

Metallic blue and red mud-worms at Pasir Ris mangrove

Subjects: Mud-worm, *Paraleonnates bolus* (Annelida: Polychaeta: Nereididae).

Subjects identified by: Lee Yen-ling.

Location, date and time: Singapore Island, Pasir Ris Park, mangrove swamp linking to Sungei Tampines; 13 November 2016; at around 1100 hrs.

Habitat: Estuarine. Shallow muddy creek with brackish water in mangrove forest patch.

Observer: Morgany Thangavelu.

Observation: Hundreds of mud-worms, mostly metallic blue but some pale red, each around 20 to 30 cm long, were observed swimming about in the water (see accompanying picture), and appeared to be gradually growing in numbers. Because of their serpentine movements and relatively large sizes, they could be mistaken for aquatic snakes.



Dorsal view of two of the mud-worms at the surface of the water. An entire specimen of the blue form in the middle, and the anterior section of a reddish form on the right. Photograph by Morgany Thangavelu

Remarks: The identification of the mud-worms is based on Hong et al. (2012). Large swarms of these surface-swimming polychaetes appear to be an annual occurrence in the month of November, usually coinciding with high tidal height, and near full moon or new moon dates. Several previous occurrences shared online on nature blogs, or personally communicated to Lee Yen-ling, remained unreported. During other times of the year, it is likely that the worms reside in the sediment of back mangroves.

Very little is known about the life cycle of this large worm. It is suspected that the swarming phenomenon ties in with their reproductive strategy, where sexually mature worms swim to the water surface in temporal and spatial synchrony to increase the chances of successful fertilisation of their eggs (Ong, 1996; Schroeder & Hermans, 1975). In other reports (personally communicated to Lee Yen-ling by various observers), worms were torn apart by fish. Sexually mature worms harbour gametes throughout their coelom. It is believed that such mutilations aid in the release of gametes into the water column to allow fertilisation to occur.

References:

- Hong J.-S., B.-M. Choi, A. Kubo & M. Sato, 2012. Redescription of the giant mud worm *Paraleonnates uschakovi* Khlebovich and Wu, 1962 (Polychaeta: Nereididae) with special reference to the synonymy of *Peirserrula leucophryna* Pail, 1977 and the difference from *Paraleonnates bolus* (Hutchings and Reid, 1991). *Zootaxa*. 3490: 49–62.
- Ong, B. 1996. Reproductive cycle of *Perinereis nuntia* var. *brevicirris* Grube (Polychaeta: Nereidae). *The Raffles Bulletin of Zoology*. 44(1): 263–273.
- Schroeder, P. C. & C. O. Hermans, 1975. Annelida: Polychaeta. In: Giese, A. C. & J. S. Pearse (eds.). *Reproduction of Marine Invertebrates. Volume III: Annelids and Echiurans*. Academic Press, London. pp. 1–213.

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