Flectonotus fitzgeraldi (Dwarf Marsupial Frog)

Family: Hemiphractidae (Marsupial Frogs)
Order: Anura (Frogs and Toads)
Class: Amphibia (Amphibians)

Fig. 1. Dwarf marsupial frog, *Flectonotus fitzgeraldi*.

[http://www.arkive.org/mount-tucuche-tree-frog/flectonotus-fitzgeraldi/image-G82244.html, downloaded 7 April 2015]

TRAITS. A small frog, its main distinguishing feature is the presence of a brood pouch along the dorsum (back) of the female which facilitates the brooding of its fertilized eggs until it develops and matures into tadpoles (Folly et al., 2014) (Fig. 1). The dorsal skin is smooth and there is an absence of diagonal markings along the scapular (shoulder) region. The snout is rounded, the nasals are small, slender and widely separated whilst the snout vent length varies between 19-24mm (Amphibiaweb, 2012).

DISTRIBUTION. *F. fitzgeraldi* can be located in Trinidad, Tobago and the Peninsula de Paria, Venezuela. In Trinidad it is most prevalent in the northern and central range whereas it is widely distributed on Tobago and also located in the mountains of the Peninsula de Paria (Fig. 2). It has an altitudinal range of sea level up to approximately 1000m (Amphibiaweb, 2012).

HABITAT AND ACTIVITY. *F. fitzgeraldi* can be classified as nocturnal, arboreal animals and usually inhabits the bushes and leaf litter of montane humid forest. They can be generally found in the leaf axils of bromeliads that are near a body of water.

FOOD AND FEEDING. *Flectonotus fitzeraldi* adults are carnivorous and forage the surrounding bushes for small invertebrates. The tadpoles on the other hand are obligatory non-feeding as they have weakly cornified beaks and intestines filled with yolk.

POPULATION ECOLOGY. They tend to be solitary throughout the year as adults, but pair up during mating. Tadpoles are kept in clutches of 6-10 until they are developed and released into the water where they disperse. They are rarely seen and its current population size is unknown.

REPRODUCTION. *F. fitzgeraldi* are oviparous organism, however the eggs are not laid on land or in the water but on the backs of the females. When the females are ready to mate they find the chirping sounds which signals an available male. They initiate amplexus by positioning themselves horizontally on a leaf (Duellman et al., 2011). The female arches her back and lowers her head while raising the cloaca. The male then mounts the female's back and positions its legs above the female's cloaca and performs a pedalling movement while thrusting its pelvis anteriorly. The female secretes a mucous substance from its cloaca which the male uses to lubricate the skin flaps of the female (Fig. 1). This pelvic thrust and pedalling movement takes about 5-8 seconds and is repeated 10-20 times, this is termed a bout. As the male widens the dorsal flaps the female begin extruding the eggs which the male deposits into the pouch using his legs while simultaneously performing a pelvic thrust. As the number of eggs increase the intensity of the pelvic thrusts decreases. The females indicate the end of oviposition by raising the anterior part of its body and begin closing its flaps. Females generally brood approximately 6-10 eggs (Fig. 3) and mate at least five times a year.

BEHAVIOUR. Females brood its eggs on its back, increasing the viability of it offspring by preventing predation of eggs by fishes, however the number of offspring produced are reduced. The skin flaps that cover the developing eggs ensure that the eggs cannot be removed from its back and allows them to forage for food in order to sustain its life as well as its offspring. Embryonic development of fertilized eggs takes 23-26 days upon which the females enter water filled bromeliad leaf axil vents and deposits the tadpoles. The tadpoles do not feed as they get nutrients from the yolk within its intestines, and they leave the water 11-17 days after being deposited. They become completely metamorphosed into froglets within 21-25 days. The adults also avoid predation by camouflaging to its surrounding. *F. fitzgeraldi* communicate using biphasic, multi noted calls that sound similar to cricket chirps, and these calls are usually given for an hour at sunset.

APPLIED ECOLOGY. Listed in IUCN as endangered and its population size cannot be determined, nevertheless it can be observed that its population size is decreasing. This is due to agricultural activities, timber extraction and to a lesser extent road construction. As such conservation efforts have been established in Venezuela where the species are protected and being conserved in the Parque Nacional Peninsula de Paria and it is also partially protected in Tobago's rainforest (IUCN, 2004).

REFERENCES

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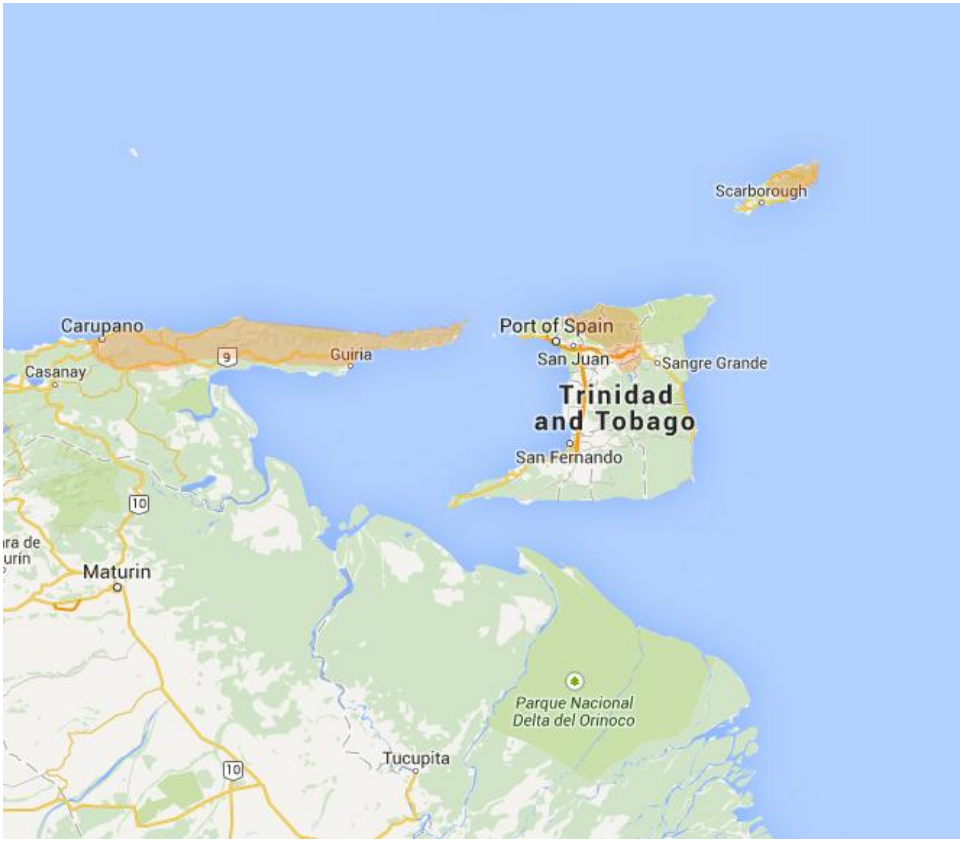

Fig. 2. Distribution of *f. fitzgeraldi*.

[http://berkeleymapper.berkeley.edu/index.html?tabfile=http://amphibiaweb.org/tmpfiles/680526&configfile=http://amphibiaweb.org/tmpfiles/bm_config_469981.xml&ViewResults=tab&sourcename=AmphibiaWeb+Species+Map:+Flectonotus+fitzgeraldi&amphibiaweb=true&label=1&opacity=0.50#, downloaded 3 April 2015]

Fig. 3. Female *F. fitzgeraldi* brooding eggs on back.

[http://www.vvc.edu/academic/biology/hinrich/RESEARCH%20PHOTOS.htm, downloaded 18 May 2015]