

**CYCLORAMPHUS BORACEIENSIS** (Flattened Waterfall Frog). **CLUTCH ATTENDANCE.** The 25 known species of *Cycloramphus* occur in the coastal Atlantic Forest. Information on reproduction is scarce and is restricted to two species. In both, the eggs are laid outside the water, are large, and are attended by the female (Heyer and Crombie 1979. J. Washington Acad. Sci. 69:17–20) or by the male (Giaretta and Cardoso 1995. Revta Bras. Zool. 12:233–237). On 2 January 2001 (1200 h), at the Cachoeira do Ipiranguinha, (Ubatuba, SP, Brazil; 23°26'S; 45°04'W), we found a clutch of *C. boraceiensis* eggs in a rock crevice near a waterfall. Close (30 cm) to this clutch we found a male hidden under a dead leaf. This male was collected, examined for natural marks, and released at the point of collection. We returned to the site during the night (2030 h) and found that the previously discovered male was sitting beside the clutch (Fig. 1). This male (AAG-UFU 2309, Museu de Biodiversidade do Cerrado, Universidade Federal de Uberlândia) measured 40.9 mm SVL. The clutch contained 43 eggs, and the embryos (10 mm TL) were at stage 22 (Gosner 1960. Herpetologica 16:183–190). Another association between a male *C. boraceiensis* (36.8 mm SVL) and an egg clutch (58 eggs, stage 17 embryos) was observed at the same waterfall on 28 December 1989. This male was in a situation similar to that illustrated in Fig. 1, during the day (0800 h). Male *C. dubius* remain close to their eggs and repel approaching objects. The presence of males of *C. boraceiensis* beside the clutch is suggestive of paternal care in this species, as in *C. dubius*.



FIG. 1. Adult male *Cycloramphus boraceiensis* close to a clutch of eggs in a rock crevice. Note that the eggs are in contact with one another and in a single layer; note also the late stage embryos inside the eggs.

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**CYCLORAMPHUS BORACEIENSIS** (Flattened Waterfall Frog). **DEFENSIVE BEHAVIOR.** The leptodactylid *Cycloramphus boraceiensis* is restricted to the coastal Atlantic Forest of Brazil (Heyer et al. 1990. Arq. Zool. 31[4]:231–410). During field work between January 2000 and April 2002 at Núcleo Picinguaba

(44°50'W; 23°23'S, 10–50 m elev.), Parque Estadual da Serra do Mar, in the municipality of Ubatuba, State of São Paulo, Brazil, we observed bite defensive behavior in *C. boraceiensis*. When disturbed, individuals of this species usually remained motionless with limbs close to the body (death feigning). Although, on 6 occasions we observed individuals biting the hand of one of us when they were hand-captured. This species inhabits wet rock surfaces in forest streams, and due to its concealing coloration the primary defense was crypsis; secondary defense was thanatosis (death feigning) and biting. Bite behavior for the genus *Cycloramphus* was described for *C. dubius* by Giaretta and Cardoso (1995. Revta. Bras. Zool. 12[2]:229–232), and was considered parental care behavior, because individuals were found near clutches. In the present report we have not observed clutches near the individuals of *C. boraceiensis*. One individual of *C. boraceiensis* captured a frog (*Hylodes phyllodes*) used as bait, and another individual was observed preying on a tadpole of *Thoropa miliaris* which inhabits humid rock surfaces. These episodes suggest that *C. boraceiensis* is a voracious predator that may use this biting behavior as a defensive mechanism. Among defensive behaviors, biting is considered one of the ultimate defensive mechanisms (Duellman and Trueb 1986. Biology of Amphibians. McGraw Hill, New York, New York. 670 pp.).

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**GASTROPHRYNE CAROLINENSIS** (Eastern Narrow-Mouthed Toad). **MAXIMUM SIZE.** On 20 June 1992 an adult *Gastrophryne carolinensis* (39 mm SVL) was collected in T36N R18W Sec 1, Dallas County, Missouri, USA, by K. R. Toal and C. Sheil. This specimen (University of Kansas, KU 220524) exceeds the maximum size reported by Conant and Collins (1998. Reptiles and Amphibians of Eastern and Central North America. Third Ed. Expanded. Houghton Mifflin, Boston, Massachusetts. xviii + 616 pp.).

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**HYLA BERTHALUTZAE** (NCN). **OVIPOSITION BEHAVIOR.** *Hyla berthallutzae* is a small treefrog with a distribution in the coastal lowlands from the State of Espírito Santo to São Paulo, and Serra do Mar, São Paulo, Brazil (Frost 1985. Amphibian Species of the World. Allen Press, Inc. and Assoc. Systematics Collections. Lawrence, Kansas. 732 pp.). From 29 reproductive modes