

Fishes, shrimps and aquatic snails observed at Kranji Marsh

Subjects: Bronze knifefish, *Notopterus notopterus* (Teleostei: Notopteridae);
 Princess carplet, *Amblypharyngodon chulabhornae* (Teleostei: Cyprinidae), Fig. 1;
 Spotfin swamp barb, *Puntius sophore* (Teleostei: Cyprinidae);
 Red-tailed rasbora, *Rasbora borapetensis* (Teleostei: Cyprinidae), Fig. 2;
 African sharptooth catfish, *Clarias gariepinus* (Teleostei: Clariidae), Fig. 3;
 Western mosquitofish, *Gambusia affinis* (Teleostei: Poeciliidae);
 Pygmy halfbeak, *Dermogenys collettei* (Teleostei: Zenarchopteridae), Fig. 4;
 Javan swamp eel, *Monopterus javanensis* (Teleostei: Synbranchidae), Fig. 5;
 Zebra spiny eel, *Macrognathus zebrinus* (Teleostei: Mastacembelidae), Fig. 6;
 Nile tilapia, *Oreochromis niloticus* (Teleostei: Cichlidae), Fig. 7;
 Marbled gudgeon, *Oxyeleotris marmorata* (Teleostei: Eleotridae);
 Lesser bumblebee goby, *Brachygobius sabanus* (Teleostei: Gobinellidae);
 Climbing perch, *Anabas testudineus* (Teleostei: Anabantidae);
 Crescent fighting fish, *Betta imbellis* (Teleostei: Osphronemidae), Fig. 8;
 Snakeskin gourami, *Trichopodus pectoralis* (Teleostei: Osphronemidae), Fig. 9;
 Three-spot gourami, *Trichopodus trichopterus* (Teleostei: Osphronemidae), Fig. 10;
 Croaking gourami, *Trichopsis vittata* (Teleostei: Osphronemidae), Fig. 11;
 Common snakehead, *Channa striata* (Teleostei: Channidae), Fig. 12;

Johnson's shrimp, *Caridina johnsoni* (Crustacea: Decapoda: Atyidae), Fig. 13;
 Riceland shrimp, *Macrobrachium lanchesteri* (Crustacea: Decapoda: Palaemonidae), Fig. 14;

Apple snail, *Pila scutata* (Mollusca: Gastropoda: Ampullariidae), Fig. 15;
 Golden apple snail, *Pomacea* sp. (Mollusca: Gastropoda: Ampullariidae), Fig. 16;
 Bithyniid snail, *Bithynia* sp. (Mollusca: Gastropoda: Bithyniidae), Fig. 17;
 Pond snail, *Radix rubiginosa* (Mollusca: Gastropoda: Lymnaeidae), Fig. 18;
 Bladder snail, *Physa acuta* (Mollusca: Gastropoda: Physidae);
 Keeled ramshorn, *Amerianna carinata* (Mollusca: Gastropoda: Planorbidae);
 Little ramshorn, *Gyraulus convexiusculus* (Mollusca: Gastropoda: Planorbidae), Fig. 19;
 Ramshorn snail, *Indoplanorbis exustus* (Mollusca: Gastropoda: Planorbidae), Fig. 20;
 Amber snail, *Indosuccinea* sp. (Mollusca: Gastropoda: Succinidae);
 Malayan trumpet snail, *Melanoides tuberculata* (Mollusca: Gastropoda: Thiaridae), Fig. 21;
 Marten's mystery snail, *Filopaludina martensi* (Mollusca: Gastropoda: Viviparidae);
 Banded mystery snail, *Filopaludina sumatrensis polygramma* (Gastropoda: Viviparidae), Fig. 22;
 Many-zoned mystery snail, *Sinotaia quangdangensis* (Mollusca: Gastropoda: Viviparidae).

Subjects identified by: Tan Heok Hui (fishes), Darren C. J. Yeo (crustacea and fishes), Ng Ting Hui (molluscs), Tan Siong Kiat (molluscs), and Cai Yi-xiong (shrimps).

Location, date and time: Singapore Island, Kranji Reservoir, Kranji Marsh at end of Neo Tiew Lane 2; 7 & 8 August 2016, between 1000 and 1300 hrs.

Habitat: Open freshwater marshes with earth banks and riparian vegetation, adjacent to rural parkland.

Observers: Contributors.

Observations: Eighteen species of fish, two species of shrimp and thirteen species of snail (listed under Subjects) were obtained during a faunal survey of the marshes. They were randomly and opportunistically sampled with push nets (60 by 40 cm, mesh 2 mm), cast nets (3 m, 2.5 cm mesh), scoop nets (1 cm mesh) and gill nets (5–8 cm mesh). Several baited traps (mesh size 1 cm) were deployed and collected the following day. Some of the snails were picked by hand. Most of the specimens were released after identification, but some were deposited as vouchers in the Lee Kong Chian Natural History Museum at the National University of Singapore.

Remarks: The fish fauna of the Kranji Marshes has been treated by Baker (2013), Lim & Tan (2011, 2012) and Lim et al. (2013). The present report seems to be the first compilation that includes invertebrates such as shrimps and snails.

Of the 18 species of fish recorded, only eight are regarded as native to Singapore. These are *Dermogenys collettei*, *Monopterus javanensis*, *Oxyleotris marmorata*, *Anabas testudineus*, *Betta imbellis*, *Trichopodus trichopterus*, *Trichopsis vittata* and *Channa striata*. All the introduced fishes have previously been recorded from reservoirs and elsewhere in Singapore (Ng & Tan, 2010). Two species of shrimp are recorded, and only *Caridina johnsoni* is native (see Cai et al., 2007). Thirteen species of gastropod molluscs are recorded, but only *Pila scutata* and *Melanoides tuberculata* are confirmed to be native to Southeast Asia. Of the other eleven gastropods, the specific identity of the South American *Pomacea* sp. is unconfirmed pending further investigation. *Pomacea canaliculata* and *Pomacea maculata*, the two species of South American apple snails known to occur in Singapore, are best distinguished using molecular genetic methods (Ng et al., 2014).



Fig. 1. *Amblypharyngodon chulabhornae* (17.1 mm SL).



Fig. 2. *Rasbora borapetensis* (24.9 mm SL).



Fig. 3. *Clarias gariepinus* (around 450 mm SL), dorsal view.



Fig. 5. *Monopterus javanensis* (710 mm SL).



Fig. 4. *Dermogenys collettei* (26.0 mm SL male).



Fig. 6. *Macrognathus zebrinus* (about 170 mm SL).



Fig. 7. *Oreochromis niloticus* (72.1 mm SL).



Fig. 8. *Betta imbellis* (22.5 mm SL female).

Photographs by Tan Heok Hui



Fig. 9. *Trichopodus pectoralis* (left 18.6 mm SL juvenile, right 87.4 mm SL)



Fig. 10. *Trichopodus trichopterus* (22.5 mm SL juvenile). Fig. 11. *Trichopsis vittata* (37.2 mm SL).



Fig. 12. *Channa striata* (left 18.6 mm SL juvenile, right 103.8 mm SL adult)



Fig. 13. *Caridina johnsoni* (male and female [right], both around 10 mm total length).



Fig. 14. *Macrobrachium lanchesteri* (male and female [right], both around 50 mm total length).

Photographs by Tan Heok Hui



Fig. 15. *Pila scutata*



Fig. 16. *Pomacea* sp.



Fig. 17. *Bithynia* sp.



Fig. 18. *Radix rubiginosa*
(shell length ca. 15 mm).



Fig. 19. *Gyraulus convexiusculus*



Fig. 20. *Indoplanorbis exustus*



Fig. 21. *Melanoides tuberculata*



Fig. 22. *Filopaludina sumatrensis polygramma*

Photographs by Ng Ting Hui

Note: The contributors are grateful to the staff of Sungei Buloh Nature Reserve (in particular How Choon Beng and Chua Yen Kheng) for logistical support and permission to participate in this aquatic survey; and to Cai Yixiong for identifying the shrimps.

The sizes of the fish are given in standard length (SL), measured from the tip of the snout to the base of the caudal fin.

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