

Unilateral anophthalmia in a recently metamorphosed blue-sided leaf frog *Agalychnis annae* in Costa Rica

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The blue-sided leaf frog *Agalychnis annae* is currently assessed by the IUCN as Vulnerable (IUCN, 2020). The species was considered endemic to Costa Rica, but a single individual has since been observed in Panama (Hertz et al., 2012). Within Costa Rica the known range of the species has recently been extended (Hidalgo-Mora et al., 2021). Despite these recent extensions the species is still found predominantly in a few, isolated populations within urban areas of the Central Valley of Costa Rica (Hoffmann, 2005; Hidalgo-Mora et al., 2021; Arguedas et al., 2022), and remains extirpated from previously known sites of more natural habitat, such as Monteverde and Tapantí national parks, where the species was once considered common (IUCN, 2020).

On 15 September 2022 at approximately 18:30 h in Heredia province Costa Rica, 1188 m a.s.l., during a visit to a breeding site for *A. annae* within an urban area, the authors observed a juvenile specimen at Gosner stage 45 (Gosner, 1960) with a missing right eye, where instead there was a small fold or scar, and a normal left eye (Fig. 1A & B). The specimen was active, observed on the upper surface of a leaf approximately 1 m above the ground and within 0.5 m from a breeding pond. It appeared otherwise in good health and body condition when compared to numerous individuals observed at the site at a similar developmental stage. Anophthalmia, the absence of one or both eyes, is a deformity that has previously been recorded in both anurans (Ramalho et al., 2017; Castro-Torreblanca & Blancas-Calva, 2021) and urodeles (Ayres et al., 2022). Individuals with this condition exhibiting the loss of a single eye have been known to survive to adulthood whilst appearing in otherwise good health (Ramalho et al., 2017).

This observation is the first recorded account of anophthalmia in a wild individual of this vulnerable species. Due to the fragile nature of amphibian populations, and observed dramatic declines recorded previously in this species (Hoffmann, 2005; IUCN, 2020), it is important to keep a record of observations that may be indicative of the health of their populations.

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Figure 1. *Agalychnis annae* from Costa Rica with unilateral anophthalmia - **A.** Missing right eye, **B.** Unaffected left eye

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