



Notes on the Diet of the Checkered Keelback (*Fowlea piscator*) Including the First Record of Saurophagy

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Photographs by the author.

The Checkered Keelback (*Fowlea piscator*) is a medium-sized natricid distributed from Afghanistan to southern China and southeastern Asia (Das and Das 2017). The species is known to feed frequently on fish, amphibians, and arthropods (Hossain 2016; Parmar 2018; Greeshma and Jayson 2021), occasionally on rodents and amphibian eggs (Phansalkar and Gowande 2017; Kalki 2020), and rarely on birds and turtles (Whitaker and Captain 2004; Gyawali 2019). Herein I describe predation and a predation attempt by *F. piscator* in Karnataka, India.

At 1840 h on 24 May 2015, I caught a female *F. piscator* approximately 75 cm in length in a suburban backyard in Bangalore, Karnataka, India (12.9863°N, 77.6951°E). The snake regurgitated a partially digested adult female Asian Common Toad (*Duttaphrynus melanostictus*) that it had swallowed feet-first. This is a frequently taken prey item that has been reported previously (Hossain 2016).

At 1922 h on 4 June 2015, I observed a male *F. piscator* approximately 1 m in length feed on a Common Skittering Frog (*Euphlyctis cyanophlyctis*) at the Kalinga Center for Rainforest Ecology near Guddekeri, Karnataka, India (13.5754°N, 75.1066°E). The predation event occurred in a

10-m deep well that contained about 1 m of water. The frog was sitting on a small embankment on the well wall while the snake was in the water at the same height. The snake quickly grabbed the frog, swam to the bottom of the well, pinned the frog against the substrate, and swallowed it feet-first. This prey item has been reported previously (Hossain 2016) but prey-handling was not addressed.

At 0445 h on 15 May 2019, I was awoken by the distress calls of an Indian Bullfrog (*Hoplobatrachus tigerinus*) at the Agumbe Rainforest Research Station in Agumbe, Karnataka, India (13.5177°N, 75.0875°E). At the edge of a small man-made pond, a male *F. piscator* approximately 75 cm in length was holding onto the hindlimbs of a large male *H. tigerinus* and attempting to ingest it, but the frog was inflating its body in an attempt to avoid being swallowed (Fig. 1). The struggle went on for about an hour and, toward the end, the snake began pushing the frog against the concrete wall of the pond in an effort to force it down its throat. This strategy appeared to be working as the frog’s head disappeared into the snake’s mouth. However, although only its forelimbs were visible, the frog was still struggling and grasping at the vegetation to pull itself free. Finally, the *F. piscator*, apparently unable to breathe,



Fig. 1. A Checkered Keelback (*Fowlea piscator*) attempting to feed on a large Indian Bullfrog (*Hoplobatrachus tigerinus*) in Agumbe, Karnataka, India.



Fig. 2. A Checkered Keelback (*Fowlea piscator*) feeding on a Marbled Balloon Frog (*Uperodon systoma*) in Devarayanadurga, Karnataka, India.

regurgitated the frog and swam away. The frog succumbed from the ordeal during the next few hours and was eaten by a Greater Coucal (*Centropus sinensis*) shortly thereafter.

At 1100 h on 16 August 2019, I observed a subadult male *F. piscator* approximately 60 cm in length feed on two juvenile Indian Bullfrogs (*H. tigerinus*) in a small pond near Begar, Karnataka, India (13.5093°N, 75.1930°E). The snake was foraging along the edge of the pond, where the frogs were sitting. It flushed one frog into the water, chased it, and swallowed it feet-first by pinning it against the base of the pond; it then repeated this sequence of events with another frog. Once it finished feeding on the second frog, the snake emerged from the water to bask on a floating Areca Palm (*Areca catechu*) leaf. Hossain (2016) previously had reported *H. tigerinus* as prey of *F. piscator*.

At 2141 h on 10 June 2020, I observed a female *F. piscator* approximately 60 cm in length feeding on a Marbled Balloon Frog (*Uperodon systoma*) in Devarayanadurga, Karnataka, India (13.3722°N, 77.2065°E; Fig. 2). The snake had the frog's right hindlimb in its mouth and was attempting to swallow it. The frog was inflating its body and attempting to escape by kicking and crawling. By 2147 h the frog's left hindlimb had been ingested but the snake appeared to be having a great deal of difficulty swallowing the frog's inflated abdomen. At 2202 h, the snake began pushing the frog against its own body and by 2206 h had ingested it entirely. The snake then retreated under a rock next to the pond. This is the first record of *U. systoma* in the diet of *F. piscator*.

At 1023 h on 16 June 2021, I found a road-killed male *F. piscator* (SVL 369 mm, TL 531 mm) in Bangalore, Karnataka, India (12.9863°N, 77.6951°E). The snake was severely wounded and died shortly after I found it. Prior to succumbing to its wounds, it regurgitated a Mysore Day Gecko (*Cnemaspis mysoriensis*; SVL 33 mm, TL 66 mm; Fig. 3). This is the first record of a lizard in the diet of *F. piscator*. Deshmukh et al. (2018) observed an *F. piscator* that might have been hunting Oriental Garden Lizards (*Calotes versicolor*). Unlike the garden lizards, *Cnemaspis mysoriensis* is terrestrial and small, rendering it more vulnerable to predation by *F. piscator*. Additionally, *C. mysoriensis* is extremely common and abundant in Bangalore, so the predation event



Fig. 3. A Mysore Day Gecko (*Cnemaspis mysoriensis*) regurgitated by a Checkered Keelback (*Fowlea piscator*) in Bangalore, Karnataka, India.

was likely adventitious. Checkered Keelbacks are known to be opportunistic feeders, eating even discarded rice and pieces of chicken (Moktadir and Hasan 2016).

All of these observations feature prey that was swallowed feet/tail-first, which seems to be common in keelbacks, especially when consuming anurans (Bhatnagar 2021; Brakels et al. 2021). Also, most of my observations involve the snake pinning the prey against either an external object or its own body in order to facilitate ingestion. Devkota et al. (2020) discussed the handling of fish by Checkered Keelbacks, but prey handling has not been described in most cases.

Acknowledgements

I thank Mohit Verma, Shiyas, Manjunath, and Sachin Gowda for their assistance in the field.

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