SINGAPORE BIODIVERSITY RECORDS 2014: 299-300 ISSN 2345-7597
Date of publication: 21 November 2014.

Blue-tailed dartfish sharing burrow with shrimp and goby

Subjects: Blue-tailed dartfish, *Ptereleotris hanae* (Teleostei: Ptereleotridae); Fig. 1 & 2.
Ventral-barred shrimp-goby, *Cryptocentrus sericu*s (Teleostei: Gobiidae); Fig. 2 & 3.
Unidentified pistol shrimp (Crustacea: Decapoda: Alpheidae); Fig. 3.

Subjects identified by: Contributor & Kelvin K. P. Lim.

Location, date and time: Singapore Straits, reef west of Pulau Hantu; 19 October 2014; around 1130 hrs.

Habitat: Marine. Coral reef, on silty-sand and rubble substrate, at depth of about 12 m.

Observer: Contributor.

Observation: A blue-tailed dartfish of about 10 cm total length (excluding its tail filaments) was observed hovering in midwater (Fig. 1), about 45 cm above the entrance of a burrow inhabited by a pistol shrimp and a ventral-barred shrimp-goby. When approached to a distance of about 1 m, the dartfish dashed into the burrow. After a few minutes, it emerged again (Fig. 2), but backed into the burrow when it sensed movements from the observer. However, the shrimp-goby and the pistol shrimp remained at the burrow's entrance; the shrimp excavating the burrow while the goby apparently keeping an eye out for predators (Fig. 3). The two retreated into the burrow when the observer approached to a distance of about 0.5 m.

Remarks: The blue-tailed dartfish was first recorded from Singapore waters in November 2011. It has been observed to hover at approximately 30 cm to 1 m off the sandy bottom, and is known to share burrows with an unidentified species of alpheid shrimp and the ventral-barred shrimp-goby, *Cryptocentrus sericus* (see Jaafar & Ng, 2012: 369). Such an interaction in Singapore waters had not been illustrated previously.

The dartfish is not regarded as an obligate symbiont of alpheid shrimps as the shrimp-gobies are. It only uses the burrow as a retreat and does not maintain physical contact with the shrimps that excavate the burrow. As the resident shrimps and gobies tolerate its occupancy by not evicting it, it is conceivable that the dartfish does contribute to the safety of the burrow's residents. By hovering high above the burrow's entrance, it is able to detect danger farther than can be seen by the shrimp-goby, and with its retreat, issue an advance warning to the burrow's occupants.

The present observation, however, does not appear to support the above suggestion. Despite the dartfish's disappearance into the burrow, both the burrow's occupants (the pistol shrimp and the shrimp-goby) still maintained their presence at the burrow's entrance. It is possible that the dartfish and the shrimp-goby each have their own interpretation of potential threats, and the distance with which intruders are tolerated vary between dartfish and shrimp-goby. This may explain why the shrimp-goby did not respond to the reaction of the dartfish. Thus, it seems that the shrimp-goby does not depend on the dartfish's apparent early warning.

Reference: Jaafar, Z. & D. Ng, 2012. New record of the blue-tailed dartfish, *Ptereleotris hanae* (Teleostei: Ptereleotridae) in Singapore. *Nature in Singapore*. 5: 369-371.

Contributor: **Toh** Chay Hoon
Contact address: nhmtohc@nus.edu.sg

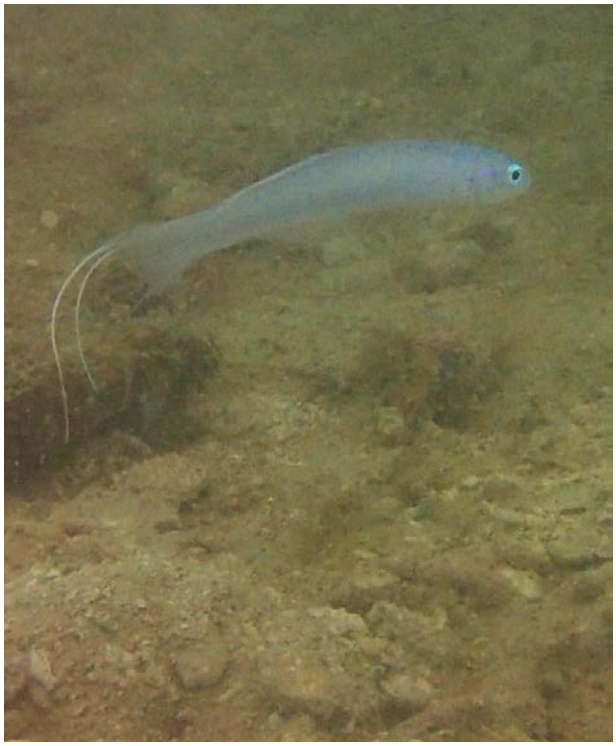

Fig. 1. Blue-tailed dartfish hovering above burrow.

Fig. 2. Dartfish peeking out of the burrow, with the occupant shrimp-goby above it.

Fig. 3. Despite the dartfish's retreat into the burrow, the occupant pistol shrimp continued to excavate, and its partner shrimp-goby remained keeping watch at the burrow's entrance. Note that the shrimp's left antenna is in contact with the fish's caudal base.

Photographs by Toh Chay Hoon