



NOTES ON *EX-SITU* INCUBATION AND HATCHLINGS OF *Eutropis carinata* (SCHNEIDER, 1801) (REPTILIA: SCINCIDAE) FROM SRI LANKA

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Abstract

Eutropis carinata is widely distributed skink in Sri Lanka. This observation describes *ex-situ* incubation and hatching of this species at Colombo district in Sri Lanka. In total, 25 eggs with two adults of *E. carinata* were located from a termite mound while some villagers were trying to kill a cobra (*Naja naja*) living in the mound. Of these skink eggs, 20 were successfully incubated. The incubation period was 30 days from the date eggs were collected. The average incubation temperature varied from 26–28°C. Mean egg length was 15.6 mm and mean egg width 10.4 mm. Mean hatchling SVL was 28.5 mm and mean TL is 41.3 mm. The mean weight of hatchlings was ~3 g and the mean total length is 69.8 mm. After about five days, hatchlings were released at the original place of the clutch.

Key Words: *Eutropis carinata*, *ex-situ* incubation, egg hatching, conservation, Sri Lanka

Introduction

The genus *Eutropis* in Sri Lanka consists of seven species: *E. beddomei*, *E. bibronii*, *E. carinata*, *E. floweri*, *E. macularia*, *E. madaraszi* and *E. tammanna* (Deraniyagala, 1953; Das & de Silva, 2005; Das *et al.*, 2008). The Common Skink, *Eutropis carinata* (Schneider, 1801) is known locally in Sinhala as “Sulaba Garandi Hikanala”. This species is the largest skink in Sri Lanka (de Silva, 1996, 2006). According to the published

literature, *E. carinata* has been widely distributed in Sri Lanka. The habitats are characterized as open areas, forests with close canopies, home gardens as well as plantations in wet and dry zones below 1,000 m a.s.l. (Das & de Silva, 2005). Adults of *E. carinata* measured from snout to vent of 140< mm, a head length of 25< mm, a tail length of 200< mm and an axilla to groin length of 100< mm (Deraniyagala, 1953). The present communication

adds to our current knowledge on *ex-situ* incubation and hatching of *E. carinata*.

Methods of incubation: An enclosure is built of 5 mm thick, waterproof glass and these form the base, the front, the back and both sides. The top consists of extruded plastic fly screen framing and this allows free flow of air but can be covered with plastic sheeting to increase humidity if desired. The lid is close fitting to protect the eggs from predators. The length of the enclosure is 30 cm, width 15 cm and height 10 cm. A thermometer and a hygrometer are used to monitor temperature and relative humidity fluctuations. The base of the unit is filled with soil mixed with sand to a depth of nearly 4 cm. A few pieces of stones and leaf litter were also provided as places of concealment for hatchlings.

The relative humidity varied between about 60–74% during the month of incubation. These values may be much higher than those found in the open in the wild. The surface soil was normally kept dry but occasionally about 30 ml of water was sprayed in to the hatching device to simulate more natural conditions. The temperature range was 26–28°C. The daily variation varied about 1–2°C. The 25 incubating eggs were half-buried in the soil and covered with leaf litter. After about five days, the hatchlings were released to the original habitat.

Observations

On the 30 January 2008 we found 25 eggs, inside a termite mound at 10:30 hr. The eggs were incubated in Colombo district in Sri Lanka. Of the 25 eggs, 20 were successfully incubated. The incubation period was 30 days from the date eggs were captured, at an average incubation temperature of around 27°C (range 26–28°C). The mean length of the eggs was 15.6 mm (range 13.7–18.0 mm) and mean width was 10.4 mm (range 9.2–14.8 mm) (Fig. 1).



Fig. 01: Three of 20 hatched *E. carinata* eggs

Measurements of the eggs and hatchling data are presented in the Table 01. The mean SVL of the hatchlings was 28.5 mm (range 26.2–30.2 mm) and mean TL was 41.3 mm (range 36.5–46.3 mm) (Fig. 2). The mean weight of the hatchlings was ~3 g (based on 10 specimens) (range 4–6 g) and the mean total length was 69.8 mm (range 62.7–76.5 mm).

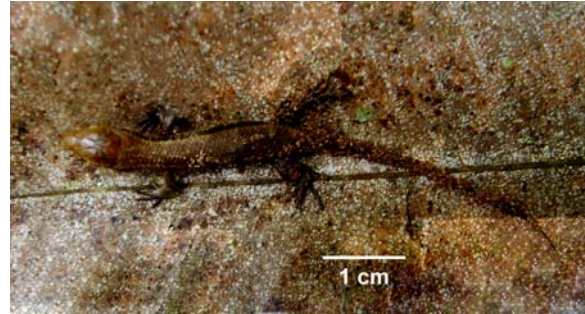


Fig. 02: Newly hatched *E. carinata*

Discussion

We have located 25 eggs with two adults (the male and the female) while some villagers were trying to kill a cobra (*Naja naja*) living in a termite mound. The cobra was about 1.5 m total length and the two skinks and eggs were present in this termite mound. The interesting fact about this observation is that this is probably the first record of *E. carinata* from a termite mound which inhabited by a cobra. This is the first documented hatching of *E. carinata* eggs observed from Sri Lanka. Sometimes *E. carinata* and *N. naja* may show commensalism; however, there are no previous records of this kind of behaviour for *E. carinata*. Somehow, it is a better habitat for *E. carinata* to live with a *N. naja* in a termite hole, because we assume that other snakes, especially *Ptyas mucosa*, *Cercaspis carinata*, *Olidodon arnensis*, *Lycodon aulicus*, *Boiga ceylonensis*, *Hypnale hypnale* and *Dendelaphis tristris*, never reach there because the ophiophagous *Naja naja* is one of their natural predators. In addition, *Varanus bengalensis* and some birds like White breasted King fisher (*Halcyon smyrnensis*), Gray horn bill (*Ocyrceros gingalensis*), Shikra (*Accipiter badius*) and Little Scops Owl (*Otus bakkamoena*) are natural predators of *E. carinata*.

It is not clear for us why *Naja naja* refrain from feeding on *E. carinata* adults living inside the same termite hole. We have observed *Naja naja* feed on toads, other snakes, *Naja naja*, juveniles of *Varanus bengalensis* as well as agamid lizards, but we never observed *Naja naja* feeds on skinks before, but skinks were swallowed by cobra as well as Ceylon

krait, *Bungarus ceylonicus* (A. de Silva, November 2008, pers. comm.). Sometimes the skink may use another root to enter the termite mound where those eggs were deposited. However we could not examine the entire hole because while we reach there the villagers had broken a half of the termite mound. According to the perused literature information on behaviors, feeding and breeding habits, population dynamics, ecology and threats are not properly understood for most species in Sri Lanka (Amarasinghe, 2009). Therefore, we believe that this information on *ex-situ* incubation and hatching of *E. carinata* may facilitate the future conservation of this species as well as other skinks.

Table 01. Measurements of eggs and hatchlings of *Eutropis carinata* (NH: not hatched; SVL: Snout-Vent length; TL: Tail length)

No.	Egg size (mm)		Hatchling size (mm)	
	Length	Width	SVL	TL
1	15.2	9.8	28.4	42.3
2	13.7	11.6	26.2	36.5
3	16.3	14.8	29.1	38.7
4	18	9.7	30.2	46.3
5	15.1	11.9	28.1	41.7
6	15.5	11.3	28.3	42
7	16.2	9.9	28.8	43.5
8	15.1	9.8	NH	
9	16.5	9.2	29.1	42.4
10	15.7	10.6	28.2	41.1
11	15.5	9.7	NH	
12	17.1	9.9	29.8	43.7
13	14.7	9.6	27.4	37.7
14	15.5	9.8	29.1	41.7
15	15.8	9.5	29.7	42.1
16	14.9	9.7	27.2	38.3
17	15.8	9.6	28.6	42.3
18	15.2	9.8	NH	
19	15.4	9.7	28.2	41.6
20	17	9.4	29.8	42.4
21	14.3	11.2	27.2	37.6
22	13.8	10.7	NH	
23	15.8	11.2	NH	
24	15.1	10.5	28.4	42.2
25	15.7	10.2	28.8	41.4
Mean	15.6	10.4	28.5	41.3

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