REPTILES & AMPHIBIANS

An Observation of Drinking Behavior by a Green Catsnake, *Boiga cyanea* (Dumeril, Bibron, and Dumeril 1854)

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The Green Catsnake (*Boiga cyanea*) is an arboreal snake distributed in the humid evergreen forests of Bangladesh, India, Bhutan, Nepal, Vietnam, Lao PDR, Cambodia, Thailand, Myanmar, Malaysia, Tuba Island, and China (Whitaker and Captain 2004; Uetz et al. 2023). In Bangladesh, *B. cyanea* is found in mixed evergreen forests of the northeastern, eastern, and southeastern parts of the country, and mangrove forests of the Sundarbans (IUCN Bangladesh 2015). This forest-dwelling species is adapted to bushy habitats, including trees and orchards along streams, and generally feeds on lizards, frogs, small birds, rodents, and snakes (Whitaker and Captain 2004; Kabir et al. 2009; IUCN Bangladesh 2015).

Maintaining body water balance in carnivorous vertebrates such as snakes is essential for digestion, excretion, and defecation, and consumption and metabolism of food can raise requirements for water (Lillywhite 2017). Snakes can gain water from dietary and metabolic sources but not enough to maintain water balance in every weather condition (Lillywhite 2017), although some terrestrial snakes exhibit resistance to dehydration (Lillywhite 2006). French (1956) reported that several species have been observed to decrease their food intake when water is scarce. Lillywhite (2017) observed that snakes increased water intake in response to food consumption. Different studies reported that free water sources are crucially important for water balance in carnivorous vertebrates (Peterson 1996; Henen et al. 1998; Davis and DeNardo 2010; Wright et al. 2013).

In contrast to feeding behavior, drinking behavior in wild snakes has been infrequently documented because of the challenges of closely observing these elusive creatures, sporadic occurrence of most species, and the behavior not being rec-

Figure 1. A Green Catsnake (*Boiga cyanea*) foraging on a bush before drinking water from a branch overhanging a pond. Photograph by Md. Mofaqkharul Islam.

Figure 2. A Green Catsnake (*Boiga cyanea*) drinking water from a pond while hanging from a branch. Photograph by Tania Akhter.

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ognized as drinking (Shine 1991; Greene 1997; Greer 1997). The reports on drinking behavior are of snakes in captivity or in arid or marine habitats (Berkhoudt et al. 1995; Lillywhite et al. 2008; Lillywhite 2017). Herein we describe drinking behavior of a Green Catsnake from a freshwater pond in humid semi-evergreen forest.

At 1045 h on 24 May 2022, during a herpetofaunal survey in Raghunandan Hill Reserve Forest, Chunarughat, Habiganj, Bangladesh (24.12755, 91.44839), we observed an adult *B. cyanea* (total length ~2.1 m) foraging about 1.8 m above the ground on a small tree in a palm-dominated patch of forest adjacent to a freshwater pond. The pond was filled with rainwater and debris and had a high abundance of frogs such as, the Indian Bullfrog (*Hoplobatrachus tigerinus*), cricket frogs (*Fejervarya* sp.), Long-tongued Forest Frog (*Hylarana leptoglossa*), Common Treefrog (*Polypedates leucomystax*), Assam Pigmy Treefrog (*Chirixalus simus*), Berdmore's Narrow-mouthed Frog (*Microhyla berdmorei*), and microhylid frogs (*Microhyla* sp.). The temperature was 28 °C, humidity 65%, and wind speed 12 km/h.

The snake was foraging leisurely on branches of the bush along the edge of the pond while intermittently flicking its tongue (Fig. 1). We noticed no body bulge indicating that it had recently ingested food. Approximately 4 min after our initial observation, the snake moved to branches above the pond, twice checking branches, presumably to find a safe location for suspending itself, before moving onto another branch about 1 m above the water's surface, from which it began to drink (Fig. 3). It consumed water without interruption for 43 sec, after which it left the site and disappeared into the bush.

Compared to other reptilian groups, physiological aspects of water retention and drinking behavior in snakes have been examined in only a limited number of species (Minnich 1982; Heatwole and Taylor 1987; Kardong and Haverly 1993; Berkhoudt et al. 1995; Cundall 2000). Some observations documented in captivity indicate that sea kraits (*Laticauda colubrina*, *L. laticaudata*, and *L. semifasciata*) and Yellow-bellied Seasnakes (*Pelamis platurus*) drink fresh water when they become dehydrated in seawater and require freshwater to restore deficits in body water (Lillywhite et al. 2008). Lillywhite (2017) documented snakes (e.g., *Pantherophis alleghaniensis*, *Lampropeltis californiae*, *Nerodia fasciata,* and *Agkistrodon conanti*) drinking water opportunistically in captivity and tending to consume more after feeding. Turner (2020) observed an adult female Coastal Taipan (*Oxyuranus scutellatus*) drinking water droplets from its dorsum, flanks, and vegetation. Terrestrial snakes generally resist consuming water from free sources rather than dietary and metabolic sources unless they are dehydrated by drought or other factors (Lillywhite 2006). In our observation, the snake might have been drinking water on a hot day to mitigate dehydration in the pre-monsoon season, possibly to improve metabolic processes such as excretion and defecation.

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