



Notes on Asian Glass Lizards, *Dopasia gracilis* (Gray 1845), in Darjeeling-Sikkim Himalaya, India

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Although the Eastern Himalaya is a global biodiversity hotspot (Mittermeier et al. 2011) and a number of 19th-century works (Gray 1845, 1853; Anderson 1871; Boulenger 1885) documented reptilian diversity in the region, few

recent studies (Chettri and Bhupathy 2007; Chettri et al. 2010, 2011) have addressed the reptilian fauna of Darjeeling-Sikkim Himalaya. The area is home to 100 species (Chettri and Bhupathy 2007; Pan et al. 2013; Pradhan et al. 2020),

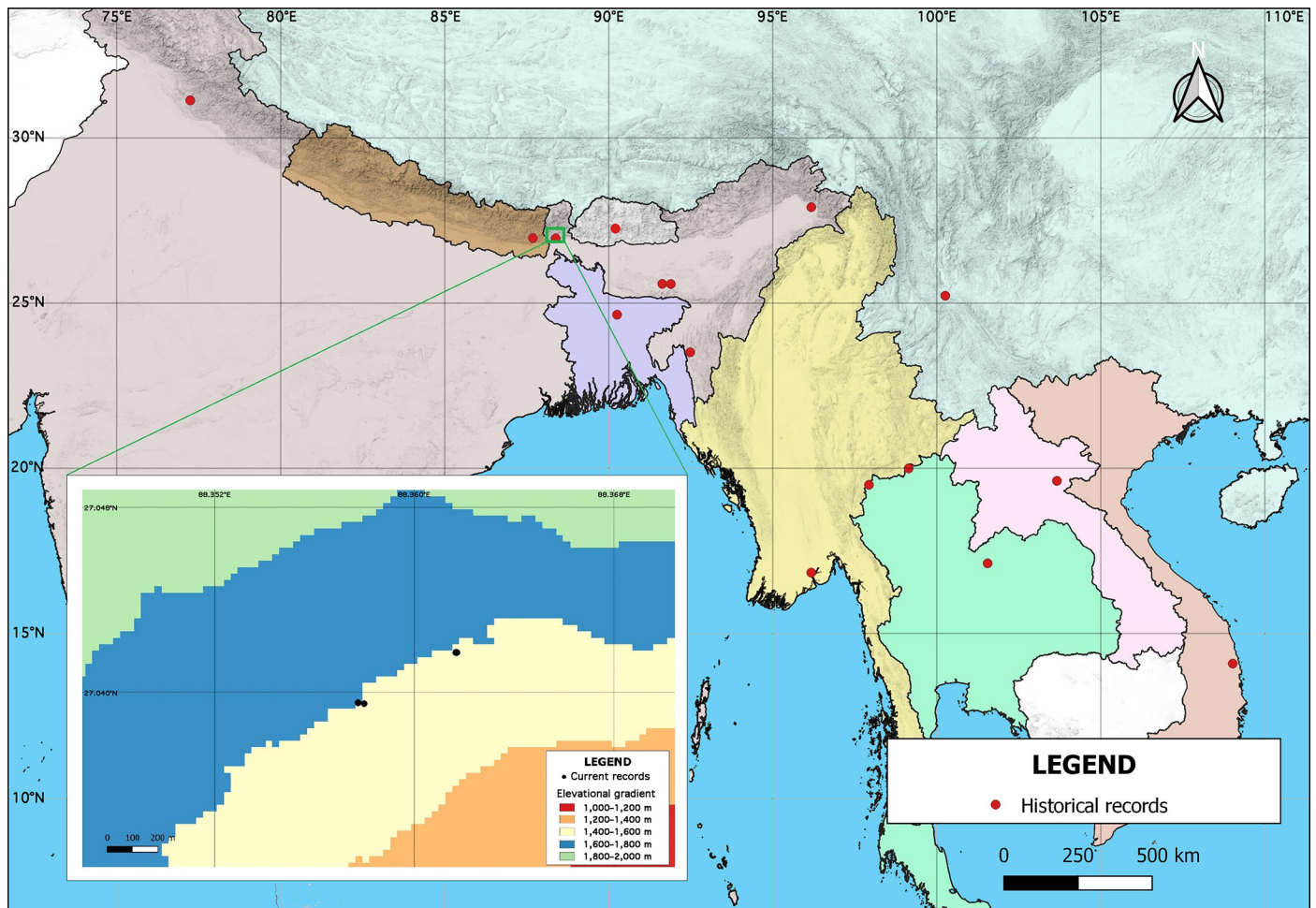


Fig. 1. Map showing historical records of *Dopasia gracilis* across the Indo-Chinese sub-region, accompanied by the current sighting records along an elevation gradient.



Fig. 2. Field observations made during the study in Darjeeling, India, Eastern Himalaya (A). Dorsum of the dead individual of *Dopasia gracilis* (B). The dead individual of *Dopasia gracilis* being measured with an mm-scale ruler, showing the two injury marks on the ventrum. (C). The live individual of *Dopasia gracilis* brooding with an egg under a pile of decaying leaf-litter (D). A typical micro-habitat where the live individual of *Dopasia gracilis* was encountered. Photographs by Aditya Pradhan.

including the recently documented Himalayan Lancehead (*Protobothrops himalayanus*) and Assam Leaf Turtle (*Cyclemys gemeli*), but also including some species that have not been encountered in recent years. One of the latter is the Asian Glass Lizard (*Dopasia gracilis*).

Dopasia gracilis (Gray 1853) is distributed from northern India through the Indo-Chinese Peninsula south to Indonesia (Nguyen et al. 2016) (Fig. 1) primarily at elevations of 3,000–5,000 ft (~900–1,500 m), with a maximum elevation of 8,000 ft (= 2,438 m) near Shimla in Himachal Pradesh, India (Smith 1935).

This species has been recorded from many parts of the eastern Himalayas of Assam and Himachal Pradesh (Smith 1935; Tikader 1967). In recent years, however, it has been reported only from Mizoram (Lalremsanga et al. 2010) and occasionally photographed by nature enthusiasts in Arunachal Pradesh (Uetz et al. 2020). In Darjeeling-Sikkim Himalaya, records date to Boulenger (1885) and Gammie (1928), with subsequent reports of its occurrence in the region (Ahmed and Dasgupta 1992; Jha and Thapa 2002; Chettri and Bhupathy 2007) based on historical records or museum specimens. Moreover, recent herpetological studies in Sikkim Himalayas (Chettri et al. 2011) failed to document this species and sur-

veys are yet to be conducted in the Darjeeling Hills. Also, although this species has been previously described and reported from elevations above 1,000 m asl in Darjeeling-Sikkim Himalaya (Anderson 1871; Boulenger 1885; Gammie 1928), no precise localities were listed. Herein, we present the first detailed locality and elevational records for the area.

We conducted a Visual Encounter Survey (VES) (Chettri et al. 2010) supplemented by opportunistic sampling to document the reptilian fauna (not presented in this paper) in a human-modified ecosystem at elevations of 1,550–1,600 m asl in the Darjeeling Hills of northern India (27.04°N, 88.36°E) (Fig. 1). The area is characterized by abandoned farms and private forests and borders a reserve forest to the west, which is continuous with the Senchal Wildlife Sanctuary. The region receives heavy rainfall during the monsoon (May–August) and occasional showers in winter, which lead to damp foggy conditions (Chaudhary and Bawa 2011). Plantations of Japanese Cedar (*Cryptomeria japonica*) are scattered among the montane subtropical and montane wet temperate broadleaf forests (Meura et al. 1983).

From May and August 2017, we encountered three Asian Glass Lizards (*Dopasia gracilis*) at three proximate sites (separated by no more than about 500 m) in the Darjeeling Hills

(Fig. 1). The first individual, which we were unable to photograph, was on a roadside near a small stream (27.04172°N, 88.36168°E; elev. 1,578 m asl) on 2 May 2017. The second individual (SVL 144 mm, total length 262 mm with a regenerated tail; Fig. 2A) was dead on a trail (27.03954°N, 88.35796°E; elev. 1,590 m asl) with two injuries on its venter (Fig. 2B) on 14 May 2017. The third individual (estimated total length >300 mm, also with a regenerated tail), encountered during a VES (27.03956°N, 88.35774°E; elev. 1,600 m asl) on 15 August 2017, was brooding an egg under a pile of decaying leaf litter (Fig. 2C). When disturbed by our presence, it escaped, leaving the oval egg that measured 19 mm along its longest axis. These sites were characterized by damp forest, decaying leaf-litter, and fallen branches (Fig. 2D).

The live individuals were sluggish when first encountered (Smith 1935; Ahmed and Dasgupta 1992) but moved quickly when disturbed. These lizards are known to feign death (Smith 1935) and autotomize their tails when attacked (Smith 1935; Jha and Thapa 2002). All three of the individuals we encountered had regenerated tails (glass lizards with intact tails are rare; Anderson 1871). Also, that all three were in damp areas is consistent with reports that this species favors moist conditions (Anderson 1871; Smith 1935).

The observation of brooding in August is in line with the breeding season (July–September) mentioned in Smith (1935). However, the presence of only one egg, as opposed to reported clutch sizes of four–seven eggs (Smith 1935; Sharma 2005), was unusual. The egg was slightly larger than the 18-mm maximum recorded in Smith (1935) and Sharma (2005). These glass lizards are thought to be nocturnal and subsist on a diet of insects and earthworms (Smith 1935). They hibernate during winter months (Smith 1935; Jha and Thapa 2002), and we encountered no individuals after the monsoon season.

In India, the Asian Glass Lizard is protected under Schedule IV of the Wildlife Protection Act (1991) (Jha and Thapa 2002) but has not been assessed by the IUCN Red List. The major threat to the species is habitat loss (Sharma 2005), but local residents, mistaking it for a snake, also often kill them whenever they are encountered (e.g., Wangyal 2013). Nevertheless, when we showed a color photograph to local residents in Darjeeling, most of them classified it as a snake, identified the species as “tukre saanp” (= “fragile snake” in Nepali), and stated that these animals were occasionally encountered during the monsoon months. This suggests that the species is less rare than the absence of recent accounts would imply and that the occurrence of *Dopasia gracilis* may have gone unnoticed in the eyes of the scientific community due to the shy nature and nocturnal habits of the species or because of insufficient sampling efforts during the very few herpetofaunal studies conducted in the region.

Acknowledgments

We thank Dr. Kaushik Deuti, Scientist-C, Zoological Survey of India, Kolkata, for the help and support he provided during the archival work. We are grateful to members of the local community for sharing their local knowledge of the species. We also thank the Head of Post Graduate Department of Zoology, Darjeeling Government College for all the support.

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