

Biodiversity Record: Glossiphoniid leeches on Sunda box turtles and Asiatic softshell turtle

Chen Xuanhe* & Luqmanul Hakim Bin Othman

Email: xuanhezen@gmail.com (*corresponding author), luqmanulhakimtwgs@gmail.com

Recommended citation. Chen X & Luqmanul HBO (2025). Biodiversity Record: Glossiphoniid leeches on Sunda box turtles and Asiatic softshell turtle. Nature in Singapore, 18: e2025090. DOI: 10.26107/NIS-2025-0090

Subjects: Proboscis-bearing leeches, unverified genus and species (Annelida: Clitellata: Hirudinea: Glossiphoniidae); Asiatic softshell turtle, *Amyda* cf. *cartilaginea* (Reptilia: Testudines: Trionychidae); Sunda box turtle, *Cuora couro couro* (Reptilia: Testudines: Trionychidae).

Subjects identified by: Chen Xuanhe and Luqmanul Hakim Bin Othman.

Locations, dates and times: Singapore Island at two locations —

- 1) Bukit Timah, Dairy Farm area; 1 January 2024 at around 0745 hrs & 28 August 2024 at around 1750 hrs.
- 2) Mandai west; 19 August 2024 at around 2122 hrs.

Habitat: 1) Artificial pond in parkland adjacent to secondary forest. 2) Open-country stream in scrubland with slow-flowing clear water, sand and silt substrate, and riparian vegetation.

Observers: Chen Xuanhe and Luqmanul Hakim Bin Othman.



1



2

Fig. 1. Lateral view of Sunda box turtle at Dairy Farm area on 1 January 2024. Fig. 2. Dorso-lateral of the hind part of the turtle's carapace with four leeches attached (indicated by arrows) (Photographs by: Chen Xuanhe).



3



4

Fig. 3. Lateral view of Sunda box turtle at Dairy Farm area on 28 August 2024. Fig. 4. Dorsal view of a leech attached to the left humeral scute of the turtle's plastron (Photographs by: Chen Xuanhe).

Observations:

1) At the Dairy Farm area, a female Sunda box turtle of around 20 cm straight carapace length (SCL) (Fig. 1) was seen with three leeches of around 2.5 cm (fully stretched) attached to the coastal and marginal scutes of the carapace (Fig. 2). On 1 January 2024. A different individual, also female, of around 18 cm SCL (Fig. 3) was also observed at the same location on 28 August 2024, with a leech attached to the left humeral scute of the plastron (Fig. 4).

2) In a stream at Mandai west, a female Asiatic softshell turtle of around 18 cm SCL was found with a leech (around 1 cm in a relaxed state) attached to the upper lip near the nostrils (Fig. 5).

All three turtles observed were found in water. Throughout the duration of the observation (around two minutes) for each turtle, the leeches made no attempt to detach from the hosts but actively shifted from their initial positions.



5



6

Fig. 5. Fronto-lateral view of the head of the Asiatic softshell turtle at Mandai west on 19 August 2024, with a leech attached to the upper lip near the nostrils (indicated by arrow). Fig. 6. Dorsal view of the carapace of the same softshell turtle showing healed lesions (Photographs by: Chen Xuanhe).

Remarks: Although the leeches observed on the three turtles featured here appear to be physically similar, it may not be possible to identify them from photographs limited to views of their dorsal surfaces. It is assumed that the leeches were feeding on the blood of the turtles, as seen in a recent record of a tentative *Hirudinaria manillensis* on a red-eared slider, *Trachemys scripta elegans* (Neo, 2025). Compared to *Hirudinaria manillensis* (see Serin et al., 2015; Tan & Yeo, 2015; Chan & Lau, 2022; Neo, 2025), the leeches herein featured appear to be considerably smaller and flatter. It is suggested that they belong to the family Glossiphoniidae (freshwater proboscis-bearing leeches), which contains turtle specialists such as *Placobdelloides siamensis* that parasitizes various species of the family Geoemydidae (see Trivalairat et al., 2020).

Several healed lesions were noted on the carapace of the softshell turtle herein featured (Fig. 6). We have observed this feature to be common among Asiatic softshell turtles. Whether such lesions are caused by leeches requires further investigation. Trivalairat et al. (2020) reported that snail-eating turtles (*Malayemys* spp.) infested with large numbers of *Placobdelloides siamensis* suffer from anaemia and malnutrition, which sometimes kills the host.

In Singapore, a glossiphoniid leech has been recorded parasitizing a lowland freshwater crab, *Parathelphusa maculata* (see Yap et al., 2023).

Literature cited:

Chan S-Y & Lau WL (2022) Biodiversity Record: Buffalo leech at Jurong Lake. *Nature in Singapore*, 15: e2022060.
DOI: 10.26107/NIS-2022-0060.

Neo J (2025) Biodiversity Record: Buffalo leeches attached to a red-eared slider. *Nature in Singapore*, 18: e2025061.
DOI: 10.26107/NIS-2025-0061.

Serin S, Law IS & Sankar A (2015) Freshwater leech at Mandai. *Singapore Biodiversity Record*, 2015: 67.

Tan HH & Yeo JW (2015) Freshwater leech brooding behaviour. *Singapore Biodiversity Record*, 2015: 83–84.

Trivalairat P, Chiangkul K & Purivirojkul W (2020) Parasitism of *Placobdelloides siamensis* (Oka, 1917) (Glossiphoniidae: Hirudinea) in snail-eating turtles, *Malayemys* spp., and the effects of host and aquatic environmental factors. *Biodiversity Data Journal*, 8: e57237.

Yap A, Lee C, Seah M & Ng D (2023) Glossiphoniid leech on lowland freshwater crab. *Nature in Singapore*, 16: e2023068.
DOI: 10.26107/NIS-2023-006.