

# New record of the cirriped *Striatobalanus tenuis* (Hoek, 1883) from breakwaters at Faw city, Iraq

Murtada D. Naser<sup>\*1a</sup> , Amaal Gh. Yasser<sup>1a</sup> , Ibtisam M. Abdul-Sahib<sup>1</sup> , Dawood S. Mohammed<sup>1</sup>, Azhar M. Abdul-Sahib<sup>8</sup>, Nabaa M. Auda<sup>1</sup>

<sup>1</sup>Marine Science Centre, University of Basrah, Basrah, Iraq

<sup>2</sup>School of Environment and Science, Griffith University, 170 Kessels Road, Nathan, Queensland, 4111, Australia

<sup>3</sup>Date Palm Researches Center, University of Basrah, Basrah, Iraq

\*Corresponding author: email: [nasergriiffith@gmail.com](mailto:nasergriiffith@gmail.com)

---

Received 23 February 2024 | Accepted 22 April 2024 | Published 05 June 2024

---

## Abstract

During intertidal stony shore surveys on the breakwaters at Faw city, Iraqi coast in November 2020, the cirriped *Striatobalanus tenuis* (Hoek, 1883) was recorded for the first time from the northwest of the Persian-Arabian Gulf attached on the bivalve *Brachidontes* sp. The morphological characteristics have been briefly discussed in the present paper.

**Key words:** Persian-Arabian Gulf, *Brachidontes* sp., morphological characteristics

---

## 1. Introduction

Breakwaters are artificial constructions designed to prevent coastal erosion caused by waves. Simultaneously, several factors such as defence structures, alterations in currents, and modifications in circulation have the potential to impact the quality of water and the composition of benthic assemblages (Carugati et al., 2018). Artificial structures can exert a substantial influence on benthic populations residing in adjacent soft-bottom sediments. The construction of breakwaters along the Iraqi coast is expected to have a significant impact on the relocation of various marine fauna and their aggregation on rocky substrates, thereby creating a favourable habitat for their survival and reproductive activities in these regions.

Barnacles are considered to be one of the most prominent fouling organisms, making them a significant economic category, which encompasses a wide variety of sessile crustaceans that can be either acorn, stalked, or parasitic (Chan et al., 2021). Multiple species of barnacles have been documented living on man-made structures such as stones and attached to other organisms along the Iraqi coastline (Naser et al., 2011; Naser et al., 2015; Yasser et al., 2022, Naser et al., 2024). These investigations emphasize the importance of identifying different barnacle species that inhabit this coastline. Given these factors, it was deemed extremely

advantageous to carry out research to ascertain the identification of different stationary barnacles found throughout the Iraqi coastline.

The present paper aims to list another record of barnacles *S. tenuis* from the Iraqi coast.

## 2. Materials and methods

Specimens of *S. tenuis* were collected from the breakwaters at Faw city of the northwest of the Persian-Arabian Gulf at 29.901427° N, 48.439762° E on 22 November 2022 (Fig. 1). The specimens are preserved in 70% ethanol and deposited in the Marine Science Centre (MSC), with collection voucher number (701), University of Basrah, Iraq. Provisional identifications were made following Chan (2009) and Chan et al. (2009).

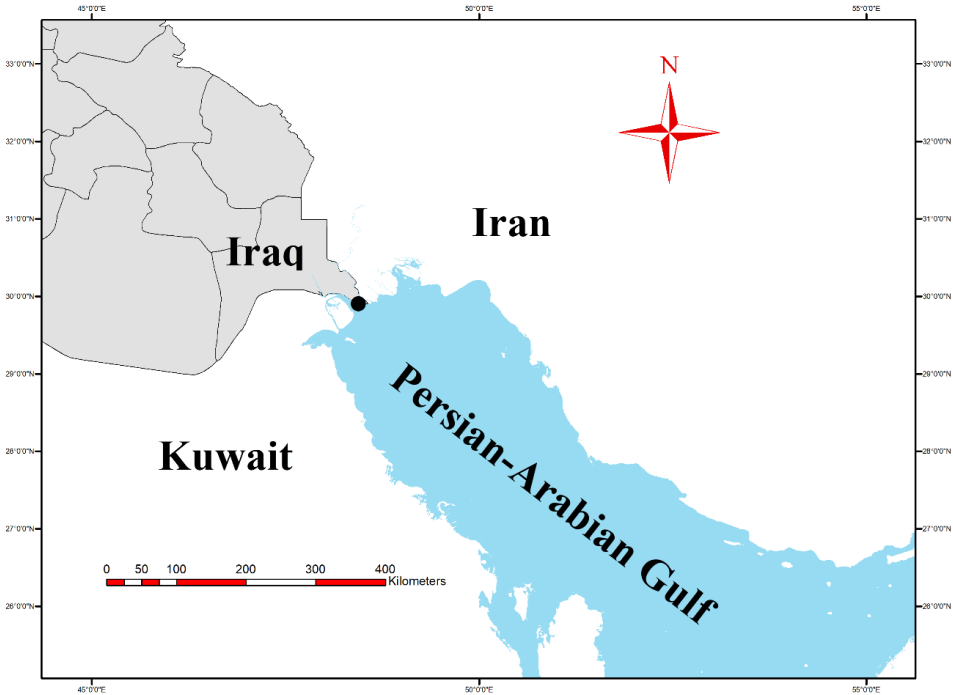


Figure 1. Map sampling from breakwaters at Faw city, Iraq (black dot)

## 3. Results

*Striatobalanus tenuis* (Hoek, 1883)

(Fig. 2)

Material examined. 4 specimens of the bivalve *Brachidontes* sp. are attached to the stones of the breakwaters at Faw city, Iraqi coast.

The shell exhibits a whitish-to-yellowish coloration, with a smooth and glossy surface. The orifice is pentagonal in shape and has deep teeth. The radii are small, and the tops are highly oblique and somewhat concave. The foundation is firm, the scutum exhibits longitudinal striations, and the tergum displays a small, somewhat wide spur.

This record of barnacles is the fifth one from the Iraqi coast (Table. 1).

Table. 1. Barnacles species listed from the Iraqi coast

Species	Reference
<i>Amphibalanus amphitrite</i> (Darwin, 1854)	Naser et al., 2011
<i>Amphibalanus improvisus</i> (Darwin, 1854)	Naser et al., 2015
<i>Amphibalanus subalbidus</i> (Henry, 1973)	Yasser et al., 2022
<i>Chelonibia testudinaria</i> (Linnaeus, 1758)	Naser et al., 2024
<i>Striatobalanus tenuis</i> (Hoek, 1883)	Naser et al., 2024 (the present study)



Figure 2. *Striatobalanus tenuis* attached on the bivalve *Brachidontes* sp.

#### 4. Discussion

In the Persian-Arabian Gulf, there are two species belonging to the genus *Striatobalanus*, namely: *S. amaryllis* (Darwin, 1854) and *S. tenuis* Hoek, 1883 (Shahdadi et al., 2014).

*Striatobalanus tenuis* bears a striking resemblance to *S. amaryllis* (Darwin, 1854), but with a few key differences: 1) a mandible with five evenly spaced teeth, while in *S. amaryllis*, the mandible has four teeth, and the distance between the third and fourth teeth is larger than the rest, Chan 2009); 2) a tergum in *S. tenuis* is triangular with a short and wide spur, whereas the tergum narrow with a beak produced apically in *S. amaryllis*, and 3) the maxilla in *S. tenuis* is triangular and covered in dense setae, on the contrary, the maxilla is bilobed, elongated with dense setae on inferior margins in *S. amaryllis* (Chan 2009).

The barnacle species *Striatobalanus tenuis* Hoek, 1883 is found in many subtidal zones, including tropical, subtropical, and temperate regions (Mao et al., 2024). The samples analyzed in the current investigation are consistent with the descriptions provided by Chan (2009) and Chan et al. (2009). The epibiotic species *S.tenuis* is extensively documented, and frequently seen adhering to the shells of deep-water crustaceans and molluscs (Pitriana et al., 2020). According to Chan (2009), this particular species has been documented in many

regions including South Africa, East China Sea, South China Sea, Japan, the Philippines, Indonesia, Vietnam (Poltarukha 2010), and India (Krishnamoorthy 2007).

## Acknowledgements

We would like to thank the reviewers for their valuable comments and suggestions to improve paper quality

## Conflict of interests

The authors declare that they have no competing interests.

## References

- Carugati, L., Lo Martire, M., Gambi, C., & Danovaro, R. (2018). Impact of breakwater relocation on benthic biodiversity associated with seagrass meadows of northern Adriatic Sea. *Rendiconti Lincei. Scienze Fisiche e Naturali*, 29(3), 571-581. DOI: [10.1007/s12210-018-0720-9](https://doi.org/10.1007/s12210-018-0720-9)
- Chan, B.K.K. (2009). Shallow water and Deep-Sea barnacles (Crustacea: Cirripedia: Thoracica) collected during the Philippine Panglao 2005 expedition, with description of two new species. *Raffles Bulletin of Zoology* 20: 47–82.
- Chan, B.K.K., Prabowo, R.E., Lee, K.S., & Chan, T.Y. (2009). Crustacean Fauna of Taiwan: Barnacles, Volume 1: Cirripedia: Thoracica excluding the Pyrgomatidae and Acastinae. National Taiwan Ocean University, Keelung, 297 pp.
- Chan, B. K., Dreyer, N., Gale, A. S., Glenner, H., Ewers-Saucedo, C., Pérez-Losada, M., ... & Høeg, J. T. (2021). The evolutionary diversity of barnacles, with an updated classification of fossil and living forms. *Zoological Journal of the Linnean Society*, 193(3), 789-846. DOI: [10.1093/zoolinnean/zlaa160](https://doi.org/10.1093/zoolinnean/zlaa160)
- Krishnamoorthy, P. (2007). Fauna of Chennai coast (Vol 1). *Zoological Survey of India*: 83–107.
- Mao, N., Shao, W., Mao, S., Cai, Y., Ji, N., & Shen, X. (2024). Complete mitochondrial genome of *Striatobalanus tenuis* Hoek, 1883 (Balanomorpha: Balanidae) and a novel molecular phylogeny within Cirripedia. *Mitochondrial DNA Part B*, 9(1), 29-32. DOI: [10.1080/23802359.2023.2299087](https://doi.org/10.1080/23802359.2023.2299087)
- Naser, M., Rainbow, P., Clark, P., Yasser, A., & Jones, D. (2015). The barnacle *Amphibalanus improvisus* (Darwin, 1854), and the mitten crab *Eriocheir*: one invasive species getting off on another!. *BioInvasions Records*, 4(3), 205–209. DOI: [10.3391/bir.2015.4.3.09](https://doi.org/10.3391/bir.2015.4.3.09)
- Naser, M. D., Son, M. O., & Yasser, A. G. (2011). Assessing the risks of invasions of aquatic invertebrates in the Shatt Al-Arab River. *Russian Journal of Biological Invasions*, 2, 120–125. DOI: [10.1134/S2075111711020081](https://doi.org/10.1134/S2075111711020081)
- Naser, M. D., Yasser, A. G., & Auda, N. M. (2024). On the occurrence of *Chelonibia testudinaria* (Linnaeus, 1758) (cirripedia) on the crab *Portunus segnis* from the Iraqi coast. *Journal of Fauna Biodiversity*, 1(1), 16-19.
- Pitriana, P., Jones, D. S., Corbari, L., & von Rintelen, K. (2020). New insights gained from museum collections: Deep-sea barnacles (Crustacea, Cirripedia, Thoracica) in the Museum National d'Histoire Naturelle, Paris, collected during the Karubar expedition in 1991. *Zoosystematics and Evolution*, 96, 649-698. DOI: [10.3897/zsc.96.55733](https://doi.org/10.3897/zsc.96.55733)

- Poltarukha, O. P. (2010). Deep-sea barnacles (Cirripedia: Thoracica) of southern Vietnam. Russian journal of marine biology, 36, 16-25. DOI:[10.1134/S1063074010010025](https://doi.org/10.1134/S1063074010010025)
- Shahdadi, A., Sari, A., & Naderloo, R. (2014). A checklist of the barnacles (Crustacea: Cirripedia: Thoracica) of the Persian Gulf and Gulf of Oman with nine new records. Zootaxa, 3784(3), 201-223. DOI: [10.11646/zootaxa.3784.3.1](https://doi.org/10.11646/zootaxa.3784.3.1)
- Yasser, A. G., Naser, M. D., Ghazi, A. H., Mahdi, R., Younis, M., Shahen, M., & Ali, R. (2022). An expansion of the invasive species *Amphibalanus subalbidus* (Henry, 1973) in the south of Iraq. BioInvasions Records, 11(4), 977-982. DOI: [10.3391/bir.2022.11.4.15](https://doi.org/10.3391/bir.2022.11.4.15)