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Necrophiliac and interspecific amplexus in *Dendropsophus columbianus* (Anura: Hylidae) in the Central Cordillera of Colombia

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Anurans are known to use vocal, visual and chemical signals for species and sex recognition (Wells, 2007). However, it has been shown that some species have explosive reproduction in lentic water bodies or after heavy rain, there is no such discrimination, generating unusual intra and interspecific amplexus, necrophiliac or with inanimate objects (Brown, 1977; Wells, 2007; Gröning and Hochkirch, 2008, Alvarez, 2011; Gómez-Hoyos et al., 2012; Izzo et al, 2012; Simović, 2014).

Cases of interspecific amplexus with living and dead individuals has been reported in several species (Ross et al., 1994; Woodhead et al., 2006; Betasso et al., 2008; Ayres, 2010; Streicher et al., 2010; Alvarez, 2011; Bezerra and Cascon, 2011; Carvalho and Nascimento, 2012; Medina, 2013; Moldowan et al., 2013). In the first case, its functionality is interpreted as the benefit the male obtains to be the first in finding an "available" female regardless the cost of this type of error (Sinovas, 2009, Costa et al., 2010). In the second case, such a function has not been reported. Here, we report the first case of interspecific and necrophiliac amplexus of *Dendropsophus columbianus* (Boettger, 1892).

Dendropsophus columbianus is a species distributed widely between 950-2300 meters along the western slope of the Central Colombian Cordillera and the eastern slope of the Western Colombian Cordillera species, it inhabits ponds in open areas, typically grassland and forest edges (Castro-Herrera et al., 2007) and often sympatric with *Pristimantis* frog genus. In ponds, *D. columbianus* maintains constant singing night activity which extends into the early morning hours (Gómez-Hoyos et al., 2012). In the reproductive aspect, unusual behaviour of intraspecific amplexus comprising multiple males on a living female and a male on a dead female has been reported for this species (Gómez-Hoyos et al., 2012).

On March 7, 2013, at 10:30 h, two pairs composed of male *D. columbianus* amplexusing *Pristimantis* dead females (Figure 1A, B) were found in the University of Santa Rosa de Cabal (UNISARC) campus municipality of Santa Rosa de Cabal, Department of Risaralda, Colombia (04 ° 52'N, 75 ° 37'W, 1840 m). Although the observation was recorded for these two couples, only the data for one of them is documented, as when the other male felt the disturbance it immediately left the amplexed female. The pair in amplexus, a male *D. columbianus* (26.7 mm SVL) and a juvenile female *Pristimantis* sp. (SVL 24.7) was found in a pond about 2 m deep with 30 cm of standing water rain. In addition, several clutches were found in the pond and males still in singing activity, indicating that the night before there was no particularly intensive *D. columbianus* reproductive activity. When the couple was captured, the male remained in amplexus position unaffected by the disturbance.

The necrophiliac amplexus with conspecifics is in some cases conceived as a functional strategy (Izzo et al., 2012). However, interspecific necrophilia is only known as an aberrant behaviour as the result of a strong inter and intra-sexual tension (Shuster and Arnold, 2007). This way, the amplexus with dead individuals and unanimated objects represents a negative effect in

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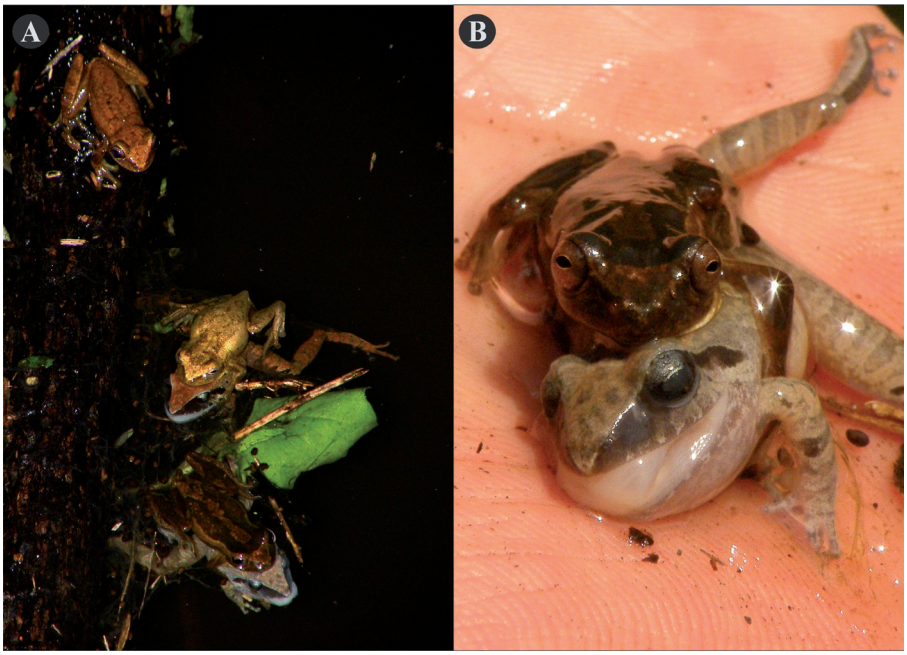

Figure 1. Interspecific necrophilia in *Dendropsophus columbianus* (A) and amplexus in male after captured (B).

the population thus reducing the conspecific males and females reproductive success (Lehner, 1987; Garwood, 2010; Alvarez, 2011; Simović, 2014).

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