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Predation on the Cuban Tree-frog *Osteopilus septentrionalis* (Anura: Hylidae) by the Eastern ratsnake *Pantherophis alleghaniensis* (Serpentes: Colubridae)

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Trophic resources are defined by any item consumed by an organism (Ricklefs and Relyea, 2016). Data on the exploration of these resources help ecologists to understand how interspecific relations shape the community dynamic and structure food webs and energy flux in ecosystems (Werner and Peacor, 2003; Falico et al., 2012; Linares et al., 2016). Knowledge on trophic relations in pairs of exotic invasive and native species is particularly relevant to conservation, because invasive species are considered the second main threat to native biodiversity worldwide after habitat destruction (Vitousek et al., 1996; Salinas, 2006).

Exotic invasive species are the most serious threat of the native ecosystems in North America (Peterson et al., 2003). Florida State (southern United States) owns the greatest diversity of exotic invasive anuran species in the World (Krysko et al., 2011). Among them the Cuban Tree-frog *Osteopilus septentrionalis* (Duméril & Bibron, 1841) (Anura, Hylidae), which had been accidently introduced in the state by a Cuban cargo (Heinicke et al., 2011), was recorded for the first time in 1931 (Barbour, 1931). Thus, *O. septentrionalis* is one of the first exotic species to successfully colonize North America. Nowadays the species is recorded throughout Florida State, but is limited by climate conditions in the state's northeast limit (Krysko et al., 2005; Glorioso et al., 2010). *Osteopilus septentrionalis* belongs to the family Hylidae and shares the genus with seven other species: *O. crucialis* (Harlan, 1826), *O. dominicensis* (Tschudi, 1838), *O. marianae* (Dunn, 1926), *O. ocellatus* (Linnaeus, 1758), *O. pulchrilineatus* (Cope, 1870), *O. vastus* (Cope, 1871) and *O. wilderi* (Dunn, 1925). Cuban tree-frogs feed on a wide range of food sources ranging from invertebrates to small vertebrates including other frogs (Maskell et al., 2003; Owen, 2005; Glorioso et al., 2010). Therefore, they may diminish the survival of native anuran species (Wyat and Foris, 2004) by predation or even by interspecific competition by overlapping feeding habits (Glorioso et al., 2010).

On the other hand, the Eastern ratsnake *Pantherophis alleghaniensis* (Holbrook, 1836) (Squamata, Colubridae) is native to the United States, ranging from east of the Apalachicola River in Florida, east of the Chattohoochee River in Georgia, east of the Appalachian Mountains, north to Ohio, Southeast New York, West Vermont, Pennsylvania, Maryland, South Carolina, North Carolina, and Georgia south to the Florida Keys (Burbrink, 2001). Eastern ratsnakes are mostly active during the day (Ernst and Ernst, 2003) and they are excellent climbers, found at heights of up to 15 m (Stickel et al., 1980; Ernst and Ernst, 2003). The species reaches sexual maturity at an age of four, when males may engage in combats for females, whereas they lack territorial defence behaviour (Stickel et al., 1980; Ernst and Ernst, 2003). Its diet consists of small mammals and birds, and occasionally of amphibians and eggs (Harding, 1997; Ernst and Ernst, 2003, DeGregorio et al., 2014). Some amphibians and reptiles have already

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been recorded in the diet of juvenile Eastern ratsnakes (Fitch, 1963, Jackson, 1974).

Here, we describe for the first time the predation of *O. septentrionalis* by *P. alleghaniensis*. On the 3rd July 2016 at 14:30 h, we observed an individual of *O. septentrionalis* being predated by a *P. alleghaniensis* in a house roof, in the surroundings of Hogtown Creek Headwaters Nature Park (29º41'45"N 82º20'37.3"W), Gainesville city, Florida State (Figure 1). After the attack, the snake pulled the anuran into the house roof and ingested it. The area is composed by a periurban patch, with the vegetation characterized by a mosaic of pine flatwoods, hardwood hammocks and cypress domes.

Although, descriptions of predation events directly contribute to the knowledge of a species' natural history, they are rare, probably due to observation difficulties of these animals' activities (Sazima, 1989; Marques and Sazima, 1997; Pombal, 2007). Since the occurrence of *O. septentrionalis* negatively affects the distribution of Florida's native frog species (Glorioso et al., 2010), predation events as the one recorded here may help to control this invasive species population, reducing its abundance and restoring the native species community.

Figure 1. Individual of *Pantherophis alleghaniensis* predating on *Osteopilus septentrionalis*, in a house roof, Gainesville, Florida, USA.

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