Considerations on the reproduction of *Philodryas olfersii* (Lichtenstein, 1823), in Roraima, Brazil

The genus *Philodryas* currently comprises 23 species widely distributed in South America’s (Uetz 2017) arid and tropical regions (Thomas 1976; Marques et al. 2001; Giraudo 2001; Uetz 2017). *Philodryas olfersii* (Lichtenstein, 1823), Lichtenstein’s Green Racer or boiubu in indigenous languages, has the widest distribution among the members of this genus. It occurs in various ecoregions throughout Brazil, Colom-
bria, French Guiana, Guyana and Venezuela (Uetz 2017) and is characterized by mainly semi-arboreal habits (Vanzolini et al. 1980; De Lema 1994; França 2006; Bernarde 2012, 2014). Nonetheless, the knowledge about its reproductive biology is insufficient. The reproductive cycle was reported to last around nine months, with oviposition in captivity, from September to December, and clutch size between two and 16 eggs (Fowler et al. 1998). According to the available information, vitellogenic follicles were identified between September and January, and a female contained seven eggs in November (Barbo et al. 2011). Dourado de Mesquita (2013) recorded females with vitellogenic follicles throughout the year, however, the presence of eggs and oviposition was restricted to the period from November to January. Likewise, mating behaviors were recorded in June in Northeast Brazil (Ceará), suggesting its reproduction occurring throughout the year in this area (Dourado de Mesquita et al. 2012).

On June 6, 2017, the authors collected an adult female P. olfersii (snout-vent-length 724 mm, tail length 263 mm) in the Brazilian state of Roraima, municipality of Cantá, highway BR–401, km 16 (2.489217° N, 60.579700° W). On the following day at 15:25 h, the snake laid seven eggs in captivity. The eggs were kept in a plastic box filled with vermiculite at temperatures of 25 – 32 °C (average 27.5 °C) and humidified daily. After 64 days, the offspring began to hatch, which took up to two days per individual. The small litter size of seven (average snout-vent-length 250 mm) can be related to the small size of the female.

The present observations from Roraima regarding the dates of oviposition, in the beginning of June and eclosion in the beginning of August at the end of the rainy season, differ from those reported by Fowler et al. (1998). According to Barbo-Sa (1997) in the State of Roraima the seasonality is represented by a dry season and a rainy season occurring between May and the end of August. The new data could suggest that in Roraima the reproductive cycle of P. olfersii is not subjected to seasonality, since neonates and juveniles are found practically throughout the year (authors personal observations). This phenomenon is likely due to the largely constant tropical rain and temperature conditions prevailing, which favor a wide variety and availability of food (Dixon & Soini 1976; Duellman 1978).

The orchid Myrmecophila tibicinis as a refuge for Scinax staufferi (C OPE, 1865), on Isla de Utila, Honduras

Scinax staufferi (C OPE, 1865), Staufer’s Long-nosed Treefrog, is widely distributed from Mexico to costa Rica. On the Honduran Isla de Utila it was detected in 2005 (MccRANIE et al. 2005). This frog species is classified as Least concern by the IUcN Red List of Threatened Species, yet is noted to have severely fragmented populations throughout its range (SANTOS-B AR-B RERA et al. 2010). On Utila, the species has been observed within various habitat types, including broad-leaf forest, neo-tropical savanna, freshwater swamp forest, grassland and some disturbed vegetated habitats alongside temporary freshwater bodies. More than two-thirds of Utila’s surface is covered by swamp forests and mangroves, predominantly consisting of vegetation tolerant to the influence of brackish or salt water (FIcKERT & G RUNINGER 2010). Due to the relative lack of permanent freshwater on the island, it previously remained unknown where S. staufferi resides during the dry season. Presumably, the reproductive cycle of this species on Utila is limited to the one distinct rainy season, which lasts from approximately October to january (PASAcHNIK et al. 2012).

The present note documents the first observations of S. staufferi utilizing the epiphytic orchid Myrmecophila tibicinis ROLFE, 1917, as refuge sites. In central America, it is common for many amphibians to associate with epiphytic Bromeliads (DUNN 1937). However, to the best of the authors’ knowledge there have been no previously published observations associating anurans to microhabitats created by epiphytic Orchidaceae.

On February 27, 2018, at 17:25 h, the authors retrieved four large orchids that were felled from a mature mango tree (Man gifera sp.). The orchids (M. tibicinis) had previously grown on multiple large limbs ca. 5 – 8 m above ground, yet were felled owing to expansion and development of the road to Pumpkin Hill, which was previously reported to have negative impacts on the native biodiversity (BROWN et al. 2017). Whilst collecting the orchids with the intention to reattach them to suitable sites, the authors encountered at least eight individuals of S. staufferi (Fig 1.) emerging simultaneously from within the distinct tubular pseudobulbs of M. tibicinis. Five of these individuals were successfully captured to prevent further disruption whilst moving the orchids, also providing the opportunity to measure and gain basic morphological information on S. staufferi from Isla de Utila.

The Snout-vent-length of the captured individuals ranged from 14-17 mm, whilst the body mass was between 0.3 – 0.5 g, consistent with reports of mainland populations (KöHLER 2011). At ca. 20:00 h, the individuals were released back on the orchids, which had been reattached to trees at the Kanahau Utila Research and conservation Facility (16.119383° N, 86.884989° W, WGS84 datum). Opportunistic weekly surveys of the relocation site were conducted from March until November 2018. These regular visits consistently found individuals of S. staufferi active at night on the leaves of orchids until late September.

Myrmecophila tibicinis is an epiphytic species which occurs in low nutrient and open canopy habitats distributed from southern Mexico through most of central America (DRESSLER 1981). On Utila, this orchid is relatively common and well distributed throughout broad-leaf, mangrove and swamp forest habitats (pers. observ.).