

Biodiversity Record: Black-and-white flatworms at the Botanic Gardens

Rene S. L. Ong* & Yap Ee Hean

Email: rene.ong@gmail.com (*corresponding author)

Recommended citation. Ong RSL & Yap EH (2022) Biodiversity Record: Black-and-white flatworms at the Botanic Gardens. Nature in Singapore, 15: e2022132. DOI: 10.26107/NIS-2022-0132

Subjects: Hammerhead flatworm, *Diversibipalium* sp. (Platyhelminthes: Tricladida: Geoplanidae: Bipaliinae).

Subjects identified by: Yap Ee Hean.

Location, date and time: Singapore Island, Botanic Gardens; 21 July 2022; around 1230 hrs.

Habitat: Remnant patch of primary lowland rainforest surrounded by urban parkland.

Observer: Yap Ee Hean.

Observation: Two examples were found on rotten wood among leaf litter (Fig. 1). A third individual was found nearby, also on rotting wood (Fig. 2). The dorsal surface of the head plate is white with a black anterior margin and a continuous blackish transverse band (Fig. 3). The dorsal part of the body is black with four white transverse bands, with the middle two divided in the middle by a thin black line, and the ends of the fourth band extending into a white lateral stripe along the rear half of the body and meeting at the tail end. All three specimens were about 8 to 10 cm in length when stretched out.



Fig. 1. One of the two hammerhead flatworms that were found together on rotten wood. Note the tiny tail-less whip scorpion (*Amblypygi*) positioned between the head and tail ends of the flatworm. (Photograph by: Yap Ee Hean).

Remarks: The generic placement of the featured flatworms is tentative. At least 13 nominal species of hammerhead flatworms (subfamily Bipaliinae) have been recorded from Singapore (see von Graff, 1899; de Beauchamp, 1933, 1940; Kawakatsu et al., 2002; Heng & Lim, 2014). None of them have colour patterns that match the specimens illustrated here. The authors are unable to identify them to species.

From photographs shared on the website iNaturalist, the authors have identified flatworms with similar black-and-white pattern occurring at Dairy Farm Nature Park, Hindhede Nature Park, MacRitchie Reservoir Park, Thomson Nature Park, Mandai and Windsor Nature Park. These locations are in the central part of Singapore Island around the Bukit Timah and Central Catchment Nature Reserves. A hammerhead flatworm photographed at Bukit Batok Nature Park on 19 April 2013 by Yeo (2014 as *Bipalium* sp. 2) seems to be conspecific with the featured taxon.



Fig. 2. The third flatworm at a nearby location. Fig. 3. Dorsal view of the head of one of the flatworms showing the continuous black band on its head plate. (Photographs by: Yap Ee Hean [2] and Rene S. L. Ong [3]).

Literature cited:

- de Beauchamp P (1933) Planaires terrestres du Raffles Museum. Bulletin of the Raffles Museum, Singapore, 8: 109–120, pl. VI.
- de Beauchamp P (1940) Planaires terrestres du Raffles Museum (deuxième note). Bulletin of the Raffles Museum, Singapore, 16: 114–118.
- Heng PY & Lim KKP (2014) Hammerhead flatworm *Bipalium* cf. *vagum* in Singapore. Singapore Biodiversity Records, 2014: 143–144.
- Kawakatsu M, Ogren RE, Froehlich EM & Sasaki G-Y (2002) Miscellaneous papers on turbellarians. Additions and corrections of the previous land planarian indices of the world (Turbellaria, Seriata, Tricladida, Terricola). Bulletin of the Fuji Women's University, 40 (series II): 157–177.
- von Graff L (1899) Monographie der Turbellarien. II. Tricladida Terri-cola (Landplanarien). Verlag von Wilhelm Engelmann, Leipzig, ixv + 574 pp.
- Yeo RKH (2014) Hammerhead flatworms at Bukit Batok Nature Park. Singapore Biodiversity Records, 2014: 209–210.