

Biodiversity Record: The sea-anemone, *Anthopleura buddemeieri*, at Sisters Islands

Jaeden Kai En Lim^{1,2*} & Nicholas Wei Liang Yap^{1,2}

¹Tropical Marine Science Institute, National University of Singapore, 18 Kent Ridge Road, Singapore 119227

²St John's Island National Marine Laboratory, c/o Tropical Marine Science Institute, National University of Singapore
Email: jaedenlim05@gmail.com (*corresponding author)

Recommended citation. Lim JKE & Yap NWL (2026) Biodiversity Record: The sea-anemone, *Anthopleura buddemeieri*, at Sisters Islands. Nature in Singapore, 19: e2026063. DOI: 10.26107/NIS-2026-0063

Subjects: Pink-spotted bead anemone, *Anthopleura buddemeieri* (Cnidaria: Anthozoa: Actiniaria: Actiniidae).

Subjects identified by: Nicholas Wei Liang Yap.

Location, date and time: Singapore Strait, Sisters Islands Marine Park, Big Sister's Island; 10 August 2025; around 0715 hrs.

Habitat: Marine. Rocky shore, along an exposed cliff face with reddish sedimentary rocks of the Jurong Formation (see Rahardjo, 2004). At the high intertidal zone.

Observers: Jaeden Kai En Lim and Nicholas Wei Liang Yap.

Observation: At low tide, at least 16 individuals were found out of water within crevices on the cliff face, and under sturdy red rocks. The anemones were found close together, about six metres away from the water's edge. The examples encountered were partially retracted. Although their tentacles were drawn in, their tentacle-tips were visible (Fig. 1).

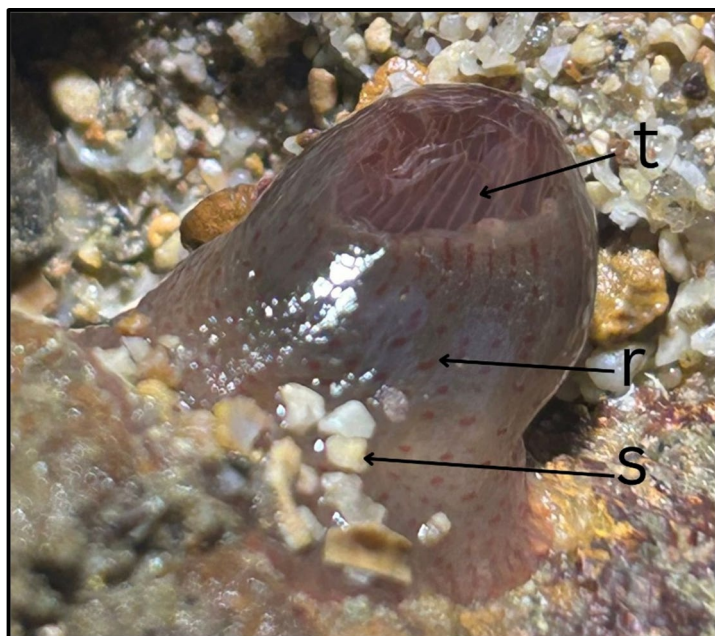


Fig. 1. In-situ dorso-lateral view of a partially retracted *Anthopleura buddemeieri* of about 10 mm column diameter. t – tentacles without bands, r – rows of red spots, s – sediment sticking to column. (Photograph by: Nicholas Wei Liang Yap).

Remarks: *Anthopleura buddemeieri* was described from specimens collected at Fiji and Papua New Guinea (Fautin, 2005). It has since been observed ranging from the Central Indo-Pacific towards the Western Indo-Pacific (Bijukumar et al., 2015; Fautin et al., 2008; Spalding et al., 2007). In Singapore, this species has been recorded from Saint John's Island (Fautin et al., 2009), Lazarus Island (Loh, 2017), Labrador beach (Tan, 2018a) and Sentosa (Tan, 2018b), and is regarded as locally Endangered (Yap et al., 2024). The present record represents the first documented sighting of *Anthopleura buddemeieri* at the Sisters Islands.

While colour is generally not a good taxonomic character to distinguish species (Stephenson, 1928), *Anthopleura buddemeieri* is an exception. Its distinct pinkish hue of both its body column and tentacles set it apart from three other congeners in Singapore—*Anthopleura handi*, *Anthopleura nigrescens*, and *Anthopleura dixoniana* (see Fautin et al., 2009). These three species lack the pinkish hue and are darker coloured. *Anthopleura buddemeieri* also has longitudinal rows of red spots from the distal end of its pink column towards the proximal end, a feature not known on the other three species (Fautin et al., 2009). *Anthopleura buddemeieri* closely resembles *Macrodactyla fautinae*, which also occurs in Singapore, and also bears longitudinal rows of pinkish spots on its body column. However, *Macrodactyla fautinae* differs in having banded tentacles, and inhabits the lower intertidal zones (Yap et al., 2023) instead of the higher intertidal zone preferred by *Anthopleura buddemeieri*. Although size is not a good indication of species (Yap et al., 2023), we have consistently found individuals of *Macrodactyla fautinae* to be much bigger than those of *Anthopleura buddemeieri*.

The ecology of *Anthopleura buddemeieri* has not been studied. Unusually for a soft bodied marine animal, this species is found far from the sea and prefers drier habitats. It likely becomes submerged in water only at high tides. While numerous individuals often occur close together, it is unclear if this species reproduces asexually, or if it broods its young internally in its gastric cavity like *Anthopleura handi* Dunn (1978), releasing them nearby when they are slightly more developed.

Literature cited:

- Bijukumar A, Dhaneesh KV & Geethu M (2015) First record of the sea anemone *Anthopleura buddemeieri* Fautin (cnidaria: actiniaria: actiniidae) from the Indian coast. *Journal of Aquatic Biology & Fisheries*. 3: 111–114.
- Dunn DF (1978) *Anthopleura handi* n. sp. (Coelenterata, Actiniaria), an internally brooding, intertidal sea anemone from Malaysia. *Wasmann Journal of Biology*, 35(1): 54–64.
- Fautin DG (2005) Three species of intertidal sea anemones (Anthozoa: Actiniidae) from the tropical Pacific: description of *Anthopleura buddemeieri*, n. sp., with remarks on *Anthopleura asiatica* and *Gyractis sesere*. *Pacific Science*, 59(3): 379–391.
- Fautin DG, Crowther AL & Wallace CC (2008) Sea anemones (Cnidaria: Anthozoa: Actiniaria) of Moreton Bay. *Memoirs of the Queensland Museum*, 54(1): 35–64.
- Fautin DG, Tan SH & Tan R (2009) Sea anemones (Cnidaria: Actiniaria) of Singapore: abundant and well-known shallow-water species. *The Raffles Bulletin of Zoology*, 22: 121–143.
- Loh KS (2017) Lobster at Seringat-Kias! <https://wondercreation.blogspot.com/2012/04/lobster-at-seringat-kias.html> (Accessed 12 February 2026)
- Tan R (2018a) Special anemone at Labrador. <https://wildshores.blogspot.com/2011/12/special-anemone-at-labrador.html> (Accessed 12 February 2026)
- Tan R (2018b) Special anemone find at Sentosa! <https://wildshores.blogspot.com/2011/07/special-anemone-find-at-sentosa.html> (Accessed 12 February 2026)
- Rahardjo H, Aung KK, Leong EC & Rezaur RB (2004) Characteristics of residual soils in Singapore as formed by weathering. *Engineering Geology*, 73(1–2): 157–169.
- Spalding MD, Fox HE, Allen GR, Davidson N, Ferdaña ZA, Finlayson M, Halpern BS, Jorge MA, Lombana A, Lourie SA, Martin KD, Mcmanus E, Molnar J, Recchia CA & Robertson J (2007) Marine ecoregions of the World: a bioregionalization of coastal and shelf areas. *BioScience*, 57(7): 573–583.
- Stephenson TA (1928) *The British sea anemones Volume I*. The Ray Society, London, United Kingdom, 69 pp
- Yap WLN, Mitchell ML, Quek ZBR, Tan R, Tan KS & Huang D (2023) Taxonomy and molecular phylogeny of the sea anemone *Macrodactyla* (Haddon, 1898) (Cnidaria, Actiniaria), with a description of a new species from Singapore. *Zoological Studies*, 62: 29.
- Yap WLN, Oh RM & Iesa I (2024) Cnidaria (non-Scleractinia). In: Davidson GWH, Gan JWM, Huang D, Hwang WS, Lum SKY & Yeo DCJ (eds.) *The Singapore Red Data Book: Red Lists of Singapore Biodiversity, Third Edition*. National Parks Board, Singapore, pp. 75–82.