

Original Article

The leucosiid crabs of the Iraqi coast with a new record of *Nursia plicata* (Herbst, 1803)

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Abstract: The leucosiid crabs are common species that can be found on soft sediments ranging in depth from the intertidal flat to the shelf and slope. The Leucosiid crab, *Nursia plicata* (Herbst, 1803), is reported in this study based on the collection of two specimens in April 2019 from the Iraqi Marine waters. Photographs and illustrations of the species and its external morphological traits and the first male gonopod G1 are given.

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Introduction

There are many records of decapod crabs from the Iraqi coast of the Persian Gulf (Naser, 2009, 2011, 2018, 2019; Ng et al., 2012; Naser et al., 2010; Naser, 2011; Naser et al., 2012; Naser et al., 2013; Yasser and Naser, 2019a, b; Yasser et al., 2021). There are three subfamilies within the Leucosiidae viz. Leucosiinae Samouelle, 1819, Cryptocneminae Stimpson, 1907, and Ebalinae Stimpson, 1871 (Ng et al., 2008; Emmerson, 2016). The leucosiid taxonomic statute is not, however, well-defined. There are 7 species of leucosiid crabs in the Iraqi coast, including *Arcania erinacea* Fabricius, 1787, *Ixa holthuisi* Tirmizi, 1970, *Seulocia anahita* Galil, 2005 (Yasser and Naser, 2019), *Hiplyra sagitta* Galil, 2009 (Al-Khafaji et al., 2017), *H. elegans* Gravier, 1920 (Al-Maliky et al., 2020), *Lyphira perplexa* Galil, 2009 (Al-Maliky, 2020), and *L. heterograna* (Ortmann, 1892) (Al-Maliky and Al-Maliky, 2021). The genus *Nursia* Leach, 1817 consists of three species in the Persian Gulf, namely *N. blandfordi* Alcock, 1896, *N. persica* Alcock, 1896 and *N. plicata* (Herbst, 1803). *Nursia plicata* is already recorded from the Kuwaiti coast (Apel, 2001). This work aimed to record *N. plicata* as a new

record family leucosiidae from the northwest of the Persian Gulf on the Iraqi coast.

Materials and Methods

Nursia plicata was collected in April 2019 from two locations along the Iraqi shore of the northwest Persian Gulf (Fig. 1). The samples were preserved in 95% ethanol and deposited at the Marine Science Center (MSC), University of Basrah, Iraq, with a collection voucher of MSC401. The specimens were photographed with a digital camera (Nikon D7100). The abbreviations “CL” and “CW” are used for the length of the carapace from the front to the posterior dorsal margin, and the width of the carapace at its widest point, respectively. The measurements of the species are reported to the closest millimeter and were taken with an electronic caliper. The systematics of this species was adapted from Naderloo and Sari (2005) and Naderloo (2017).

Results

Nursia plicata (Herbst, 1803)

(Figs. 2A-B)

Cancer plicatus Herbst 1803: 2, 3, pl 59, fig 2,
Nursia plicata — Alcock 1896: 179 (in key), 180,

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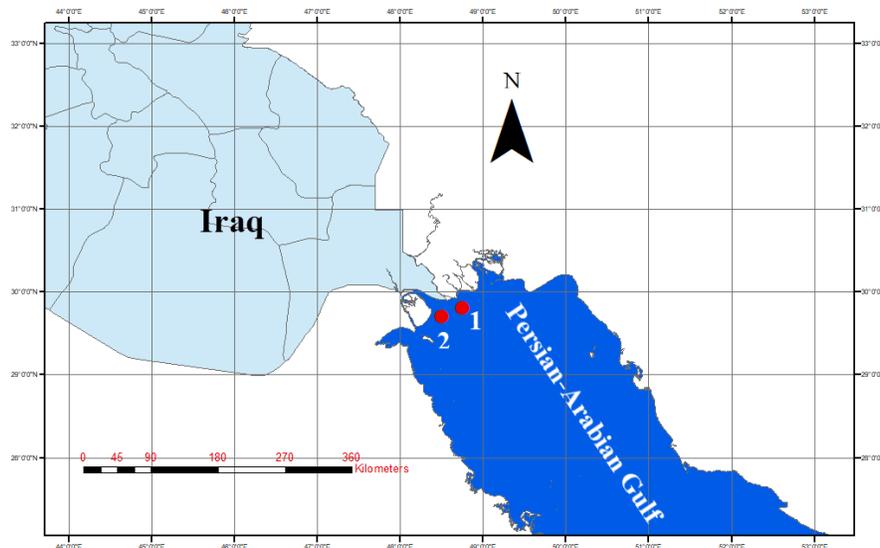


Figure 1. Sampling sites (red dots).



Figure 2. *Nursia plicata* (Herbst, 1804): A: carapace, B: abdomen of male; CW. 13.8 mm. (Photographs by M.D. Naser).

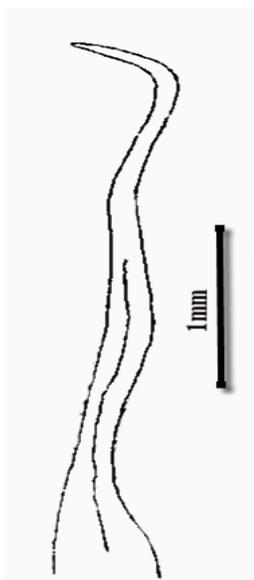


Figure 3. *Nursia plicata* (Herbst, 1804): First male gonopod G1.

and Sari 2005a: 35, fig 5, 2007a: 342, tab 1; Ng et al. 2008: 92 (in list). *Nursia plicata plicata* — Campbell and Stephenson 1970: 249 (in key).

Type locality: “Ostindien”. East India or Indo-Malayan Archipelago.

Material examined: two specimens, 1♂ CL. 19.0 mm, CW. 13.8 mm; 1♂ CL. 21.9 mm, CW. 16mm.

Carapace nearly pentagonal, slightly wider than long, with two semicircular lobes on posterior margin (Fig. 2A). Front barely visible beyond eyes, with a thickened granular edge. Third maxillipeds, pterygostomian regions, thoracic sterna, and proximal part of male abdomen having granular surfaces (Fig. 2B). The manus is longer than the finger, the carpus has an upper and inner surface covered in very minute granules, and chelipeds long

181; Stephenson 1946: 70, fig 6c; Titgen 1982: 248 (in list); Sakai 1999: 16; Apel 2001: 54; Naderloo

Table 1. Species and subfamilies of the family Leucosiidae from the Iraqi coast.

Species	Family	Subfamily
<i>Arcania erinacea</i> Fabricius, 1787	Leucosiidae	Ebaliinae
<i>Ixa holthuisi</i> Tirmizi, 1970	Leucosiidae	Ebaliinae
<i>Seulocia anahita</i> Galil, 2005	Leucosiidae	Leucosiinae
<i>Hiplyra sagitta</i> Galil, 2009*	Leucosiidae	Ebaliinae
<i>Hiplyra elegans</i> (Gravier, 1920)	Leucosiidae	Ebaliinae
<i>Lyphira heterograna</i> (Ortmann, 1892)	Leucosiidae	Ebaliinae
<i>Lyphira perplexa</i> Galil, 2009	Leucosiidae	Ebaliinae
<i>Nursia plicata</i> (Herbst, 1803)	Leucosiidae	Ebaliinae

* Revised by Al-Maliky et al. (2020) as *Hiplyra elegans* (Gravier, 1920)

and stout. First gonopod sinuous, proximally setose, and distally bent (Fig. 3). The previous records of the Leucosiid crabs from northwest of the Persian Gulf from Iraqi coasts are shown in Table 1.

Discussion

The Leucosiidae family is widespread in the Red Sea, the Gulf of Oman, and the Persian Gulf. Of all the brachyuran families, this one is the most diversified and widely distributed (Stephensen, 1946; Titgen, 1982; Apel, 2001; Naderloo and Türkay, 2012). About 16.6% of the brachyuran crab species in the Persian Gulf belong to the Leucosiidae family (Apel, 2001). The reported leucosiid species in the Persian Gulf has increased to 37 according to Naderloo and Apel (2012) and Naderloo and Türkay (2012). Recently, Al-Maliky and Al-Maliky (2021) listed *Lyphira heterograna* (Ortmann, 1892) for the first time from Iraqi marine waters, which may raise the number of this family to 38 species in the Persian Gulf. However, we can't confirm the identity of *L. heterograna* reported by Al-Maliky and Al-Maliky (2021) due to the poor quality of the picture.

Most leucosiid crabs from the Iraqi coast belong to the subfamily Ebaliinae, except the leucosiid *Seulocia anahita* Galil, 2005 which belongs to the subfamily Leucosiinae. The Indo-West Pacific genus *Nursia* Leach, 1817, contains 20 species (Ng et al., 2008). Most of its species are distinguished by their plate-like appearance with distinct ridges on the dorsal surface of the carapace. This genus is extremely diverse and needs further revision. There are three species of the genus *Nursia* in the Persian Gulf, with only one species recorded from the

northwest of the Persian Gulf. *Nursia plicata* is widely distributed in the Persian Gulf: Iran (Naderloo and Sari 2005; Naderloo and Sari 2007), and Kuwait (Apel, 2001). Alcock (1896) recorded this species from an unknown locality. There is no record from the Gulf of Oman. The distribution of this species in the world is Indo-West Pacific: Persian Gulf, India, Palk Straits, Mumbai, China, Hong Kong, and Japan. This species is found at the subtidal 3-20 m, living on a sandy substrate with clay and stones.

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References

- Al-Maliky T.H. (2020). New records of Leucosiid crabs *Lyphira perplexa* Galil, 2009 (Crustacea; Decapoda; Leucosiidae) in the northwest of the Gulf-Iraq. Indo Pacific Journal of Ocean Life, 4(1): 1-3.
- Al-Maliky T.H., Al-Maliky A.M. (2021). First record of *Lyphira heterograna* (Ortmann, 1892) from the North West of the Gulf. Jordan Journal of Biological Sciences, 14(1): 7-9.
- Al-Maliky T.H., Ukash A.N., Al-Maliky A.M., Zeini A., Carnin R.L.P. (2020). First record of *Hiplyra Elegans* (Gravier, 1920) (Crustacea; Decapoda; Leucosiidae) in the North-West Gulf-Iraq. Revista Meio Ambiente e Sustentabilidade, 9(19): 91-98.
- Al-Khafaji K.K., Abdul-Sahib I.M., Ajeel S.G. (2017). First records of Leucosiid crabs: *Hiplyra sagitta* (Galil, 2009) from Iraqi coast, NW Gulf. International Journal of Aquaculture, 7: 139-142.
- Apel M. (2001). Taxonomie und Zoogeographie der Brachyura, Paguridea und Porcellanidae (Crustacea:

- Decapoda) des Persisch Golfes. Fachbereich Biologie, Frankfurt am Main.
- Emmerson W.D. (2016). A guide to, and checklist for, the Decapoda of Namibia, South Africa and Mozambique. Cambridge Scholars Publishing, Cambridge, U.K. 2: 1-645.
- Naderloo R. (2017). Atlas of Crabs of the Persian Gulf. Atlas of Crabs of the Persian Gulf. 1st ed. 20 p.
- Naderloo R., Sari A. (2005). Iranian subtidal leucosiid crabs (Crustacea: Decapoda: Brachyura) of the Persian Gulf: Taxonomy and zoogeography. Iranian Journal of Animal Biosystematics, 1(1): 31-46.
- Naderloo R., Türkay M. (2012). Decapod crustaceans of littoral and shallow sublittoral habitats along the eastern (Iranian) coast of the Persian Gulf: faunistics, biodiversity and zoogeography, Zootaxa, 3374: 1-67
- Naser M. (2011). The Sesarmid Crab *Parasesarma persicum* Naderloo and Schubart, 2010 (Crustacea: Decapoda: Brachyura: Sesarmidae), new to the Iraqi Coastal Waters of Khor AlZubair and Shatt AlBasrah Canal, Basrah, Iraq. Jordan Journal of Biological Sciences, 4: 185-190.
- Naser M. (2019). A New Record of *Eurycarcinus orientalis* A. Milne-Edwards, 1867 (Decapoda, Brachyura, Pilumnidae) from the Northwestern Part of the Persian Gulf. Journal of Biological Studies, 4: 160-164.
- Naser M. (2009). First Record of the Freshwater Crab, *Potamon mesopotamicum* Brandis, Storch & Türkay, 1998 (Decapoda, Brachyura, Potamidae) from the Al-Huwaizah Marshes, Iraq. Crustaceana, 82: 1599-1602.
- Naser M. (2018). A new record of *Eurycarcinus integrifrons* De Man, 1879 (Decapoda, Brachyura, Pilumnidae) from NW of the Persian Gulf, Iraq. Journal of Biological Studies, 1: 9-13.
- Naser M., Ali M., Yasser A. (2010). New record of the fiddler crab *Uca (Paraleptuca) sindensis* (Crustacea: Brachyura: Ocypodidae) from Khor Al-Zubair, Basrah, Iraq. Marine Biodiversity Records, 3: 1-3.
- Naser M., Page T., Ng N., Yasser A., Bishop J.M., Ng P.K.L., Clark P.F. (2012). Invasive records of *Eriocheir hepuensis* Dai, 1991 (Crustacea: Brachyura: Grapsoidea: Varunidae): Implications and taxonomic considerations. BioInvasions Records, 1: 71-86.
- Naser M.D., Alkhafaji K.S., Yasser A.Gh., Darweesh H.S. (2013). New Record of *Nanosesarma sarii* (Naderloo and Turkay, 2009) (Crustacea: Decapoda: Brachyura: Sesarmidae) from Khor Al-Zubair, South of Iraq. Bulletin of the Iraq Natural History Museum, 12: 35-41.
- Ng P.K.L., Guinot D., Davie P.J.F. (2008). Systema Brachyurorum: Part I. An annotated checklist of extant brachyuran crabs of the world. Raffles Bulletin of Zoology, (Supplement) 17: 1-286.
- Ng P.K., Safaie M., Naser M.D. (2012). A new species of *Raphidopus* Stimpson, 1858, from the Persian Gulf (Crustacea: Decapoda: Anomura: Porcellanidae). Zootaxa, 3402(1): 54-60.
- Stephensen K. (1946). The Brachyura of the Iranian Gulf, Danish Scientific Investigations in Iran, Part IV. E. Munksgaard, Copenhagen. pp: 57-237.
- Titgen R.H. (1983). The Systematics and ecology of the Decapods of Dubai, and their zoogeographic relationships to the Persian Gulf and the western Indian Ocean, Dissertation, Texas A & M University, USA.
- Yasser A.G., Alkhafaji K.S., Darweesh H.S., Naser M.D. (2020). A new record of the hairy crab *Pilumnus savignyi* Heller, 1861 (Pilumnidae Samouelle, 1819) from the Northwest of the Persian Gulf. EurAsian Journal of BioSciences, 14: 7575-7577.
- Yasser A.G., Naser M.D., Jabbar I.M. (2020). Far from the Persian Gulf, *Ilyograpsus rhizophorae* Barnard, 1955 (Crustacea: Decapoda: Brachyura: Macrophthalmidae) as a New Record of Khur AlZubair, Basra, Iraq. EurAsian Journal of BioSciences, 14: 7645-7649.
- Yasser A.G., AbdulSahib I.M., Naser M.D., Al-Khafaji K.K., Darweesh H.S. (2013). Two records of *Macrophthalmus Desmarest*, 1823 (Decapoda: Brachyura: Thoracotremata) from the NW of the Gulf. Arthropods, 2(3): 105-110.
- Yasser A., Naser M. (2019a). First Report of Leucosiid Crabs (Decapoda, Brachyura) from the Iraqi Coast of the Persian Gulf. Journal of Biological Studies, 2: 25-30.
- Yasser A., Naser M. (2019b). A New Record of *Dorippe quadridens* (Fabricius, 1793) (Decapoda, Brachyura, Dorippidae) from the Northwestern Persian Gulf, Iraq. Journal of Biological Studies, 2: 1-3.
- Yasser A.G., Naser M.D., Al-Khafaji Kh.Kh.S. (2021). A new record of dotillid crab *Ilyoplax stevensi* (Kemp, 1919) Crustacea: Brachyura: Dotillidae Stimpson, 1858) from Shatt Al-Basrah Canal, Iraq. Ukrainian Journal of Ecology, 11(2): 77-79.