A record of the moon crab *Matuta victor* (Fabricius, 1781) (Crustacea; Decapoda; Matutidae) from the Mediterranean coast of Israel

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**Abstract**

Two adult specimens of *Matuta victor* were recently collected in Haifa Bay, Israel. A single specimen of *Ashtoret lunaris*, collected in 1987 from Haifa Bay, was hitherto the only record of the Matutidae in the Mediterranean Sea.

**Key words:** *Matuta victor*; Decapoda; Erythraean alien; Mediterranean; Israel

**Introduction**

The Levantine upper shelf biota has an ever increasing component of Erythraean aliens (Galil 2012). Decapod crustaceans are well represented (Galil 2011); some penaeid and portunid species have established flourishing populations and are highly prized and considered a boon to the Levantine fisheries (Galil 2007), while a few species are only known from a single record. Twenty five years ago, a single specimen of *Ashtoret lunaris* (Forskål, 1775) was collected by a trawler in Haifa Bay at depth of 20 m (Galil and Golani 1990). Although those sandy-silt bottoms are frequently trawled, no other specimens were reported since, and it is assumed the population is extinct.

**Material and methods**

Israel: Haifa Bay, 1 km north of the Kishon harbour, 32°83 N, 35°35 E, 31.10.2012, trammel net, depth 10 m, 1 ♂, carapace length 3.25 cm; Kiryat Yam, 32°85 N 35°07 E, 20.11.2012, seine net, depth 5 m, 1 ♀, carapace length 2.95 cm; collected by M. Mendelson. The specimens are deposited in the Steinhardt National Collections of Natural History, Tel Aviv University, Israel (TAU AR 29089).

**Results**

Family Matutidae De Haan, 1835

*Matuta victor* (Fabricius, 1781) (Figures 1, 2)

*Cancer victor* Fabricius, 1781: 502, 1793: 449. *Matuta victor*; Fabricius, 1798: 369.

Diagnosis: Carapace subcircular, bearing six obtuse tubercles centrally. Front, wider than orbit, trilobate, median lobe projecting, anteriorly emarginate. Anterolateral margin arcuate, tuberculate. Posterolateral margin convergent, carinate. Lateral spine massive. Orbits communicating with antennular fossa. Suborbital margin laterally interrupted by curved inhalant canal. On pterygostomial region rows of elongate tubercles, serving as stridulating organ. Chelipeds subequal, massive. External surface of palm with two rows of granulate low tubercles, proximalmost in lower row largest. Mid-palm a rounded ridge extending to tip of lower finger,
proximally with granulate tubercle followed by a prominent spine. At lower proximal angle of palm a prominent spine. Dactylus in male bearing distinctly milled ridge on outer surface, absent in female. Ambulatory legs natatory, with first propodus bearing triangular tooth on inferior margin; penultimate carpus unicarinate; unicarinate; fifth propodus greatly extended. Sternum anteriorly in ‘fleur de lis’ form.

Colour in life: carapace and chelae ivory colored, minute purplish dots forming a diffuse reticulate pattern; pereiopods yolk-yellow with white margins, speckled purple; propodi of first pereiopods distally with prominent purple mark (Figure 1).

Seemingly gaudily-colored, the color pattern is in fact perfectly suited for concealment in sandy bottoms (Figure 2).

Remarks: Up to now, only one moon crab species has been recorded from the Mediterranean coast of Israel, *A. lunaris* (see Galil and Shlagman 2010), a common inhabitant of
tropical sandy shores, widely distributed from the Red Sea and East Africa to Australia (Galil and Clark 1994). Males of both species can be easily separated on account of the oblique mid-palmar ridge, strongly milled dactylar ridge and unicusarinate carpus of fourth pereiopod in *M. victor* (vs. mid-palmar ridge parallel with lower margin, finely milled dactylar ridge and bicarinate carpus in *A. lunaris*). Further details to separate both species can be found in Galil and Clark (1994).

**Distribution:** Gulf of Suez, Red Sea, Gulf of Oman, Arabian Sea, East Africa, Madagascar, Comoro Is, Bay of Bengal, Andaman Sea, Malaysia, Indonesia, South China Sea, Japan, New Caledonia, Australia, New Hebrides. Confirmed records in the Mediterranean Sea.

**Discussion**

Of the 34 Erythraean alien decapod crustacean species recorded off the Israeli coast, 4 are known from single specimens and 5 more are rarely found, but the remainder have established large populations and some are more prominent in the Levant than in their native habitats in the Red Sea. Since the role of brachyurans in the regulation of prey populations may be considerable, what might possibly be the implications were *M. victor* to establish large populations in the Levantine sandy littoral? Moon crabs are carnivorous and facultative scavengers, their diet composed primarily of crustaceans and mollusks, with smaller individuals feeding on smaller, softer-shelled species, whereas large size classes prey on shelled sessile or slow-moving species such as anomurans, bivalves and gastropods (Perez and Bellwood 1988). As a predator of slow-moving benthic invertebrates, *M. victor* may influence the abundance and distribution of its prey items were it to achieve numerical abundance in Levantine sandy shores.

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**References**

Fabricius JC (1781) Species Insectorum Exhibentes eorum Differentias Specificas, Synonyma Auctorum, Loca Natalia, Metamorphosia adiectis observationibus, descriptionibus, 2: i–ii, 1–517. Hamburg and Kilonii

Fabricius JC (1793) Entomologia Systematica Emendata et Aucta. Secundum Classes, Ordines, Genera, species, Adjectis Synonimis, Locis, Observationibus, Descriptionibus, 2: i–viii, 1–519. Hafniae

Fabricius JC (1798) Supplementum Entomologiae Systematice, 1–572. Hafniae

Forskål P (1775) Descriptiones Animalium Avium, Amphibi-orum, Piscium, Insectorum, vermium; quae in finiere orientali observavit. Petrus Forskal. Post Mortem Auctoris eddit Carsten Niebuhr’ Adjuncta est materia Medica Kahirina: t–19, i–xxxii, 1–164. Hafniae

Galil BS (2007) Loss or gain? Invasive aliens and biodiversity in the Mediterranean Sea. *Marine Pollution Bulletin* 55(7–9): 314–322, http://dx.doi.org/10.1016/j.marpolbul.2006.11.008

Galil BS (2009) Taking stock: inventory of alien species in the Mediterranean Sea. *Biological Invasions* 11: 359–372, http://dx.doi.org/10.1007/s10530-008-9253-y

Galil BS (2011) The alien crustaceans in the Mediterranean: an historical overview. In: Galil BS, Clark PF, Carlton JT (eds) In the wrong place – alien marine crustaceans: distribution, biology and impacts. Springer Series in invasion ecology, 6. Springer Verlag, Berlin, pp 377–401, http://dx.doi.org/10.1007/978-94-007-0591-3_13

Galil BS (2012) Truth and consequences: the bioinvasion of the Mediterranean Sea. *Integrative Zoology* 7: 299–311, http://dx.doi.org/10.1111/j.1749-4877.2012.00307.x

Galil BS, Shlagman A (2010) An annotated list of the decapod *Matuta* Weber, 1795 (Crustacea: Brachyura: Calappidae). *Zoologische Verhandelingen Leiden* 294: 1–55

Galil BS, Clark PF (1994) A revision of the genus *Matuta* (Brachyura: Calappidae). *Zoologische Verhandelingen Leiden* 294: 1–55

Galil BS, Clark PF (1994) A revision of the genus *Matuta* (Brachyura: Calappidae). *Zoologische Verhandelingen Leiden* 294: 1–55

Haan W de (1833–1850) Crustacea. In: PF van Siebold, *Fauna Batavorum*, 1–243. Lugundi-Batavorum

Haan W de (1833–1850) Crustacea. In: PF van Siebold, *Fauna Batavorum*, 1–243. Lugundi-Batavorum

Hans W de (1833–1850) Crustacea. In: PF van Siebold, Fauna Japonica, sive Descriptio animalium, quae in finit termina per Japaniam, Jussu et auspiciis superiores, quorum cuius jam in India Batavia imperium tenent, suscepit annis 1823–1830 collegit, notis, observationibus et adumbrationibus illustravit: i–xvii, ii–xxxii, ix–xvi, 1–243. Lugandi-Batavorum

Perez OS, Bellwood DR (1988) Ontogenetic changes in the natural diet of the sandy shore crab, *Matuta lunaris* (Forskål) (Brachyura: Calappidae). *Australian Journal of Marine and Freshwater Research* 39: 193–199, http://dx.doi.org/10.1071/MF9880193