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Morphological characterization of *Leptodactylus elenae* tadpoles (Anura: Leptodactylidae: *L. fuscus* group), from central Paraguay

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Abstract

In this paper we characterize the morphology of *Leptodactylus elenae* tadpoles (*L. fuscus* group) from central Paraguay, considering external morphology, oral disc, buccopharyngeal cavity, skeleton and musculature (N = 17; Gosner Stage 36–37; Central, Paraguay). Specimens were fixed with 10% formaline and were prepared according to a classic staining protocol. These larvae show external traits similar to those of other taxa within the group, such as an ovoid and depressed body, left spiracle, ventromedial vent tube, and marginal papillae interrupted in a wide rostral gap. Distinctive features are the rounded snout, the distally wide and rounded tail, the labial tooth formula 2(2)/3(1), lateral constrictions absent, and the large internal marginal papillae, intercalated every two or four small external marginal papillae. Inside the buccopharyngeal cavity, traits shared with related species are the prenarial ridge, the transversal nares, two pairs of infralabial papillae, the medial ones joined at their bases, four lingual papillae, and dorsal and ventral vela with secretory epithelium. Skeletal configuration is constant within the genus, with common character states such as the quadripartite suprarostral cartilage, quadratoorbital commissure and larval crista parotica present, larval otic process absent, ceratobranchials fused to the hypobranchial plates, anterior branchial process, and basihyal absent. *Leptodactylus elenae* and other *L. fuscus* group species resemble taxa from the *L. pentadactylus* group, due to the configuration of the branchial process, the articular process of the palatoquadrate, the suspensorium, and the trabecular horns; this can be observed in the chondrocranium and hyobranchial skeleton morphospaces for 22 species of the genus. Finally, muscular features are also maintained at intra-genus level, with common traits such as m. mandibulolabialis superior absent, mm. diaphragmatopraecordialis, interhyoideus posterior and hyoangularis medialis present, m. subarcualis rectus I with 3 slips, and m. subarcualis rectus II–IV inserted on ceratobranchial III. Further analyses on intraspecific variation and descriptions of related larvae are needed to improve the knowledge about this diverse genus.

Key words. *Leptodactylus elenae*; tadpole; external morphology; buccopharyngeal cavity; chondrocranium; hyobranchial skeleton; musculature

Resumen

En este trabajo caracterizamos la morfología larval de *Leptodactylus elenae* (grupo *L. fuscus*), considerando caracteres externos, disco oral, cavidad bucofaríngea, esqueleto y musculatura (N = 17; estadio 36–37 de Gosner; Central, Paraguay). Los ejemplares se fijaron con formol 10% y se prepararon con un protocolo de tinción diferencial clásico. Las larvas presentan rasgos externos similares a los de otras integrantes del grupo, como un cuerpo ovoide y deprimido, espiráculo izquierdo, tubo proctodeal ventromedial, y papilas marginales interrumpidas en un claro rostral amplio. Características distintivas son el hocico redondeado, cola distalmente ancha y redondeada, fórmula dentaria 2(2)/3(1), ausencia de constricciones laterales orales, y en el labio inferior, papilas marginales internas de mayor tamaño intercaladas cada dos o cuatro papilas externas pequeñas. En la cavidad bucofaríngea, rasgos compartidos son el pliegue prenarial, coanas transversales, dos pares de papilas infralabiales, las mediales unidas por su base, cuatro papilas linguales, y

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