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SOME NOTE-WORTHY FISHES OBSERVED IN THE SINGAPORE STRAITS

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INTRODUCTION

Coral reefs around the islands south of Singapore comprise of fringing and patch reefs. Some of these have been monitored for their coral cover, and fish communities since the early 1980s (Goh et al., 1994). Fish were mainly monitored by visual means, and to date more than one hundred species have been recorded (Low & Chou, 1992). Since species with cryptic habits, and those occurring in deeper waters are likely to be missed, it is not possible for this method to provide a comprehensive inventory of the fish fauna. Nevertheless, we have been able to observe species which have hitherto not been recorded from Singapore, or are presumed to be locally rare. Five such fish species are highlighted in this article. Three are new records for Singapore, the other two have been recorded previously—one without evidence hitherto, and the other, rare.

The fish were all observed and photographed in-situ while diving in the Singapore Straits, in coral reefs around islands south of Singapore Island (Fig. 1). These include Pulau Hantu, Pulau Jong, Pulau Semakau, and Pulau Subar Darat and Pulau Subar Laut. All, with the exception of Pulau Jong, have been developed—Pulau Hantu, Pulau Subar Darat, and Pulau Subar Laut—for recreation, and the eastern half of Pulau Semakau partly reclaimed for an offshore landfill. Of the five species recorded, four are based on photographic evidence, and one is represented by a specimen.

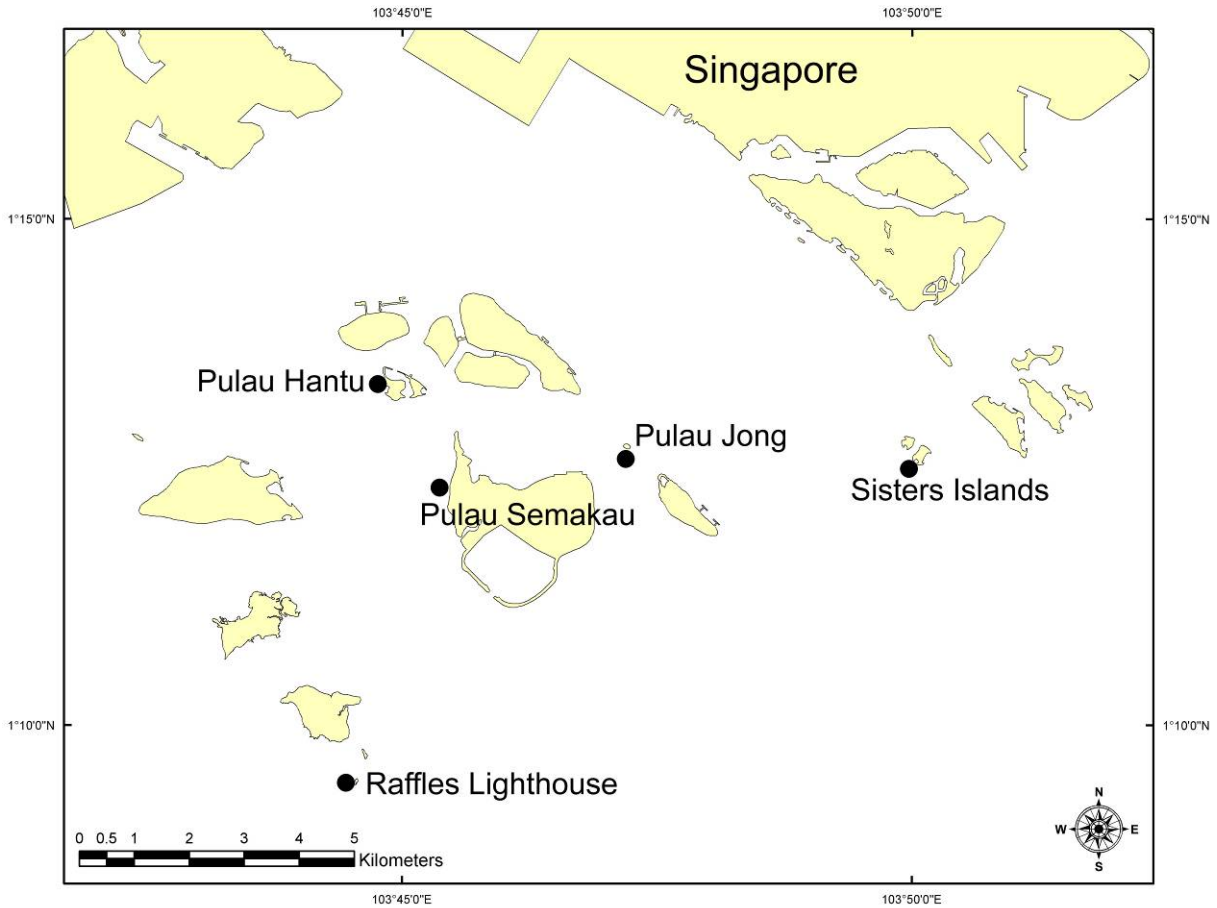

Fig 1. The islands south of Singapore. Black dots indicate locations of sightings.

Fig 2. The titan triggerfish (*Balistoides viridescens*) collected off Raffles Lighthouse. (Photograph by: Zeehan Jaafar).

DETAILS OF SIGHTINGS

Balistoides viridescens *(Bloch & Schneider) (Fig. 2).* – titan triggerfish; Tetraodontiformes: Balistidae. One individual was collected at Pulau Satumu (Raffles Lighthouse) on 6 Jun.2006 at about about 10 m depth. This specimen measured 26.7 cm in standard length, and is presently lodged at the Raffles Museum of Biodiversity Research, National University of Singapore with reference number ZRC 50549. The titan triggerfish is distinguished from related species by its colour pattern—pale yellowish body with scales that are dark brown or greenish-centred, a broad blackish zone containing yellow spots extending from the dorsal part of the head (enclosing the eye) to the pectoral base., and a broad blackish band containing a pale line from above the mouth to halfway across the cheek. The second dorsal, anal and caudal fins are edged in black. This species occurs through out the Indo-Pacific, feeding on sea-urchins, coral , crabs, molluscs and tubeworms. It is the largest of the Balistidae, reaching a total length of 75 cm. Females can be very aggressive during nesting (Randall et al., 1997). This is the first record of the titan triggerfish in Singapore waters.

Doryrhamphus janssi *(Herald & Randall) (Fig. 3).* – Janss' pipefish; Gasterosteiformes: Syngnathidae. Three individuals of this pipefish were sighted at Pulau Jong on 29 Oct.2005 at approximately 8 m depth, and at Pulau Hantu on 14 Apr.2006 at 5 m depth. They were observed in reef crevices, and below large plate corals. Individuals ranged from 5 to 10 cm in total length. The most distinctive feature of Janss' pipefish is its colouration—orange in the middle section of the body, with a blue head and tail. The caudal fin is black with a white centre. Attaining 13 cm in total length, this pipefish is found from the northern Australia and the Solomon Islands, north to the Philippines and South China Sea (Randall et al., 1997). Although it was described by Kuiter (2003) as an active cleaner of cardinalfishes (Apogonidae) and damselfishes (Pomacentridae), such activity was not observed by us. Janss' pipefish is herein recorded for the first time in Singapore.

Cromileptes altivelis *(Valenciennes) (Fig. 4).* – polka-dot grouper, panther grouper or barramundi cod; Perciformes: Serranidae. One example of about 50 cm total length was observed at Pulau Semakau, during a coral survey on 27 Feb.2005. Fig. 4 was the only photograph taken of the fish before it swam away, at about 3 m depth. The fish was observed on the western side of the island, and the site has been regularly monitored since 1986, for both hard corals and fish (Low & Chou, 1992). This grouper is distinguished from other members of the Serranidae in having a small

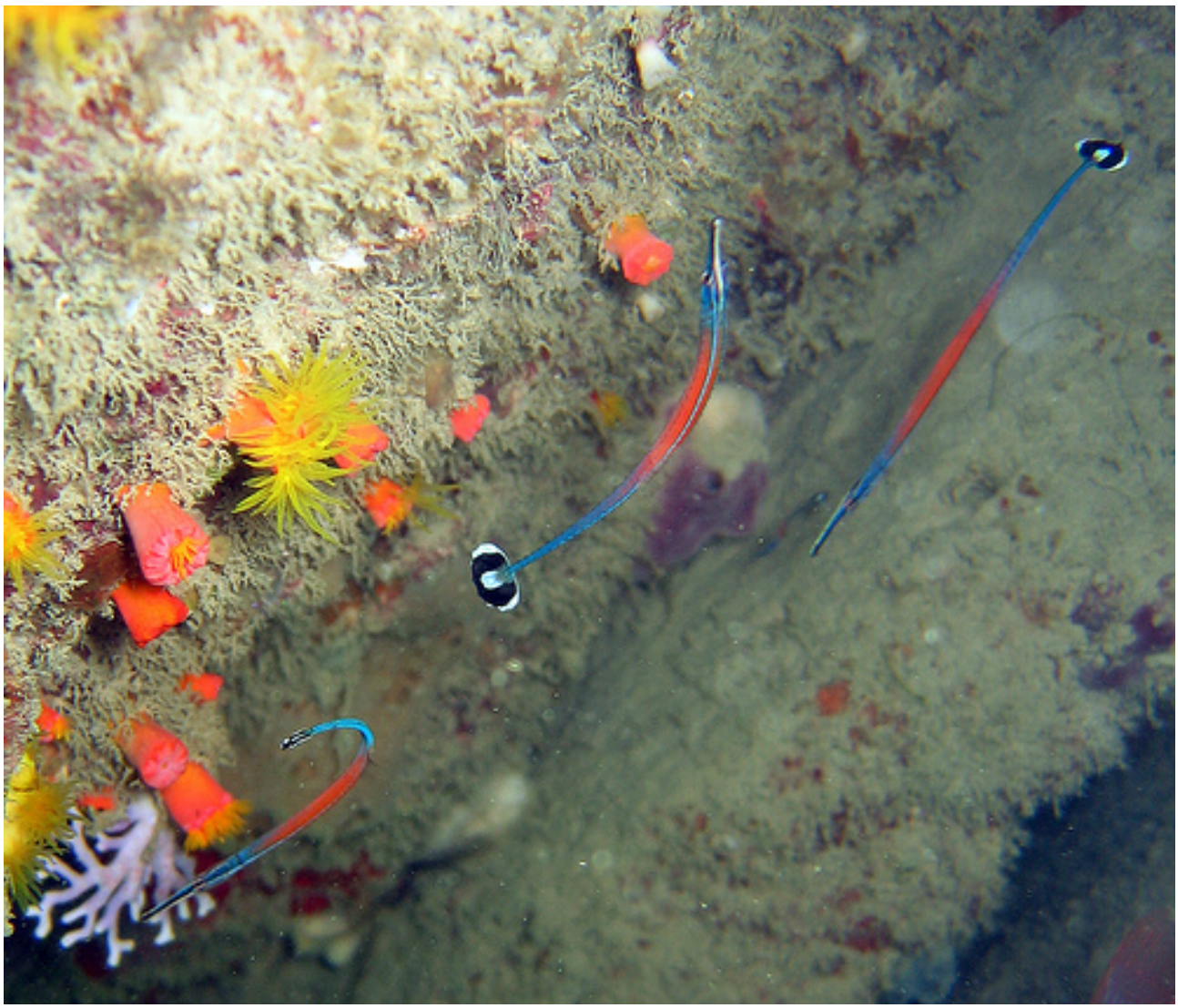

Fig. 3. *Doryrhamphus janssi* (Janss' pipefish) individuals at Pulau Jong. (Photograph by: Jani Isa Thuaibah Tanzil).

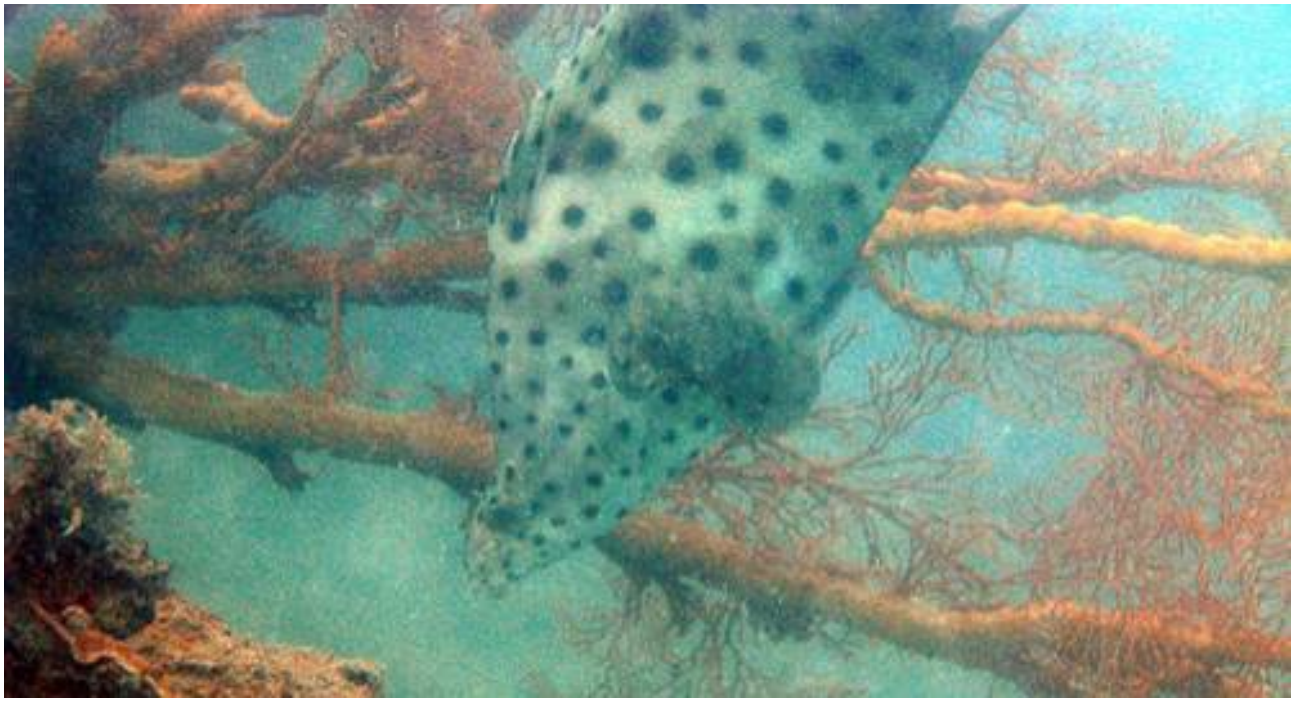

Fig. 4. *Cromileptes altvelis* at Pulau Semakau. (Photograph by J. K. Y. Low).

Fig. 5. The banded goby (*Amblygobius phalaena*) at Pulau Hantu. (Photograph by: J. K. Y. Low).

and narrow head, with the dorsal profile of the head rising steeply from above the eye to the origin of the dorsal fin. Its colour pattern is creamy white with scattered black spots. The panther grouper is secretive in nature and tends to inhabit silty reefs. It is widely distributed throughout the Western Pacific to the Nicobar Islands in the eastern Indian Ocean. This highly-prized food fish attains a total length of 66 cm and 3.5 kg weight (Randall et al., 1997). The panther grouper has been recorded from Singapore (Fowler, 1938), and there are two specimens in the Raffles Museum—a 16 cm (standard length) example from Pulau Salu collected in the 1970s [ZRC 27216], and a 17 cm (standard length) example from Tuas collected on 1 Aug.1983 [ZRC 40316]. Until now, we are unaware of this species having been observed alive by divers in Singapore waters. However, it must be noted that since it is often imported into Singapore and raised on fish farms, there is a possibility of the present example being an escapee.

Amblygobius phalaena *(Valenciennes) (Fig. 5).* – banded goby; Perciformes: Gobiidae. The specimen in Fig. 5, of about 12 cm total length was photographed on the seabed at Pulau Hantu on 11 Feb.2007 at a depth of about 12 m. The seabed at the site consists of a mixture of sand and silt. Distinctive characteristics of this fish include the mottled greenish-brown body, with five narrow blackish bars edged with pale blue on the body. There is a prominent ocellus in the middle of the first dorsal fin and a black spot on the upper caudal fin near its base. According to Randall et al. (1997), this goby inhabits sandy substrate with sparse growths of seagrass near reefs throughout the Indo-Pacific, and attains a total length of 15 cm. The banded goby has been reported from Singapore by Larson et al. (2008), but until now, there had been no evidence of physical specimens or photographs.

Heniochus varius *(Cuvier) (Fig. 6).* – humphead bannerfish; Perciformes: Chaetodontidae. The specimen in Fig. 6 was photographed at Pulau Subar Laut on 19 Jul.2008. The waters of Pulau Subar Darat and Pulau Subar Laut have been monitored once a year since 2003. The bannerfish was photographed at 3 m depth, and seemed to occupy a limited range, for it kept returning to the same area. The humphead bannerfish is dark brown or black, with two distinctive white bars, one from the upper nape across the gill cover and expanding to the thorax and a second, oblique band from the rear spines of the dorsal fin to the caudal penduncle. The 'peaked' appearance of the body is owed to the elongated 4th dorsal spine. In adults, there is a notch on the forehead that is topped by a bony protruberance, and curved sharp 'horns' that increase in length with age. The species ranges from the Malay Peninsula to Samoa and attains 18 cm in total length (Randall et al., 1997). This is the first record of the humphead bannerfish in Singapore waters.

Fig. 6. The humphead bannerfish (*Heniochus varius*) in silty waters at Pulau Subar Laut. (Photograph by: J. K. Y. Low).

DISCUSSION

As Singapore is well within the geographic distributions of these fishes, their appearance in local waters can be expected. Apart from Janss' pipefish, which has most likely been overlooked in the past owing to its cryptic habits, the single observations of the other four species indicate that they occur only very rarely in Singapore waters, or that their distribution is sparse within the area.

Another possibility, which should not be discounted, is that they were artificially introduced. This is highly possible with the panther grouper, because this commercially-valuable food species is sometimes reared locally on floating fish cages, and this specimen could have been an escapee. The humphead bannerfish, and the banded goby are occasionally imported from neighbouring countries for the ornamental fish trade, and could have been released by aquarists. However, given the isolation of the sites in which the specimens were observed, deliberate or accidental introduction appears to be highly unlikely.

With the exception of Pulau Hantu, the other sites mentioned are not visited or surveyed on a regular basis. Therefore, it is difficult to ascertain if these fishes are able to maintain a presence in our waters for the long term.

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