

Luca Mizzan, Cecilia Vianello

FIRST RECORD OF *CHARYBDIS (CHARYBDIS) LUCIFERA* (FABRICIUS, 1798)
(CRUSTACEA, DECAPODA, PORTUNIDAE)
IN THE MEDITERRANEAN SEA

Riassunto. *Prima segnalazione di Charybdis (Charybdis) lucifera (Fabricius, 1798) (Crustacea, Decapoda, Portunidae) nel Mediterraneo.*

Si riporta il ritrovamento di un singolo esemplare maschio adulto del granchio Portunide *Charybdis (Charybdis) lucifera* (Fabricius, 1798), prima segnalazione per il Mediterraneo (Golfo di Venezia).

Summary. A single male adult specimen of the Indo-Pacific portunid crab *Charybdis (Charybdis) lucifera* (Fabricius, 1798) is recorded for the first time for the Mediterranean Sea (Gulf of Venice).

Keywords: *Charybdis lucifera*, alien species, first record, Mediterranean sea.

MATERIALS AND METHODS

Material examined: 1 male specimen caught by fishing net in the summer of 2006 6 miles off the Venetian coast (leg. Massimo Giuma).

Specimen initially frozen, afterwards preserved in alcoholic solution, then delivered for identification to the Natural History Museum of Venice. Given the general conditions of preservation of the specimen at the moment of reception, the animal may have dried up for some time, due to evaporation of the alcohol in which it was immersed.

Carapace width mm 84,4

Carapace length mm 53,1



Figure 1. Dorsal view.



Figure 2. Ventral view.

Morphological characters

Carapace exagonal, dorsal surface naked with microscopic granules; posterior border of carapace curved, dim cardiac region; anterolateral margin with 6 subequal teeth, especially the second tooth equal to or only slightly smaller than the first; first tooth pointed. Frontal region with 6 rounded teeth, the central two just larger than the others; lower orbital margin dentiform.

Chelipeds massive; 3 spines on the anterior margin of the merus; carpus with pointed strong spine on interior margin and 3 no sharp spines exteriorly.

Superior surface of propodus with 5 spines, lower surface smooth with only microscopic granularity. Hand of cheliped massive, with parallel sides. Fifth leg bearing sharp spine only on the posterior margin of the merus, carpus without spine. Posterior margin of propodus denticulate, dactyl ovate (fig. 5).

First pleopods characterized by inner spines, sparse row of small spines and presence of a membrane starting near the tip.

The colour of the specimen was not detectable at the moment of our examination, due to its conservation in alcoholic solution. Only four spots were still visible on the branchial region, the two nearer to the cardiac region larger than the two nearer to the posterolateral region. The tips of the spines of the chelipeds and the anterolateral teeth appeared reddish-brown.



Figure 3. First right pleopod (apex).

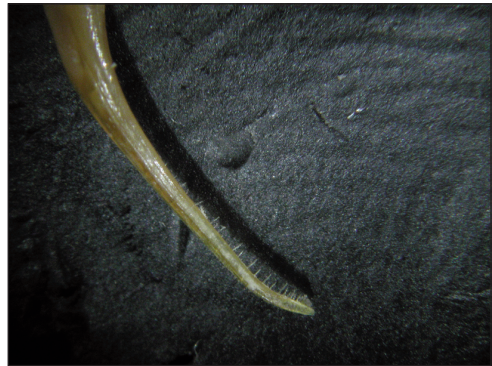


Figure 4. First right pleopod (dorsal view).

RESULTS AND DISCUSSION

Charybdis (Charybdis) lucifera (Fabricius, 1798) has not been reported before for the Mediterranean, unlike the congener *Charybdis (Charybdis) hellerii* (Milne Edwards, 1867) recorded in 1929 for Palestine, later found in Egypt, south Turkey, Lebanon and Syria where it got acclimatized (GALIL et al., 2002), and *Charybdis feriata* (Linnaeus, 1758) recorded with a single adult near Barcelona in 2004 (ABELLÒ & HISPANO, 2006).

C. lucifera and *C. hellerii* are apparently similar species, both with 6 anterolateral teeth, 6 frontal, carapace exagonal and chelipeds massive and spiny; however, they can be distinguished by some diagnostic characters.

C. hellerii has got 6 sharp (not rounded) frontal teeth, granulated lines in the frontal, mesogastric and branchial regions and strong, pointed spine on the carpus of the fifth pereopod (fig. 6) (STEPHENSON et al., 1957).

We have therefore compared the specimen object of our paper with specimens of the Genus *Charybdis* present in our Museum collections, in particular with a specimen of *C. lucifera* (Fabricius, 1798) from the Red Sea (coll E. Ninni: Red Sea 1929 n° MSNVE-2902, male, adult, det. Guinot 1962), and one of *C. hellerii* (Milne Edwards, 1867) also from the Red Sea (coll. E. Ninni: Red Sea 1929 n° MSNVE-2904, male, adult, det. Guinot 1961). In addition to the morphological characters previously highlighted, we have proceeded with the study of the first pleopods, which correspond, as for shape and characteristics, to the drawings of the species by STEPHENSON et al., 1957, as well as to the specimen in the Museum collections and the one object of this article (figg. 3 and 4). In this case, however, the spines on the left pleopod seem to be fewer, maybe due to the deterioration of the specimen. Actually, the first right pleopod, shown in figures 3 and 4, displays a distribution of the bristles on a more regular and continuous line on the internal side.

The original distribution of *C. lucifera* goes from India to Japan, including Australia (STEPHENSON, 1972), though the ways of transportation and the causes of its introduction are unknown. It's very likely that, owing to the increasingly busy maritime traffic, the species was unintentionally introduced by passive transportation of the planctonic larva in ballast water.

As far as we know today, the finding of this single specimen represents a single, isolated case. The large dimension and the very unusual shape makes us think that the species has not so far acclimatized in our waters.



Figure 5. 5th left pereopod of *C. lucifera* (ventral view).



Figure 6. 5th left pereopod of *C. hellerii* (ventral view) - inside the circle the strong, pointed spine of the carpus.

ACKNOWLEDGEMENTS

We especially thank dr. Riccardo Fiorin (University of Venice) for his help.

References

- ABELLÒ P., HISPANO C., 2006. The capture of the Indo-Pacific crab *Charybdis feriata* (Linnaeus, 1758) (Brachiura: Portunidae) in the Mediterranean Sea. *Aquatic Invasions* Vol. 1: 13-16.
- GALIL B., FROGLIA C., NOËL P., 2002. CIESM Atlas of Exotic Species in the Mediterranean Vol. 2. Crustaceans: decapods and stomatopods [F. Briand, Ed.] *CIESM Publishers*, Monaco, 192 pp.
- STEPHENSON W., HUDSON J.J., CAMPBELL B., 1957. The Australian Portunids (Crustacea; Portunidae). II. The genus *Charybdis*. *Australian Journal of Marine and Freshwater Research*, 8 (4): 491-507.
- STEPHENSON W., 1972. An annotated check list and key to the Indo-West-Pacific swimming crabs (Crustacea: Decapoda: Portunidae). *Bulletin of the Royal Society of New Zealand*, 10: 1-64.

Authors' address:

Luca Mizzan and Cecilia Vianello - Museum of Natural History, S. Croce 1730, I-30135 Venice, Italy