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Tadpole and vocalizations of *Chiasmocleis hudsoni* (Anura, Microhylidae) in Central Amazonia, Brazil

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The genus *Chiasmocleis* is distributed from Panama to southern South America and contains 21 recognized species (Frost 2007). Eight of them are associated with Amazonian rainforests (Frost 2007). However, only the larvae of four species and the vocalization of three species have been described for species occurring in this region (Nelson 1973; Duellman 1978; Zimmerman & Bogart 1988; Hero 1990; Schlüter & Salas 1991; Lescure & Marty 2000; Vera Candioti 2006). The tadpole of *C. hudsoni* has not been formally described; it was mentioned briefly (diagrammatic drawings and larval color notes) in Hero´s tadpole identification key from Central Amazonia (Hero 1990), as *Chiasmocleis* cf. *ventrimaculata*. In this paper we describe the tadpole and the vocalizations of *C. hudsoni* and also provide comments on the spawning sites, clutch size and breeding periods.

We collected clutches and tadpoles of *Chiasmocleis hudsoni* in streamside ponds in January 2004 and from February to March 2005, at Reserva Florestal Adolpho Ducke (RFAD) (02º55' and 03º01'S, 59º53' and 59º59'W) in Manaus, Amazonas, Brazil. Tadpoles were preserved immediately after collection and used in the description. Identification was based on newly metamorphosed individuals obtained after keeping clutches in the laboratory. Tadpole stages were defined follow Gosner (1960). Descriptive terminology and morphometric variables follow Altig & McDiarmid (1999). Measurements were taken with millimetric oculars. We recorded vocalizations of eight individuals in RFAD from February to March 2005 using a Sony TC-D5M tape recorder coupled to an external condenser microphone (TECT Model UEM-83). We used Raven 1.2 software to analyze calls (Blackman function, size 20 ms, 3 dB filter Bandwidth 80 Hz, overlap 80 ms, hop size 16.4 and DFT size 2048). Voucher specimens were deposited in the Herpetological Collection of the Instituto Nacional de Pesquisas da Amazônia (Tadpole lots: INPA-H 16958–16965).

Description of tadpoles: The description is based on nine tadpoles (INPA-H 16958) at stage 33. Body rectangular in dorsal view (Fig 1A) and oval in lateral view (Fig 1B). Body and tail 37 and 63 % of total length, respectively. Body widest than deep. Body is highest in its posterior third and wider immediately behind eyes. Snout broad and bluntly rounded in dorsal and ventral view and rounded in lateral view. Eyes located and directed laterally. Interorbital distance four times larger than maximum eye diameter. Narial openings not visible at stages 27 and 33. Spiracle single, long and wide, positioned medially and ventrally; distal border projecting over the anal tube, visible in lateral and dorsal view (Fig. 1A and B). Anal tube positioned along ventral midline, attached directly to ventral fin. Tail musculature heavy and practically equal in size to dorsal and ventral fins along the anterior third of the tail. Dorsal and ventral fins similar in height. Dorsal fin originating at tail-body junction, increasing throughout the first third of the tail, and then gradually diminishing to a tip. Ventral fin originating at the posterior ventral terminus of the body, slightly arched and, maintaining the same height throughout the proximal two-thirds of the tail. Tail pointed; flagellum absent. Mouth small (1.44±0.05 mm, 1.40–1.50, N=7) and terminal (Fig. 1C). Upper lip large, fleshy, covering the opening. Lower lip narrow, generally arched. Jaw sheaths, papillae, and tooth rows absent. Snout-vent length of metamorphosed froglets (stage 46) was 4.97±0.21 mm (4.60–5.30, N=10). Froglets were similar to adults in color patterns and body shape. Measurements of tadpoles at other developmental stages are presented in Table 1.

Variation: At stage 41, 42 and 44 the external nares are located in dorsal area and consists of a rounded whitish spot located dorsally and the narial distance is 0.65±0.07 mm (0.60–0.70, N=4, stages 41 and 42).

Coloration: In life, dorsum transparent brown or orange, venter whitish and tail transparent. In fixed specimens, dorsum transparent brown with dark melanophores, venter whitish with melanophores on anterior part and tail transparent with melanophores on dorsal fin and on the posterior third of the ventral fin.

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