

FIRST RECORD OF *HIPLYRA ELEGANS* (GRAVIER, 1920), (CRUSTACEA; DECAPODA; LEUCOSIIDAE) IN THE NORTH-WEST ARABIAN GULF – IRAQ

PRIMEIRO REGISTRO DE *HIPLYRA ELEGANS* (GRAVIER, 1920), (CRUSTACEA;
DECAPODA; LEUCOSIIDAE), NO NOROESTE DO GOLFO PÉRSICO – IRAQUE

PRIMER REGISTRO DE *HIPLYRA ELEGANS* (GRAVIER, 1920), (CRUSTACEA; DECAPODA;
LEUCOSIIDAE), EN EL NOROESTE DEL GOLFO PÉRSICO - IRAK

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Abstract

The article presents the first record of the *Hiplyra elegans* crab — from the Leucosiidae family — on the Iraqi coast, located in the north-west Arabian Gulf - Iraq. Through the morphological characteristics of the species *Hiplyra elegans*, it was possible to diagnose these crabs. Such characteristics, used for classification, are: the lateral margin of the carapace posteriorly to subhepatic facet closely beaded; granules smaller posteriorly; frontal region distinctly narrowed; carapace is long thin wide; sixth somite of male abdomen smooth; elevated male telson on lateral portion; dactyl shorter than upper margin of propodus, sickle-shaped, with its inner margin smooth, Chela elongate, laterally flattened, dactyl with inner margin entire. In male surface minutely granulate, bearing perliform granules anteriorly; Lower margin of propodus granulate, line of minute granules on the inner lower surface, upper margin minutely granulates. Pereiopods slender, short. Pereiopodal meri longer than carpi and propodi; dactyli longer than propodi.

Keywords: Arabian Gulf. Crabs. Crustacea. *Hiplyra*. Leucosiidae.

Resumo

O artigo apresenta o primeiro registro do caranguejo *Hiplyra elegans* — da família Leucosiidae — na costa iraquiana, localizada no noroeste do Golfo Pérsico - Iraque. Através das características morfológicas da espécie *Hiplyra elegans*, foi possível diagnosticar esses caranguejos. Tais características, utilizadas para a classificação, são: margem lateral da carapaça posterior à face sub-hepática, extremamente granulada e com grânulos menores posteriores; região frontal estreita; carapaça longa, fina e larga; sexto somito do abdômen masculino liso; télson masculino elevado na parte lateral; dátilo mais curto que a margem superior do própodo e em forma de foice; margem interna lisa; quela alongada e lateralmente achatada; dátilo com margem interna inteira; superfície masculina finamente granulada e com grânulos perliformes anteriores; margem inferior do propódio granulada; linha de grânulos minúsculos na superfície interna inferior; margem superior finamente granulada; pereiópodes delgados e curtos; pereiópodes merus mais longos que o carpo e propódio; dátilo mais longo do que propódio.

Palavras-chave: Golfo Pérsico. Caranguejos. Crustacea. *Hiplyra*. Leucosiidae.

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Resumen

El artículo presenta el primer registro del cangrejo *Hiplyra elegans* — de la familia Leucosiidae — en la costa iraquí, ubicada en el noroeste del Golfo Pérsico – Irak. A través de las características morfológicas de la especie *Hiplyra elegans*, fue posible identificar esos cangrejos. Tales características, utilizadas para la clasificación, son: borde lateral del caparazón posterior a la región sub-hepática, extremadamente granulada y con gránulos menores posteriores; región frontal angosta; caparazón largo, fino y ancho; sexto segmento del abdomen masculino liso; telson masculino elevado en la parte lateral; dactilo más corto que el borde superior del propodo y en forma de hoz; borde interno liso; quela alargada y lateralmente aplanada; dactilo con borde interno entero; superficie masculina finamente granulada y con granos perliformes anteriores; borde inferior del propodo granulado; línea de gránulos minúsculos en la superficie interna inferior; pereiópodos delgados y cortos; pereiópodos meros más largos que el carpo y el propodo; dactilo más largo que el propodo.

Palabras-clave: Golfo Pérsico. Cangrejos. Crustacea. *Hiplyra*. Leucosiidae.

1 Introduction

There are many species of crabs (Crustacea: Decapoda: Brachyuran), including the *Leucosiidae* family on the Iraqi coasts, NW Arabian Gulf. Brachyuran crabs are one of the most diverse crustaceans, with 98 families containing more than 7,000 species. From these 7,000 species, 495 are attributed to *Leucosiid* crab species, occurring in marine, freshwater, and terrestrial habitats. *Leucosiid* crabs are frequently nut crabs, Pebble crabs and Purse crab that are found in the intertidal and sublittoral species. They are easily recognized by the highly polished carapace and the thoracic sinus is to the genus (De Grave *et al.* 2009; Ahyong *et al.* 2011; Beleem *et al.* 2017), carapace subcircular, ovoid, pentagonal; smooth or armed, with spines and lobes. Eyes and orbits small. The group belongs to the round crab; these animals are found in tidal and subtropical habitats with soft sediments from the Gulf (Poore, 2004; Naderloo; Apel, 2012; Al-Yamani *et al.* 2012).

Apel (2001) listed 30 leucosiid species from the Gulf, plus two additional species only known in the Oman Gulf. However, records of four more species, reported in the region, are doubtful; thus, almost 1/6 of all brachyuran crab species belong to the Leucosiidae. Also, new species were from the Gulf. Therefore, over 35 species of leucosiid crabs were known to occur in the Arabian Gulf (Naderloo and Sari 2005). Galil (2009) revised the genus *Philyra* Leach, 1817, added more species, and divided it into eight genera.

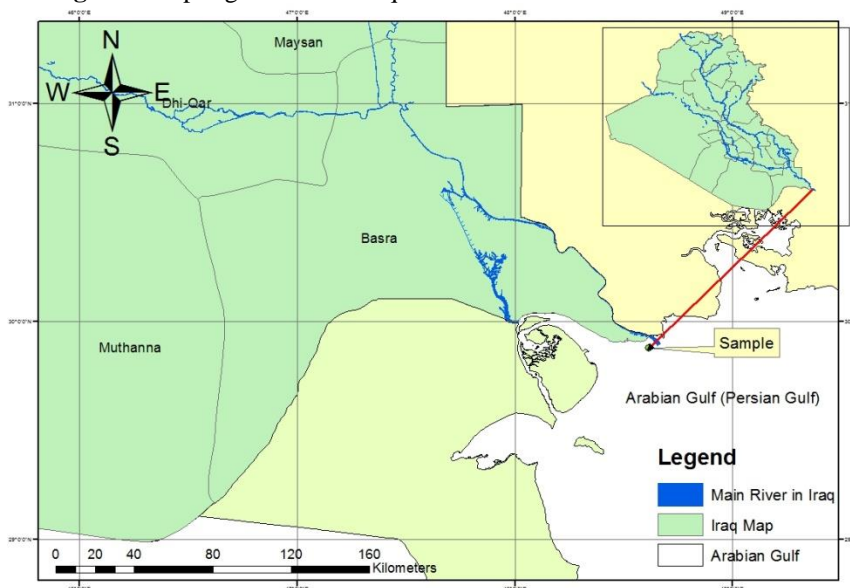
Competing Interest Statement: the present study aims to contribute to the collection of the Leucosiid crabs of Iraq water - Crab *H. elegans*. It is important to emphasize that the detailed morphological description given in the present report is beneficial for further analyses of the species' characters in question. The species was recorded for the first time in our geographical

location (Arabian Gulf), which may be due to climate changes in the world in general and our region.

2 Materials and Methods

Crab samples (*H. elagans*) were collected during October, 2016, from the waters of the Iraqi coast (Faw) in the North-West Arabian Gulf, N 29°53'35.9736'', E48°35'28.9212'' (Fig. 1) — by using fishing trawler, with the depths ranging between 6-12 m. After the collection, the specimens were immediately kept under 70-80% alcohol and transported to the laboratory of Department of Marine Biology, Marine Science Center, University of Basrah, Iraq. The imaging device using an Microscope (Carl Zeiss - 426126) is made in Germany, with a camera (Canon – pc1309; made in Japan), a touch a screen (LG) with a software (Hasco) which is used scale mm. Accreditation of the classification: Galil, (2009); Naderloo and Apel, (2012).

Fig. 1 - Sampling site in the Iraqi coast North-East of the Arabian Gulf.



3 Result and Discussion⁶

3.1 Taxonomic

⁶ **List of Abbreviations:** CL, carapace length; CB, carapace breadth; AL, abdomen length; ML, Merus length of male cheliped; ChL, Chelipod Length; DL, Dactyl Length; PL, Propodus Length ;n G1, first gonopod of male; MSC, Marine Science Center; MM, Millimeter;

Order Decapoda Latreille, 1802

Family Leucosiidae Samouelle, 1819

Subfamily Philyrinae Rathbun, 1937

Genus *Hiplyra* Galil, 2009

Hiplyra elegans (Gravier, 1920) n. comb. (Fig. 2,3)

Hiplyra elegans Galil, 2009 (Fig. 2,3)

3.2 Material examined

1♂, CL. 16.00 mm, CB.15.40 mm; 1♀ CL. 18.0 mm, CB. 16.80mm in deep 6-12 m (MSC).

Fig. 2 - *Hiplyra elegans* (Gravier, 1920). A, B, ♂; C, D, ♀. Scales: 1mm.



3.3 Diagnosis

Specimens of this species in the Iraqi coast of the Arabian Gulf were on the dorsal surface of carapace. On the front, there were little dots; the poster side margin of its subhepatic facet were closely beaded. At the posterior side of the carapace, there were smaller granular, and the front area of the carapace is clearly narrow. The carapace is distinguished by the fact that its length is greater than its width. The sixth somite of the male abdomen is smooth and the male telson is high on the lateral part. The dactyl (moving forceps) is shorter than the upper edge of the propodus (fixed forceps), and their smooth inner edge, sickle shaped. The chelas are elongated with a horizontal flat shape. The male carry flattened granules on the movable forceps with the entire inner edge in the front. It was also found granules at the edge of the static forceps by shape and a fine-grained line on the inner bottom surface. At the top edge, there are very small granules (Fig. 2. A). The

lower margin of the first and the second pereopod bear granules lines. Pereiopods are slender and short. G1 widened distally, with small subdistally apical process and the 1st somite of female abdomen not lobate (Fig. 2. B).

Fig. 3 - *Hiplyra elegans* (Gravier, 1920). A, cheliped ♂; B, C, G1; D, abdomen ♀; E, abdomen ♂. Scales: 1mm.



3.4 Redescription

In the description, rely on the measurements of the current study and approved by the classification as follows: the length of carapace in male (Fig. 2, A, B) as long as CL, very slightly (mean CL/CB = 1.05), while in female carapace were (CL/CB = 1.07; CL/AL = 1.36). Frontal region distinctly narrowed (Fig. 2. A, B).

Cheliped as long as carapace, in male (ChL/CL = 1.96), while female it was (ChL/CL = 1.87) (Fig. 2. A, B); inner margin of pollex thickly fringed with setae (Fig. 3. A). Length of

chelipeds in male (Fig. 2, A, B) as long as the female; merus: slightly larger than the carapace breadth (mean ML/CB = 0.92), while in female carapace (ML/CB = 0.83).

Dactyl shorter than the upper margin of propodus in male (DL/PL = 0.33), while in female it was (DL/PL = 0.63); sickle-shaped, its inner margin smooth. Chela elongated and laterally flattened; dactyl with entire and blade-shaped inner margin. In male, the surface is minutely granulate, bearing perliform granules anteriorly; Lower margin of propodus granulate, line of minute granules on inner lower surface, upper margin minutely granulates.

Length of abdomen (Fig. 2. A, B) in male was short and thin. The length of carapace was (CL/AL = 1.53), while in female (CL/AL = 1.36). Fused male abdominal segments 2-6 bearing proximally granulate basal knobs; telson elongate; proximally swollen, slightly concave medially (Fig. 3.E). First abdominal segment in female distinctly trilobate, lobes separated by deep fissures; margins of fused abdominal segments minutely granulate; first two segments transversely narrow, yoke-like; segments three to six fused, greatly enlarged, shield-like; telson lacinate (Fig. 3.D). Male pleopod elongate, shaft wide, dorsoventrally flattened, tip setose; apical process minute (Fig. 3. B, C). G1 (Fig. 3. B, C) long and thin; curved laterally in proximal; apical portion wide, long setae around apical process, clearly.

3.5 Remarks

Naderloo and Apel, (2012) illustrated that the male abdomen *H. elegans* has a lobular shape at its base, and the presence of a high concave in the middle, compared to the type *H. sagitta* which is bowed down at the middle of the abdomen in males. The upper end of the telson in *H. elegans* is short and thick compared with the shape of telson in *H. sagitta*, which is long and slim. There is also a clear difference between the dorsal shape of the carapace in *H. elegans*. This difference is in the length, since *H. elegans* is narrower at the front, compared to carapace in *H. sagitta*.

According to Galil (2009), *H. elegans* is similar to *P. variegata* in urn-shaped carapace and granulate hepatic tumescence but can be easily distinguished through its larger size (Fig. 2. A), indistinct subterminal denticles on pollex, proximally swollen telson in males (Fig. 3. A) and distinctly trilobate first abdominal segment in female specimens (Fig. 3.D).

The current description is in accordance with what was mentioned by Al-khafaji *et al.* (2017) that the presented species belongs to *H. sagitta*; however, with closer view, we could to re describe it as *H. elegans* due to the similar morphological characteristic that it has.

In addition, there is cheliped and pollex, which are unclear of triangular denticles distally in *H. elegans* (present study) while in *H. sagitta*, there are two triangular denticles distally (Galil, 2009).

3.6 Distribution

Madagascar, Gulf of Oman, Sri Lanka, Arabian Gulf.

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