



A new cryptic species of glassfrog (Centrolenidae: *Nymphargus*) from Reserva Las Galarias, Ecuador

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Abstract

We describe a new species of *Nymphargus* from Reserva Las Galarias, in the montane forests of the Pacific versant of the Andes of Ecuador. The new species, *Nymphargus lasgralarias* **sp. nov.**, is nearly morphologically identical to sympatric *Nymphargus griffithsi* (Goin 1961), with the exception of the following characters: (i) a gold colored iris with numerous small spots and lighter reticulation, (ii) absence of dark dorsal spotting, and (iii) a significantly larger body size. Additionally, we describe the vocalizations for *N. griffithsi* and *N. lasgralarias*. The call of *N. lasgralarias* **sp. nov.** is easily distinguished from *N. griffithsi* through the following temporal and spectral characteristics: (i) calls are emitted in series, (ii) waveform shape is always pulsed, (iii) significantly shorter call duration, and (iv) lower dominant frequency.

Key words: Andes, Anuran, diversity, Neotropics, *Nymphargus lasgralarias*, *Nymphargus griffithsi*, speciation

Resumen

Se describe una nueva especie de rana de cristal del género *Nymphargus*, de la Reserva Las Galarias, en la vertiente pacífica de los Andes del Ecuador. La nueva especie, *Nymphargus lasgralarias* **sp. nov.**, es casi indistinguible morfológicamente de la especie simpátrica *Nymphargus griffithsi* (Goin 1961), con la excepción de las siguientes características: (i) iris dorado con numerosos puntos pequeños y fina reticulación, (ii) ausencia de puntos oscuros en el dorso y (iii) tamaño corporal significativamente más grande. Adicionalmente, describimos las vocalizaciones de *N. griffithsi* y *N. lasgralarias*. El canto de *N. lasgralarias* **sp. nov.** se distingue fácilmente del de *N. griffithsi* por los siguientes rasgos: (i) cantos emitidos en series, (ii) cantos pulsados, (iii) cantos con menor duración, (iii) frecuencia dominante más baja y (iv) ausencia de modulación en la frecuencia.

Palabras claves: Andes, Anura, canto, especie críptica, diversidad, especiación, rana de cristal, Neotrópico, *Nymphargus lasgralarias*, *Nymphargus griffithsi*

Introduction

Currently, the family Centrolenidae has 150 described species (AmphibiaWeb 2011). Diversity in centrolenids is centered in the Andes Mountains, with high rates of endemism probably associated with geographic and climatic isolation, narrow physiological tolerance, and low dispersal ability (see Janzen 1967; Lynch & Duellman 1997). The genus *Nymphargus* is endemic to the Andes of Colombia, Ecuador, Peru and Bolivia, with most species inhabiting at elevations above 1000 m (Guayasamin *et al.* 2009). Within *Nymphargus*, some species have demonstrated to be taxonomically complex. For example, *N. griffithsi* shows substantial morphological (i.e., cresta humeralis) and genetic variation, suggesting the presence of cryptic species (Cisneros-Heredia & McDiarmid 2007; Guayasamin *et al.* 2009; JMG pers. obs.). As defined by Bickford *et al.* (2007), cryptic species are two or more distinct