

World News of Natural Sciences

An International Scientific Journal

WNOFNS 64 (2026) 92-99

EISSN 2543-5426

A mango-eating Checkered Keelback *Fowlea piscator* (Schneider, 1799) (Serpentes: Natricidae) from West Bengal, India

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ABSTRACT

Checkered keelback snakes *Fowlea piscator* are generalist carnivores feeding on various groups of animals including fish, frogs, insects, bat, turtle, rodents and birds. They are also known to scavenge on road-killed frog and dead fishes. Unusual food items are also reported in their diet like stone, cooked chicken and boiled rice. In this present communication, mango fruit *Mangifera* spp. is reported in the diet of this snake species and herbivory and other unusual food habits of Indian snakes are also discussed.

Keywords: *Fowlea piscator*, Mango fruit, Unusual food habits, Chemical stimulus

1. INTRODUCTION

Checkered keelback *Fowlea piscator* (Schneider, 1799) is a natricid non-venomous oviparous freshwater snake found in and around ponds, rivers, tanks, flooded rice fields, marshes and swampy areas and ranges from Afganistan to southern China and southeast Asia, including India, Bangladesh, Bhutan, Nepal, Pakistan and Sri Lanka, excluding Andaman and Nicobar Islands (Daniel, 2002; Whitaker and Captain, 2004; Das and Das, 2017). Adults are about 24 inches to 69 inches in length (Whitaker and Captain, 2004). They are active by day and night, and are generalist carnivores, feeding on fish, frogs, insects, *Pipistrellus* bat, Indian peacock softshell turtle *Nilsonnia hurum*, rodents and birds (Whitaker and Captain, 2004;

Hossain, 2016; Gyawali, 2019; Vadhavana and Thanki, 2024). Scavenging and unusual food items are also reported for this snake species, that includes, cooked chicken, boiled rice, stone, discarded chicken intestine, road-killed carcass of fungoid frog *Hydrophylax bahuvistara*, dead catla *Labeo catla* and tilapia waste *Oreochromis niloticus* (D'Abreu, 1911; Moktadir and Hasan, 2016; Wewhare and Pandey, 2021; Bhattacharjee and Purkayastha, 2022; Abinesh *et al.*, 2022). In the present communication, I report discarded mango fruit *Mangifera* spp. in the diet of *F. piscator* from Hooghly district, West Bengal, India.

2. STUDY AREA & METHODOLOGY

The study was conducted on 22 November 2021, in a large pond of Old Kodalia (22.9156°N, 88.3814°E), Chinsurah, Hooghly district, West Bengal, India (map shown in Fig. 1). This is an urban locality and is a part of Lower Gangetic Plains biogeographic zone. Average elevation of the study area is 9 metres. The study season was winter. Visual observation and photographic documentation was conducted during the study. Photographs were captured by a Nikon Coolpix B500 camera.

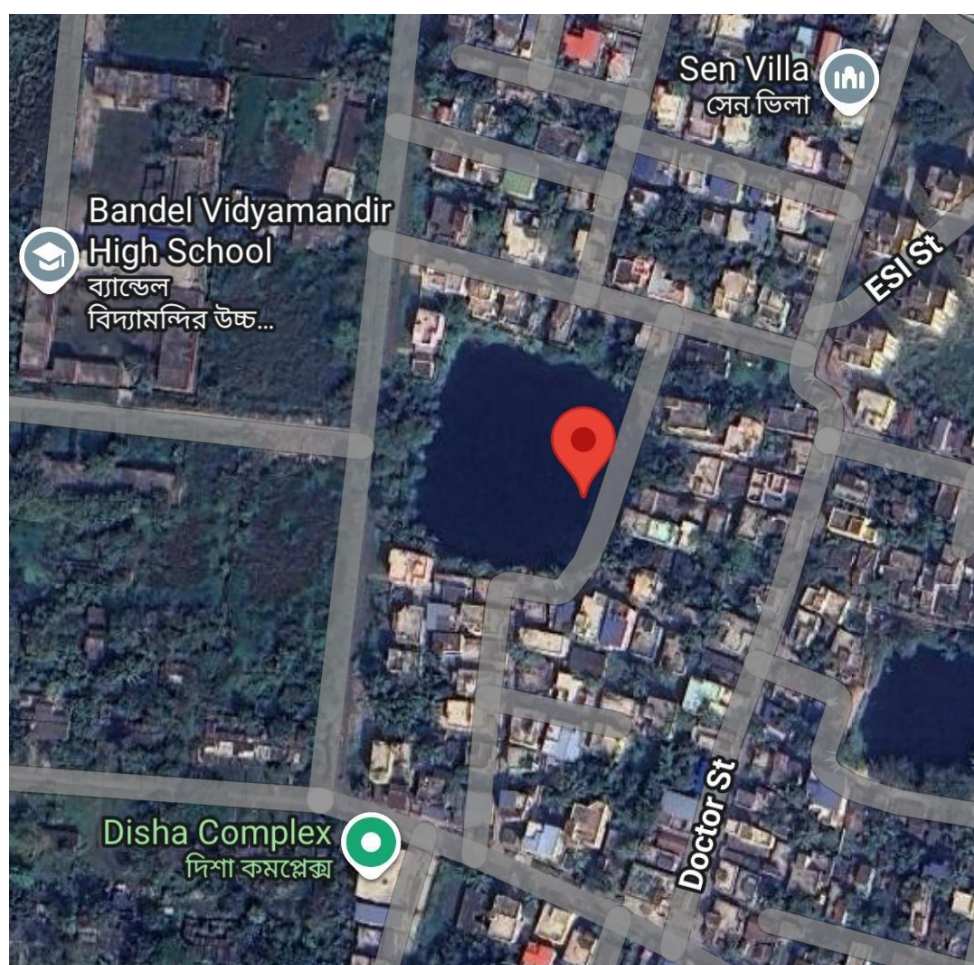


Figure 1. Google Map® view of the pinned study area showing the pond.

3. RESULTS & DISCUSSION

The observations were made during a field study on biodiversity of the pond and its adjacent area. The pond was within a residential area and local people of the nearby houses sometimes throw their household organic and polythene wastes inside the pond. On 22 November 2021 morning, at 10:05 hrs, a *Fowlea piscator* snake was observed to forage at one of the edge of the pond. Most of the pond surface was covered by *Lemna* spp., a free-floating hydrophyte (Fig. 2).



Figure 2. The pond with free-floating hydrophytes *Lemna* spp.

That edge of the pond had some submerged discarded organic wastes and plastics including bones of cooked fishes, some peeled unripe mango pieces (*Mangifera* spp.), peeled periderm of potatoes etc. At 10:06 hrs, the snake was observed to capture one of the mango pieces by its jaws and started feeding on it (Fig. 3a). The snake completely devoured the mango piece in approximately 55 seconds (Fig. 3b-3e). Then at 10:07 hrs it again started to roam at the edge of the pond and the observation was ended.

Moktadir and Hasan (2016), who reported checkered keelback's consumption on boiled rice and discarded cooked chicken from Bangladesh, speculated this behaviour could be due to the reduction of its natural food resources or could be the opportunistic feeding habits of this snake species. D'Abreu (1911) assumed that, the presence of stone in the stomach of a checkered keelback snake from Nagpur, India might serve a purpose similar to the stones consumed by crocodiles and birds. In one report, road-killed fungoid frog (*Hydrophylax bahuvistara*) was consumed by a checkered keelback from Maharashtra, India and this kind of behaviour could increase their chances of being killed by vehicles, that can be an underestimated cause of snake mortality (Wewhare and Pandey, 2021).



Figure 3(a). The *Fowlea piscator* started swallowing a piece of discarded unripe mango fruit.

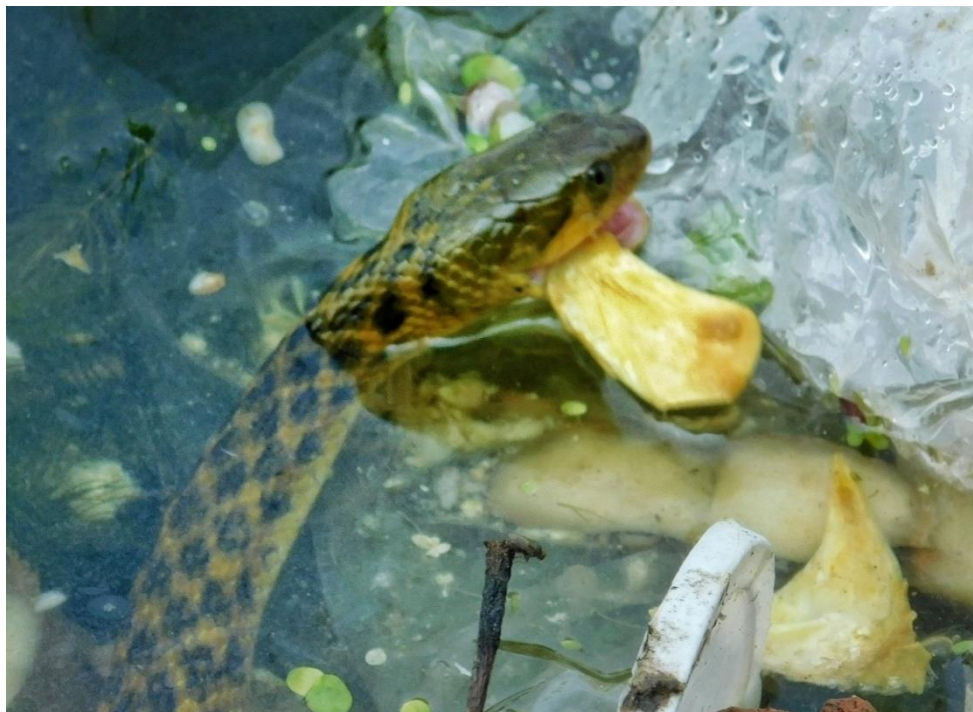


Figure 3(b). The *Fowlea piscator* swallowing a piece of discarded unripe mango fruit.



Figure 3(c). The *Fowlea piscator* swallowing a piece of discarded unripe mango fruit.



Figure 3(d). The *Fowlea piscator* swallowing a piece of discarded unripe mango fruit.



Figure 3(e). The *Fowlea piscator* swallowing a piece of discarded unripe mango fruit.

Bhattacharjee and Purkayastha (2022) noted, discarded chicken intestine fed by a checkered keelback from Guwahati, Assam, India. In another report, dead catla fish (*Labeo catla*) and tilapia waste (*Oreochromis niloticus*) were scavenged by checkered keelbacks from Hyderabad, India (Abinesh *et al.*, 2022). Herbivory and consumption of inanimate objects are documented in some other Indian snakes by various workers. Deshmukh *et al.* (2021) reported, a spectacled cobra (*Naja naja*) ingesting fruits of an eggplant (*Solanum melongena*), known in India as brinjal, in which the fruit was already rotten and its foul odor might have attracted the snake. Sharma *et al.* (2016) reported, an oriental ratsnake (*Ptyas mucosa*) swallowed an onion and died in ~3 minutes.

Additionally Sharma *et al.* (2016) also reported the same species to swallow discarded cloth used to clean vehicle, a male contraceptive discarded in a garden, old discarded socks, discarded polythene roll that appeared to have remained some salvageable edible material. Parmar and Patel (2022) reported, *P. mucosa* consumed five propylene bottles containing pills, along with five dead rat pups. Odor of rodents or other prey on unusually consumed objects acts as chemical stimulus to snakes in these cases (Parmar and Patel, 2022). Lillywhite *et al.* (2008) demonstrated, Florida cottonmouths voluntarily consumed marine algae (*Ulva lactuca*), rubbed gently with a dead fish (*Mugil gyrans*), but algae without fish odor were ignored. A *Python molurus* from a tea garden of Darjeeling was reported to feed on four insect larvae infested mangoes (Mookerjee, 1946). Reported plastic consumptions by snakes can be hypothetically explained in similar ways as presence of chemical stimulus or odor of prey animals, and it is necessary to ban single-use plastics for the protection and conservation of snakes and other wildlife (Parmar and Patel, 2022).

4. CONCLUSIONS

In the present communication, the discarded piece of mango was consumed by the checkered keelback snake and it can be assumed that, the odor of the rotting mango or odor of any prey items on the mango could be the chemical stimulus to which the snake was attracted. Plastics and bones of cooked fishes were also present near the mango. Detailed studies are necessary to understand the positive or negative effects of consumption of unusual food items on digestion and health of snakes and potential impact on their populations (Sharma *et al.*, 2016). Use of single-use plastics and throwing them in wetlands should be checked to prevent them entering into the digestive system of wild animals, that can be harmful to them and the ecosystems.

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