



FIG. 1. Interspecific amplexus between a male *Euphlyctis cyanophlyctis* and a *Duttaphrynus stomaticus* (unknown sex).

Both *E. cyanophlyctis* and *D. stomaticus* are widely distributed in India and are mostly sympatric (Frost 2023. Amphibian Species of the World: An Online Reference. Version 6.1; amphibiansoftheworld.amnh.org; 30 June 2023).

On 25 June 2023, at 2157 h during a night survey inside the Indira Gandhi National Open University campus, New Delhi, India (28.49632°N, 77.20321°E; WGS 84; 277 m elev.) we observed a male *E. cyanophlyctis* in axillary amplexus with a *D. stomaticus* near an artificial pond. The amplexus lasted ca. 6 minutes. During the amplexus, no release calls were emitted, and no resistance was observed from the *D. stomaticus*. Inside the pond, there were many actively calling *E. cyanophlyctis* and *D. stomaticus* males. We also observed an *E. cyanophlyctis* pair in amplexus. This was the only observation of interspecific amplexus at the site. Both *E. cyanophlyctis* and *D. stomaticus* have prolonged breeding strategies, and the Operational Sex Ratio (OSR) in the family Bufonidae has been reported to be skewed in favor of males (Marco and Lizana 2002. Ethol. Ecol. Evol. 14:1–8), possibly increasing the chance of interspecific amplexus.

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HADDADUS BINOTATUS (Clay Robber Frog). **CANNIBALISM.** Anurans are known as generalist predators that feed mostly on arthropods, though other types of prey may also be consumed, including small vertebrates (Solé and Rödder 2009. In Dodd [ed.], Amphibian Ecology and Conservation: A Handbook of Techniques, pp. 167–184. Oxford University Press, Oxford, UK). Considering the latter, other anurans are among the most common prey (Toledo et al. 2007. J. Zool. 271:170–177; Measey et al. 2015. PeerJ 3:e1204). In a recent literature review of frog-on-frog predation (anurophagy) among post-metamorphic anurans, Caicedo-Martínez et al. (2021. Food Webs 27:e00191) compiled 161 records involving 59 species, of which 24 (40.6%) also preyed on conspecifics. This suggests that cannibalism is not uncommon among anurans, at least among those that may engage in anurophagy.

Haddadus binotatus (Brachycephaloidea, Craugastoridae) is a direct developing leaf litter frog endemic to the Brazilian Atlantic rainforest, where it is distributed from the states of Bahia

to Rio Grande do Sul (Haddad et al. 2013. Guia dos Anfíbios da Mata Atlântica: Diversidade e Biologia. Anolis Books, São Paulo, Brazil. 544 pp.). With a maximum SVL exceeding 60 mm in females (Heyer et al. 1990. Arq. Zool., São Paulo 31:231–410; Hartmann et al. 2010. Iheringia, Sér. Zool. 100:207–215), *H. binotatus* is usually one of the largest species in forest floor leaf litter frog assemblages of Atlantic Forest areas (e.g., Heyer et al. 1990, *op. cit.*; Almeida-Gomes et al. 2008. An. Acad. Bras. Ci. 80:291–300; Hartmann et al. 2010, *op. cit.*; Rocha et al. 2013. North-Western J. Zool. 9:151–156). Given its relatively large body size and the generalist and opportunistic feeding habits of anurans in general, and brachycephaloids in particular (e.g., Toft 1981. J. Herpetol. 15:139–144; Whitfield and Donnelly 2006. J. Trop. Ecol. 22:409–417; Dietl et al. 2009. J. Nat. Hist. 43:1473–1483), it is expected that *H. binotatus* may occasionally prey on smaller frogs with which it shares its habitat. Nevertheless, dietary studies have not reported consumption of anurans or any other small vertebrates by *H. binotatus* so far (Rebouças et al. 2013. North-West. J. Zool. 9:293–299; Coco et al. 2014. An. Acad. Bras. Ci. 86:239–249). Here, we present a record of cannibalism in *H. binotatus* from an Atlantic Forest fragment in southeastern Brazil.

During a dietary study of a population of *H. binotatus* from the region of Monte Verde (21.48686°S, 41.87272°W; WGS 84), municipality of Cambuci, state of Rio de Janeiro, Brazil, we dissected 39 individuals for analysis of their stomach contents. The frogs had been collected in September 2006 during an inventory of the local anuran fauna (see Almeida-Gomes et al. 2010. Braz. J. Biol. 70:871–877). One female (SVL = 35.3 mm) collected on 11 September 2006 contained the remains of a smaller conspecific in its stomach (and no other prey items). The femur length of the frog consumed was equivalent to ca. 43% that of the one that preyed on it, which suggests that the former may have measured ca. 15 mm in SVL. The larger frog was deposited, along with its stomach contents, in the amphibian collection of the Museu Nacional, Rio de Janeiro (voucher number: MNRJ 94464). To our knowledge, this is the first record of cannibalism for *H. binotatus*, as well as the first record of vertebrate consumption by this species.

Body size is considered one of the main predictors of anurophagy in frogs (Measey et al. 2015, *op. cit.*). Although females of *H. binotatus* reach relatively large sizes compared to most other Atlantic Forest leaf litter frogs, the individual reported here consuming a conspecific was well below the maximum size attained by the species (and apparently still immature, judging by the state of her gonads). Nevertheless, even juveniles of large-bodied anuran species may prey on smaller anurans, and sometimes in high proportions (Measey et al. 2015, *op. cit.*). Local population density may also influence the occurrence of cannibalism in amphibians (Polis and Myers 1985. J. Herpetol. 19:99–107). The anuran assemblage inhabiting the forest floor leaf litter at Monte Verde Hill is very species-poor, with *H. binotatus* being the most abundant species by far and occurring at a relatively high density (Almeida-Gomes et al. 2010, *op. cit.*). Thus, it is not surprising that the only frog found in the stomach of a *H. binotatus* from our sample was a conspecific.

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