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A regurgitation event in Indian Ratsnake *Ptyas mucosa* (LINNAEUS, 1758) provides insights into its diet

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The prey-predator relationship is a key component that explains the trophic ecology of an environment (Dorresteijn et al. 2015). Functionally, the mechanised prey-predator dynamics conceptualise the trophic cascade, which determines changes in prey abundance and behaviour (Silliman and Angelini 2012). The predatory dichotomy that includes active and ambush predators differ in foraging mode, which intertwines with morphological and behavioural traits through the adaptive syndrome hypothesis (Eckhardt 1979; McLaughlin 1989). The adaptive syndrome can enhance behavioural syndrome, which explains how behaviour changes in different foraging scenarios (Sih et al. 2004). The community profile is the size profile of prey species, and the food profile is the ingested species from the community profile, which is mediated through the prey-predatory dynamics (Griffiths 1975). The optimal foraging theory involves animals balancing energy expenditure with each predation event's success to avoid starvation. This relates to trade-offs in foraging ecology (Higginson and Ruxton 2015). The foraging pattern of predators can also switch depending on prey availability, abundance, and how widely the area is occupied by the prey species (Hirvonen 1999; Higginson and Ruxton 2015). Predators may choose their prey based on factors such as size and predation cost. Among active foragers, there is likely to be higher energy expenditure compared to ambush foragers (Downes 2002; Higginson and Ruxton 2015). This note reports an observation of the stomach contents in the active foraging Indian rat snake (*Ptyas mucosa*). The Indian rat snake is a common, widespread, non-venomous snake found across India in different habitats such as xeric regions, mesic habitats, coastal lines, open fields, deciduous forests, evergreen forests, scrub jungles, and agricultural lands (Whitaker and Captain 2004; Parmar and Tank 2019; Biodiversity portal 2023). The diet of *P. mucosa* varies with age and habitat. Juveniles primarily feed on insects, reptiles, and frogs but shift to consuming mammals, birds, fishes, amphibians, snakes, and other reptiles as they grow (Parmar and Patel 2022).

On 4th October 2018 at 17.00 h, we got a rescue call about a snake's presence inside a house near Thiyagarajar School of Management on Avaniyapuram road, Thirupparankundram, Madurai, Tamil Nadu (9.8796°N; 78.0863°E). We rushed to the spot and found an Indian Rat snake (*Ptyas mucosa*) approximately 7 feet in size hanging on the window. We gently rescued it from the house and brought it outside (Figure 1). Instantly, the snake started regurgitating a variety of prey items, including a marbled balloon frog (*Uperodon systoma*). This individual had an olive-yellowish dorsum with a marbled design and a smaller head with a blunt snout. We also spotted an unidentified rodent and a juvenile three-striped palm squirrel (*Funambulus palmarum*) with three stripes on its dorsum. Additionally, we found two bird eggs — one was broken with a partially grown juvenile bird inside. Later identification revealed that the eggs belonged to a white-breasted water hen (*Amau-*

Figure 1. An array of regurgitated meals by *P. mucosa*, showcasing species names from left to right: *Amaurornis phoenicurus*, *Funambulus palmarum*, Unidentified Rodent, *Uperodon systoma*, and White-breasted Waterhen Eggs.

rornis phoenicurus; Anthal and Sahi 2017) (Figure 1). Subsequently, the snake was safely bagged and released into a nearby plot of agriculture land (9.8840°N; 78.0891°E).

Several prey items of *P. mucosa* have been reported in the literature, including *Eutropis dissimilis*, *Hoplobatrachus tigerinus*, *Euphlyctis cyanophlyctis*, *Fejervarya limnocharis*, and unidentified toads (Wall 1926; Dunn 1935; Minton 1966; Sharma and Vazirani 1977; Whitaker and Captain 2004). Studies have also documented unusual feeding and scavenging events in *P. mucosa*, such as consumption of plastics, onions, male contraceptives, cloth pieces, discarded socks, and polythene rolls (Sharma et al. 2016; Saha and Chaudhuri 2017; Chaudhuri et al. 2018; Parmar and Patel 2022).

In general, stomach content analyses in snakes have reported details on the diet and prey species that are known to occur in an ecosystem. However, this observation on the regurgitation by this *P. mucosa* individual indicates that the diet can consist of multiple species and diversified prey preferences in *P. mucosa*. This predation strategy may help maintain their metabolic energy requirements, as they are active foragers. Foraging is a basic and primary trade-off activity that limits prey dynamics such as availability, abundance, and spatiotemporal distribution (Higginson and Ruxton 2015). Higginson and Ruxton (2015) explained a relationship between prey statuses to predatory movement in environmental space, stressing the fact that active predators have a higher prey cost. The pressure of food consumption to either overcome or avoid starvation may cause the predator to engage in opportunistic foraging, and preying on what is available, which is seemingly costly, yet a viable option for generalists (Westoby 1978; Rex et al. 2010; Pereira et al. 2016).

The stomach content also gives an idea of the diet of a species, which would be important for the conservation of prey and predators. Regurgitation and aggressive behaviour during handling could be a defence mechanism to allow for a quick escape.

Perez-Ramos et al. (2018) reported regurgitation of three painted wood rats (*Neotoma picta*) by Barbour's montane pit viper (*Mixcoatalus barbouri*) from Mexico. This note reports the diet of *P. mucosa*, which includes different prey species of smaller size, indicating the individual's need to be an active forager in an environment where larger prey is lacking. However, we are aware that *P. mucosa* has a generalist diet and it may or may not consume a wide range of species at a single time. Since we could not find any other related observations for this snake, we conclude this to be significant. More studies on foraging aspects along with stomach content analyses across a spatiotemporal gradient would enhance the understanding of foraging behaviour and ecology of this common colubrid.

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Additional record of the Arrow-headed Trinket (*Coelognathus helena nigriangularis*, Mohapatra, Schulz, Helfenberger, Hofmann, and Dutta, 2016) from Rajasthan

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