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PREDATION ON ASIAN COMMON TOAD (*DUTTAPHRYNUS MELANOSTICTUS)* BY BENGAL MONITOR LIZARD (*VARANUS*) IN NATIONAL BOTANICAL GARDEN, BANGLADESH

Atikul Islam Mithu*[1], Mirza Md Moon Ridoy[2] and Sajid Hassan Prangon[3]

Department of Zoology, Jagannath University, Dhaka-1100, Bangladesh

Among the reptile community in Bangladesh, the family Varanidae is represented by three species: Bengal monitor lizard (*Varanus bengalensis*), Yellow monitor lizard (*Varanus flavescens*) and Water monitor lizard (*Varanus salvator*) (Khan, 2008). The Bengal monitor lizard is listed as Near Threatened in Bangladesh and Least Concern globally (IUCN Bangladesh, 2015). It has a wide global distribution range from Afghanistan to Vietnam through Bangladesh, Bhutan, Cambodia, China, India, Indonesia (Java and, Sumatra islands), Iran, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Sri Lanka, and Thailand (Papenfuss et al., 2010; IUCN Bangladesh, 2015). It is distributed widely in all major habitat types in the country including the coastal islands (IUCN Bangladesh, 2015). Bengal monitor lizards are carnivores and opportunistic scavengers (Devanda and Jayashankar, 2022). Their typical diet consists of insects, crustaceans, fishes, amphibians, vertebrates, vegetables and fruits matter (Rahman and Rakhimov, 2015). Among amphibians, *V. bengalensis* has been reported to mostly prey on the Indian skipper frog, Indian green frog, Common paddy field frog, Jurdon's bullfrog, Sri Lankan bullfrog, Spotted tree frog, Common shrub frog, Short-headed burrowing frog, Roland's burrowing frog, and Marbled ballon frog (Jaman et al., 2007; Karunarathna et al. 2017).

The Asian common toad (*Duttaphrynus melanostictus*) is the commonest amphibian in Bangladesh, which also has a wide global distribution from India to Papua New Guinea throughout the mainland of south and south-east Asian countries (Charles and Das 2008, IUCN Bangladesh 2015). In Bangladesh, toad occurs through the mainland to coastal areas, including offshore islands and all terrestrial forests ecosystems (Asmat et al., 2003; Khan 1982, 1987, 2015; Pratihar et al., 2014, IUCN Bangladesh, 2015). Although Bengal monitor lizards are often known to prey on frogs, preying on toads is relatively infrequent because they secrete bufotoxin that can kill predators. In Bangladesh, information about feeding ecology and prey species of Bengal monitor lizard is

**Author for correspondence: <atikulmithu9944@gmail.com>, [2]Department Geography and Environment, Jagannath University, Dhaka-1100, Bangladesh; [3]Department of Zoology, Jagannath University, Dhaka-1100, Bangladesh.*

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very scanty. Herein, we present an observation of predation on the Asian common toad by the Bengal monitor lizard in the National Botanical Garden, Bangladesh.

National Botanical Garden (NBG) is situated in Dhaka, the capital city of Bangladesh (23°49'21.0329" N, 90°21'52.5082" E). During a biodiversity survey in NBG, on 30 November 2023, at 1130 h, we observed a Bengal monitor lizard preying on an adult Asian common toad near a fallen tree. The toad was identified having a relatively small head in proportion to its body, blacktipped warts and ridges, and prominent toxin-exuding parotid glands. The Lizard captured the head and right forelimb of the toad (Figure 1). The toad tried to escape from the predator by jerking its limbs and swelling belly. But the predator slammed the toad to kill against the fallen tree. It first swallowed the toad's head and then the rest of the body. The predation took approximately nine minutes to complete and the predator left the place immediately.

The Bengal monitor lizard is a widely-foraging predator and consume almost everything that is smaller than themselves and they can easily overpower (Auffenberg, 1994). Previous studies and literature reviews have revealed a diverse array of prey species consumed by *Varanus bengalensis* but relatively rare among toads. This can be because toad have toxic substances in the skin and parotid glands. When threatened by predators, they secrete a milky bufotoxin that can be fatal to predators, depending on the intensity of ingestion and the strength of the bufotoxin. Previously, Jaman et al., (2007) reported predation of Asian common toad by Bengal monitor lizard from gut content analysis in Bangladesh. of the total food items consumed by *V. bengalensis,* only 1.62% were identified as toads, but both photographic and genetic evidence for toad identification was lacking. Karunarathna et al. (2017) also reported predation of Atukorale's toad, Schneider's toad, and Asian common toad by *V. bengalensis* from gut content analysis in Sri Lanka. Although genetic evidence for toad identification was lacking, photographic evidence of Asian common toad predation by *V. bengalensis* was present. A few studies conducted on habitat preference (Mijanur and Iliazovic, 2016), behavioral aspects (Ahsan and Saeed, 2004; Rahman and Rakhimov, 2015; Rahman et al, 2015; Khan et al., 2018), and feeding ecology (Jaman et al., 2007) of Bengal monitor lizard in Bangladesh. However, the information about prey species of the lizard in Bangladsh remains largely unexplored. As far as we know, this is the first observational record with photographic evidence, of Bengal monitor lizard preying on an Asian common toad in Bangladesh. We conducted a comprehensive literature review to validate the information by using online databases and different scholarly search engines such as Google Scholar, Science Direct, and PubMed. By analyzing previous records, our study suggest that Bengal monitor lizard is physiologically resistant

to the toxins of Asian common toads, but it does not always prefer to eat them. This could have implications for their feeding behavior and ecological interactions within their habitat. So, we recommend detailed studies on the Bengal monitor lizard diet and prey species which can be interesting considering its wide distribution and habitat heterogeneity.

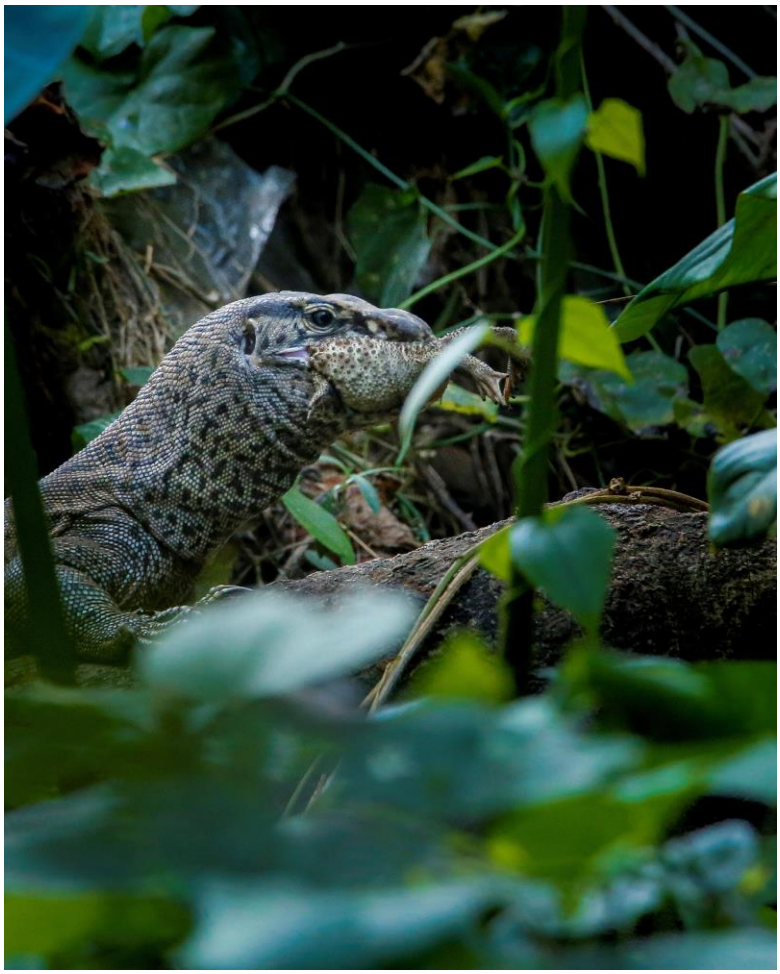

Fig.1: Bengal Monitor Lizard preying on an Asian Common Toad in National Botanical Garden, Bangladesh.

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