

INVERTEBRATES

Natural mortality of hard corals during summer 2003

by Andy Cornish

Natural mortality in local coral communities was observed during July and August 2003 and attributed to 3 possible causes, *Drupella*, low tides and typhoon Imbudo.

Drupella outbreak

Several hundred *Drupella* cf. *rugosa* snails were observed feeding in dense concentrations on four large (around 70 cm in height) *Platygyra* cf. *sinensis* colonies at Sharp Island on 10 July (Fig. 1). All four colonies were within 5 m of each other and at < 3 m depth. When the site was revisited on 17 July the majority of each colony had been completely stripped of live tissue and another colony nearby of the same species was being attacked. The largest quantitative survey of the phenomenon in Hong Kong (Morton and Blackmore, 2000) noted that while *Acropora pruinosa* seems to be the favourite prey of *Drupella rugosa*, other species may be attacked when the *Acropora* is scarce, such as at Sharp Island. That report concluded that such outbreaks posed “little threat” to coral communities in Hong Kong, in part because the *Drupella* normally only eat the connective tissue between polyps, allowing subsequent recovery. In the case reported in 2003, however, all tissue was removed with the loss of several decades-old colonies.



Fig. 1. *Drupella* cf. *rugosa* snails feeding on *Platygyra* cf. *sinensis* at Sharp Island

Extreme low tides

Partial coral mortality was apparent at Coral Beach, within the Hoi Ha Wan Marine Park, when the coral community there was visited on the 17 July. The top 3 or so centimeters of all of the shallowest corals, mostly *Platygyra* species, were bleached white and covered in various gastropods. It seems likely that the upper surfaces had been exposed to the air and sun for extended periods on the 14 and 15 July when there were extremely low tides (0.04 m and 0.06 m, respectively at Tai Po Kau, Hong Kong Observatory pers. comm.) and that the dead tissue was subsequently being eaten by the gastropods. Such mortality limits the vertical growth of corals on shallow reefs resulting in “micro-atolls” of massive corals, where growth is only possible horizontally leading to colonies with a large dead eroded center and a ring of living tissue on the sides.

Typhoon Imbudo

Typhoon Imbudo hit Hong Kong on the 24 July, causing damage to many large coral colonies in the Hoi Ha Wan and Ping Chau Marine Parks. At Moon Island in Hoi Ha, a number of large, internally bio-eroded *Platygyra* colonies in the shallowest waters (< 2 m depth) toppled over. Also, at least six large black coral colonies (*Antipathes* sp.) snapped near the base, or the holdfast came free, and they were transported from depths of > 7 m into shallower waters. This species is bush-like with numerous branches which must create significant drag in the water, making them vulnerable to strong surges. Coral Beach (Hoi Ha) is dominated by *Pavona decussata* and less damage was evident although some individual *Pavona* plates and a large stand measuring around 2 x 1 x 1 m had pulled out of the sand and fallen over. At Ping Chau the primary damage was caused by various species of massive coral including *Platygyra* cf. *sinensis* separating at the base from the siltstone bedrock and toppling down a siltstone “step.” There was also one small patch at < 2 m depth where loose siltstone slabs had been moved considerably by the waves, smashing corals in their path. Although greater than the damage caused by the direct hit of Typhoon Victor in 1997, I estimate that < 5% of all coral colonies were affected in both parks and even those that toppled should still be able to grow on those living surfaces not now smothered by sand etc.

Bibliography

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Rediscovery of a rare skipper — White-banded Awl (*Hasora taminatus*)

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On 29 May 2003, during a field trip in Pat Sin Leng Country Park, many leaf shelters were spotted on *Derris alborubra* (Fabaceae). Several skipper larvae were found inside the shelters and two were collected. The larvae pupated on 2 June and a male and female emerged on 11 June. The adults were examined and identified as *Hasora taminatus*.

Hasora taminatus is one of the rarest skippers in Hong Kong as only two specimens were known locally and no immature stage has been recorded (Bascombe, 1997). Since the last specimen was taken in 1957, this species has not been recorded in Hong Kong for nearly half a century.

Five *Hasora* species have been recorded in Hong Kong. Among them, *Hasora chromus* (Figs. 1-4) and *Hasora taminatus* (Fig. 5-12) highly resemble each other. In both species, the hindwing underside of both sexes has a white postdiscal band; the male forewing upperside is spotless and the female forewing has two small hyaline spots. The main differences between the two species are shown in the table below:

	<i>H. taminatus</i>	<i>H. chromus</i>
Larval Foodplant	<i>Derris alborubra</i> (Fabaceae) and probably <i>Millettia</i> sp.	<i>Pongamia pinnata</i> (Fabaceae)
Female Forewing Spots	Smaller and round	Larger and elongate
Underside Gloss	Metallic green	Pale purple

However, a worn specimen may lose its underside gloss and makes identification more difficult. As many larvae were seen on *Derris alborubra* in that area on the same day, *Hasora taminatus* could be locally common in Pat Sin Leng area.

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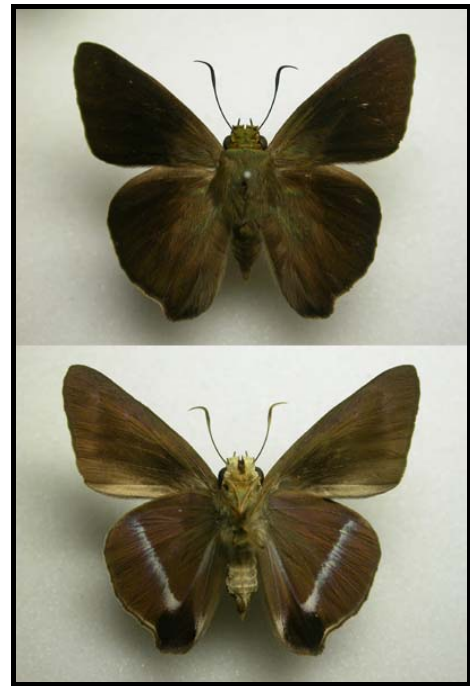


Fig. 1. Adult male of *Hasora chromus* (upperside).

Fig. 2. Underside of an adult male of *Hasora chromus*.



Fig. 3. Upperside of an adult female *Hasora chromus*

Fig. 4. Underside of an adult female *Hasora chromus*.



Fig. 5. Upperside of an adult male *Hasora taminatus*.

Fig. 6. Underside of an adult male *Hasora taminatus*.



Fig. 7. Upperside of an adult female *Hasora taminatus*.

Fig. 8. Underside of an adult female *Hasora taminatus*.



Fig. 9. Last (fifth) instar larva of *Hasora taminatus*



Fig. 10. Prepupatory larva of *Hasora taminatus*.



Fig. 11. Pupa (dorsal view) of *Hasora taminatus*.



Fig. 12. Pupa (lateral view) of *Hasora taminatus*.

A photo record of the coral reef mantis shrimp, *Pseudosquilla ciliata* in Hong Kong

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There is virtually no documentation or record of coral reef associated Stomatopoda (i.e. mantis shrimps) in Hong Kong, as most local studies on stomatopod Crustacea have been conducted in deeper waters (i.e. >20 m in water depth) using shrimp trawlers (Lai *et al.* 2003). On 18 May 2003, Ming-Hong Cheung and Joey Leung were diving at the south of Shelter Island, Port Shelter, Hong Kong (Grid reference: 22° 19'N 114° 18'E; water depth: *ca.* 8 m and visibility: 10 m) where they discovered and photographed a greenish mantis shrimp walking across the coral reef area (Figs. 1 & 2). The total length of this stomatopod was *ca.* 100 mm estimated by the divers. It could move very fast on the seabed and was occasionally hidden under the sediment or reef structure.



Figs. 1 & 2. The coral reef mantis shrimp *Pseudosquilla ciliata* found at Shelter Island, Port Shelter.

Recently, these photo records have been sent to the leading authority of Stomatopoda, Dr. Shane T. Ahyong of the Department of Marine Invertebrates, Australian Museum for further identification. The photographed stomatopod is confirmed to be *Pseudosquilla ciliata* (Fabricius, 1787) by Dr Ahyong. Probably, it is the first record of this reef stomatopod species in Hong Kong waters. This is a widespread coral reef species, which have been found in Australia, Vietnam and Indo-West Pacific (Ahyong 2001). Due to its wide occurrence throughout the region of South East Asia, it is not surprising that *P. ciliata* also inhabits in the coral reef area of Hong Kong. Although this photographed specimen is green in colour, it is important to sound a note that the colour of the species is amazingly variable and can vary from lemon yellow to mottled green or brown to black-green; they can change their colour dramatically between moults (Ahyong, personal communication). Detailed information regarding the morphology and identification of this species can be found in Ahyong (2001).

This is, once again, a good example to illustrate how much we still don't know about the diversity of marine life in the marine environment of Hong Kong. In future, more studies should be carried out with a view to deepening our knowledge about the diversity and ecology of reef Stomatopoda in Hong Kong.

Acknowledgements

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Fish checklist grows further at Cape d'Aguilar

by Andy Cornish

Despite poor visibility at the Marine Reserve all summer, a number of new records have been made in recent months. On 25 June a small school of Silvery Moony (*Monodactylus argenteus*) were recorded at 10 m depth. The same day, a 35