

First record of *Lyphira heterograna* (Ortmann, 1892) from the North West of the Arabian Gulf

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Abstract

One male specimen of the species *Lyphira heterograna* (Ortmann, 1892) was recorded for the first time in October 2016 from Iraqi coast, North West of the Arabian Gulf, outside its known distribution range in the Indian and Pacific Oceans. The present specimen agrees morphologically with the original description of *L. heterograna* in key diagnostic characters and should be considered a range extension for the species and a new record for the region.

Keywords: Arabian Gulf, Crustacea, Leucosiidae, *Lyphira heterograna*.

1. Introduction

The genus *Lyphira* was described in detail by Galil (2009) based on studies of crabs of the family Leucosiidae found in the Indian Ocean. In her revision of this genus, Galil (2009) reclassified its genera from *Philyra* to *Lyphira* and established that the species had a wide distribution range across the Indian and western Pacific Ocean, including Japan, Taiwan, China, Malaysia, Indonesia, Philippines, East China Sea. In the Arabian Gulf, the genus *Lyphira* had been thought to be represented solely by the species *Lyphira perplexa* Galil, 2009 (Naderloo, 2017, Al-Maliky, 2020).

Recently, there has been a drive to identify the Leucosiid crabs from the Iraqi coast, on the North West of the Arabian Gulf (Al-Khafaji *et al.*, 2017; Yasser and Naser, 2019; Al-Maliky, 2020, Al-Maliky and Lu'isa, 2020). In this time, six species were recorded, namely: *Ixa holthuisi* Tirmizi, 1970, *Arcania erinacea* Fabricius, 1787, *Seulocia anahita* Galil, 2005, *Hiplyra sagitta* Galil,

2009, *Lyphira perplexa* Galil, 2009 and *Hiplyra elegans* Galil, 2009.

The aim of the present paper is to confirm the identification of *Lyphira heterograna* for the first time in the Arabian Gulf, far outside its previously accepted distribution range.

2. Materials and Methods

One male specimen of *Lyphira heterograna* was collected a live in October 2016 at sampling location 29° 53' 35.9736'' N, 48° 35' 28.9212'' E (Fig. 1), by trawl net in 3-13 m of water depths. The specimen was preserved in 70-80% alcohol solution and deposited in the Department of Marine Biology, Marine Science Center, University of Basrah, Iraq. Specimen was photographed using the stereomicroscope (Carl Zeiss - Stemi 2000-C), equipped with a digital camera (Canon G 10 Wide 52 mm). The specimen was identified based on a comparison of morphological characteristics outlined for *L. heterograna* by: Ortmann (1892), Shen (1932) and Galil, (2009).

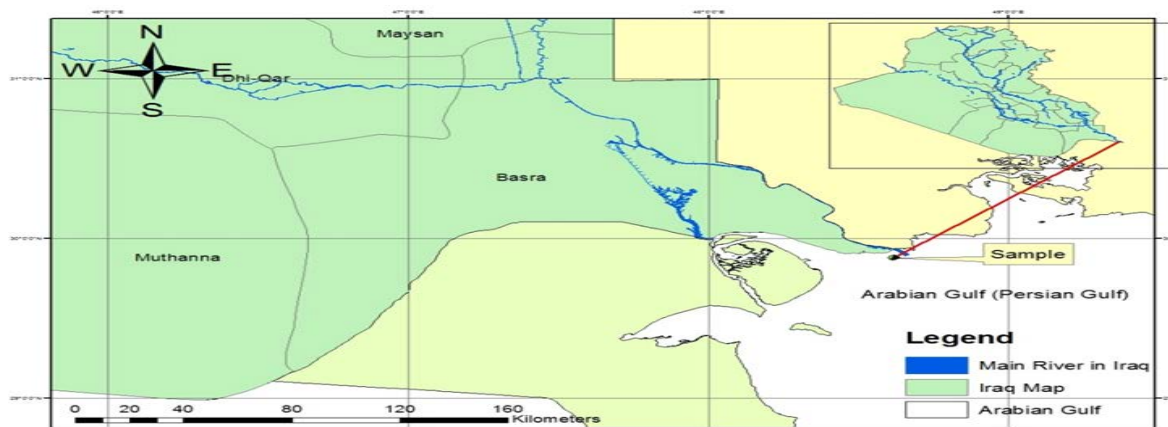


Figure 1. Map representing the study site in the Iraqi coast, Arabian Gulf

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3. Material examined

Single damaged male, (carapace only): Carapace Length 12.60 mm, Carapace Width 13.22 mm.

4. Result and Discussion

Systematic Treatment

Order Decapoda Latreille, 1802

Family Leucosiidae Samouelle, 1819

Subfamily Philyrinae Rathbun, 1937

Genus *Lyphira* Galil, 2009

Lyphira heterograna (Ortmann, 1892)

Philyra globulosa – H. Milne Edwards 1837: 132, pl. 24, fig. 4; *Philyra heterograna* Ortmann, 1892: 582, pl. 26, fig. 17; *Philyra globosa* – Lanchester 1900: 764; *Philyra peitahoensis* Shen, 1932: 18, pl. 1.1-2, text figs 10-12, 16b; *Philyra anatum* – Rathbun 1910: 312; *Philyra acutidens* Chen, 1987: 195, fig. 1.

Description of single male specimen

Carapace bearing minute granules, hepatic, branchial and intestinal regions with prominent granules (Fig. 2A); frontal margin slightly granulated; epistome slightly arcuate at anterior margin, inner angles of afferent branchial canals not prominent; external maxillipeds well granulated. Pterygostomial region prominently granulated (Fig. 2B). Anterior margin of abdominal sulcus prominently granulated. Fused abdominal segments 2-6 minutely granulated (Fig. 2B); male gonopod with a digitate apical process (Fig. 3A,B).

Note: Other appendages such as chelipeds and periopods were lost during collection.

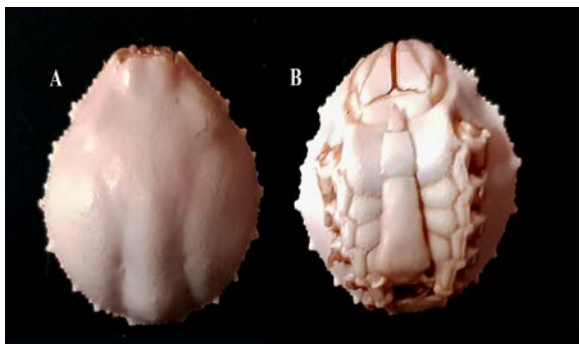


Figure 2. *Lyphira heterograna* (Ortmann, 1892) A, dorsal view; B, ventral view.

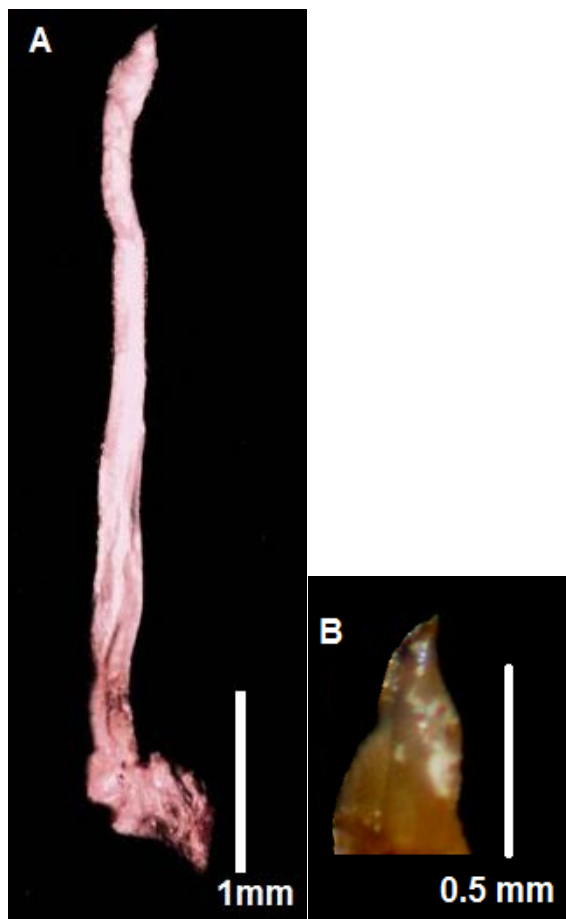


Figure 3. First male gonopod of *Lyphira heterograna* (Ortmann, 1892): A. whole gonopod; B. close-up of apical process.

5. Remarks

Only one species of the genus *Lyphira* was known from the Arabian Gulf, the species *Lyphira perplexa* (Naderloo, 2017, Al-Maliky, 2020). *Lyphira heterograna* can be easily separated from *L. perplexa* by its smaller body size and the digitate apical process of the first male gonopod. In *L. perplexa* the first gonopod has a flattened, squat, distally rounded apical process. The present specimen represents the first record of the species *L. heterograna* outside its previously known distribution range in the Indian and western Pacific Ocean and marks the first record of *L. heterograna* in the Arabian Gulf.

Distribution of *Lyphira heterograna* (Ortmann, 1837)

Japan, Taiwan, China, Malaysia, Indonesia, Philippines, East China Sea, and the Arabian Gulf, as in the present study.

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