

New record of the polychaete *Tylonereis bogoyawlenskyi* in Singapore

Subjects: *Tylonereis bogoyawlenskyi* (Annelida: Polychaeta: Nereididae).

Subjects identified by: Lee Yen-ling.

Location, date and time: Johor Strait -

1) Pulau Ubin, Chek Jawa; 16 October 2012; 1700 to 1930 hrs; at average tidal height of 0.6 m.

2) Seletar; 3 August 2011; 0845 to 1100 hrs; at average tidal height of 1.1 m.

3) Sungei Loyang, at mouth of channel; 25 May 2012; 0900 to 1030 hrs; at average tidal height of 0.9 m.

Habitat: Estuarine, on exposed intertidal mudflat.

Observer: Lee Yen-ling.

Observation: Examples of this worm were obtained from mudflats at the above three localities along the Johor Strait. The live animal is yellow-brownish with green pigment (Fig. 1). A red line (dorsal blood vessel) with a white edge runs down the mid-dorsum. The general body shape is long, rectangular, with rather parallel sides. The prostomium (head) is about as wide as the body (Table 1). The prostomium has a conical palpostyle at each anterior-lateral corner and a deep mid-dorsal groove starting from the median antenna, ending between the anterior pair of eyes (Fig. 1). The supra notocircular lobe is leaf-like, glandular edge yellow when preserved (Fig. 3). Homogomph spinigers are present in the midbody parapodia.

The animals were fragile and damaged easily during the sampling process, resulting in specimens that were incomplete and have missing posterior segments. Therefore, the numbers of chaetigers (an example shown on Fig. 4) recorded on Table 1 represent the least numbers that an individual could have. Table 2 records the number of papillae in the proboscis area of three specimens. The arrangement of papillae in the proboscis is shown on Fig. 2.

Remarks: The specimens are preserved and deposited in the Zoological Reference Collection of the Lee Khong Chian Natural History Museum at the National University of Singapore. They have been catalogued as ZRC.ANN.0099 (Chek Jawa), ZRC.ANN.0100 (Seletar), and ZRC.ANN.0101 (Sungei Loyang) respectively.

This is the first record of *Tylonereis bogoyawlenskyi* Fauvel, 1911, in Singapore. The type locality of this species is in the Persian Gulf (Fauvel, 1911). Its known range covers the eastern Indian Ocean, eastwards to China, and includes the west coast of peninsular Malaysia (WoRMS, 2015; Wu et al, 1981). The attached photographs appear to be the first published ones to feature live individuals of the species.

The genus *Tylonereis* comprises three species and with this record, two are now known from Singapore. The type locality of the other species, *Tylonereis heterochaeta*, is Changi Beach in Singapore (Tan & Chou, 1994). Members of the genus *Tylonereis* are easily recognised by the complete absence of paragnaths but papillae are present on both maxillary and oral rings. *Tylonereis bogoyawlenskyi* is distinguished from its two congeners in having trilobed (instead of bilobed) chaetae-bearing neuropodia in the first few segments (Fig. 4).

Table 1. Measurements (in mm) of Singapore specimens of *Tylonereis bogoyawlenskyi*.

Specimen Catalogue number	Number of chaetigers	Body length	Body width at chaetiger 10, including parapodia	Body width at chaetiger 10, excluding parapodia	Prostomium width
ZRC.ANN.0099	44	29	4.5	2.0	1.8
ZRC.ANN.0100, 1	91	51	2.5	1.0	1.0
ZRC.ANN.0100, 2	86	46	2.0	1.0	1.0
ZRC.ANN.0100, 3	101	49	2.2	1.1	1.0
ZRC.ANN.0100, 4	72	26	1.8	0.9	0.8
ZRC.ANN.0101	47	27	3.0	2.0	1.5

Table 2. Number of papillae in the proboscis area on selected specimens of *Tylonereis bogoyawlenskyi* from Singapore.

Proboscis Area	ZRC.ANN.0099	ZRC.ANN.0100, 1	ZRC.ANN.0100, 2
I	1	2	3
II	1, 1	1, 1	1, 1
III	Two rows: 10 (top), 6 (bottom)	Single row: 10 #	Single row: 12
IV +	5, 7	4, 6	5, 6
V	0	0	0
VI	1, 1	1,1 #	1, 1
VII-VIII	2 at each end	2 at each end ^{#^} ,	3 or 2 at each end [^]

Remarks: # Each papilla arises from a cushion-like base; + The papillae are arranged as a bundle, emerging from a raised base; # Papillae were branched; ^ The papillae sandwich three low bumps in the middle.

References:

- Fauvel, P., 1911. Annélides Polychètes du Golfe Persique recueillies par M. M. Bogoyawlewsky. *Archives de Zoologie Expérimentale et Générale*. Ser. 5 (6): 353-439.
- Tan L. T. & L. M. Chou, 1994. A new species of polychaete worm, *Tylonereis heterochaeta* (Polychaeta: Nereididae) from Singapore. *The Raffles Bulletin of Zoology*. 42 (3): 663-668.
- WoRMS, 2015. *World Register of Marine Species*. <http://www.marinespecies.org> at VLIZ (accessed 1 July 2015).
- Wu B., R. Sun & D. Yang, 1981. Studies on species of Nereidae off the Chinese coast. *Collection of Oceanographic Works*. 4 (1): 64-88, Table 1.



Fig. 1. Dorsal view of the prostomium (head) and anterior segments of a live *Tylonereis bogoyawlenskyi* specimen (ZRC.ANN.0099). Black arrow indicates position of the deep mid-dorsal groove. Photograph by Rene Ong



Fig. 2. Ventral view of proboscis, showing the arrangement of papillae and the jaws of a live *Tylonereis bogoyawlenskyi* specimen (ZRC.ANN.0099). Photograph by Rene Ong

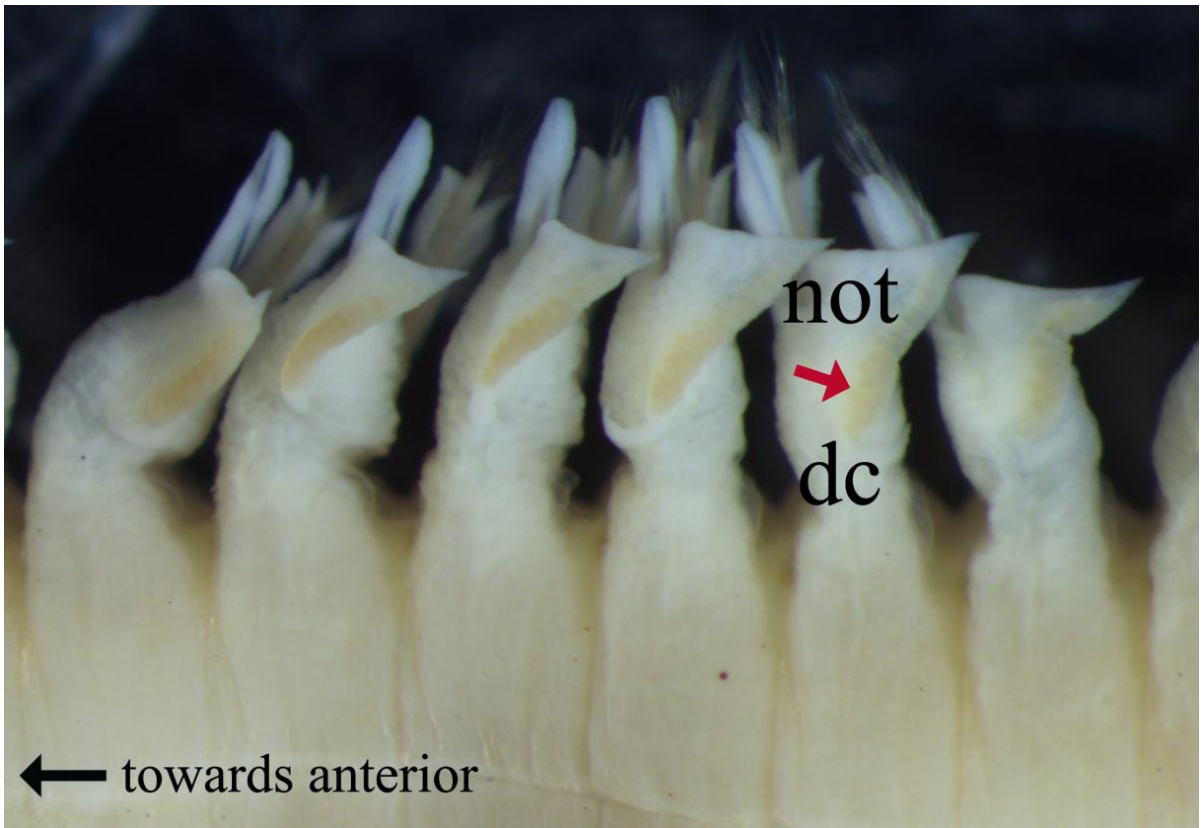


Fig. 3. Dorsal view of the right midbody parapodia of a preserved *Tylonereis bogoyawlenskyi* specimen (ZRC.ANN.0099). Red arrow indicates glandular part of notopodia. (Abbreviations: dc = dorsal cirrus; not = notopodia). Photograph by Lee Yen-ling

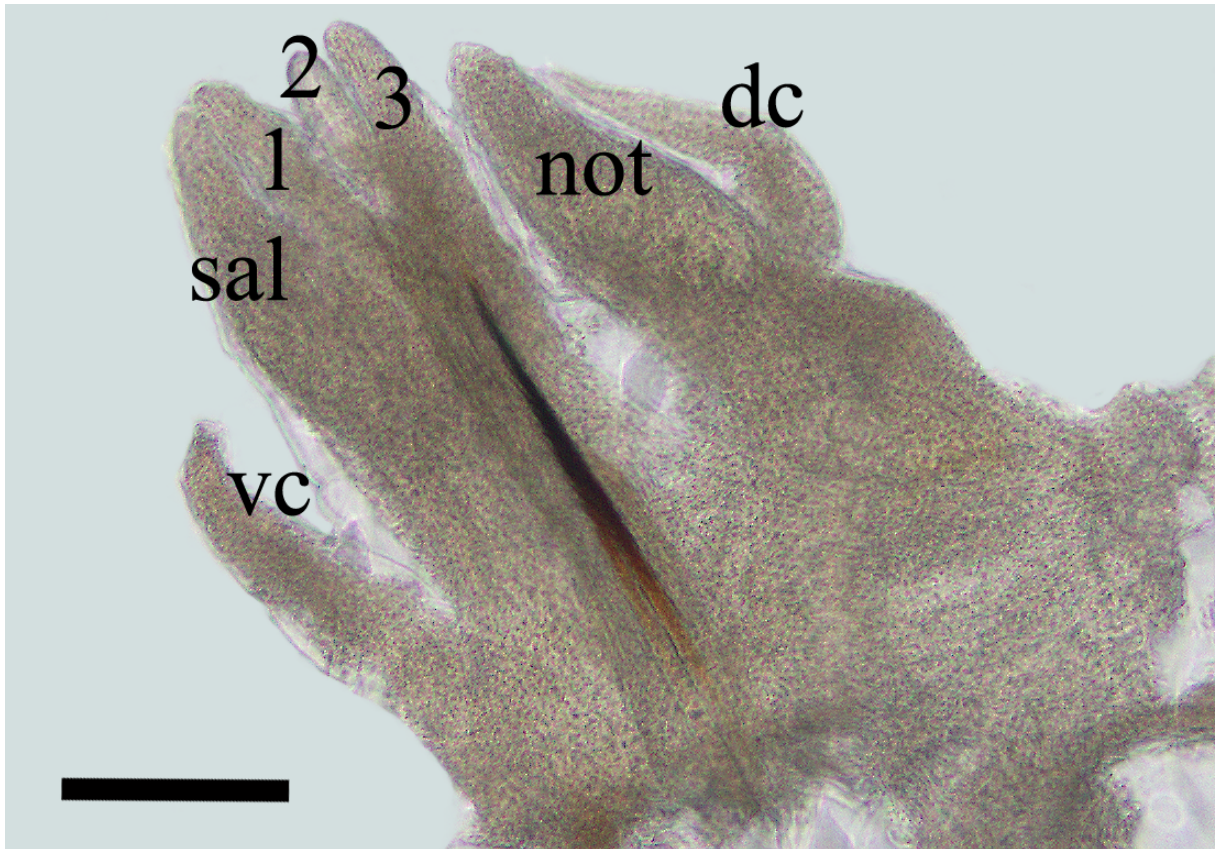


Fig. 4. Anterior view of chaetiger 1 of a preserved *Tylonereis bogoyawlenskyi* specimen (ZRC.ANN.0099). Abbreviations: Dc = dorsal cirrus; not = notopodia; 1, 2, 3 = trilobed chaetigerous ligules; sal = sub-neuroacicular lobe; vc = ventral cirrus. Scale bar = 0.5 mm. Photograph by Lee Yen-ling

Note: This is a contribution of the Singapore **Comprehensive Marine Biodiversity Survey** conducted by the National University of Singapore's Tropical Marine Science Institute and the National Parks Board.

Contributors: **Lee Yen-ling** & **Chris Glasby**
Contact address: tmsleeyl@nus.edu.sg (Lee)