

A NOTE ON THE "WHISTLING FROG" IN CAPTIVITY

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Eleutherodactylus johnstonei (Barbour, 1914), is a member of the Leptodactylidae, and is native to the numerous islands of the West Indies, for example, Antigua, Barbados, and Martinique. It is a small, plainly coloured species, the females up to 2.5cm in length, the males slightly smaller. However, it is fair to say that what it lacks in size, it more than makes up for with vocal prowess. In fact, it is rumoured that a remarkably similar species, *E. martinicensis*, was introduced to Barbados by an irate local to annoy a neighbour, with whom he was no longer on speaking terms. Anybody who has heard these anurans calling can easily understand why they could be an annoyance!

An interesting aspect of their life history, along with many other *Eleutherodactylus* species, is that they are terrestrial breeders, i.e. the larvae complete the cycle on land, bypassing a free swimming tadpole stage. Few eggs, (each of about 4mm diameter), are laid on damp soil, (Plate 1), and development of the young frogs occurs within the egg, until fully formed froglets emerge, using their egg tooth, and are immediately ready to feed. The only major hazards facing the developing young in the egg are dessication and fungal attack. Both are prevented to a certain degree by the parent, in choice of egg laying site being clean and free from spores, and the presence of the male remaining with the eggs to moisten them with a watery excretion should they become too dry.



Plate 1. View of egg cluster at 7 weeks. Close examination of the top egg will reveal two hind limbs of the developing froglet

I happened to have my first experience of these animals in September of 1985 when a rather dry, neglected vivarium of size 48 by 15 by 12 inches, was given to me to maintain in our department foyer. At that time it contained 5 unknown frogs, (*E. johnstonei*), and a large female Warty newt, (*Triturus cristatus*), all huddled together in the only moisture available, underneath the empty water tray. The newt was released into a pond containing a breeding population, the frogs transferred to a temporary holding tank whilst the other was cleaned out. Fresh soil, plants (including 'Maidenhair' and *Nephrolepis* sp. ferns), logs, water container were added, and a layer of muslin was placed across the top of the tank, under the tube, to reduce the light intensity.

Although no heater was installed the tank remained at the temperature of the foyer, (about $23^{\circ}\pm 2^{\circ}\text{C}$), and the animals were fed a constant supply of *Drosophila*, and various other invertebrates.



Plates 2 and 3. Adult female *E. johnstonei*

After a period of about 2 to 3 weeks in their new, damp environment, the males were heard calling. This only occurred at night at what appeared to be a regular calling site, on the leaves of an exposed fern about 6 inches off the tank floor. No amplexus was observed, and it was assumed none had occurred. However, on the morning of February 25th 1986, a small, (5 to 6mm), froglet was found drowned in the pool, which was then lowered to make it very shallow, and a search of the tank was undertaken. This revealed a further two froglets and a clump of approximately 15 to 20 fresh, unpigmented eggs laid under one of the logs. Bayley (1950) states that *E. martinicensis* froglets hatch after 10 days, however, the eggs in my care took just over 8 weeks, to eventually hatch on the 18th April. The froglets remained hidden and secretive until a week after hatching, and were 2 to 3mm long. Contrary to the adult behaviour, the froglets were not nocturnal and were often seen foraging during the day. Being so small they could not eat the adults' food and were fed on invertebrates contained in floor sweepings from a nearby copse. The two older froglets were now 6 to 7mm long, and could be sexed via their markings, which corresponded with the adults. (Females being a drab, uniform, light brown, (Plates 2 and 3), the males having a darker, dorsal stripe extending from the midline of the eyes to the vent, (Plates 4 and 5)). It is hoped that these juveniles will grow to a breeding stock.



Plates 4 and 5. Adult male *E. johnstonei*

In order to maintain these amphibians in a healthy condition with the ultimate view to breed, the following is worth remembering:

1. The frogs must feel comfortable in their tank, and this is best achieved by emulating their natural conditions. In this case it involves a vivarium with shaded light levels, a variety of hiding places, damp soil, (a shallow water container can be added, but it is not essential), correct temperature of about 23°C, and a plentiful food supply. However, it must be realised that as these are nocturnal animals, and if sufficient hiding places are available, you are unlikely to see them at all during daylight hours, and any forced exposure to daytime activity will decrease the chances of breeding.
2. During the night period *E. johnstonei* is a very active and agile animal. It is, therefore, essential that a secure, tight fitting lid is used, otherwise escapees will be inevitable!
3. The natural breeding season on the islands is the rainy season between April and May, the stimulus being an increase in humidity and rainfall. This can be mimicked in the vivarium by periods of relative dryness, lasting about three months, interspersed with a wetter period involving regular spraying with de-chlorinated water to increase the humidity.
4. If the eggs are obtained it is a good idea to transfer them to a rearing tank, in case the adults eat the emergent froglets.

It is hoped that this may be of small benefit to anyone who has these, or similar, animals but is unsure of their requirements and habits.

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REFERENCES

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