

Thunder crabs *Myomenippe hardwickii* feeding on seahare and stingray

Subjects: Thunder crab, *Myomenippe hardwickii* (Crustacea: Decapoda: Menippidae);
Spotted sea hare, *Aplysia sp.* (Mollusca: Gastropoda: Anaspidea: Aplysiidae);
Blue-spotted fantail ray, *Taeniura lymma* (Chondrichthyes: Myliobatiformes: Dasyatidae).

Subjects identified by: Contributor.

Location, date and time: 1) Johor Strait, Pulau Ubin, Tanjong Chek Jawa; 7 May 2016; 0417 hrs. 2) Johor Strait, Beting Bronok north of Pulau Tekong; 7 June 2016; 0616 hrs.

Habitat: Estuarine. 1) Seagrass meadow and 2) reef flat, at low tide.

Observers: Contributor & Loh Kok Sheng.

Observations: Two records are herein featured.

1) On a seagrass meadow at Tanjong Chek Jawa on 7 May 2016, a thunder crab of about 10 cm carapace width was observed feeding on a spotted sea hare held in the crab's chelipeds (Fig. 1). When the observers approached the crab, the crab did not relinquish its grip on its food as it moved away from the observers.

2) On the reef flat of Beting Bronok on 7 June 2016, a thunder crab of about 10 cm carapace width was observed clutching a dead blue-spotted fantail ray (Fig. 2). The ray was much bigger (20 cm in length including tail) than the crab and seemed to be partially eaten. When approached, the crab moved away, dragging the ray along (Fig. 3), and attempted to hide beneath an abandoned rubber tyre. A video footage of the encounter recorded by the contributor can be viewed at: <https://www.youtube.com/watch?v=AAvI4M2fK14>.

Remarks: Although the cause of death of both the sea hare and ray in the two featured incidents could not be determined, it seems plausible that they were captured and killed by the crabs as there were no signs of decomposition or large chunks of tissue missing from either of the two victims. Crabs and lobsters are known to feed on sea hares, which in defence, will secrete purple ink that interferes with the chemoreceptors of their would-be predators (Kamio et. al., 2010 and Love-Chezem et. al., 2013). In contrast, a crab killing and eating a ray might seem unusual, especially since crabs often fall prey to rays. The thunder crab is also recorded to prey on molluscs (Ling, 2008). This may indicate that it is an opportunistic feeder on a wide variety of animal prey.

References

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- Love-Chezem, T., J. F. Aggio & C. D. Derby, 2013. Defense through sensory inactivation: sea hare ink reduces sensory and motor responses of spiny lobsters to food odors. *Journal of Experimental Biology*. 216: 1364-1372.

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Fig 1. Frontal view of thunder crab feeding on spotted sea hare at Tanjong Chek Jawa.



Fig. 2. Thunder crab clutching a dead blue-spotted fantail ray on the reef flat at Beting Bronok.



Fig. 3. Thunder crab dragging dead ray (left) while apparently searching for shelter.

Photographs by Jonathan Tan Yong How