

The silty damselfish, *Pomacentrus cheraphilus*, in Singapore

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Subjects: Silty damselfish, *Pomacentrus cheraphilus* (Teleostei: Pomacentridae).

Subjects identified by: Gerald R. Allen.

Location, date and time: Singapore Strait off Saint John's and Kusu Islands, and at Sultan Shoal; between 2014 and 2020, in daytime.

Habitat: Marine. Coral reef, 3–10 m depth.

Observers: Daisuke Taira and Amanda R. Hsiung.

Observations: Many individuals were observed among coral rubble on reef slopes at 3–10 m depths between 2014 and 2020 while diving. In three observations, four examples, representing different life stages, are featured:

1. A small juvenile, about 2 cm total length (TL), bright yellow on the ventral and rear part of its body, with blue streaks on the head and a large blue-ringed black blotch on the soft dorsal fin, was observed off Saint John's Island on 5 November 2014 (Fig. 1).
2. One juvenile, about 3 cm TL, yellow on the lower side of its body and tail, blue streaks on the head and an ocellus on its soft dorsal fin, was photographed at Sultan Shoal on 16 April 2016 (Fig. 2);
3. Two grey adults, each around 6 cm TL, were encountered off Kusu Island on 26 February 2015 (Fig. 3 & 4).



Fig. 1. Juvenile of about 2 cm TL off St. John's Island on 5 November 2014. Photograph by Daisuke Taira



Fig. 2. Juvenile of about 3 cm TL at Sultan Shoal on 16 April 2016. Photograph by Daisuke Taira

Remarks: *Pomacentrus cheraphilus* was described from Brunei and Palawan by Allen, Erdmann & Hiloman (2011). It was diagnosed as having 13 dorsal spines, 17-19 (modally 18) lateral line scales and 19-21 rakers on the first gill arch. The adult phase is light grey to dark greyish brown with a dark-edged greenish spot just below the lateral line origin. The juvenile is yellow with blue stripes on upper head and adjacent antero-dorsal part of the body, and a prominent ocellus on the middle of its dorsal fin. Although a dark wedge-shaped mark at the anterior base of pectoral fin can be seen on the specimens illustrated (in Allen et al., 2011: fig. 1 & 3), it was not mentioned in the text. *Pomacentrus cheraphilus* occurs in silty reefs around coral and rock outcrops at depths of 10-18 m.

Pomacentrus cheraphilus is similar in general appearance to other sympatric and non-descript *Pomacentrus* species in the Singapore area such as the smoky damselfish (*Pomacentrus littoralis*), the three-spot damselfish (*Pomacentrus tripunctatus*), the obscure damselfish (*Pomacentrus adelus*) and the Bintan damselfish (*Pomacentrus bintanensis*). *Pomacentrus adelus* differs in having more rakers (22-24) on the first gill arch. *Pomacentrus bintanensis* was stated (in Allen et al., 2011) to differ in adults and juveniles being uniformly dark with no distinct markings. According to Allen et al. (2011), *Pomacentrus cheraphilus* differs from *Pomacentrus littoralis* in lacking a patch of scales on the pre-orbital

(beneath the front margin of the eye), and from *Pomacentrus tripunctatus* in lacking a large black spot on the upper caudal peduncle. The latter two species do not have yellow juvenile phases, and are usually confined to areas 3 m or less in depth. Another species, the wedge-spot damselfish, *Pomacentrus cuneatus*, recognized as widespread in the Indo-Malayan region, differs in having 16-17 lateral line scales and a mainly blue-grey juvenile phase. Dr Gerald Allen (in correspondence) informed the authors that based on his latest unpublished research, he believes *Pomacentrus cuneatus* is restricted to eastern Indonesia around Ambon, and that damselfish in the Singapore region identified as *Pomacentrus cuneatus* (see Low et al., 1995) should be *Pomacentrus cheraphilus*.

The authors examined 55 preserved specimens of *Pomacentrus* damselfish in the Zoological Reference Collection of the Lee Kong Chian Natural History Museum, at the National University of Singapore, and identified 44 of them as *Pomacentrus cheraphilus*. They range from 32.5 to 86.8 mm in standard length (measured from snout tip to caudal fin base), and were collected in the Singapore Strait and the Johor Strait between 1966 and 2019. Many of these specimens were identified as *Pomacentrus cuneatus* by Low et al (1995). This study documented that records from Singapore, formerly mis-identified as *Pomacentrus albimaculus* or *Pomacentrus brachialis*, along with records from other localities in Malaysia, Gulf of Thailand, the Philippines and Java, were believed to be an extension of the known range of *Pomacentrus cuneatus*, which was described in 1991 from Ambon in eastern Indonesia. These extralimital specimens were recorded to have 19-20 total rakers on the first gill arch, 17 lateral line scales*, having a characteristic wedge shaped black mark on the upper half of the pectoral base, and a black spot on the dorsal edge of the operculum. The juvenile fish was described as yellowish with an ocellus on the dorsal fin between the 10th spine and 5th soft ray. No specimen from Singapore was illustrated by Low et al. (1995).

This is the first record of *Pomacentrus cheraphilus* from Singapore, and a southward range extension of the species.



Fig. 3. Pale grey adult of about 6 cm TL off Kusu Island on 26 February 2015.



Fig. 4. Slightly darker adult of about 6 cm TL off Kusu Island on 26 February 2015.

Photographs by Daisuke Taira

References:

- Allen GR, Erdmann MV & Hiloman VV (2011) A new species of damselfish (*Pomacentrus*: Pomacentridae) from Brunei and the Philippines. *aqua: International Journal of Ichthyology*, 17 (1): 35-43.
- Low JKY, Randall JE & Chou LM (1995). New localities for the wedge-spot damselfish, *Pomacentrus cuneatus* Allen, 1991 (Teleostei: Pomacentridae) in Southeast Asia. *Raffles Bulletin of Zoology*, 43 (1): 45-50.

Notes: *Part of the series reported in Low et al. (1995) are among the specimens identified by the present authors as *Pomacentrus cheraphilus*. The number of lateral line scales (LLS) is not consistently 17. Instead, they documented a range of 16 to 19 LLS, with most of the specimens having greater numbers of LLS than the range expected for *P. cuneatus* (one example has 16, 9 examples with 17, 22 examples with 18, and 12 examples with 19 LLS).

We thank Dr Gerald Allen for helping us identify the featured damselfishes from underwater photographs and for generously furnishing us with relevant publications on damselfish taxonomy. He has graciously shared with us his observations and new information on the taxonomic status of *Pomacentrus cheraphilus*, and even encouraged us to publish it. However, with our limited material and expertise, we are unable to make the required taxonomic change in a convincing and justifiable manner. We thank Dr Zeehan Jaafar for access to specimens collected during the Singapore Marine Fish Expedition in August 2019, and Kelvin Lim for access to specimens in the Lee Kong Chian Natural History Museum at the National University of Singapore. *In situ* sightings of *P. cheraphilus* were recorded as part of the project “Enhancing Singapore’s Coral Reef Ecosystem in a Green Port” funded by the Maritime and Port Authority of Singapore (WBS: R 347-001-215-490) and by the National Research Foundation, Prime Minister’s Office, Singapore, under its Marine Science R&D Programme (MSRDP-P05).