REPTILES & AMPHIBIANS

Anopthalmia in *Lithobates vaillanti* (Brocchi 1877) (Anura: Ranidae) in Colombia

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Anophthalmia, a common malformation in natural populations of amphibians, consists of the total lack of one or both eyes, usually presenting as a depression in the eye socket that is covered only by skin (Meteyer 2000; Cortés-Suárez 2018; Morales-Flores et al. 2021). Vision is crucial to the fitness and survival of anurans, because it affects both perception and visual communication between individuals during reproductive, territorial, or aggressive encounters (Carezzano et al. 2016; Holer and Koleska 2018; Szkudlarek 2020; De Souza et al. 2021). Published reports describing ocular malformations in frogs in the Colombian Caribbean are rare (Venerozo-Tlazalo et al. 2022), and less common for frogs in the family Ranidae (Barragán-Ramírez and Navarrete-Heredia 2011; Monroy-Vilchis et al. 2015; Castro-Bastidas et al. 2022; Yeung and Yang 2022). Herein we present the first report of anophthalmia for frogs in the Colombian Caribbean and the first documented case of anophthalmia in the genus *Lithobates*.

On 8 January 2023 during night-time sampling carried out between 1600 h and 2400 h in a stream (Fig. 1) that crosses a patch of forest located in the Altamira Natural Refuge, Chalán, Department of Sucre, Colombia (9.58846 N, 75.33996 W; elev. 420 m asl), we encountered an adult *Lithobates vaillanti* (Brocchi 1877) missing its left eye (Fig. 2). It was carefully examined, photographed, and then released where initially observed.

This type of malformation can result from various factors ranging from environmental to inbreeding (Reeves et al. 2008). Agrochemicals constitute a probable cause in environments where they are applied intensively, because high concentrations can affect the development of tadpoles and post-metamorphic stages (Ganesh and Arumugam 2015; Aguillón-Gutiérrez 2018). For this reason, we must point out that, although the locality corresponds to a conserved fragment of secondary forest, it is surrounded by properties where agrochemicals are applied. Also important to highlight is that records of *L. vaillanti* in the department of Sucre are rare and that at present a large part of its distribution in the Colombian Caribbean is unknown. To date the distribution of the species within the department is restricted to the municipalities of Colosó and Chalán, where the species was reported for the first time (Perlaza-Berrio and Peláez-Plazas 2018). Our record concurs with these occurrences, and also with reports that *L. vaillanti* is encountered only during periods of very high rainfall (Perlaza-Berrio and Peláez-Plazas 2018).

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Figure 1. Habitat at the Altamira Natural Refuge where we encountered a Vaillant's Frog (*Lithobates vaillanti*) with anophthalmia of the left eye. Photograph by Oscar Sierra-Serrano.

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Figure 2. A Vaillant's Frog (*Lithobates vaillanti*) with anophthalmia of the left eye. Photographs by Oscar Sierra-Serrano.

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