

The First Record for the Shore Crab, *Cyclograpsus aff. integer* (Cyclograpsinae: Varunidae: Grapsoidea) from the Egyptian Coasts of the Red Sea

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Abstract. The shore crab, *Cyclograpsus aff. integer* (Subfamily Cyclograpsinae, Family Varunidae: Superfamily Grapsoidea), is recorded for the first time from the Egyptian Red Sea coasts and from the entire Red Sea. This species is a small-sized crab, lives in burrows at the upper intertidal zone of the sandy-mud and sandy bottom mixed with small pebbles. The diagnostic characters with illustrations distinguished it from other closely allied species were given. All information on crab habitat, color, diagnostic and morphological characters of this species were given and discussed.

Keywords: Egypt, Red Sea, shore crab, *Cyclograpsus integer*, Cyclograpsinae, Varunidae, Grapsoidea.

1. Introduction

The superfamily Grapsoidea is the most common and diverse brachyuran crabs, comprises about 600 species distributed in marine habitats around the world (Guinot *et al.*, 2018). Those crabs occur along the shoreline and shallow water habitats in the Indo-west Pacific and Atlantic regions (Ng *et al.*, 2008). The taxonomy of family Grapsidae in the Indian Ocean was treated previously by Barnard (1950) and Crosnier (1965) and during the early decades of the 21st century. Family Grapsidae was treated in several articles based on morphological and molecular analyses (Schubart *et al.*, 2000 a&b; Ng *et al.*, 2001; Schubart *et al.*, 2002, 2006) where new families, genera and species were added and several subfamilies were treated and promoted to families such as Varunidae (Ng, 2006; Davie and Ng, 2007). With the recognition and promotion of the new families among Grapsidae, it was promoted into superfamily Grapsoidea which contains nine families

comprised: Gecarcinidae, Glyptograpsidae, Grapsidae, Percinidae, Sesarmidae, Varunidae, Plagusiidae, Xenograpsidae and Leptograpsidae which were confirmed by Ng *et al.* (2008) and Guinot *et al.* (2018). Among these families, Varunidae was classified into five subfamilies comprised: Asthenognathinae (one genus and four species), Gaeticinae (two genera and five species), Thalassograpsinae (only one genus and one species), Varuninae (20 genera and 90 species), and Cyclograpsinae (12 genera and 52 species), of them the genus *Cyclograpsus* is the most diverse.

It is worth to mention that, all species of genus *Cyclograpsus* are small-sized crabs, live in coarse sand mixed with gravel and small rock fragments at the upper intertidal zones particularly around mangroves in the tropical and subtropical regions around the world (Barnard, 1950; Forest and Guinot, 1961, 1962, Crosnier, 1965; Vannini and Valmori, 1981; Ng, 2006; Guinot, *et al.*, 2018). This genus comprises 19 valid species (Ng *et al.*, 2008), in

addition to 3 fossils species (De Grave *et al.*, 2009). *Cyclograpsus* was created for the first time by H. Milne Edwards (1837) from *Cyclograpsus punctatus* that is one of the commonest shore crabs around the South African coast, inhabiting both rocky coasts and muddy estuaries (Barnard, 1950); at the same time, *Cyclograpsus integer* was created by H. Milne Edwards (1837) and confirmed by Crosnier (1965).

The species of genus *Cyclograpsus* had treated in several articles among the Pacific, Atlantic and Indian Oceans (Nobili, 1905, 1906; Barnard, 1950, Monod, 1956, Forest and Guinot, 1961, 1962; Crosnier, 1965; Hartnoll, 1965; Campbell and Griffin, 1966; Guinot, 1967 (list); Griffin, 1968; Ng, 2006; Ng *et al.*, 2008; Boos *et al.*, 2012; Poupin *et al.*, 2012; Bacon, 2015; Guinot, *et al.*, 2018). *Cyclograpsus punctatus* was the only species recorded from the western Indian Ocean from South Africa and southern eastern Atlantic coasts (Barnard, 1950; Vannini and Valmori, 1981), while *C. integer* was recorded from Socotra Islands (Simões *et al.*, 2001; Al-Hindi, 2019) and Gulf of Oman (Khvorov *et al.*, 2012).

Along the Red Sea coasts, the grapsid crabs are successfully occurring in rocky, sandy, and muddy shores, as well as in coral reefs, mangroves, and among seagrass communities (Holthuis, 1977; Por *et al.*, 1977; Price *et al.*, 1987), however, no *Cyclograpsus* species were recorded. On the other hand, Nobili (1905) recorded *Cyclograpsus lophobus* from Djibouti without certain locality but it was excluded by Ng *et al.* (2008) based on its characters being very close to Sesarminae.

Along the Egyptian coasts of the Red Sea, and the Gulfs of Suez and Aqaba), a total of 12 grapsid species were recorded (Ramadan, 1936; Monod, 1938; Holthuis, 1958, 1977; Por *et al.*, 1977; El-Sayed, 1996a,b, 2002; El-Sayed and Hellal, 1995; Fouda, 2000; Fouda *et al.*, 2003;

Davie and Ng, 2007) and even from the Suez Canal and its Lakes (Holthuis, 1956; El-Sayed, 1992); but no record for *Cyclograpsus integer* or its allies was reported.

Therefore, the present work aims at carefully examine and revise those unidentified specimens belonging to the subfamily Cyclograpsinae (family Varunidae) deposited among the "Reference Collection of Al-Azhar University, Egypt" (RCAZUE Crus-Br.890101-1&2) using classical morphological investigations

2. Material and Methods

Only two female specimens belonging to the genus *Cyclograpsus* were collected from the Egyptian Red Sea coasts in 1997. The largest specimen was collected from the upper intertidal sandy-rock bottom mixed with small pebbles and gravels at Mouth of Wadi Marefay (38 km north Shalateen City), in April 1997, while the smallest one was collected from sandy mud habitat at the mangroves of Abu Hamrah (16 km north Qusier City) in December 1997. These specimens were deposited after collection among the "Reference Collection of Al-Azhar University, Egypt" (RCAZUE) at Laboratory of Marine Invertebrates, Zoology Department, Faculty of Science, Al-Azhar University, Cairo, till further fine examination. The specimens were re-examined and identified according to keys of Barnard (1950), Crosnier (1965), Campbell & Griffin (1966), Griffin (1968), and Ng (2006).

All measurements of carapace length (CL), carapace width (CW), carapace depth (CD), front-orbital breadth (FB), orbital breadth (OB), chela length (ChL), chela height (ChH), greatest abdominal length and breadth (AB) of the 4th segment, breadth and length of 4th and last abdominal segment (LAS), and eye stalk length (ESL) were taken using Vernier caliper with an accuracy of 0.01 mm. The terminology used in this article follows those reported by

Barnard (1950), Crosnier (1965), Campbell and Griffin (1966), Griffin (1968), Ng (2006), Ng *et al.* (2008) and Guinot *et al.* (2018).

Microscopic investigations and photography of fine details of the body regions of the examined specimens were carried out using a binocular microscope (Model OPTICA, SZM-1) fitted by a Micro-cam (PHD-5 MP) and a portable camera (Samsung HD1080).

3. Results

Systematic account

Superfamily: Grapsoidea MacLeay, 1838

Family: Varunidae H. Milne Edwards, 1853

Subfamily: Cyclograpsinae H. Milne Edwards, 1853

Genus: *Cyclograpsus* H. Milne Edwards, 1837

Cyclograpsus aff. integer H. Milne Edwards, 1837

(Plates I & II)

Material examined and localities: Two female specimens.

Red Sea: RCAZUE-Crus-Br.890101-1, 1♀, 7.71 × 10.20 mm (Cl x Cw), Mouth of Wadi Marefay, 38 km north Shalateen (35° 32' 35.30" E, and 23 ° 23' 11.95" N), 26/4/1997; RCAZUE-Crus-Br.890101-2, 1♀, 5.10 × 6.85 mm (Cl x Cw), Mangrove Abu Hamrah, 16 km north Qusier City (34° 07' 4.60" E, and 26° 23' 49.70" N), 19/12/1997. These specimens were collected by the first author (El-Sayed, A. A.A.) and all measurements and ratios are given in Table (1).

Diagnostic and General Characters

Carapace varied from sub quadrangular to semi rounded, beings broader than long (Plate I, A), varied from 1.32 to 1.34, averaged 1.33 breadth on length (Cw/Cl), and from 0.45 to 0.57, averaged 0.51 depth on length (CD/Cl); dorsal surface is slightly elevated, with ill-defined regions, beings smooth but has fine granules at frontal, hepatic anterior

epibranchial, cardiac, metagastric and mesogastric regions, and characterized with obvious whitish spots and ridges at these regions (Plate I, A& C-E).

The front is slightly deflected, with a nearly straight anterior margin (Plate I, B, C, D), varying from 0.36 to 0.45, averaging 0.41 in carapace width, characterized with a very shallow median notch, and finely granulated.

Orbits are transversely oval, completely filled with the eyes (Plate I, C&H), varied from 0.38 to 0.45, averaged 0.42 in frontal breadth; the front-orbital width varied from 0.61 to 0.69, averaged 0.65 in carapace width (Plate I, C& D); external orbital tooth short, acute, at level lower than front (Plate I, C &D), equipped with fine microscopically minute granules at its edge(Plate I, G, H&I), with a brush of stiff brown setae located near its inner base (Plate I, I); eyestalks stout, with fine minute granules on outer surface, being much shorter than the breadth of front, varied from 0.60 to 0.62, averaged 0.61 in orbital width, with sub-terminal eyeball (Plate I, G, H&J), represents from 0.62 to 0.70, with an average of 0.66 in eyeball size.

Lateral margins of carapace are parallel but divergent posteriorly (Plate I, A&E); anterolateral margins entire, convergent without any teeth, except the external orbital tooth, but equipped with fine and minute granules (Plate I, H); posterolateral margins are straight, divergent posteriorly, the posterior half curved, equipped with the appearance of last walking legs coxae before join with the rear carapace margin (Plate I, A &E); rear margin is straight (Plate I, E), varied from 1.15 to 1.43, averaged 1.29 in frontal width, 0.69 to 0.75, with an average of 0.72 in front-orbital breadth, and from 0.517 to 0.518 in carapace breadth.

The third maxillipeds are separated by a wide rhomboidal gap in mid-line, characterized by an oblique hairy ridge that extends across the

meri and outer upper half sides of ischium; the inner borders of ischium have long and dense setae (Plate I, B&F).

The infra-orbital ridges provided with nine unequal tubercles at both sides; the mid-two are the largest and elongated, followed by four inner and three outer variable-sized and smaller granules, both decreasing gradually in size (Plate I, G).

Pterygostomial region and ventro-lateral surface have rows of short setae, without reticulation of oblique striate, characterized by a mid-ridge that extends outward, but disappears at the outer border (Plate I, K).

The chelipeds are symmetrical or sub-equal, being rather massive, swollen; right chelae slightly larger than left, varying from 0.68 to 0.71 with an average of 0.66 chelae length in carapace length, and from 0.50 to 0.502 with an average of 0.501 chelae height in chelae length; movable fingers (pollex) are slightly longer than thumb, with an average of 0.49 and 0.51 in right and left chelae length, respectively; the inner surface of chela has scattered granules, that appear clearly around the base of fixed finger; the outer surface smooth; fixed finger with nine semi-sized granules ends with a terminal brown tooth, has a brush of brown short setae, faced with 6-7 granules on thumb (Plate II, A & B).

Ambulatory legs compressed laterally, stout, not slender, and trigonal in cross section. The second is the longest; meri characterized with irregular crenulated transverse ridges, punctuate with fine granules, developed clearly on the upper surface, in addition to 3 obvious small pits at midline (Plate II, C&D); meri varied from 3.93x1.57 to 6.03 x 2.05 mm length x breadth (LxB), with few scattered short hairs (3-4) at the lower border (Plate II, C&D), compared with 2.76x1.26 to 4.17 x 1.57 mm LxB in last legs (Plate II, H).

Carpi of second legs varied from 2.76 x 1.26 to 4.02 x 1.97 mm (LxB) in first legs, and from 1.57 x 1.10 to 2.44 x 1.34 mm (LxB) in last one; each carpus has short tuft of hairs lying at distal dorsal end (Plate II, C).

Propodi slightly longer than carpi, with 6 to 10 long scattered or grouped stiff hairs fringed the lower border (Plate II, C&D), with 3 oval pits lying at the outer midline (Plate II, D); proximal portion has an irregular naked surface; posterior 2/3 provided with dense short setae arranged in 2 broad longitudinal bands, very broad ventrally, and alternated with naked bar bands at each side, dense short setae extending in longitudinal bands alternated with bare parallel bands and irregularly broad and narrow bands on the anterior surface linking the dorsal and ventral bands (Plate II, D).

Dactylus with six broad longitudinal bands, provided with scattered long setae (hairs) arising singly or in groups (2- 6) among short hairs (Plate II, E&F).

The first and third walking legs have hairs arranged as on the second leg except for scattered hairs on the posterior surface of propodus (Plate II, H&I); bases between the first and second as well as the second and third legs have long tufts of hairs filling gap between them ventrally (Plate II, J).

The 4th walking leg short, has short hairs on the propodi, lies dorsally in a narrow patch on the distal half and ventral quarter; dactyli has six bands, with scattered long hairs arising singly or in groups as on other legs over the whole propodi, dactyli and distally on carpus (Plate II, G).

Female abdomen beings semi-circular, with 6 segments and triangular telson, equipped with 4 pairs of slender pleopods fringed with lateral marginal setae (Plate I, B); the greatest width at the 4th segments varied from 0.51 to 0.59, averaging 0.55 in carapace width; last

segments (telson) varied from 0.52 to 0.82, averaging 0.67 times length in breadth.

The female gonopore is circular in shape with a semicircular operculum.

Color: Carapace, chelipeds, and all walking legs in the examined preserved specimens are yellowish brown; the ventral surface is yellowish white, with brown fingertips of chelipeds. Carapace is characterized by small whitish spots and whitish low ridges on cardiac, metagastric, epigastric and hepatic regions. Dactylus and propodus of walking legs have darks and yellowish-white bands and brownish setae (Plate I, J& K).

Habitat: The present specimens were collected from sandy-mud bottom habitats mixed with organic debris, pebbles, small rocks and gravel in mangroves swamps.

Status: Very rare.

Distribution: This is the first record for *Cyclograpsus aff. integer* from the Egyptian coasts and the entire Red Sea. However, the allied *Cyclograpsus integer* has worldwide distribution in the West Pacific and Indian Oceans, and is circum-tropical and even subantarctic (Barnard, 1950; Forest and Guinot, 1961, 1962; Crosnier, 1965; Campbell and Griffin, 1966; Griffin, 1968; Vannini and Valmori, 1981; Ng, 2006; Bacon, 2015; Maenosono, 2022). It was also recorded from several localities in the western and eastern Atlantic (Forest & Guinot, 1961; Souza, 1999; Boos *et al.*, 2012; Garcia and Capote, 2015) and considers the only Cyclograpsinae species that occurs in the Atlantic and Western Pacific but is absent from the eastern Pacific east of the Tuamotus (Ng, 2006; Ng *et al.*, 2008; Guinot, *et al.*, 2018).

Remarks

Most of the diagnostic characters of the examined specimens agree well with those given by Forest and Guinot (1961), Crosnier (1965), Campbell and Griffin (1966) and Ng, (2006) on the allied species *C. ingeter*. In contrast, the infra-orbital tubercles in the present specimens are distinctly different in shapes and number which will be demonstrated in the following discussion.

4. Discussion

The careful examination of the present species indicated that, most of the diagnostic characters of the examined specimens are very close to those of *C. ingeter*, whereas other allies' species included *C. punctatus*, *C. henshawi*, and *C. lophobus* (with exception of *Cyclograpsus escondidensis* Rathbun, in Glassell, 1933, which has confined distribution in the Atlantic regions (Ng, 2006). The majority of the 19 species of the genus *Cyclograpsus* occurring in the Indo-Pacific regions (Ng, 2006; Ng *et al.*, 2008), out of them only *C. punctatus*, *C. lophobus* and *C. integer* were recorded from the Indian Ocean (Nobili, 1905, 1906; Barnard, 1950; Monod, 1956; Forest and Guinot, 1961, 1962; Campbell and Griffin, 1966; Griffin, 1968; Ng, 2006). The first species, *C. punctatus*, was recorded from the Indian and Atlantic Oceans only, extending within the restricted area from South Africa to South America around Chile (Barnard, 1950; Campbell and Griffin, 1966; Griffin, 1968; Ng, 2006). On the other hand, Ng *et al.* (2008) reported that, the original description of *C. lophobus* recorded by Nobili (1905, 1906) from Djibouti was considered a Red Sea *Cyclograpsus* which was not accompanied by any illustrations and beings unusual members of the genus and not a species of *Cyclograpsus* or varunids. The type specimens reexamined by Naruse and Ng (2012) and revealed that it belongs to the subfamily Sesarminae Dana

1851, within a new genus (*Cyclorma*) and identified as *Cyclorma lophobus* Naruse and Ng, 2012, characterized by very broad, foliaceous and keeled ambulatory legs meri. In contrast, *C. integer* is widely distributed in the Indo-West-Pacific and extends to the Atlantic Ocean reaching northwards to Brazil (Campbell and Griffin, 1966; Griffin, 1968; Ng, 2006). In the Indian Ocean, this species was recorded from Madagascar by Forest and Guinot (1961, 1962), Vannini and Valmori (1981) and from the Socotra Islands and Gulf of Oman by Simões *et al.* (2001) and Khvorov *et al.* (2012). It considers the nearest species of *Cyclograpsus* to the Red Sea and adjacent regions.

During the present study, the characters of the investigated specimens are very close to those of the allied *C. integer*; but some features are also close to those of *C. punctatus* and *C. henshawi*, while the general outline is similar to that of the Atlantic species, *C. escondidensis* (Ng, 2006). However, the investigated specimens showed some differences from *C. integer* by the numbers and shapes of the infra-orbital granules which appear as three elongated lobules in *C. integer* without indication to other granules according to Campbell and Griffin (1966) and Griffin (1968). In the investigated specimens, the infra-orbital ridge carries only two mid-elongated equal granules under orbit followed by four dissimilar inner and three dissimilar outer granules decreasing gradually in size. In *C. punctatus*, the number of infra-orbital granules is numerous exhibiting various sizes and shapes along with faulted carapace borders (Campbell and Griffin, 1966; Ng, 2006). This is in contrast to the present specimens, which have nine unequal granules and unfaulted carapace borders.

The present specimens also differ from the restricted Hawaiian Pacific species, *C. henshawi* (Campbell and Griffin, 1966; Ng, 2006). *C. henshawi* is characterized by a

straight front, a regularly crenulated infra-orbital ridge characterized by elongated innermost granules, followed by three granules decreasing in size. Additionally, there are differences in the shape and numbers of setae on the ambulatory legs which have serrated propodi and dactyli with sparse short setae (Campbell and Griffin, 1966).

The presence of *Cyclograpsus aff. integer* in the Red Sea, may be attributed to the invasive behavior of some varunides as reported by Lowe *et al.* (2004) and Ng (2006). Those authors indicated that, the family Varunidae contains several invasive species, including *Eriocheir sinensis* listed as one the world's list of 100 most invasive aquatic invertebrates. Consequently, if the present specimens belong to the Asian form of *C. integer*, its occurrence northwards in the Red Sea may be attributed to natural distribution. The locations of the obtained specimens suggest a natural occurrence rather than invasion or introducing through ballast waters or other routes. This species was previously recorded in the Socotra Islands by Simões *et al.* (2001) and in the Gulf of Oman by Khvorov *et al.* (2012), and was listed by Al-Hindi (2019) among Socotra crustaceans, but did not record in the Arabian Gulf among the intensive study carried out by Naderloo (2017). It is well known that, the distribution of brachyuran crabs depends upon several factors particularly the availability of preferred habitats (coastal rocky, sandy and muddy areas, in addition to mangroves) suitable for the natural distribution of the species (Gosavi, *et al.*, 2017). Additionally, the circular movement of surface current in the Gulf of Aden and the northern regions of Arabian Sea could facilitate the transport of larvae of these brachyurans species and others western Indian Ocean faunal elements to southern Red Sea and then after extend northwards along the coastal shores (Edwards, 1987, Morcos, 1990; Shetye, *et al.*, 1994; Gosavi, *et al.* 2017).

The first record for *Cyclograpsus aff. integer* in the Red Sea increases the number of grapsids into 20 species according the previously reported works (Holthuis, 1977; Vine, 1986; Price *et al.*, 1987, Davie and Ng, 2007), and 13 species at the Egyptian Red Sea coasts based on those previously reported by Ramadan (1936), Monod (1938), Holthuis (1956, 1958, 1977), Por *et al.* (1977), El-Sayed and Hellal (1995), El-Sayed (1996 a & b, 2002), Hellal *et al.* (1997) and Fouda *et al.* (2003), which represents about 65 % of all Red Sea grapsids.

Lastly, the present species has some features that vary from other allied species that were not recorded previously from the entire Red Sea. It may be either a new species or another morph of *C. integer* as discussed by Ng (2006). Therefore, additional specimens comprising different sexes and sizes are necessary for confirmation of the validity of *Cyclograpsus aff. integer* using both morphological (especially male specimens), and molecular investigations.

5. Conclusion

The shore crab, *Cyclograpsus aff. integer* (Cyclograpsinae: Varunidae: Grapsoidea), is recorded for the first time from the Egyptian Red Sea coasts and from the entire Red Sea. All information on crab diagnostic and morphological characters were given and discussed.

Acknowledgements

Authors thank all staffs in the Egyptian Environmental Affairs Agency (EEAA), General Authority for Tourism Development, and Red Sea Governorate for providing all facilities through the research project (Red Sea Coastal Management Project) funded by "Global Environmental Fund" during the period from 1994- 1998).

Authors' Contributions

AAME collected the present specimens from the field; AAME and AMA examined and identified the specimens and prepared all photos; all authors (AAME, AMA and MAA) prepared, reviewed and finalized, as well as read and approved the manuscript.

Conflict of Interest

The authors declare that no financial conflict of interest exists in relation to the work described. The Egyptian Environmental Affairs Agency (EEAA), the General Authority for Tourism Development, and Red Sea Governorate had been provided all facilities through the research project (Red Sea Coastal Management Project) funded by "Global Environmental Fund" during the period from 1994- 1998).

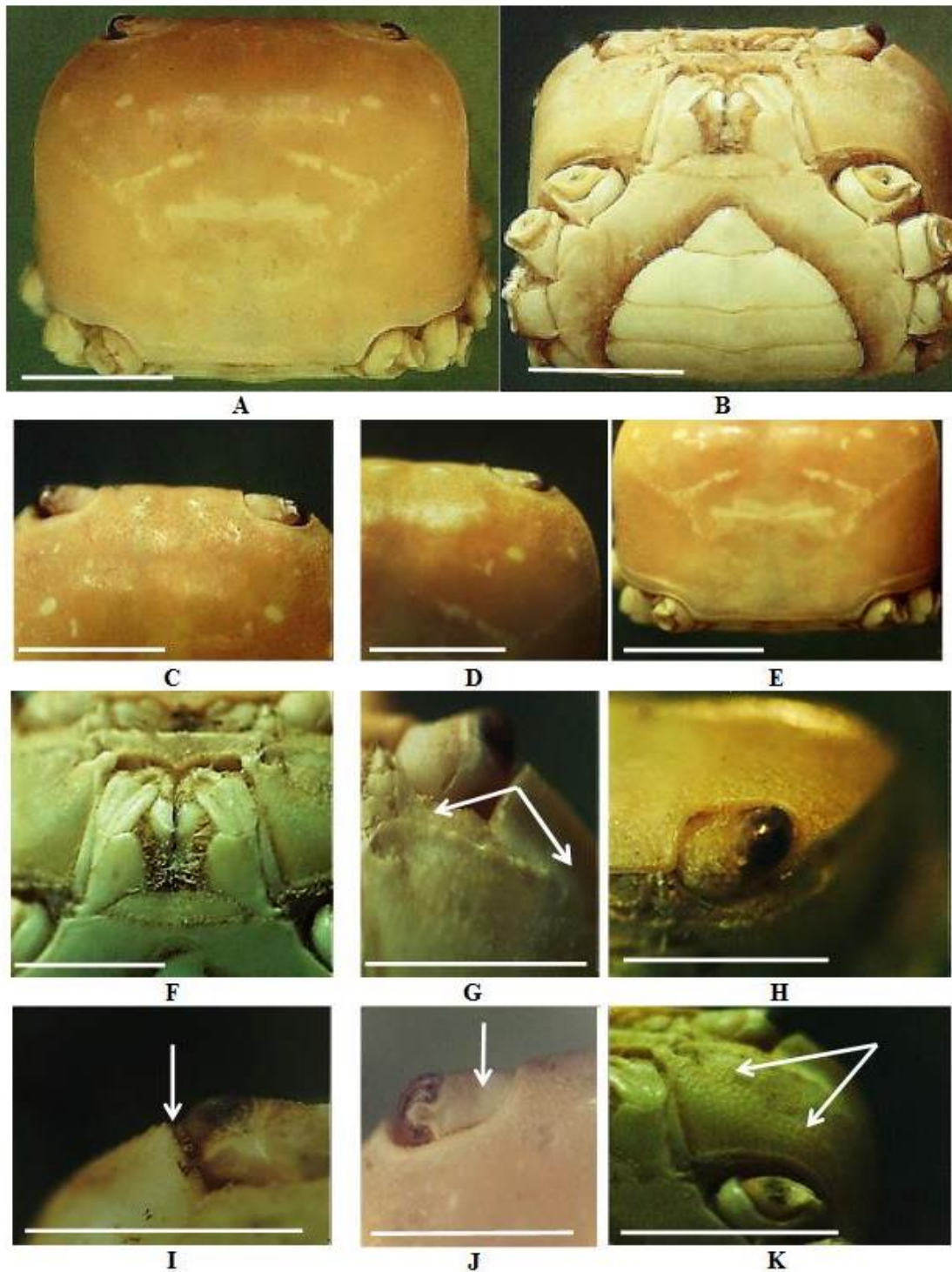


Plate I. Shows *Cyclograpsus aff. integer*: (A&B) dorsal and ventral views for carapace for the large specimen (7.71 × 10.20 mm, Cl × Cw), (C) frontal margin, (D) anterolateral margin, (E) posterior or rear margin, (F) third maxillipeds and epistome, (G) infra-orbital ridges, (H) frontal view for orbit with eye, (I) orbit with setae and eye ball, (J) eye stalk with eye ball, (K) granulated pterygostomial region (arrow denote to indicated organ, scale bar =3mm).

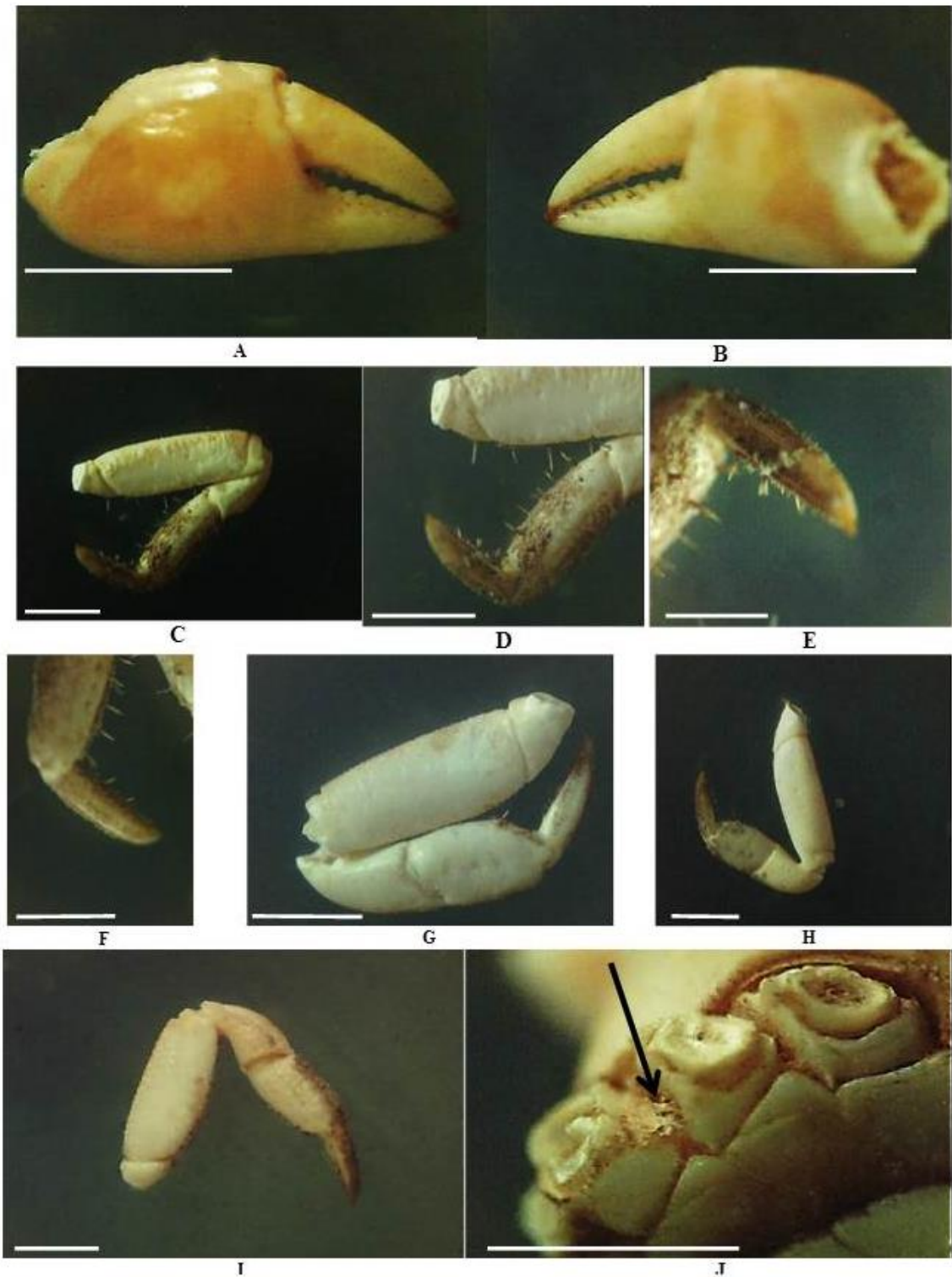


Plate II. *Cyclograpsus aff. integer*: (A&B) outer and inner surfaces of right chela (5.5 x 2.76 mm LxH), (C&D) the second walking leg normal and enlarged, (E&F) outer and inner surfaces of propodus and dactylus of the second leg, (G) the 4th leg enlarged, (H) the first leg, (I) the 3rd leg and (J) tuft of hairs between first and the second walking legs (Scale bar =3 mm).

Table 1. Morphometric measurements and their ratios taken for the two *Cyclograpsus* aff. *integer* females collected from the Egyptian Red Sea coast in 1997(all measurements were taken in mm).

Items	Range	Average (X ± SD)	Abdominal segments				CW/CL	CD/CL	FB/CW	OB/FB	FOB/CW	ESL/OB	RChL/CL	RChL/ChL	RF/ChL
			4 th Seg.		7 th Seg. (Telson)										
			L	B	L	B									
CL	5.10-7.71	6.41±1.85													
CW	6.85-10.2	8.53±2.37													
CD	2.28-4.41	3.35±1.51													
RChL	3.46-5.50	4.49±1.44													
RChH	1.73-2.76	2.25±0.73													
LChL	3.15-4.72	3.95±1.11													
LChH	1.18-2.52	1.85 ±0.96													
FOB	4.20-7.08	6.09±1.40													
FB	3.07-3.70	3.39±0.46													
OB	1.18-1.65	1.42±0.33													
EBL	0.50-0.63	0.57±0.09													
ESL	0.71-1.02	0.87±0.22													
REL	3.54-5.28	4.41±1.23													
			0.86±0.11												
			4.76±1.84												
			0.94±0.23												
			1.54±0.83												
			1.33±0.04												
			0.51±0.08												
			0.41±0.06												
			0.42±0.05												
			0.65±0.06												
			0.61±0.01												
			0.70±0.02												
			0.50±0.501												
			0.50±0.01												

Notice that: CL= Carapace length, CW= Carapace width, CD=Carapace depth, RChL= Right chela length, RChH= Right chela height, LChL= Left chela length, LChH= Left chela height, FOB= Front orbital breadth, FB=Frontal breadth, OB= Orbital breadth, EBL= Eye ball length, ESL= Eye stalk length, REL=Rear edge length (posterior margin), RFL=Right finger length and Seg.= Segment.

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التسجيل الأول لنوع سيكلوجرابسس انتيجر (سيكلوجرابسيني - فارونيدي - جرابسويديا) من الشواطئ المصرية للبحر الأحمر

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المستخلص. تشير النتائج الحالية إلى تسجيل نوع سيكلوجرابسس انتيجر (*Cyclograpsus aff. integer*) من عائلة فارونيدي، التي تتبع فوق عائلة الجرابسويديا من السرطانات الأصلية بالشواطئ المصرية قاطبة، ومن البحر الأحمر عامة، ويعتبر هذا النوع من الأنواع صغيرة الحجم التي تقطن المناطق الرملية المختلطة بفتات الصخور والرمال والمواد العضوية المتحللة حول تجمعات نبات المانجروف، وفي مصبات الأودية، حيث تبني أنفاقا للمعيشة بتلك البيئات. ولقد أوضحت الصفات المميزة والفاصلة لهذا النوع، والتي تميزه عن غيره من الأنواع قريبة الشبه، وجود اختلاف في بعض الصفات التصنيفية للعينات الحالية عن مثيلاتها من نفس النوع المسجل سابقا من مناطق انتشاره بالمحيطات الهندي والهادي والأطلسي، مما يؤدي هذا التسجيل إلى احتمالية كونه نوعا جديدا، وزيادة فونة سرطانات الجرابسويديا بالبحر الأحمر إلى ٢٠ نوعا حسب التسجيلات السابقة، وإلى ١٣ نوعا بالشواطئ المصرية، تمثل أكثر من ٦٥٪ من إجمالي فونة سرطانات الجرابسويديا بالبحر الأحمر.

الكلمات المفتاحية: مصر، البحر الأحمر، سرطان الشاطئ، *Cyclograpsus integer*،

.Grapsoidea، Varunidae، Cyclograpsinae

