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**NEW RECORD OF THE BUBBLE SNAIL *HALOA WALLISII*  
(GRAY, 1825) (HAMINOEIDAE PILSBRY, 1895) FROM  
THE BREAKWATERS OF THE IRAQI COAST,  
PERSIAN-ARABIAN GULF**

| **Murtada D. Naser\*** | **Amaal Gh. Yasser\*** |  
| **Shaker G. Ajeel\*\*** | **Nabaa M. Auda\*\*** |

\* School of Environment and Science, Griffith University, 170 Kessels Road, Nathan, Queensland, 4111, AUSTRALIA. E-mail: [nasergriffith@gmail.com](mailto:nasergriffith@gmail.com), ORCID ID: 0000-0001-5047-7657

\*\* Marine Science Centre, University of Basrah, Basrah, IRAQ. ORCID ID: 0000-0002-2904-4141

[**Naser, M. D., Yasser, A. Gh., Ajeel, S. G. & Auda, N. M.** 2024. New record of the bubble snail *Haloa wallisii* (Gray, 1825) (Haminoeidae Pilsbry, 1895) from the breakwaters of the Iraqi coast, Persian Gulf. *Munis Entomology & Zoology*, 19 (suppl.): 2699-2703]

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**ABSTRACT:** The gastropod *Haloa wallisii* has been found for the first time off the coast of Iraq in the northwestern Persian Gulf. Specimens were discovered adhering to the surface stones of the Faw city breakwaters, collected during low tide from the intertidal region. This species is distinguished by its distinct clear spiral striae, small shell, and reddish color. The present paper includes a brief description, illustrations, and an outline of the species' global distribution. The findings underscore the importance of the breakwaters in Faw City, northwest of the Persian Gulf, in hosting rare marine species, as well as the need for ongoing research and conservation efforts in this biologically important region.

**KEY WORDS:** Northwestern Persian Gulf, intertidal region, breakwaters

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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.

According to Burn & Thompson (1998), the Haminoeidae family, also known as bubble snails, has the most genera among cephalaspidean gastropods. The family has been linked with 47 taxa; however, the majority of these were based solely on minute changes in anatomy or, more frequently, shell shape (Oskars et al., 2019). A number of taxonomic modifications, including the confirmation of 16 valid genera, have resulted from the family's recent study utilizing integrative taxonomical methodologies that included DNA, internal anatomy, external soft body morphology, and shell morphology (Oskars & Malaquias, 2019; Oskars et al., 2019).

The type genus of the family, Haminoea Turton & Kingston (1830), was recently investigated by Oskars et al. (2019) to be polyphyletic. Three distinct clades made up Haminoea sensu lato: a clade that included all Indo-West Pacific (IWP) species; this clade was sister to the haminoeid genus *Smaragdinella* A. Adams, 1848, which inhabits intertidal rocks; and these two clades were sister to a radiation that included all Atlantic (Atl) and eastern Pacific (EP) species of Haminoea, along with one single species from South Africa that inhabits the temperate waters of the Indian Ocean. To reflect the phylogeny, Oskars et al., 2019 reintroduced the genus *Haloa* Pilsbry, 1921 for the IWP species and kept the Atl+EP species in the genus Haminoea sensu stricto (type species *Haminoea hydatis* Linnaeus, 1758 from the Mediterranean Sea). The genus *Haloa* includes dull-coloured species of haminoeid snails inhabiting tidal and shallow waters of the tropical and sub-tropical Indo-West Pacific. Based on the integrative study conducted by Oskars & Malaquias (2022), thirteen species were recognised as valid species in the genus *Haloa*.

This is the first record for this species from the north west of the Persian-Arabian Gulf.

## MATERIALS AND METHODS

Specimens of *Haloa wallisii* were collected from the breakwaters at breakwaters of 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 collected from stones by hand. The specimens are preserved in 70% ethanol and deposited in the Marine Science Centre (MSC), with collection voucher number (801), University of Basrah, Iraq.

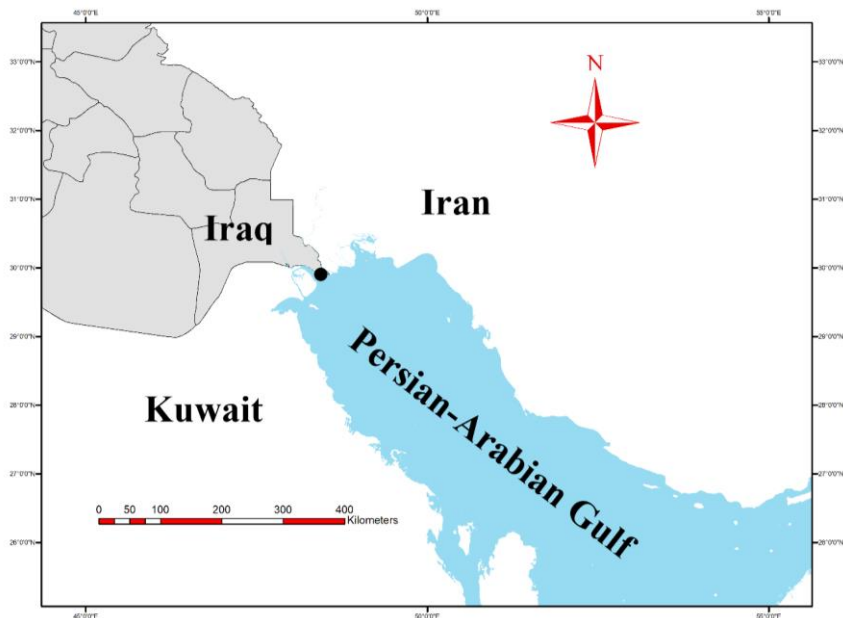


Figure 1. Map sampling from breakwaters at Faw city, Iraq (black dot).

## RESULTS AND DISCUSSION

Systematics  
Phylum Mollusca  
Class Gastropoda Cuvier, 1795  
Order Cephalaspidea P. Fischer, 1883  
Superfamily Haminoeioidea Pilsbry, 1895b  
Family Haminoeidae Pilsbry, 1895b  
Genus *Haloa* Pilsbry, 1921

### *Haloa wallisii* (J. E. Gray, 1825)

**Material examined:** IRAQ • 3 specimens, off the coast of Iraq in the northwestern Persian Gulf (29.901427° N, 48.439762° E), deposit voucher number 801.

**Diagnosis and description:** Shell: tiny, thin, bullate, ranging in size from 10 mm. Whorls are inflated. Sculpture: numerous fine axial striations and fine threads appear as darker lines in the periostracum. Aperture extends widely at the front; Columella is smooth and sharply curved. Periostracum is thin and has a straw to tan color.

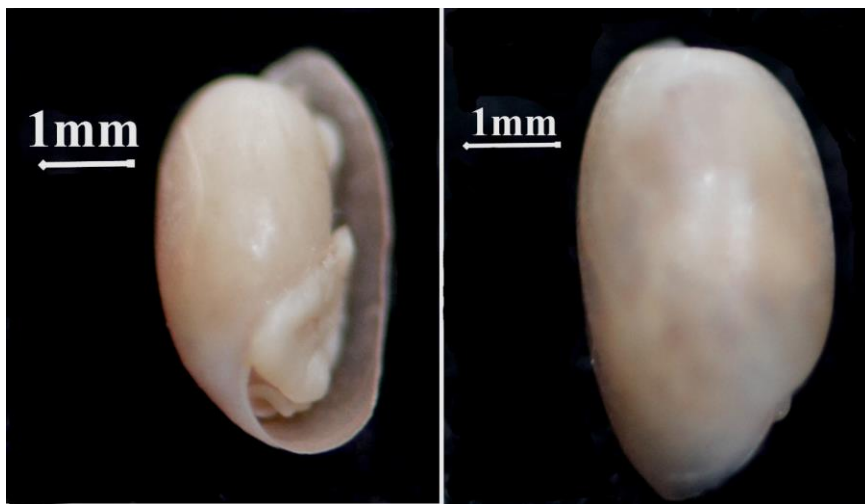


Figure. 2. *Haloa wallisii*, dorsal and ventral view.

There has been increasing interest in identifying species of molluscs from the northwest Persian- Arabian Gulf in recent years. The record for gastropod and bivalve species has been updated (Yasser & Naser, 2021; Yasser et al., 2022a,b, 2023; Yasser & Naser, 2023; Naser et al., 2024). Perhaps the diversity of natural or artificial environments (such as the breakwater in Faw city) has contributed to some extent to the presence of species that were not possible to identify in the past (Yasser et al., 2022).

*Haloa wallisii* is distributed across various regions, encompassing the South Africa, Mozambique, to the Indian Ocean Thailand, Hong Kong, India to United Arab Emirates and to the south hemisphere to Australia ( MolluscaBase, 2024). This is the first record of *H. wallisii* from the north of the Gulf (Fig. 3).

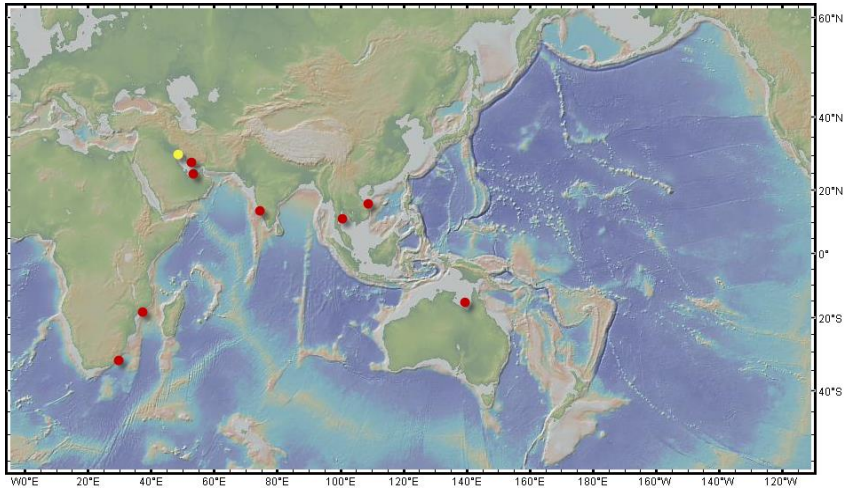


Figure 3. Map showing the distribution of *Haloa wallisii* in the world (Red dot shows the distribution in world, yellow dot shows the present study area).

## CONCLUSION

In the present study, gastropod specimens were found attached to the stones at the breakwaters of Faw city, northwest of the Persian Gulf. This observation underscores the crucial role of breakwaters as essential ecosystems for a diverse range of marine organisms. Scyphers et al. (2014) found that breakwaters were feasible and offered habitats for mobile invertebrates, filter-feeding bivalves, and fish populations.

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**Author contributions:** MDN initiated the work, identification and manuscript making, NMA field work, specimen collection, figures. AGhY and SGA participate writing the manuscript and reviewed the manuscript.

## LITERATURE CITED

- Burn, R. & Thompson, T. E.** 1998. Order Cephalaspidea. In 'Fauna of Australia, Mollusca: the Southern Synthesis. Part B, VIII, Vol. 5'. (Eds PL Beesley, GJB Ross, and AA Wells.) pp. 943–959.
- MolluscaBase eds.** 2024. MolluscaBase. *Haloa wallisii* (J. E. Gray, 1825). Accessed at: <https://www.molluscabase.org/aphia.php?p=taxdetails&id=1341837> on 2024-04-20
- Naser, M. D. & Yasser, A. G.** 2023. First record of *Glycymeris taylori* Angas, 1879 and two additional records of *Azamapecten ruschenbergerii* Tryon, 1869 and *Lutraria australis* Deshayes, 1855 from the north west of the Persian-Arabian Gulf. *Acta Biologica Sibirica*, 9: 521-527.
- Naser, M. D., Yasser, A. G., Mohammed, D. S. & Auda, N. M.** 2024. First record of *Dosinia prostrata* (Linnaeus, 1758) (Bivalvia: Veneridae) from the Iraqi coast. *Journal of Fauna Biodiversity*, 1 (1): 8-11.
- Oskars, T. R. & Malaquias, M. A. E.** 2019. A molecular phylogeny of the Indo-West Pacific species of *Haloa* sensu lato gastropods (Cephalaspidea: Haminoeidae): Tethyan vicariance, generic diversity, and ecological specialization. *Mol Phylogenet Evol.*, 139: 106557.
- Oskars, T. R., Too, C. C., Rees, D., Mikkelsen, P. M., Willassen, E. & Malaquias, M. A. E.** 2019. A molecular phylogeny of the gastropod family Haminoeidae sensu lato (Heterobranchia: Cephalaspidea): a generic revision. *Invertebr. Syst.*, 33 (2): 426-472.
- Oskars, T. R. & Malaquias, M. A. E.** 2022. Systematic revision of the Indo-West Pacific bubble-snails of the genus *Haloa* (Pilsbry, 1921) (Cephalaspidea: Haminoeidae). *Invertebr. Syst.*, 36 (5): 436-492.
- Scyphers, S. B., Powers, S. P. & Heck, K. L.** 2015. Ecological value of submerged breakwaters for habitat enhancement on a residential scale. *Environ. Manag.*, 55: 383-391.
- Yasser, A. & Naser, M.** 2021. *Pupa affinis* (A. Adams, 1855) (Gastropoda: Acteonidae) a newly recorded species from Iraq, with an updated checklist of the marine gastropods from the Iraqi coast. *J. animal divers*, 3 (2): 76–80.
- Yasser, A. G., Naser, M. D. & Abdul-sahib, I. M.** 2022a. Some new records of Marine Gastropod from the Iraqi Coast. *Zoodiversity*, 56 (4).
- Yasser, A. G., Naser, M. D., Oliver, P. G., Darweesh, H. & Al-Khafaji, K.** 2022b. Additional records of marine bivalves from Iraq, with a provisional checklist for the marine bivalves of Iraq. *Ecol. Montenegrina*, 53: 25–34.
- Yasser, A. G., Naser, M. D., Abdul-sahib, I. M. & Abdullah, D. S.** 2023. New records of bivalves from the Iraqi coast. *Ecol. Montenegrina*, 62: 50-54.
- Yasser, A. G., Naser, M. D., Abdul-sahib, I. M., Son, M. O. & Oliver, P. G.** 2023. First record of the invasive non-native Asian date mussel *Arcuatula senhousia* (Benson 1842)(Mollusca: Bivalvia: Mytilidae) from Shatt Al-Basrah Canal, Basrah, Iraq. *Bioinvasions Rec.*, 12 (1): 265-271.