



A New Elevational and Locality Record of the Assam Leaf Turtle, *Cyclemys gemeli* (Geoemydidae), from the Darjeeling Hills in the Central Himalayan Biogeographic Province

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The Assam Leaf Turtle (*Cyclemys gemeli* Fritz, Guicking, Auer, Sommer, Wink, and Hundsdörfer 2008) is one of only two species in the genus *Cyclemys* known to occur in India (Aengals et al. 2018). Only one or two species were recognized (Iverson 1992) until analyses of mtDNA sequences

suggested the existence of seven species (Guicking et al. 2002; Stuart and Fritz 2008). Distributions are not clearly defined at this time (Fritz et al. 2008); however, based on morphology, locality records of the Assam Leaf Turtle include Assam (Fritz et al. 2008; Basumatary and Sharma 2013), Meghalaya



Fig. 1. An Assam Leaf Turtle (*Cyclemys gemeli*) from the Avon Grove Tea Estate, Darjeeling, West Bengal, India, at an elevation of 1,444 m asl. Photographs by Avantika Thapa and Pujan Kumar Pradhan.

(Praschag et al. 2009), Nagaland (Praschag et al. 2009), West Bengal (Pradhan et al. 2020), Uttar Pradesh (Das et al. 2012), and southeastern Bhutan (Wangyal et al. 2012). The elevational extent of the species' entire distribution is unknown, but published records span a range of 70–1,300 m asl (Table 1). Herein we report the highest elevational record of the Assam Leaf Turtle from the Darjeeling Hills in West Bengal.

On 22 August 2020, during fieldwork in the Avon Grove Tea Estate (26.93804°N, 88.19495°E), Darjeeling, West Bengal, India, at an elevation of 1,444 m asl, we were informed by local residents that a turtle had been rescued from a road at night. We took photographs and morphometric measurements of the rescued individual, compared them to descriptions provided by Ahmed and Das (2010) and Fritz et al. (2008), and tentatively identified it as *Cyclemys gemeli*. The adult female (carapace length 22.8 cm, carapace width 16.0 cm, plastron length 16.5 cm, tail length 3.8 cm, forelimb length 10.1 cm, hindlimb length 7.6 cm) weighed 890 g (Fig. 1). The turtle had 11 pairs of marginal scutes and both the carapace and plastron were dark brown. Other than missing the digits of its left hindlimb, it appeared to be in good health. The turtle was released into a nearby swamp (26.937767°N, 88.194352°E), where it has been resighted at least twice by local residents.

The closest published locality record for this species is in Sittong, Darjeeling District, West Bengal (26.9480°N, 88.3800°E) at an elevation of 580 m asl (Pradhan et al. 2020) and 56 km from the Avon Grove Tea Estate. We submitted a photographic voucher to the Zoological Survey of India, National Zoological Collection (ZSI/WL/1903) and the identity of the turtle was confirmed from photographs by Dr. Kaushik Deuti.

Turtles and tortoises are severely threatened by unprecedented habitat destruction and poaching for food and traditional Chinese medicine (van Dijk et al. 2000; Praschag and Ahmed 2021). Documentation of distributions is of critical importance for developing conservation strategies (Sharief et al. 2021). The Assam Leaf Turtle has been mentioned as a food item and as a cure for skin diseases in a study conducted among the Adi tribes residing in Arunachal Pradesh as well (Chinlapianga et al. 2013), and a study conducted in Nagaland reported a shell of this species painted with enamel (Bhupathy et al. 2013). The current conservation status of Near Threatened (NT) on the IUCN Red List (Praschag and Ahmed 2021) is based largely on evidence that the population of this species is declining. In India, this species has been categorized as Schedule IV under The Wildlife (Protection) Act, 1972 and is listed in CITES Appendix II (CITES 2021).

Acknowledgements

We thank the Chief Wildlife Warden, Forest Department, West Bengal, for granting the necessary permission to undertake field surveys for the research work. We are grateful to the staff of both the forest department of Darjeeling Directorate and the Wildlife Division-I for extending their support during fieldwork. We are grateful to Mr. Abhishek Gurung and Mr. Sewak Gurung for passing on invaluable information. We also thank Mr. Aditya Pradhan for his kind support and guidance during the drafting of this manuscript. Dr. Kaushik Deuti for helping in identification of the species. Finally, we acknowledge the National Mission on Himalayan Studies, Ministry of Environment, Forest and Climate Change (MoEFCC) for financial support Grant No. NMHS/2017-18/LG09/02.

Table 1. Published localities with elevations for the Assam Leaf Turtle (*Cyclemys gemeli*).

Locality	Elevation (asl)	Source
Jia Bhoroli River, Assam, India	Approx. 70 m	Fritz et al. 2008
Damra Village, Assam, India	Approx. 50 m	Praschag et al. 2009
Near Barni Hat, Meghalaya, India	Approx. 75 m	Praschag et al. 2009
Dimapur, Nagaland, India	150 m	Praschag et al. 2009
Tuli Village, Nagaland, India	153 m	Praschag et al. 2009
Orang National Park, Assam, India	Approx. 60 m	Baruah et al. 2011
Sershong, southeastern Bhutan	325 m	Wangyal et al. 2012
Panbari, Assam, India	252 m	Basumatary and Sharma 2013
Nishangada, Uttar Pradesh, India	Approx. 100 m	Das et al. 2012
Around Sendenyu Village, Nagaland, India	Approx. 1,300 m	Bhupathy et al. 2013
Arunachal Pradesh, India	—	Chinlapianga et al. 2013
Chittagong Hills, Bangladesh	—	Rahman et al. 2015
Sitong, West Bengal, India	580 m	Pradhan et al. 2020
Avon Grove Tea Estate, West Bengal, India	1,444 m	Present study

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