

## A tadpole of *Trachycephalus venulosus* (Anura: Hylidae) as prey for a fishing spider (Araneae: Pisauridae) in the Bolivian Chiquitano Dry Forest

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Regarding predation of amphibians by invertebrates, the majority of reports are given for arachnids (Toledo, 2005; Barej et al., 2009). Especially in the Neotropical region predaceous spiders from several families (Pisauridae, Ctenidae, Lycosidae, Sparassidae and Theraphosidae) are known to feed on anurans (e.g. Menin et al., 2005; Jansen and Schulze, 2008; Barbo et al., 2009; for a review see Toledo 2005). As spiders are opportunistic predators they prey on small hylids or, in the case of the theraphosid spiders, upon sub-adult frogs like *Phyllomedusa vaillanti* (Menin et al., 2005). The most common tadpole predators are dragonfly larvae (Odonata) and water bugs of the family Belostomatidae (e.g.: Sazima and Eterovick, 2000; Kwet, 2001; Toledo, 2003; Eterovick and Barata, 2006; Figueiredo-de-Andrade et al., 2010). Even though the fishing spiders of the genus *Dolomedes* are known for feeding on anurans and their larvae (Zimmerman and Spence, 1989; Kwet, 2001; Menin et al., 2005), we herein report for the first time an observation of one of those spiders feeding on a tadpole of *Trachycephalus venulosus*.

On 17<sup>th</sup> January 2010 at 19:57 h we found a fishing spider *Dolomedes* sp. in a flooded area of a Chiquitano Dry Forest (Research Station Chiquitos, Santa Cruz, Ñuflo de Chavez, San Sebastián; S 16°21.578', W 62°00.003', altitude: about 500 m a.s.l). The spider was observed motionless on the water surface among some dead leaves and branches, observing an approaching tadpole school of *Trachycephalus venulosus* with a diameter of about 70 cm. The spider then jumped approximately 10 cm to a spot of open water and caught one of the

tadpoles near the water surface which was away from the group. The spider landed the tadpole on a green leaf in a height of about 5 cm above the water surface (Fig. 1) by sinking its chelicerae into the tadpoles' body. The tadpole tried to escape and for about 30 seconds heart activity could be observed. Then it was motionless and probably dead. It could not be determined whether the spider finished feeding or whether it was disturbed by our headlamps, but after two minutes of feeding it left the tadpole and entered the water where it escaped and could not be caught.

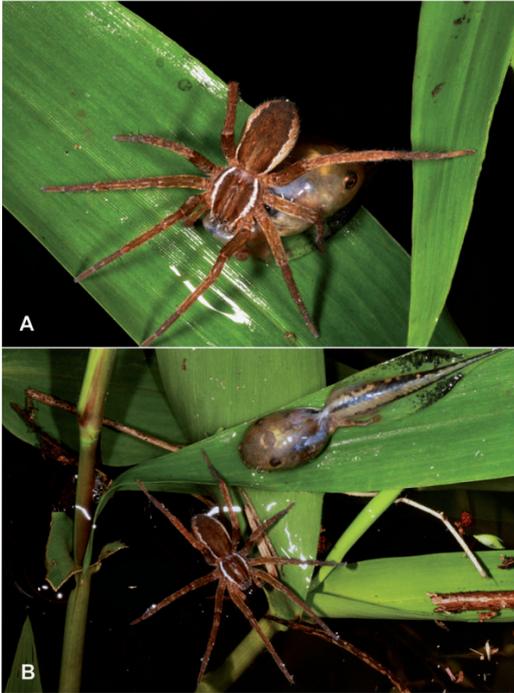
The attacked tadpole was identified by collecting 12 additional specimens out of the same tadpole school. Vouchers are deposited in the Museo Noel Kempff Mercado (MNKA), Santa Cruz, Bolivia (Lot MNKA 9713, n = 5 and Lot MNKA 9714, n = 7). Tooth row formula of the individuals was 3-4(1,2)/6(1) and Gosner stages varied from 32 to 38. Body length had a mean of  $41.2 \pm 4.51$  mm, ranging from 32.7 to 46.3 mm. It is the only species of *Trachycephalus* in the study site.

During the same night we noticed at least five other spiders of *Dolomedes* sp. in that site close to a second school of *Trachycephalus venulosus* tadpoles. Furthermore, we observed another school of probably leptodactylid tadpoles in the same pond close to the schools of *T. venulosus*. These observations are an example of the coexistence of tadpole schools and fishing spiders, and may indicate that schooling behaviour is a defensive strategy of tadpoles as stated by various authors (for a review see Wells 2007). Unfortunately, due to lack of detailed data, we cannot infer about predator-prey size relationships as observed by Toledo et al. (2007). However, we suggest that fishing spiders play an important role as predators for tadpoles in this region. Further studies on predator-prey relationships could test this hypothesis and would help the understanding of predator-prey ecology in this region.

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**Figure 1.** Predation of a *Trachycephalus venulosus* tadpole by a fishing spider *Dolomedes* sp. in a flooded area of Bolivian Chiquitano Dry Forest. A. *Dolomedes* sp. feeding on the tadpole. B. Probably dead *Trachycephalus venulosus* tadpole with the escaping spider.

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