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Redescription of tadpole of the hylodid frog *Hylodes asper* (Müller, 1924)

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The genus *Hylodes* Fitzinger, 1826 currently comprises 24 species of diurnal frogs (Frost 2010), most of them restricted to mountainous rheophilic habitats of the Brazilian Atlantic Forest Biome ((Nascimento *et al.* 2001), with exception for *Hylodes otavioi*, inhabitant of the rocky fields from the riparian forests at the Serra do Cipó (Sazima & Bokermann 1982).

Of the 24 species of the genus *Hylodes*, only 11 have their larvae described (Costa *et al.* 2009). Costa *et al*. (2009) stated the need for redescription of the tadpole of *H. asper* because a single tadpole of the species (WCAB 13290) was used for description without any information about its development stage (Bokermann, 1963). Larval characters have proven to be important for phylogenetic and taxonomic studies and, considering the need for characters that could serve to define morphological synapomorphies for anurans, herein we redescribe the tadpole of *H. asper* and its oral internal features. The species is known from the states of Rio de Janeiro, São Paulo and Paraná, in southeastern Brazil (Frost 2010).

Tadpoles were manually collected with a fish-net on July 2006 in a torrent stream in Reserva Rio das Pedras (ReRP; 22°59'29"S, 44°06'01"W), municipality of Mangaratiba, Rio de Janeiro state, southeastern Brazil. Twelve tadpoles (UNIRIO 3600) were anesthetized with 0.10% cloretona and then fixed and preserved in 5% formalin. Four tadpoles were reared to froglets in order to allow specific identification. In the study area, there are two species of *Hylodes*: *H. asper* and *H. phyllodes*. *Hylodes asper* belong to the *Hylodes nasus* species group that is characterized by large size, robust body, distinctly granular dorsolateral surfaces, absence of light dorsolateral stripes and moderate-sized fringe on the outer margin of toe V. While *Hylodes phyllodes* belong to the *Hylodes lateristrigatus* species group that contains small to moderate-sized species with slender bodies, smooth dorsum, and light dorsolateral stripes (Heyer 1982). The differences observed between the *Hylodes lateristrigatus* species group and the *Hylodes nasus* species group can be used the differentiated *H. asper* of *H. phyllodes*. Some of these differences, like the smooth or granular dorsal surface and presence or absence of ligth dorsolateral stripes, can be observed in the juvenile. Adults of *Hylodes asper* can be easily observed in the same stream that the tadpoles were collected. The analyzed material is housed at the amphibian collection of the Laboratório de Biossistemática de Anfíbios in the Universidade Federal do Estado do Rio de Janeiro (UNIRIO). For the description of oral internal features, five specimens of tadpoles in the stages 27, 28, 30, 33 and 36 (MNRJ 35039) were collected in Barreiras (22°29′ S, 43°00′ W), Municipality of Guapimirim, Rio de Janeiro, Brazil. In the laboratory, the tadpoles were dissected and stained with a 1% methylene blue solution for description the oral internal features. Those tadpoles are housed at the amphibian collection of the Museu Nacional, Rio de Janeiro. The terminology for the oral internal features follows Wassersug (1976). Descriptions and measurements are based on tadpoles at stages 25–36 (Gosner 1960). Nomenclature and measurements follow Altig & McDiarmid (1999). Measurements (in millimeters) were taken using a caliper to the nearest 0.1 mm.

Description of tadpole (stages 25–36). Body robust and elongated, elliptical in dorsal and lateral views (Figs. 1B, C). Body length is 33.5 % of the total length and body height is 74.5% of tail height. The snout is rounded in dorsal view and truncate in lateral view. Eyes are located dorsally and their diameter is 10% of body length; distance between the eye and nostril represents 44.4% of the distance between the eye and snout. The nostrils are rounded, closer to the eyes than the snout; internostril distance is 93.5% of interorbital distance; the distance between the nostril and snout is 17.4% of body length. The spiracle is sinistral, short, tubular-shaped, and with the inner wall free. It is posterolaterally oriented and its opening located approximately in the middle of the body. Distance between spiracle and snout is 55.4% of the

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