

Biodiversity Record: Prey capture by carpet anemones, *Stichodactyla haddoni*

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Subjects: Haddon's carpet anemone, *Stichodactyla haddoni* (Cnidaria: Actinaria: Stichodactylidae); Orange-spotted grouper, *Epinephelus coioides* (Teleostei: Perciformes: Epinephelidae); Orange-striped hermit crab, *Clibanarius infraspinatus* (Crustacea: Decapoda: Diogenidae).

Subjects identified by: Elliott James Ong and Lewis Jie Qi Low.

Location, date and time: Johor Strait, Changi Beach off Carpark 7; 12 May 2024; around 0745 and 0815 hrs.

Habitat: Estuarine shore. On sand flat covered with seagrass during low tide.

Observers: Elliott James Ong, Lewis Jie Qi Low, Daphne Ong and Kenny Lek.

Observations: Haddon's carpet anemones were observed trapping and consuming live animals on two separate occasions in the same morning.

At approximately 0745 hours, the observers found a juvenile grouper of about 10 cm (Fig. 1) stranded in a small pool of water. They caught and released it in deeper water where it promptly darted under a carpet anemone which oral disc was around 30 cm across. Shortly after, a splashing sound (three splashes in about two seconds) from the carpet anemone alerted the observers to investigate. They found the grouper motionless within the mouth of the anemone and in the process of being consumed (Fig. 2).

About 30 minutes later, a hermit crab observed being captured and eaten by another carpet anemone which oral disc was about 25 cm in diameter. After getting trapped by the tentacles on the edge of the anemone's large oral disc, a small edge of the oral disk slowly folded inwards, pushing the hermit crab towards the anemone's mouth (Fig. 3). It took 30 seconds for the hermit crab to be brought from the edge of the oral disk to the centre of the anemone. Once there, a larger portion of the oral disk (about half) folded inwards, pushing the hermit crab deeper into the anemone's mouth until it, along with the shell, disappeared from the observers' view. The whole process from start to finish lasted approximately 2.5 minutes.

Remarks: These observations demonstrate that the carpet anemone *Stichodactyla haddoni* is a voracious predator that is adept at capturing prey, whether it be the grouper seeking shelter beneath its oral disc, or a hermit crab that blundered onto its tentacles. The consumption of the hermit crab shows that the anemone has a varied diet that includes prey with hard bodies. In Singapore, the Haddon's carpet anemone has been photographed eating crabs, sand dollars, sea pens and button snails (Tan, 2008). The parts that cannot be digested, such as the shells, are expelled later from the mouth. The carpet anemone may even attack large terrestrial prey. It has been implicated in the entrapment of a sand plover on a sandbar (Chan & Tan, 2020). *Stichodactyla haddoni* is usually found in mud or sand away from reefs (Fautin & Allen, 1997). In Singapore, it is known to host the saddleback anemonefish (*Amphiprion polymnus*) but only in subtidal areas of around 10 m (Toh, 2013).

Literature cited:

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- Tan R (2008) What do carpet anemones eat? Wild Fact Sheets. wildsingapore.com/wildfacts/cnidaria/actinaria/haddonieat.htm (Accessed 16 July 2024)
- Toh CH (2013) Shrimps and saddleback anemonefish on carpet anemone off Pulau Hantu. Singapore Biodiversity Records, 2013: 126–127.



Fig. 1. The juvenile grouper, about 10 cm in total length, found stranded, and photographed before being released into deeper waters (Photograph by: Elliott James Ong).

Fig. 2. Dorsal view of the carpet anemone with the grouper motionless and partially hidden among its tentacles (Photograph by: Lewis Jie Qi Low).

Fig. 3. Dorsal view of another carpet anemone pulling an orange-striped hermit crab (in its shell) towards the centre of its oral disk by folding in its edges (Photograph by: Lewis Jie Qi Low).