

A dragonfly of the genus *Heliaeschna* in Jalan Lembah Thomson estate

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Subject: *Heliaeschna* species (Insecta: Odonata: Aeshnidae).

Subject identified by: Robin Ngiam and Christian Sih.

Location, date and time: Singapore Island, Jalan Lembah Thomson; 2 November 2019; 2200 hrs.

Habitat: Suburban housing estate. In the outdoor kitchen of a terrace house.

Observers: Christian Sih and Robin Ngiam.

Observation: A relatively large dragonfly of around 7.3 cm body length and with a wingspan of about 11 cm, was found freshly deceased on the floor of an outdoor kitchen (Fig. 1). Fractures noted in its compound eyes suggest that it could have died from collision with a hard surface, such as a glass pane or a wall. The dragonfly has a uniform dark brown coloration and its eyes appear light green. Unique features include highly pigmented costal margins of both fore and hindwings, and patterned wings having a ‘dusty’ appearance (Fig. 2-4). Based on the absence of secondary genitalia in the second abdominal segment, this individual is a female. The specimen has since been pinned and preserved.

Remarks: The featured dragonfly specimen belongs to the family Aeshnidae based on its large size and morphological characteristics. Upon observation under a microscope, we were able to identify it as belonging to the genus *Heliaeschna* from the presence of four spines (Fig. 5) on the ventral dentigerous plate of abdominal segment 10 (S10) (Orr & Ngiam, 2011). Two *Heliaeschna* species are known from Singapore - *Heliaeschna crassa* and *Heliaeschna uninervulata* (Soh et al., 2019). Because there are multiple cross-veins at the base of the wing median space (Fig. 2), our specimen is not *Heliaeschna uninervulata*, as that species has only one cross-vein (Tang et al., 2010). Unfortunately, the difficulty in differentiating females of this genus hinders species identification. Our specimen could either be *Heliaeschna crassa* or the closely related *Heliaeschna idae* (see Tang et al., 2010).

Unlike the more common diurnal dragonflies, *Heliaeschna* species are mainly crepuscular and inhabit swampy forests, which renders them elusive. Local records are sporadic. Many are of individuals attracted to artificial light at the forest edge. This finding is significant in helping us understand the distribution range of these dragonflies. We believe that the featured specimen most likely came from the nearby MacRitchie forest.



Fig 1. Dorsal view of the dragonfly on the night of acquisition.

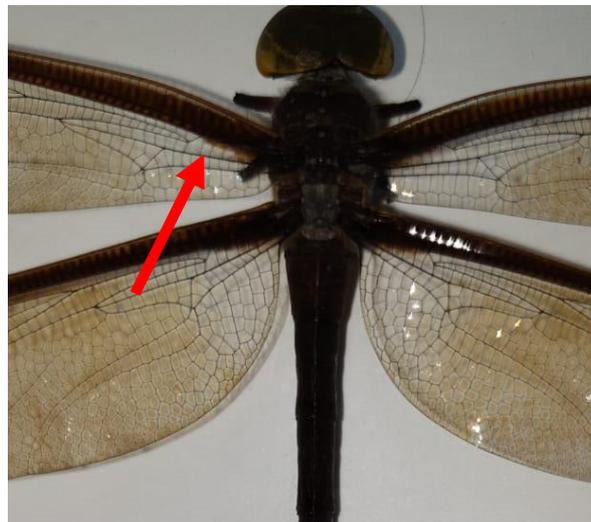


Fig 2. Dorsal close-up view of the thoracic region with arrow pointing to cross-veins at wing median space.

Photographs by Christian Sih



Fig 3: Dorsal view of dragonfly against ruler scale, indicating a body length of 7.3 cm.



Fig 4. Hindwing of the specimen, indicating length of approximately 5.5cm.



Fig 5. Magnified ventral view of the four spines (in circle) on the ventral dentigerous plate of abdominal segment 10.

Photographs by Christian Sih

References:

- Orr AG & Ngiam RWJ (2011) A description of the larva of *Heliaeschna uninervulata* Martin (Odonata: Aeshnidae) from Singapore, with notes on its relationships. *International Journal of Odonatology*, 14: 163–169.
- Soh M, Ng M. & Ngiam RWJ (2019) New Singapore record of a dragonfly, *Indothemis carnatica*, with an updated Singapore Odonata checklist. *Singapore Biodiversity Records*, 2019: 10-17.
- Tang HB, Wang LK & Hämäläinen M (2010) *A Photographic Guide to the Dragonflies of Singapore*. Raffles Museum of Biodiversity Research, National University of Singapore. 223 pp.