

# On the occurrence of *Chelonibia testudinaria*(linnaeus, 1758) (cirripedia) on the crab *Portunus segnis* from the Iraqi coast

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## Abstract

In January 2024, the symbiotic barnacle *Chelonibia testudinaria* (Linnaeus, 1758) was collected from the Iraqi coast. This is the initial documentation of *C. testudinaria* on the carapace and cheliped of *P. segnis* from the Iraqi shore.

**Key words:** Symbiotic, barnacle, *Chelonibia testudinaria*

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## 1. Introduction

Crabs play a significant ecological function in coastal and marine habitats, particularly mangrove forests, seagrass beds, and coral reefs (Kunsook & Dumrongrojwathana, 2017). Carapaces of crabs provide a living substrate for several epibiont/symbiont species (Dang et al., 2022). Portunid crabs are decapod crustaceans that play an essential role in the global economy. A significant fishery resource in the Persian-Arabian Gulf, blue swimming crabs (*Portunus segnis*, Forskal, 1775) are ecologically and commercially significant in the Persian-Arabian Gulf and Oman Sea (Lai et al., 2010; Yasser et al., 2021).

The classification scheme was revised in recent studies conducted by Cheang et al. (2013) and Zardus et al. (2014) through the utilization of genetic and morphological comparisons. These studies posited that individuals of *C. patula*, *C. manati*, and *C. testudinaria* can be classified under the broad and cosmopolitan species *C. testudinaria*, which exhibits crab, manatee, and turtle morphotypes, respectively. According to the findings of Cheang et al. (2013), the observed morphological differences between *C. testudinaria* and *C. patula*, which were previously interpreted as evidence of speciation, are indicative of host-specific phenotypic plasticity in these particular species. However, *C. testudinaria* has replaced *C. patula* and *C. manati* as accepted nomenclature (Hyatt et al., 2023).

Barnacles, commonly found on decapod crustaceans, are the most studied symbiotic crustacean species. Their symbiotic relationship is determined by the host's biological properties, including distribution, sex, maturity stage, moult cycle, and size (Gaddes and Sumpton, 2004). Several symbiotic species have been found on crabs in the Persian-Arabian Gulf (Bastami et al., 2012; Shahdadi et al., 2014; Naser et al., 2015; Hosseini et al., 2023).

This paper represents the initial documentation of *C. testudinaria* on the Iraqi coast northwest of the Persian-Arabian Gulf.

## 2. Materials and methods

Trawl nets were used to collect a total of 30 blue crab (*P. segnis*) specimens from the Iraqi coast (Fig. 1). Of these individuals, there were 13 females and 17 males. The identification of symbiotic barnacle species was conducted by utilizing taxonomic keys and species descriptions provided by Shahdadi et al. (2014).

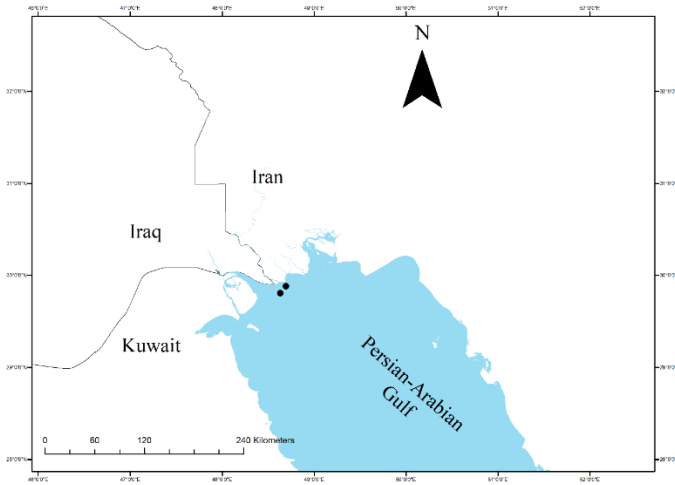


Figure 1. Map of the Iraqi coast with sampling stations (black dots)

## 3. Results and Remarks

*Chelonibia testudinaria* (Linnaeus, 1758)

(Figs 2A–C). Material examined. MSC 400, 401, 402, 403. Iraqi coast.

Descriptive features and remarks.

Smooth, white, conical, and not elevated. orifice broadly polygonal (Fig. 2A, 1) or oval (Fig. 2 A, 2). Non-sinuuous ocludent margin of the scutum. The largest specimen (MSC-cirri 400) with a height of 4.22 mm and a basal diameter of 11.88 mm. The specimens were attached to the carapace (Fig.2B) and chelipeds (Fig.2 C) of *Portunus segnis* crabs (Forskål, 1775).

Distribution and habitat. Tropical Atlantic and Indo-West Pacific; attached to sea turtles and decapod crustaceans (Jones et al. 2000).

*Chelonibia testudinaria* typically colonizes the carapace of crabs (Dang et al, 2022). There are several studies have documented the presence of this species on the carapace of crabs, including *Portunus pelagicus* and *Charybdis hellerii* (A. Milne Edwards, 1867) from Pakistan (Mahjabeen and Mustaqium 1994), and *Portunus validus* and *Callinectes amnicola* Lagos Coast, Nigeria (Lawal-Are and Daramola 2010), on *P. segnis* from Turkish coast and the Persian Gulf-Arabian Gulf, respectively (Özcan, 2012; Shahdadi et al., 2014).

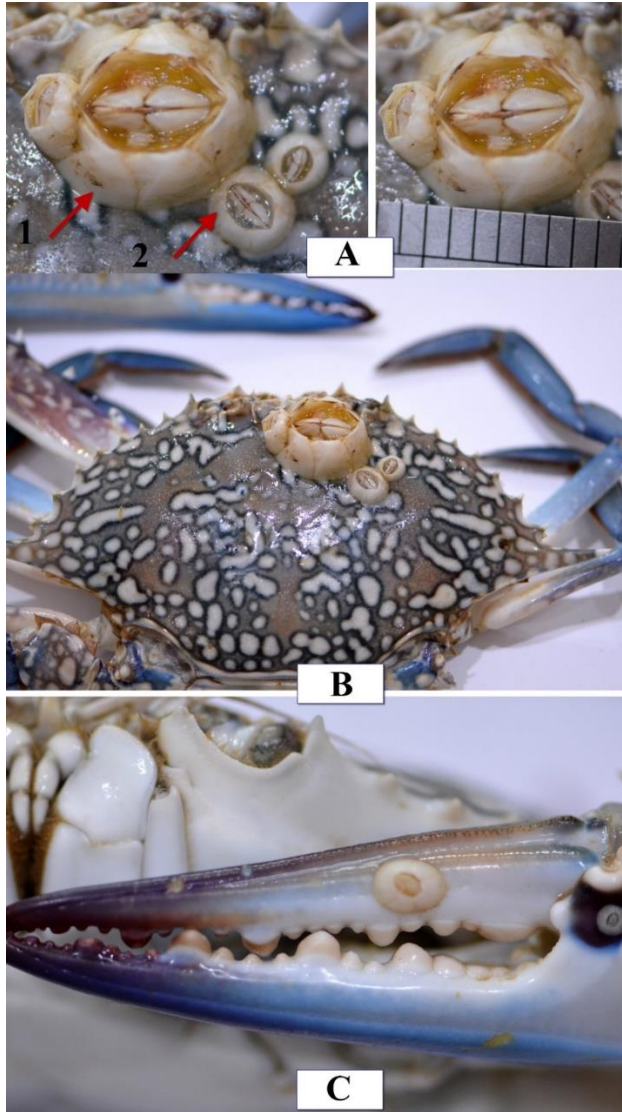


Figure 2. *Chelonibia testudinaria* MSC 400, from Faw, Persian-Arabian Gulf, A (1,2) with 1, polygonal orifice; dorsal view, 2, oval orifice, dorsal view; B. *C. testudinaria*, on crab *Portunus segnis* (Forskål, 1775); C. *C. testudinaria* on the left cheliped of *Portunus segnis* (Forskål, 1775)

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## Conflict of interests

The authors declare that they have no competing interests.

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