

it has useful implications for future eradication efforts of *B. marinus* in the Fiji Islands.

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PROCERATOPHRYS MELANOPOGON (Black-bearded Horned Leaf Toad). **DEFENSIVE BEHAVIOR.** *Proceratophrys melanopogon* is a small to medium-sized cycloramphid anuran that belongs to the *Proceratophrys appendiculata* complex (Prado and Pombal 2008. Arq. Zool. 39:1–85). Species within this complex are characterized by the presence of palpebral appendages and cryptic coloration resembling fallen leaves (Prado and Pombal 2008, *op. cit.*; Toledo and Haddad 2009. Int. J. Zool. 2009:1–12). *Proceratophrys melanopogon* mainly inhabits leaf litter on the forest floor in Atlantic Rainforest areas of southeastern Brazil (Izecksohn et al. 1998. Rev. Univ. Rural, Sér. Ciênc. Vida 20:37–54; Prado and Pombal 2008, *op. cit.*).

On 4 Dec 2009 at 1430 h, we observed defensive behavior displayed by *P. melanopogon* upon capture. After grasped with the hand, the specimen flattened its body and stretched out its legs, keeping this position until being released on the ground (Fig. 1). The observation took place near a permanent pond in Serra do Brigadeiro State Park, an area of montane rainforest in municipality of Araponga, state of Minas Gerais, Brazil (20.7219°S, 42.4786°W, elev. 1320 m, SAD1969).

This defensive behavior has been called stiff-legged (Sazima 1978. Biotropica 10:158) and was reported for other horned leaf toads, including *P. appendiculata* (Sazima 1978, *op. cit.*) and *P. boiei* (Toledo and Zina 2004. Herpetol. Rev. 35:375). Similar behaviors for other leaf-litter anurans (e.g., *Dendrophryniscus leucomystax*, *D. brevipollicatus*, *Scythrophrys sawayae*, *Stereocyclops parkeri*) has been regarded as behavioral convergence given that leaf-litter inhabiting species are subject to similar predation pressures (Bertolucci et al. 2007. Alytes 25:1–2; Garcia 1999. Herpetol. Rev. 30:224; Sazima 1978, *op. cit.*; Toledo and Zina 2004, *op. cit.*).



FIG. 1. *Proceratophrys melanopogon* (25.9 mm SVL) from Minas Gerais, Brazil displaying stiff-legged defensive behavior.

The adaptive value of this behavior might be in enhancing crypsis among fallen leaves, confusing visually oriented predators (Sazima 1978, *op. cit.*; Toledo and Zina 2004, *op. cit.*), and/or inhibiting ingestion by predators (Angulo and Funk 2006. Herpetol. Rev. 37:203–204; Azevedo-Ramos 1995. Rev. Bras. Biol. 55:45–47).

We thank the Instituto Estadual de Florestas (IEF) and Universidade Federal de Viçosa for logistic support, and Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) for fellowships granted to MRM.

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RHINELLA MARGARITIFERA (NCN). **PARASITES.** The *Rhinella margaritifera* complex is widely distributed in Latin America, occurring throughout the Amazon Basin and parts of Panama (IUCN, Conservation International, and NatureServe 2004. Global Amphibian Assessment. <www.globalamphibians.org>. Accessed 03 Dec 2004). Although amphibians are known to be parasitized by larvae of numerous fly species, this is a poorly studied area of amphibian biology. In Europe, North America, and India, amphibians are commonly attacked by larvae of several blow flies (Calliphoridae) and flesh flies (Sarcophagidae; Bolek and Coggins 2002. J. Wildl. Dis. 38:598–603; Dasgupta 1967. Parasitology 52:63–66; James and Maslim 1947. J. Washington Acad. Sci. 37:366–368; Strijbosch 1980. Oecologia 45:285–286), and in Australia amphibians are infected with larvae of grass flies (Chloropidae; Schell and Burgin 2001. J. Parasitol. 87:1215–1216).

In Neotropical regions, cases of flesh fly parasitism in anurans have been recorded from *Atelopus* spp. in Costa Rica (Crump and Pounds 1985. Parasitology 75:588–591), *R. granulosa* in Venezuela (Lopes and Vogelsang 1953. An. Acad. Brasil. Ciências 25:139–143), *Rana catesbeiana* in Brazil (Souza et al. 1990. Mem. Inst. Oswaldo Cruz 84:517–518), *Eleutherodactylus* sp. in Panama (Dodge 1968. Ann. Entomol. Soc. America 61:421–450), *Proceratophrys* in Brazil (Lopes 1981. Rev. Brasil. Entomol. 41:149–152), and *Epipedobates* spp. (Hagman et al. 2005. Phyllomedusa 4:60–73). Here, we offer a first report of parasitism of *R. margaritifera* by flesh flies.

On 16 August 2007 at 1000 h, we found an adult *R. margaritifera* (42.9 mm SVL, 6 g) in Floresta Nacional de Caxiuana, near the municipality of Portel (1.96000°S, 51.6152778°W; elev. 20 m), State of Pará, Brazil. The specimen was hidden within the dry leaves and twigs of *terra firme* forest ground. During preservation we observed 21 flesh fly larvae leaving the body of *R. margaritifera* through the cloaca. The larvae were preserved in 70% alcohol.

We deposited the *R. margaritifera* and flesh fly larvae in the herpetological (MPEG 21938) and entomological collections, respectively, of the Museu Paraense Emílio Goeldi, Belém, State of Pará, Brazil. Marinus S. Hoogmoed verified identification of the frog.