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Albinism in two Amazonian frogs: *Elachistocleis carvalhoi* (Microhylidae) and *Lithobates palmipes* (Ranidae)

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Complete or partial lack of skin and eye pigmentation, mostly considered as albinism, but in some cases referred as leucism, in anurans have been reported in tadpoles (e.g., Sazima, 1974; Maneyro and Achaval, 2004; Rodrigues and Oliveira, 2004; Mitchell and McGranaghan, 2005; Johnston, 2006; McCreary, 2008; Sanabria & Laspiur, 2010), juveniles (e.g., Sazima, 1974; Norman, 2002), and adults (e.g., Federighi, 1938; Smallcombe, 1949; Benavides et al., 2000; Browder, 2005; Brannon, 2006; Wojnowski, Malonza and Ng'Asike, 2010).

During a field expedition to the municipality of Altamira, state of Pará, Northern Brazil, an adult *Elachistocleis carvalhoi* Caramaschi, 2010 (Microhylidae) lacking body and eye pigmentation have been captured. However, the belly and the femoral stripes were yellow indicating the likely presence of xanthophores (Fig 1 A-B).

In another site, municipality of Paranaíta, state of Mato Grosso, Northern Brazil, we captured an adult *Lithobates palmipes* (Spix, 1824) (Ranidae) lacking body pigmentation, although the eyes presented normal coloration (Fig 1 C-D). Both individuals are deposited in Museu de Zoologia "prof. Adão José Cardoso", Unicamp, Campinas, Brazil (ZUEC 16041 and ZUEC 7418, respectively).

Albinism in anurans may occur due to a recessive gene (*alb*) in the homozygous condition (see Browder 2005), and may be a deleterious trait, as it can be correlated to tadpole scoliosis (Norman, 2002; Browder, 2005), increase of time spent for development and metamorphosis (Sazima, 1974), and death (Browder, 2005). In spite of this, both individuals (*E. carvalhoi* and *L. palmipes*) survived up to the reproductive maturation and look healthy. Sazima and Di-Bernardo (1991) suggested that albinism should be more frequent in nocturnal (as in *L. palmipes* and *E. carvalhoi*) and cryptic (e.g., fossorial, as in *E. carvalhoi*) species, as they are theoretically less dependent on camouflage to survive. These predictions may be hard to test for anurans, as the great majority of the species are nocturnal.

The observation of albinism in the wild remains a rare event (estimates suggest orders of 1:10,000 to 1:30,000 in vertebrates: Bechtel, 1995), and the reports are scattered in the literature. Short contributions reporting on albinism are therefore encouraged in order to improve our knowledge on the dynamics of albinism in natural systems.

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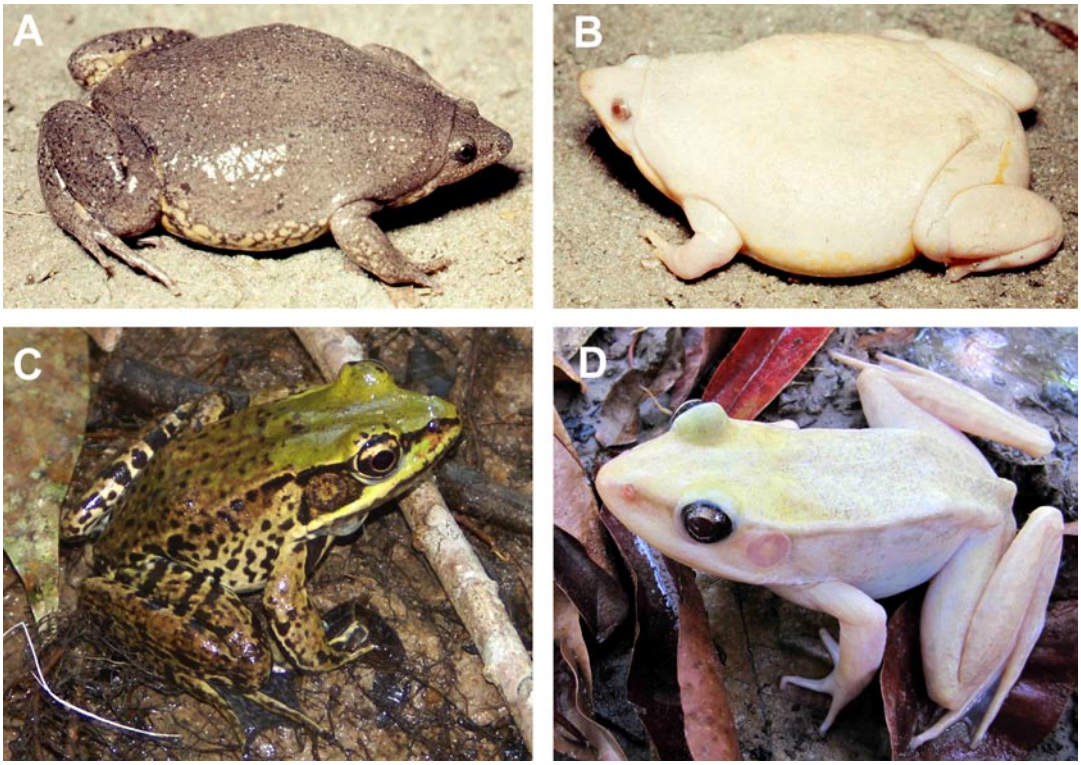

Figure 1. Normal (A) and albino (B) adults of *Elachistocleis carvalhoi* (Microhylidae), and normal (C) and albino (D) adults of *Lithobates palmipes* (Ranidae). Pictures by A. J. Cardoso (A and B), L. F. Toledo (C), and O. G. S. Araújo (D).

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