



Oviposition by an Indian Ratsnake, *Ptyas mucosa* (Linnaeus 1758) in the Shell of an Indian Black Turtle, *Melanochelys trijuga* (Schweigger 1812)

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Snakes deposit eggs in a wide variety of natural and altered sites, that include grasslands, scrub, forest, agricultural areas, gardens, tree holes, in sand or loose soil, under rocks or piles of rocks, near water, in leaf litter, pipes, rodent burrows, rotten logs, and abandoned or even occupied houses (Daniel 1983; Whitaker and Captain 2008; Vyas et al. 2013; Desai 2017; Parmar 2018a, 2018b; Parmar and Limbachiya 2020). Indian Ratsnakes *Ptyas mucosa* (Linnaeus 1758) (Fig. 1), which are habitat generalists, typically lay 8–22 eggs between March and September (Whitaker and Captain 2008; Desai 2017).

Herein we describe oviposition by an Indian Ratsnake in an unusual site and also document the unnatural death of an Indian Black Turtle *Melanochelys trijuga* (Schweigger 1812).

At 1204 h on 19 May 2021, we discovered a concrete pit (width ~1 m, depth ~1.7 m) near Men’s Hostel II at Goa University, Goa, India (15.461255 N, 73.834854 E), in which we found the shell of a female Indian Black Turtle (carapace 177.8 × 155.4 mm, height 62 mm, plastron 152.4 × 132.1 mm) (Fig. 2). When we removed and examined the shell, we found two Indian Ratsnake eggs inside (Fig. 3). We identified



Figure 1. The Indian Ratsnake (*Ptyas mucosa*) is widely distributed, large, and the fastest non-venomous snake in India. Photograph by Dikansh S. Parmar.



Figure 2. An open pit covered by bushes is a risk for animals and humans (left); note the empty turtle shell and the depth of the pit (right). Photographs by Dikansh S. Parmar.



Figure 3. Two eggs of an Indian Ratsnake (*Ptyas mucosa*) found in the shell of an Indian Black Turtle (*Melanochelys trijuga*) (top); weighing the empty shell and eggs (bottom). Photographs by Dikansh S. Parmar.

the eggs by comparing shape, size, and egg-laying season with information in our unpublished data set. The eggs (both 46 × 25 mm, weight 10.5 g and 8.6 g), which appeared to be infertile when candled, were elongated, white, and chalky, and no fungus or mold was evident. They appeared to be healthy, so we decided to incubate the eggs at room temperature (27–32 °C) in a plastic jar with a soil substrate.

Because clutch sizes of *P. mucosa* are usually larger than two eggs, we revisited the site at 1001 h on 21 May 2021 in search of more eggs. We found no eggs, but did find a live female Indian Black Turtle (carapace 203.2 × 149.4 mm, height 76 mm, plastron 157.5 × 132.1 mm, weight 581 g) in the pit. It was weak and lethargic. We removed it from the pit with the help of a security guard and, after rehabilitation, released it in nearby habitat (Fig. 4).

As Indian Ratsnake egg incubation typically lasts 50–70 days (Daniel 1983; Whitaker and Captain, 2008; Ong et al.



Figure 4. A rescued female Indian Black Turtle (*Melanochelys trijuga*) released in natural habitat. Photograph by Dikansh S. Parmar.



Figure 5. Apparently healthy Indian Ratsnake (*Pytas mucosa*) eggs incubated for 70 days (left); when eggs failed to hatch, they were dissected and no embryos were found in either egg (right). Photographs by Dikansh S. Parmar.

2014), we opened the eggs found in the turtle shell after 70 days of incubation without hatching and confirmed that they were infertile. We found only dried yolk and a foul odor with no evidence of blood vessels or embryos (Fig. 5).

Known oviposition sites of *P. mucosa* include rodent burrows, inside rotten logs, in bamboo root systems, cracks in soil, rice fields, piles of organic waste, and haystacks (Auliya 2010). Because *P. mucosa* usually lay more than two eggs and we found no eggs or empty eggshells in the pit or immediate vicinity, we speculate that the female might have deposited additional eggs elsewhere. These eggs may have been consumed by predators, indicated by the absence of eggs or the empty egg shells in the turtle nest, or if laid elsewhere, they might have been fertile and hatched outside the observed location.

To the best of our knowledge, this is the first instance in Asia of a snake laying eggs in a dead turtle’s shell. The only similar situation was described by Overdeep (2023) from Geneva County, Alabama, USA, where employees of the Geneva State Wildlife Management Area found two eggs from an unidentified snake in the shell of an unidentified turtle.

Anthropogenic habitat alterations can result in the death of wildlife. Herein, we recorded the death of a turtle caused by falling into what effectively was a pit trap. Such structures in the Goa University campus should be covered to protect animals and humans.

Acknowledgements

We thank the security guard who helped us remove the live turtle from the pit. We are also thankful to Animal Rescue Squad Goa for joining us in the rescue operation.

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