

The Epialtid Crab: *Hyastenus hilgendorfi* (De Man, 1887) A New Spider Crab Record from Iraqi Coast, NW-Arabian Gulf

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Abstract Specimens of the epialtid crab. *Hyastenus hilgendorfi* De Man, 1887 were collected from intertidal and shallow subtidal of the Rass Al-Beshaa area of the Shatt Al-Arab in Al-Faw City, NW-Arabian Gulf. Specimens were collected by trawl net during November 2016. This represents the first record of the genus *Hyastenus* White, 1847 for Iraqi coast. The specimens are diagnosed and the taxonomy of the genus discussed.

Keywords *Hyastenus hilgendorfi*; Spider crab; Al-Faw City

Background

Current studies during the past two decades on the genus *Hyastenus* White, 1847 confirmed the presence of 38 species worldwide (Ng et al., 2008).

The brachyura crabs of the Persian Gulf currently lists 17 species of Epialtid crabs (Nobili, 1906; Stephensen, 1945; Evans et al., 1973; Titgen, 1982; Apel, 2001). Two of these belong to the genus *Hyastenus*, namely *H. diacanthus* (De Haan, 1837) and *H. hilgendorfi* (De Man, 1889), which were reported in other parts of Persian Gulf for the first time by Nobili (1906) and Evans et al. (1973), respectively.

The genus *Hyastenus* White, 1847 are divided into three groups, named groups 1-3 depended on morphology characters of this genus by Griffin and Tranter (1986). Most species of *Hyastenus* belong to group 1. The present contribution reports new records of *Hyastenus hilgendorfi* (De Man, 1887) from the Iraq coast.

In shores of Persian Gulf many better studied Reported occurrence and distribution *Hyastenus hilgendorfi* (De Man, 1887) and other species of genus *Hyastenus* White, 1847 in Persian Gulf and mentioned diagnoses of this species (Stephensen, 1946; Basson et al., 1977; Apel, 2001; Naderloo and Sari, 2007; Naderloo and Türkay, 2012; Naderloo, 2017).

1 Material and Methods

Specimens of the spider crab *Hyastenus hilgendorfi* (De Man, 1887) were collected during November 2016 from the intertidal and shallow subtidal zone at the Rass Al-Beshaa area of the Shatt Al-Arab in Al-Faw city, south of Al-Basrah city (Figure 1). The samples were collected by trawl net, preserved in 70-80% alcohol and then taken to Marine Invertebrates Laboratory (MIL) in the Marine Biology Dep. (MBD) of Marine Science Center (MSC) and The specimens were deposited in (collection number: 53).

The imaging device using an electron microscope (Carl Zeiss - 426126) is made in Germany, with a camera (Canon-pc1309) made in Japan.

Specimens of this species were identified following (Stephensen, 1946; Apel, 2001; Naderloo and Sari, 2007; Naderloo and Türkay, 2012).

Carapace length (CL) is measured dorsally from the rostral apices to the posterior margin of the carapace. Carapace width (CW) is the greatest carapace width.

The main physical and chemical parameters in the study area at the period of sampling collected were as follows: salinity 36 ppt, water temperature 23 °C, pH 7.85.

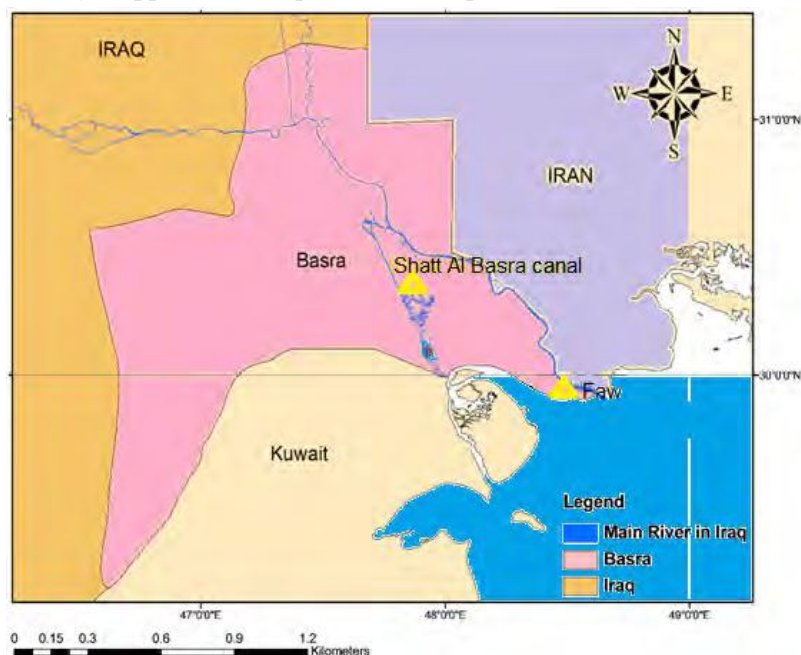


Figure 1 Map of study area in south al-Faw city

2 Results

2.1 Systematics

Superfamily: Majoidea Samouelle, 1819

Family: EPIALTIDAE MacLeay, 1838

Subfamily: PISINAE Dana, 1851 (Figure 2A; Figure 2B)

Hyastenus hilgendorfi (De Man, 1887)

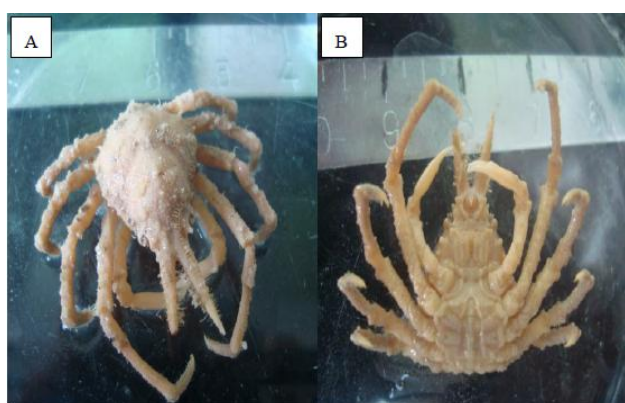


Figure 2 *Hyastenus hilgendorfi* (De Man, 1887) male, CL = 31.5mm, CB = 18.2 mm (MSC, 53), A: dorsal surface; B: ventral surface

2.2 Material examined

1 male, CL=31.5 x CW=18.2 mm, 1 female CL=27.6 x CW=14.8 mm (MSC).

Rass Al-Beshaa region, NW-arabian, Sta. 1, 7-10 m, 2 specimens. 1/11/2016.

1 male, CL=33.5 x CW=19.8 mm, 1 female CL= 25.3 x CW=13.4 mm (MSC).

Rass Al-Beshaa region, NW-arabian, Sta. 2, 10-15 m, 1 specimens. 28/11/2016.

2.3 Diagnosis

Carpace pear-shaped or sub-piriform, dorsal surface convex, slightly tuberculate, covered with a thin coating of setae. Rostral spines slender, divergent, horizontal and acuminate. Supraorbital eave developed, long, margin somewhat upturned, preorbital angle developed into a short forward directed spine, antorbital angle obtuse. Six mesobranchial tubercles sub-equal to the sides of the median line. Two divergent, slender rostral spines, of length equal to two thirds of the carapace length in males, much smaller in females. Eye pedicels short, retracting. Protogastric region with a very faint to distinct tubercle, if present. Mesogastric and cardiac region either smooth or with a low median tubercle each, both regions separated by a depressed urogastric region. Intestinal region with small curved spine, very close to posterior margin. Branchial region smooth or with two to three tubercles. Epibranchial teeth small, tuberculate to moderately long, curved apically. Basal antennal article with anterolateral angle produced into a finger-like projection, visible from dorsal view, lateral margin straight, proximal lobe broad, convex. Suborbital hiatus a very broad U shape.

The chelipeds are the same length as the carapace, the merus has nodules in its proximal portion while the claw is smooth and glabrous. The merus of the pereopods also bear nodules, while the posterior border of the dactyl is spiny, the spines becoming successively larger distally. The separation of the rostral spines is u shaped or keyhole shaped. Pterygostomial region with three large teeth, posteriormost directly above cheliped. Male and female abdomen with seven free segments.

2.4 Remarks

Specimens of *H. hilgendorfi* were described from the Shores of east Mediterranean by Galil (2006), This specimens agree closely with specimens description in current study from the Rass Al-Beshaa region, NW-Arabian Gulf.

Apel (2001) compared specimens *H. hilgendorfi* from the Persian Gulf with specimens from the Red Sea – and the specimens collected from these two regions were found to be similar in descriptions, While the specimens of *H. pleione* from Pakistan significantly different. The carapace is much less sculpted by *H. hilgendorfi* as in *H. pleione*. In any case, there are two distinct species, their distributions do not overlap.

H. hilgendorfi is a typical subtidal crab occurring rarely in low-intertidal zone. This species is a very common spider crab in the Persian Gulf (Naderloo and Sari, 2007a). There are four species of the genus *Hyastenus* known from the Persian Gulf (Naderloo and Sari, 2007b) but only *H. hilgendorfi* is considered as an intertidal element.

Colour: *H. holgendorfi* is a brownish colour.

2.5 Distribution

Distribution of Persian Gulf: Iran (Stephensen, 1946; Apel, 2001; Naderloo and Sari, 2007; Naderloo and Türkay, 2010), Kuwait (Apel, 2001), Saudi Arabia (Basson et al., 1977; Apel (2001), Bahrain (Stephensen, 1946), UAE (Nobili, 1906), Iraq (current study).

World Distribution: East African coast, Red Sea, Mediterranean Sea, Persian Arabian Gulf, Andaman Sea, Thailand, Indonesia, Philippines, Australia, Hawaii.

Habitat: intertidal and subtidal zones to 35m, substrates sandy and rocky.

3 Discussion

The Arabian Gulf (Persian Gulf) fauna is influenced by its specific environmental conditions, and is very poor compared to the Indian Ocean. The population of brachyuran crabs in the Persian Gulf is an exception to the greater variety of proportions It has other animal species and is comparable to the ocean. About 1000 species of crabs are from the western Indian Ocean (Apel, 2001).

The first finding of current specimens from invasive species *H. holgendorfi* in intertidal and subtidal areas of Iraqi coast in south al- Faw city, since the species is widely distributed in another parts of worldwide, especially in

south part of Arabian Gulf and Oman Gulf (Apel, 2001; Stephensen, 1946), and due to the fact that this species can easily distributed by several reasons. One more reason, the ecological conditions and habitats in different areas in Arabian Gulf is similar to that of the Iraqi coast, southern Iraq. The present record to adds crab *H. holgendorfi* to the brachyura list of Iraqi waters.

Authors' contributions

All authors in this paper have contributed equally toward the publication of this paper.

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