Article

Two records of *Macrophthalmus* Desmarest, 1823 (Decapoda: Brachyura: Thoracotremata) from the NW of the Arabian Gulf

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Abstract

Specimens of two crabs *Macrophthalmus dentipes* Lucas, 1836 and *Macrophthalmus laevis* A. Milne-Edwards, 1867 were collected from the intertidal zone of the lower reaches of Shatt Al-Arab at Fao region, Basrah, Iraq, 2012. A note on the morphological features of these two species and a photograph is provided to confirm the identification of the crabs.

Keywords *Macrophthalmus dentipes*; *Macrophthalmus laevis*; Brachyura; Shatt Al-Arab; Arabian Gulf.

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1 Introduction

The family Macrophthalmidae Dana, 1851, is represented by two subfamilies Ilyograpsinae Števcic, 2005 and Macrophthalminae Dana, 1851 in the Arabian Gulf. The first one subfamily Ilyograpsinae Števcic, 2005 is represented by one species *Ilyograpsus rhizophorae*, While the second subfamily Macrophthalminae Dana, 1851 is represented by eight species, have been recorded from the area, all belonging to *Macrophthalmus* Desmarest, 1823, represented of these: *M. sinuspersici* Naderloo & Türkay, 2010, *Macrophthalmus graeffei* A. Milne-Edwards, 1873, *M. dentipes* Lucas, 1836, *M. depressus* Rüppell, 1830, *M. grandidieri* A. Milne-Edwards, 1867, *M. laevis* A. Milne-Edwards, 1867, *M. serenei* Takeda & Komai, 1991, and *M. sulcatus* H. Milne-Edwards, 1852, are important elements of the intertidal soft bottom communities (Naderloo et al., 2011).

Barnes (1970) was so far recorded *M. dentipes* from the Arabian Gulf at Al-Faw referred to it as *M. pectinipes* Guerin-Méneville 1838. Pretzmann (1971) and Jones (1986) recorded the species from Bandar-Abbas at the Iranian coast and from Kuwait respectively, both following Barnes (1970) using the name *M. pectinipes*. Holthuis (1995) revised *M. dentipes* as the valid name by showing that *M. pectinipes* is an objective synonym of *M. dentipes*, and therefore must be replaced by the latter. Apel and Türkay (1999) and Apel (2001) listed *M. dentipes* from the Arabian Gulf with reference to the records by Barnes (1971) and Jones (1986).

Pretzmann (1971) described *M. ressli* as a new species from Bandar-Abbas, on the Iranian coast near the Straits of Hormuz. Barnes (1976) synonymised *M. ressli* with *M. laevis* and was the first to provide a detailed description for *M. laevis*.

The aim of the present study is to re-describe *M. dentipes* from fresh specimens collected from NW of the Arabian Gulf at Faw region and to record *Macrophthalmus laevis* to add to the brachyua list of Iraq.

2 Materials and Methods

Specimens of *M. dentipes* and *M. laevis* were recently collected from the intertidal muddy flats of NW of the Arabian Gulf, Fao region (Fig. 1) on July 2012. Specimens are preserved in 70% alcohol and deposited in the marine science centre (MSC) (collection number: 33 and 34), and *M. dentipes* only deposited in the Zoological Reference Collection of the Raffles Museum of Biodiversity Research, National University of Singapore (ZRC).

The main abiotic parameters in the study area by the time of collection were as follows: salinity 35 ppt, water temperature 27 ^{o}C, pH 8.4.

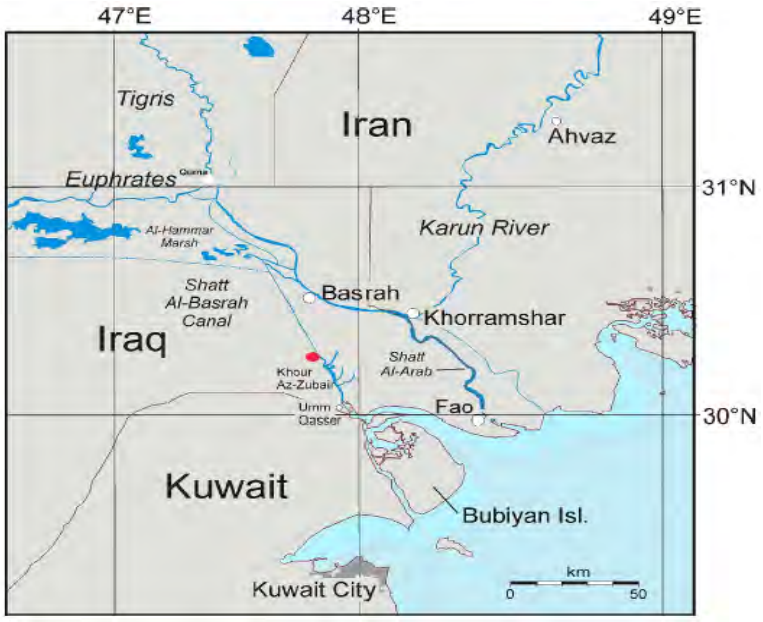

Fig. 1 Sampling site Faw=Fao region (white dot).

3 Results and Remarks

***Macrophthalmus dentipes* Lucas, 1836**

Systematics

Order Decapoda

Macrophthalmidae Dana, 1851

Subfamily Macrophthalminae Dana, 1851

Macrophthalmus dentipes Lucas, 1836

(Fig. 2A, B, C and D)

Macrophthalmus dentipes Lucas 1836: 551. — Holthuis 1995: 401.

Macrophthalmus pectinipes — Guerin-Méneville 1838: 1, pl. 23. — Alcock 1900: 377. — Chhapgar 1957b:

512. — Barnes
1970: 237, fig. 10. — Pretzmann, 1971: 31; 1974: 442. — Tirmizi 1981: 109. — Titgen 1982: 253 (in list). — Jones 1986:
159, pl. 45. — Tirmizi & Ghani 1996: 121, fig. 46.
Macrophthalmus (Venitus) dentipes — Apel & Türkay 1999: 135. — Apel 2001: 110. — Naderloo et al., 2011: figs. 4a–e, 5a–f, 10a–b.

Type locality

Bombay (= Mumbay), India

Material examined (msc, 33)

Carapace measurements are length × breadth respectively.

Three (38.55×60.50), (36.55×60.00), (39.00×60.50) mm collected during July 2012 from the intertidal zones of the mudflats of lower reaches of Shatt Al-Arab at Fao.

Diagnosis

Carapace (Fig. 2 A) moderately wider than long (CB/CL = 1.6), slightly convex; large granules scattered on entire posterior surface except in narrow median, frontal regions. Lateral margin of carapace (Fig. 2 A) with 3 distinct teeth (including exorbital tooth); first nearly subquadrate, with posterior margin smooth, curved forward; second triangular, with smooth margin, higher than first, greatest width of carapace between second lateral teeth; third very small, directed forwards; posterolateral margin nearly straight, slightly converging posteriorly, with small granules, beset with long setae; posterior margin with very small granules.

Eyestalks narrow (Fig. 2A), long, but not reaching to exorbital angle.

Male abdomen (Fig. 2B) with segments 3, 4 of same length, slightly shorter than segment 5; segments 5, 6 nearly of same length, with lateral margins nearly straight; lateral margins of segment 6 with small depression at one third distal portion; telson very slightly longer than segment 6, lateral margins strongly converging distally, apically rounded.

Palm long (Fig. 2C), outer surface smooth without longitudinal ridge; inner surface smooth, patch of dense setae on upper portion. Fingers remarkably curved inward distally, movable finger with upper margin smooth, long setae densely along inner surface of upper margin, continuous on upper, outer surface, cutting edge with subproximal differentiated tooth, small teeth distally; immovable finger narrow, with relatively large teeth on cutting edge, long setae along inner surface.

Male G1 (Fig. 2D,E,F) moderately stout, slightly curved outward medially; distal half relatively narrowing, with apical chitinous process remarkably long, narrow, curved outward at about 45°; distal opening large, distinct, subdistal on dorsal portion of apical process; long feather-shaped setae densely set along lateral margin, long setae around apical process.

Habitat

Macrophthalmus dentipes is the largest ocypodid crab, inhabiting the mid and low intertidal zones in muddy sand/sandy mud substrates at the lower reaches of Shatt Al-Arab at Fao, it may be occur coexisting with the grapsoid crab *Metaplax indica*. *Macrophthalmus dentipes* digs large burrows with an opening of approximately 10 cm in diameter.

Distribution

Northern Indian Ocean: northern and eastern Arabian Gulf, Oman (Gulf of Masirah), Pakistan, west coast of India, Iraq.

***Macrophthalmus laevis* A. Milne-Edwards, 1867**

Systematics

Order Decapoda

Macrophthalmidae Dana, 1851

Subfamily Macrophthalminae Dana, 1851

Macrophthalmus laevis A. Milne-Edwards, 1867

(Fig3. A,B,C and D)

Macrophthalmus laevis A. Milne-Edwards 1867: 287. — Barnes 1976: 143, fig. 6a–c. — Titgen 1982: 150.

Macrophthalmus (Macrophthalmus) ressli Pretzmann 1971: 382, pl. 9 figs. 23.

*Macrophthalmus ressel*i [sic!] — Pretzmann,1974: 441.

Macrophthalmus (Macrophthalmus) laevis — Barnes 1977: 277 (in key), 280 (in list); 2010: 35 (in key), 40. — Tirmizi & Ghani 1988: 253, figs. 1–11. — Tirmizi & Ghani 1996: 109, fig. 41. — Apel & Türkay 1999: 135. — Apel 2001: 109— Naderloo et al., 2011: figs. 13a–f, 14a–e, 10e–f.

Type locality

Indian Seas.

Material examined (msc,34)

Carapace measurements are length × breadth respectively.

Two males (12.50×24.50) and (12×23.50) mm collected during July 2012 from the intertidal zones of the mudflats of lower reaches of Shatt Al-Arab at Fao.

Carapace

Macrophthalmus laevis is a medium-size species (Fig. 3A) wider than long; posterior surface is convex, small granules distributed on posterior surface, extensive patch of setae near posterolateral margin, long setae on lateral margin. Regions well defined; defining gastric, epibranchial regions are remarkably deep. Lateral margin with three teeth including exorbital angle.

Chelipeds nearly equal; merus with upper surface smooth, inner, upper margins sparsely beset with long setae, row of long setae near inner margin.Carpus smooth with large spine- shaped tooth medially on upper inner margin, small one behind it, two spine-shaped teeth on inner proximal margin. Movable finger long (Fig. 3C) curved inward distally; upper margin smooth; cutting edge with differentiated subproximal tooth, large, subquadrate, low, small denticles distal to large one along cutting edge. Immovable finger short, with median tooth, large, extending proximally, small denticles on cutting edge, even on large tooth.

Walking legs narrow, long, anterior margin of segments bearing long setae. Merus with small subdistal tooth on anterior margin, that of second, third legs large, last leg usually lacking this subdistal tooth (Fig.3.A).

Male abdomen (Fig. 3B) triangular; segments 3, 4 of same length, segment 5 slightly longer; segment 6 longest with lateral margins swollen proximally, gently converging distally; telson slightly shorter than segment 6, with margins clearly converging distally, rounded distally.

Male G1 (Fig. 3D) curved outward medially; apical chitinous process short, nearly subdistal, directed laterally at 45°; distal opening prominent, located apically; long setae around apical part, long plumose setae sparsely set along lateral, ventral surfaces.

Habitat

M. laevis mainly in the upper mid littoral zone on muddy silty substrata.

Distribution

North-western Indian Ocean: Persian Gulf, Gulf of Oman, Pakistan, Iraq.

Fig. 2 *Macrophthalmus dentipes* Lucas,1836, male (39.00×60.50): A, posterior view of whole crab, male; B, male ventral view. C, cheliped of male, outer surface; D- F, first gonopod, Photos taken by Murtada.D.Naser, Marine Science Centre.

Fig. 3 *Macrophthalmus laevis* A. Milne-Edwards 1867, male (12.5×24.5): A, posterior view of whole crab, male; B, male ventral view. C, cheliped of male, outer surface; D,first gonopod, Photos taken by Murtada.D.Naser, Marine Science Centre.

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