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Descriptions of the Tadpoles of *Scinax alter* and *Scinax cuspidatus* (Anura: Hylidae)

ANA C. R. ALVES¹ AND SERGIO P. DE CARVALHO E SILVA, Departamento de Zoologia, Instituto de Biologia, Universidade Federal do Rio de Janeiro, Caixa Postal 68044, 21944-970, Rio de Janeiro, Rio de Janeiro, Brazil

Duellman and Wiens (1992) recognized *Scinax* Wagler, 1830, as the valid name for *Oloolygon* Fitzinger, 1843. They redefined the genus based on the morphology of adults and larvae, osteology, and reproduction. At present, more than 80 species are grouped in this genus, which occurs from Mexico to Argentina (Duellman, 1993). The tadpoles of *Scinax* exhibit a rich diversity of external features. Unfortunately, the larval characteristics of several species in this genus are currently unknown (de Sá et al., 1997).

Scinax alter (Lutz, 1973) and *Scinax cuspidatus* (Lutz, 1925) are similar species that occur in open areas of lowlands and "restingas" (sand-dune vegetation) of Rio de Janeiro State, southeastern Brazil. Herein, their tadpoles are described for the first time.

The specific status of *S. alter* is controversial. Duellman and Wiens (1993) consider this species as a junior synonym of *Scinax ruber* (Laurenti, 1768). However, there are authors who recognize *S. alter* as a valid species, even suggesting that a complex of species could be involved (Carvalho e Silva and Peixoto, 1991; Pomal et al., 1995a,b). None of these authors discussed this problem in detail. We assume that treating *S. alter* as a valid species will cause less confusion at this time, because tadpoles of populations attributed to *S. alter* are different from those attributed to *S. ruber* (Kenny, 1969; Duellman, 1970). This paper is part of a study intended to determine the identity of *S. alter* and *S. ruber*.

We collected adults and tadpoles of *S. alter* and *S. cuspidatus* from Rio de Janeiro State, Brazil. Specimens of *S. alter* were collected from Magé Municipality (22°39'S; 43°02'W), and those of *S. cuspidatus* were collected from Rio de Janeiro Municipality (22°50'S; 43°29'W). We did not find eggs at the collecting sites. Amplexic pairs of the two species were kept in plastic bags for a few hours after they have been collected to obtain eggs. Some tadpoles were reared from these eggs, whereas others were collected in the field. Tadpoles were reared until advanced stages or metamorphosis. Field collected tadpoles were identified by comparisons with those obtained from eggs.

Tadpoles were reared in captivity in plastic boxes

(measurements: 262 × 77 × 147 mm) with about 1.5 liters of water from the collecting sites. Fish food was regularly provided, pH and water temperature were not controlled. Tadpoles were anesthetized in 0.1% chlorotone and stored in 5% formalin. Adults were anesthetized in 0.25% chlorotone, preserved in 10% formalin, and stored in 70% alcohol. Some eggs were preserved and stored in 5% formalin.

All tadpoles were staged according to Gosner (1960). Tadpoles in stages 36–37 were used in the descriptions and measured. Only tadpoles preserved immediately after capture were used in the descriptions. The measurements, terminology, and labial tooth row formula follow Altig and McDiarmid (1999), except interorbital distance which was taken between the inner margins of the eyes. The term "labial arm" follows McDiarmid and Altig (1990). The technique proposed by Carvalho e Silva and Carvalho e Silva (1994) was used for the study of oral morphology. Eggs were measured without capsules. Drawings were made with the aid of a camera lucida attached to a stereo-microscope.

Specimens examined in this study (listed in Appendix 1) are deposited in the Collection of Departamento de Zoologia, Instituto de Biologia, Universidade Federal do Rio de Janeiro (ZUFRRJ) and at the Natural History Museum, University of Kansas (KU).

Scinax alter (B. Lutz, 1973)

Figure 1

Description.—Mean (\pm SD) total length at stage 36–37, 26.5 \pm 0.8 mm ($N = 23$; Table 1). Body ovoid in dorsal view, approximately as wide as high; maximum height located about three-fourths body length in lateral view. Body length 32% of total length. Snout rounded in dorsal view. External nares small, rounded, located dorsally, and visible in lateral view, slightly closer to eyes than to snout. Internarial distance 82% of interorbital distance. Eyes lateral, their diameter about 31% of body height, interorbital distance 59% of body width and 1.8 times greater than eye diameter. Spiracle sinistral, short, slightly protuberant, located slightly beyond half of body, opening directed posteriorly. Vent tube short, dextral, attached to ventral fin. Tail slightly higher than body, gradually tapering to slender and rounded tip; point of maximum height of tail located about one-third tail length. Tail fins similar in height; dorsal fin arched, gradually ascending from posterior third of body. Oral disc anteroventral, about 36% of body width, with single row of marginal papillae extending ventrally and laterally, and with variable number of lateral submarginal papillae. Labial tooth row formula 2(2)/3(1); posterior labium with third tooth row short, prominent and about 53% of second tooth row ($N = 59$). Jaw sheaths strong and finely serrated.

Color in Life.—General color yellowish-brown covered with numerous dark brown spots and some golden and iridescent spots. Body in lat-

¹ Corresponding Author. E-mail: anaalves@uol.com.br