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**Comparative larval morphology of eight species of *Hypsiboas* Wagler
(Amphibia, Anura, Hylidae) from Argentina and Uruguay,
with a review of the larvae of this genus**

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Abstract

We studied the external and oral cavity morphology of the tadpoles of eight species of *Hypsiboas* in the *H. albopunctatus*, *H. faber*, *H. punctatus* and *H. pulchellus* species groups. After a review of the available information about larval external and oral cavity morphology, no character state seems to be synapomorphic for *Hypsiboas*. The presence of a fleshy projection in the inner margin of the nostrils and rounded vacuities of the anteromedial surface of the choanae (pending the confirmation of the latter in *Hyloscirtus* and *Myersiophyla*) seems to be synapomorphic for the tribe Cophomantini, as previously noticed by other authors. Some putative synapomorphies are suggested for some species groups of *Hypsiboas*, but a denser sampling is needed to study the taxonomic distribution of these character states, in order to determine which clades they may support. The presence of lateral flaps with labial teeth in the oral disc is a variable feature of many species in the *H. faber* and *H. pulchellus* groups. A spiracular tube free from the body wall is present in some species, mostly in the *H. albopunctatus* group, but also in the *H. rufitelus*, *H. faber* and *H. pulchellus* groups. Unique ventrolateral cumules of neuromasts are present in *H. faber*, and also in some species of other groups of *Hypsiboas* and of the sister genus *Aplastodiscus*. Our results highlight the importance of studying the taxonomic distribution of many character states that were sometimes overlooked in tadpole descriptions but seem relevant to test phylogenetic hypothesis.

Key words: Cophomantini, Hylinae, *Hypsiboas andinus*, *Hypsiboas caingua*, *Hypsiboas cordobae*, *Hypsiboas faber*, *Hypsiboas pulchellus*, *Hypsiboas punctatus rubrolineatus*, *Hypsiboas raniceps*, *Hypsiboas riojanus*, larval external morphology, oral papillation, neuromasts

Introduction

The tree frogs of the recently resurrected hylid genus *Hypsiboas* Wagler (Faivovich *et al.* 2005) are common components of Neotropical herpetofauna. The 79 species currently assigned to this genus are distributed in Central and South America, from Nicaragua to central Argentina and the islands of Trinidad and Tobago (Duellman 1970; Ceï 1980; Frost 2007). No morphological synapomorphy is known for this genus, which comprises seven species groups: the *H. albopunctatus*, the *H. benitezi*, the *H. faber*, the *H. pellucens*, the *H. pulchellus*, the *H. punctatus* and the *H. semilineatus* groups (Faivovich *et al.* 2005).

Although external morphology information about tadpoles of 49 species of *Hypsiboas* is available from the literature (Appendix 1), we are still lacking accurate descriptions of the external morphology of some of these, and tadpoles of many species are still unknown. The information relative to oral cavity morphology is scarce compared with external morphology descriptions. There are oral cavity descriptions available for the tadpoles of only 14 species of *Hypsiboas* (for a list see Appendix 2—Wassersug 1980; Lavilla & Fabrezi 1987; Spirandeli Cruz 1991; d'Heursel & de Sá 1999; Both *et al.* 2007; Vera Candioti 2007; d'Heursel & Hadad 2007).

Within the *Hypsiboas pulchellus* group, some confusion exists in the literature because six currently recognized species were previously considered subspecies of *H. pulchellus*. The earliest description of tadpoles assigned to this species (as *Hyla raddiana*) by Fernández (1927), was based on samples collected at Sierras de Córdoba and in La Plata, Argentina, which are currently assigned to two different species: *H. cordobae* and *H. pulchellus*, respectively. Gallardo (1961) made a very brief description of the tadpole of *H. pulchellus* (as *Hyla raddiana*) based on samples collected in Buenos Aires, Argentina. Later, B. Lutz (1973) described tadpoles of *H. pulchellus* (as *Hyla pulchella* “Platine form”) apparently from La Plata, Buenos Aires Province, Argentina, without illustrations. Echeverría (1992) reported variations in oral structures of tadpoles of *H. pulchellus* collected in La Plata, Argentina. Ceï (1980) published an illustration of a lateral view of a tadpole attributed to *H. cordobae* (as *Hyla pulchella cordobae*) without further description, and he also presented an illustration and briefly described the tadpole of *H. andinus* (as *Hyla pulchella andina*). Then, Lavilla (1984) redescribed the latter, together with an analysis of intra and inter population variability of this species in Argentina. Duellman *et al.* (1997) made a thorough redescription of the tadpoles of this species based on