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SHORT COMMUNICATION

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Rediscovery of the Quindío robber frog *Pristimantis alalocophus* in a new locality in the Department of Quindío, Colombia

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Colombia has a remarkable diversity and endemism of amphibians of the genus *Pristimantis* (Anura: Craugastoridae), hosting more than 230 species (Acosta-Galvis, 2021; Rivera-Correa et al., 2021), of which 149 species are endemic to the country (IUCN, 2021). However, half of this diversity has been listed in a conservation threat category (IUCN, 2021) due to deforestation, agricultural and mining activities, emerging infectious diseases and pollution (Stuart et al., 2004; Lips et al., 2008; Ruíz-Carranza & Rueda-Almonacid, 2008; Isaacs-Cubides & Urbina-Cardona, 2011). Additionally, in expeditions to type localities and/or their surrounding areas to search for some species of the genus *Pristimantis* many of these have not been found, remaining known only from their formal description, which alerts us to the possibility that they may now be extinct (e.g. *Pristimantis lichenoides*, *Pristimantis torrenticola*, Duarte-Marín et al., 2018; *Pristimantis cacao*, *Pristimantis diogenes*, Pisso-Flórez et al., 2018; *Pristimantis anolirex*, Acevedo et al., 2018).

Pristimantis alalocophus (Roa-Trujillo & Ruiz-Carranza, 1991), is an endemic species to the Andean forest and streams of the Central Cordillera, between 2650-3100 ma.s.l. (Roa-Trujillo & Ruiz-Carranza, 1991; Ruiz-Carranza et al., 1996; Bernal & Lynch, 2008). This species is catalogued as Endangered (EN) due to its restricted distribution (2700 km^2), few localities of occurrence (5-6), and a continuing habitat loss in extent and quality caused by deforestation and livestock grazing (IUCN SSC Amphibian Specialist Group, 2019). This species was last seen and collected in 1997 by Taran Grant in the Natural Reserve La Sirena, municipality of Palmira, department of Valle del Cauca (Colección de Prácticas Zoológicas, Universidad del Valle) (CPZ-UV). Considering the above, we report the rediscovery of *P. alalocophus* 24 years after it was last recorded.

On 8 April 2021 at 20:15 h, we found an adult female of *P. alalocophus* (SVL: 45 mm) during a naturalists' photo tour in the Kiraikai stream of Kiraikai Ecolodge (4°38'57.7'' N, 75°38'57.7'' W, 1780 m a.s.l.; Fig. 1), municipality of Filandia, Department of Quindío, Colombia. The individual was found perched 25 cm from the ground in riparian vegetation where it was photographed but not collected (Fig. 2A). The individual was identified with the help of researcher Gustavo Gonzalez-Durán based on diagnostic characters proposed for *P. alalocophus* according to the original description by Roa-Trujillo & Ruiz-Carranza (1991): dorsum skin smooth with small flat pustules, absent dorsolateral folds (Fig. 2B),

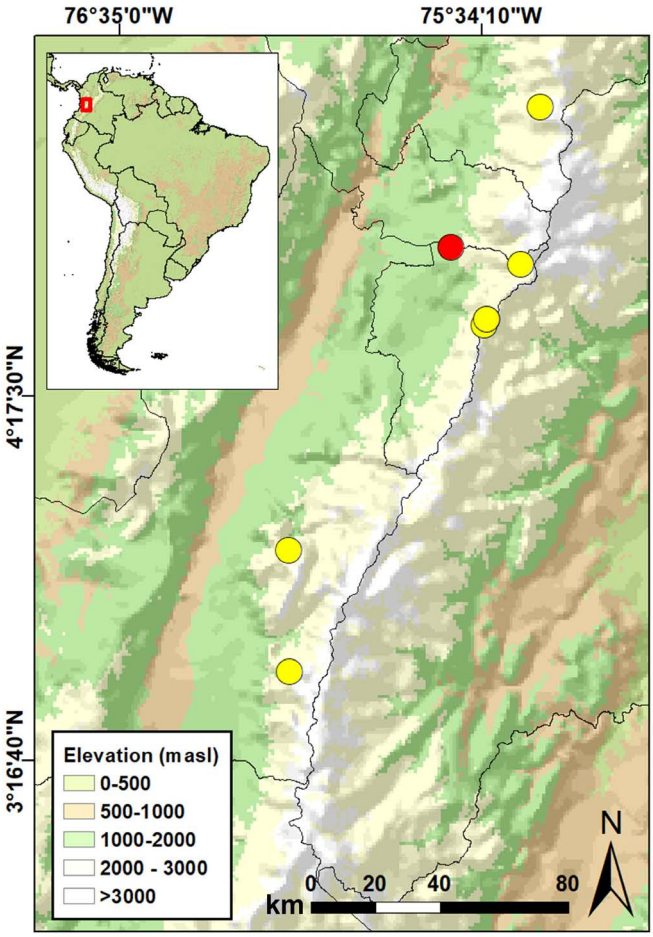

Figure 1. A portion of the Cordillera Central of Colombia showing historical records (yellow circles) and the new record of *Pristimantis alalocophus* (red circle). Historical records obtained from Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá, Colombia (ICN) and Colección de anfibios y reptiles de la Universidad del Valle, Cali, Colombia (UVC).

absent tympanic membrane and tympanic anullus (Fig. 2C), subconical and moderate-sized tubercle on heel, females with black belly with spots and white granules of variable density (Fig. 2D).

Pristimantis alalocophus is similar to the three species of *Pristimantis* that have lack tympanic membranes or concealed and absent tympanic anullus, which inhabit

Figure 2. An adult female *Pristimantis alalocophus* recorded but not collected at the Kirakai Ecolodge, Filandia, Quindío- **A.** General features, **B.** Dorsal view, **C.** Lateral view of head, and **D.** Ventral view of hindlimbs. White arrows indicate diagnostic characters, see text for details

Central Cordillera of Colombia (*P. bernali*, *P. gracilis* Lynch, 1986; *P. lichenoides* Lynch & Rueda-Almonacid, 1997), but differs from these by the combination of the following characters -dorsum skin smooth with small flat pustules (granular in *P. bernali*, smooth with postorbital folds in *P. gracilis*), ventral skin areolate (coarsely areolate in *P. bernali* and *P. lichenoides*), vomerine odontophores triangular (oval in *P. bernali* and *P. lichenoides*), males without vocal slits and vocal sac (present in *P. gracilis*), nuptial pad present in males (*P. bernali* and *P. lichenoides*), ulnar tubercles present (absent in *P. bernali* and *P. gracilis*), tarsal tubercles present (absent in *P. gracilis*), heel tubercle present (absent in *P. gracilis* and *P. bernali*), inguinal region brown (grey in *P. bernali*, yellow and orange with white spots in *P. gracilis* and brown with occasional cream flecks in *P. lichenoides*).

Our observations suggest that *P. alalocophus* may have little tolerance for disturbance, which may explain its disappearance from its type locality despite extensive recent fieldwork in the area (Gómez-Hoyos et al., 2017, 2018). In the early 90s, the forest where *P. alalocophus* has previously been reported, had been heavily affected by habitat degradation resulting from intensive agricultural activities (e.g., Livestock) (García-Romero, 2013). However, other factors such as climate change and emerging infectious diseases (e.g. chytridiomycosis) should also be considered as potential threats.

Although *P. alalocophus* is a rare species and has a restricted distribution in the Central Cordillera, this report does not increase its known area of occupancy but does lower its elevation limit by 870 m. Due to the lack of information on the wider distribution, threats, and natural history for *P. alalocophus*, we suggest that its conservation status should remain as Endangered (EN). For the future, it is important to direct efforts to the collection of basic data on the natural history and the size of populations of threatened species such *P. alalocophus*. Although there are conservation and monitoring programmes for species in the Department of Quindío (Paula Navarro-Salcedo & Sebastián Acevedo-Muñóz. pers. comm.), these efforts focus on charismatic species such as *Centrolene savagei*, *Hyloscirtus larinopygion* and *Andinobates bombetes*. Sampling efforts need to be extended to new locations in the Department of Quindío to enable a wider assessment of threated species.

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