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Some observations on the foam nest of *Polypedates cruciger* (Amphibia: Ranidae) a tree frog endemic to Sri Lanka

S M M Samarakoon and Shirani Nathanael*

Department of Biology, Faculty of Applied Science, Rajarata University of Sri Lanka, Polgolla

The Common hourglass tree frog *Polypedates cruciger*, an amphibian species endemic to Sri Lanka is a prolific breeder found mainly in the wet zone close to human habitation. The present study records observations over a one-year period on foam nests of this species found on a wall of an artificial pond in the University premises at Polgolla. Nests are formed from a sticky mucous like substance secreted by the mating female who whips it into a foam by kicking it up with her hind legs. Eggs are deposited inside the nest, fertilized, and mixed with the foam using the hind legs. Foam nests are frequently found after heavy rain sticking onto the pond wall above the water level. A fresh foam nest measures (mean ± SD) (n=30) 6.9 ± 1.2 cm in diameter and weighs 18.2 ± 4.2 g. A nest contains (mean ± SD) (n=10) 296 ± 43 eggs, which are white in colour with a diameter of 2.0 ± 0.29 mm. Since nests are constructed above or out of immediate contact with water the outer part hardens to form a crust that maintains suitable moisture for the eggs developing inside. Foam nests (n=30), are stable and persist for about 4 to 7 days (5 ± 1.5) until the tadpoles emerge from the eggs, break down the foam and drop into water. No information is available hitherto on the composition of this unusual material, the molecular mechanism by which it is formed, and how it remains stable for such lengths of time. Our study reveals that the main constituent of fresh foam is protein, and its moisture content varies between 80.9% and 87.6%.

In the present study 36.6% of *Polypedates cruciger* nests were invaded by larvae of a Dipteran fly (*Calliphoridae* sp) which causes disintegration of the foam and destruction of the eggs, while tadpoles dropping into the pond water face the risk of becoming prey to guppies (*Poecilia reticulata*), a fish species that readily feeds on them. Under laboratory conditions, tadpoles take 3 ½ to 4 months for metamorphosis indicating that they would be vulnerable to other predators in the pond as well, during their prolonged development.

The function of foam nests remain uncertain, but several possibilities exist such as attachment of nest to suitable substrates above water level, protection of eggs from predators, microbial infection, dehydration and sunlight, and to camouflage by its blue green colour if laid close to vegetation.

*skcopy2000@yahoo.com Tel: 081 2499206