



# Gliding Leaf Frogs (*Agalychnis spurrelli*): Interspecific Amplexus in Sierpe de Osa, Puntarenas, Costa Rica

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Gliding Leaf Frogs (*Agalychnis spurrelli*) occur in isolated populations in southeastern and southwestern Costa Rica at elevations from sea level to 750 m asl (Leenders 2016). From July through October, we have observed these canopy-dwelling frogs descend to breed in spectacular aggregations on vegetation above an ephemeral lagoon in Sierpe de Osa. Under ideal (wet) conditions, these explosive breeding events can occur 2–4 times in a month. We have documented 13 anuran species other than *A. spurrelli* that reproduce in this lagoon.

Under similar conditions at a pond in Colombia, Vargas-S. et al. (2020) recorded relatively few female Gliding Leaf Frogs (only about 10% of frogs present), so males aggressively competed for females and even tried to separate pairs in amplexus. Situations in which females are relatively rare and available for only short periods and males occur at higher densities than females, even from the start of the breeding

season (Chandler and Zamudio 2008), could contribute to frequency of interspecific amplexus, a form of reproductive interference (Groffen et al. 2019), when multiple species are present.

Frogs generally communicate and recognize conspecifics using visual, chemical, or acoustic signals (Bowcock et al. 2008; Belanger and Corkum 2009). Within a reproductive context, the most common acoustic signal is the advertisement call (Vitt and Caldwell 2013). These signals, however, are not always effective (e.g., Haddad et al. 1990, 1994). Interspecific amplexus can occur in the absence of niche segregation between sympatric species (e.g., Höbel 2005; Streicher et al. 2010), and short time periods combined with overlapping breeding habitats increase pressure to breed (Beranek 2017), which can result in less accurate mate discrimination. Herein we document three instances of interspecific amplexus



**Fig. 1.** A male Gliding Leaf Frog (*Agalychnis spurrelli*) in amplexus with a female Milky Treefrog (*Trachycephalus vermiculatus*) near an ephemeral lagoon in Sierpe de Osa, Puntarenas, Costa Rica. Photographs by Raby Nuñez Escalante.



**Fig. 2.** A male Gliding Leaf Frog (*Agalychnis spurrelli*) in amplexus with a female Long-snouted Treefrog (*Scinax boulengerii*) near an ephemeral lagoon in Sierpe de Osa, Puntarenas, Costa Rica. Photograph by Steven Gallo Gutiérrez.

involving male Gliding Leaf Frogs (*Agalychnis spurrelli*) at the aforementioned lagoon in Sierpe de Osa.

At 2052 h on 25 July 2017, RNE observed a male Gliding Leaf Frog in amplexus with a female Milky Treefrog (*Trachycephalus vermiculatus*) 8 m above the ground on a small tree near the lagoon. The following night (26 July 2017), he encountered another identical pair in amplexus (Fig. 1). At 0450 h on 21 July 2020, SGG found a male Gliding Leaf Frog in amplexus with a female Long-snouted Treefrog (*Scinax boulengerii*) on a Biscoyol Palm (*Bactris major*) (Fig. 2). At 2056 h on 25 August 2020, JMG found a male Gliding Leaf Frog in amplexus with a female Rosenberg’s Gladiator Treefrog (*Boana rosenbergi*) on low vegetation about 1.20 m above the ground next to the trail that leads to the lagoon (Fig. 3). In none of the three instances did we hear any release or distress calls. To the

best of our knowledge these are the first documented incidents of interspecific amplexus involving Gliding Leaf Frogs.

**Literature Cited**

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**Fig. 3.** A male Gliding Leaf Frog (*Agalychnis spurrelli*) in amplexus with a female Rosenberg’s Gladiator Treefrog (*Boana rosenbergi*) near an ephemeral lagoon in Sierpe de Osa, Puntarenas, Costa Rica. Photographs by Raby Nuñez Escalante.