

Marine flatworms at Seringat Kias

Subjects: *Pseudobiceros stellae* (Platyhelminthes: Polycladida: Pseudocerotidae), Figs. 1, 2 & 3;
Pseudobiceros flowersi (Platyhelminthes: Polycladida: Pseudocerotidae), Fig. 4;
Pseudobiceros sp. (Platyhelminthes: Polycladida: Pseudocerotidae), Fig. 5;
Tytthosoceros lizardensis (Platyhelminthes: Polycladida: Pseudocerotidae), Fig. 6;
Phrikoceros sp. (Platyhelminthes: Polycladida: Pseudocerotidae), Fig. 7.

Subjects identified by: Rene Ong.

Location, date and time: Singapore Strait, Seringat Kias; 30 & 31 October 2015, 1900-2200 hrs.

Habitat: Marine. Seagrass meadow in lagoon, in intertidal zone at low (0.2 to 0.5 m) tide.

Observers: Contributors.

Observations: Aggregations of two species of cotylean flatworms, *Pseudobiceros stellae* and *Tytthosoceros lizardensis* were encountered in the late evening after 1900 hrs on 30 October 2015. A casual count of the flatworms within an area of approximately 4 m² revealed about 50 *Pseudobiceros stellae* of around 4 to 6 cm (Fig. 1) and 10 *Tytthosoceros lizardensis* of around 4 to 6 cm. There appeared to be hundreds of them within the entire seagrass meadow at the Seringat Kias lagoon which has an estimated length of 150 m.

On the next day (31 October 2015), the same two species were still aggregating at the seagrass meadow, but the number seemed to have decreased. Three other species of cotylean polyclads were also observed in the area on that day: *Pseudobiceros flowersi* (two examples, around 3 to 4 cm), an unidentified species of *Pseudobiceros* (one example, about 4 cm) and an unidentified species of *Phrikoceros* (three examples, around 1.5 to 2 cm).

Remarks: Information on the reproductive biology and life cycle of marine flatworms in Singapore is almost non-existent, except for a recent study on *Pseudoceros indicus* (Chim et al., 2015). The featured observation seems to be the first record in Singapore of marine flatworms forming an aggregation of over one hundred individuals within one area. Previous local sightings of flatworm congregations involved only one species (*Phrikoceros baibaiye* and *Pseudobiceros stellae*) at each sighting, and in much lower numbers of around 10 to 20 individuals (Loh, 2012, 2014; Tan, 2009, 2010). Many individuals of *Pseudobiceros stellae* had white blobs and streaks, presumably spermatophores, on their bodies (Fig. 2). This suggests that the aggregations are associated with breeding.

The colour pattern of *Pseudobiceros flowersi* is similar to that of seagrasses (Fig. 4), and this species can be difficult to detect. Being small-sized with the largest individual only about 2 cm long, *Phrikoceros* sp. (Fig. 7) can also be easily missed. It is possible that both these species were overlooked on 30 October 2015.

References:

- Chim C. K., R. S. L. Ong & B. Q. Gan, 2015. Penis fencing, spawning, parental care and embryonic development in the cotylean flatworm *Pseudoceros indicus* (Platyhelminthes: Polycladida: Pseudocerotidae) from Singapore. *The Raffles Bulletin of Zoology*. Supplement 31: 60–67.
- Loh K. S., 2012. Exploring a new stretch of Seringat Kias. Saturday August 18, 2012. *God's Wonderful Creation*. <http://wondercreation.blogspot.sg/2012/08/exploring-new-stretch-of-seringat-kias.html#more> (accessed on 5 November 2015).
- Loh K. S., 2014. Any impact on Chek Jawa from Dec flood at Johor? Friday January 31, 2014. *God's Wonderful Creation*. <http://wondercreation.blogspot.sg/2014/01/any-impact-on-chek-jawa-from-dec-flood.html#more> (accessed on 5 November 2015).
- Tan, R., 2009. Clamless on Kusu. 22 September 2009. *Wild Shores of Singapore*. <http://wildshores.blogspot.sg/2009/09/clamless-on-kusu.html#more> (accessed on 5 November 2015).
- Tan, R., 2010. Frog Island annual check up. 16 May 2010. *Wild Shores of Singapore*. <http://wildshores.blogspot.sg/2010/05/frog-island-annual-check-up.html#more> (accessed on 5 November 2015).



Fig 1. *Pseudobiceros stellae* aggregating on the seagrass meadow.



Fig 2. Ventral side of a *Pseudobiceros stellae* showing the presence of spermatophores (circled).

Photographs by Rene Ong



Fig. 3 *Pseudobiceros stellae*



Fig. 4 *Pseudobiceros flowersi*



Fig. 5 *Pseudobiceros* sp.



Fig. 6 *Tytthosoceros lizardensis*



Fig. 7 *Phrikoceros* sp.

Photographs by Rene Ong

Contributors: Rene **Ong**, Samantha **Tong** & Teresa Stephanie **Tay**
Contact address: rene.ong@gmail.com (Ong)