 49.5 km², including about 6.7 km² of marine areas, hence not compatible with the species’ occurrence. The latter, beside the other justifications given by Fong (2019), permits *T. celiae* to fulfill the IUCN criteria for the category of Critically Endangered (B1ab[iii]), not Endangered, as it is currently listed (Fong 2019). Following IUCN criterion D (e.g., Rodríguez Schettino 2012) and given the extremely low encounter rate and very low representation in museum collections, we propose that *T. celiae* must be listed as Critically Endangered (see Torres et al. 2016 for similar criteria).

Every known locality of *T. celiae* is important in order to provide this rare species with the most effective management possible. Fortunately, this new record falls within the “Cueva La Pluma” Natural Monument (CNAP 2013) that, together with the “Boca de Canasí” Flora Reserve (Torres et al. 2013, 2016), represent the only two protected areas, both of local significance, harboring this species. The third locality where this species occurs, Carbonera, falls outside the boundaries of “Caverna Santa Catalina” Natural Monument by a mere 200 m (CNAP 2013; Torres et al. 2013), but assuming that it also occurs in this protected area seems reasonable. The latter is a protected area of national significance and is also internationally recognized as a National Monument (CNAP 2013), which might help in allocating resources for the conservation of *T. celiae* and associated habitat. Additional fieldwork is needed in these three protected areas to gather key baseline information on the populations of *T. celiae*, but for that to occur, it must first become a target species of conservation priority within these protected areas.

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