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ON THE OCCURRENCE OF ADULT SPECIMENS OF THE CRAB *PERCNON GIBBESI* (H. MILNE EDWARDS, 1853) (DECAPODA, GRAPSIDAE) IN SOUTHERN APULIA (IONIAN SEA, ITALY)

RIASSUNTO

Due esemplari adulti del granchio subtropicale *Percnon gibbesi* sono stati avvistati e fotografati in due località del Capo di Leuca (Puglia meridionale, Mar Ionio). Le due località in questione distano circa 10 km l'una dall'altra. In entrambi i casi, i due esemplari si trovavano in un habitat roccioso costiero fotofilo, a pochi metri di profondità. I due avvistamenti rappresentano le prime segnalazioni ufficiali di esemplari adulti di questa specie non indigena in acque pugliesi.

SUMMARY

Two adult specimens belonging to the sub-tropical rock crab *Percnon gibbesi* have been identified in two different locations of the "Capo di Leuca" (Southern Apulia, Ionian Sea). The distance between the two sites is estimated at about 10 km. Both specimens were found walking in rocky habitats, a few meters deep. The two records represent the first occurrence of adult specimens belonging to the invasive species in the Apulian waters.

INTRODUCTION

The rock crab *Percnon gibbesi* (H. Milne Edwards, 1853) is known to be common along the American coasts. It occurs both in the Pacific Ocean

from California to Chile, and along the Atlantic coasts, from Florida to Brazil. On the Eastern Atlantic, it occurs from Madeira, the Azores, the Cape Verde Islands to the coast of Africa, from Portugal to Ghana and offshore islands of the Gulf of Guinea (D'UDEKEM D'ACÓZ, 1999). Recently *P. gibbesi* entered through the Strait of Gibraltar into the Mediterranean Sea (RELINI *et al.*, 2000), where it is actually considered the most invasive decapod species (CANNICCI *et al.*, 2006). Subsequently, it has spread rapidly from the Balearic Islands (GARCIA and REVIRIEGO, 2000; DEUDERO *et al.*, 2005) to the Turkish waters (YOKES and GALLIL, 2006). Regarding the Italian waters, in addition to Sicily (RELINI *et al.*, 2000; PIPITONE *et al.*, 2001, MORI and VACCHI, 2003; CATALANO, 2004), this species has been found in the central Tyrrhenian Sea (RUSSO and VILLANI, 2005), in Southern Sardinia (P. PANZALIS, personal communication), on the Calabrian side of the Strait of Messina (BELLANTONI and CORAZZA, 2002), at Capo Rizzuto, on the Ionian coast of Calabria (FACCIA and BIANCHI, 2007), and in the Apulian part of the Gulf of Taranto (CROCETTA and COLAMONACO, 2008). The last record concerns a juvenile specimen. The present paper deals with the occurrence of adult specimens in two sites of the Southern Apulia (Ionian Sea, Italy) and includes a short discussion on the reasons of their presence in this region of Italy.



Fig. 1 - Geographical area where the *Percnon gibbesi* specimens occurred.

RESULTS AND DISCUSSION

Both crabs have been identified in two distinct places of the “Capo di Leuca” (Salento Peninsula, Ionian Sea) in different seasons of the same year (Summer and Autumn) while walking on submerged rocks (Fig. 1). The first specimen was identified in Summer 2007 at 5 m depth at the coastal site “Torre Marcheddu”, located on the Western side of “Punta Ristola”, the extreme Southern point of the Region. The second one was found the same year in Autumn at 3 m depth at the site “Canale del Ciolo”, a small natural Bay located on the Eastern side of “Punta Ristola”. The distance between the two sites is estimated at about 10 km.

The two rock crabs reported in the present note represent the first occurrence of adult specimens of *Percnon gibbesi* in the Apulian waters. The present discovery has already been reported as “Licchelli personal observation” by GRAVILI *et al.* (2010) in the list of “Nonindigenous species (NIS) along the Apulian coast”, but without any information and/or discussion on its presence in this area. It should be noted that a similar report referred on an occasional occurrence of a single juvenile specimen (carapace length 8 mm) collected successively (in October 2008) in the Apulian waters, in a sandy-rocky bay bounded by the city of Gallipoli, at a rocky point, Punta Pizzo (Gulf of Taranto, Ionian Sea) (CROCETTA and COLAMONACO, 2008).

Regarding our specimens, both crabs (Fig. 2a, b) were observed while walking in rocky habitats, a few meters depth (for details, see Tab. 1). One of the two crabs was found at the same place (Canale del Ciolo) where another crab of tropical Atlantic origin lives, *Herbstia nitida* Manning and Holthuis, 1981, and which is considered as well as an invasive species (DENITTO *et al.*, 2010). The other one was instead observed in a different locality (Torre Marcheddu) at 5 m depth, an unusual bathymetry for this species which usually occurs in shallow subtidal rocky shores, at 1-2 m depth (DEUDERO *et al.*, 2005; PUCCIO *et al.*, 2006).

Table 1 - Main information gathered about the two sites where the two specimens occurred

Site	“Torre Marcheddu” - Castrignano del Capo (Le)
coordinate	39° 47' 46" N - 18° 20' 01" E
depth	5 m
data	23 July 2007
Site	“Canale del Ciolo” - Gagliano del Capo (Le)
coordinate	39° 50' 38" N - 18° 23' 09" E
depth	3 m
data	22 November 2007



Fig. 2a - Picture of the specimen taken at "Torre Marcheddu" site. Estimated size (Carapace Width): approximately 30 mm. Photo by C. Licchelli.



Fig. 2b - Picture of the specimen taken at the "Canale del Ciolo" site. Estimated size (Carapace Width): approximately 30 mm. Photo by C. Licchelli.

After the first Mediterranean records occurred at the beginning of the XXI Century (GARCIA and REVIRIEGO, 2000; RELINI *et al.*, 2000; PIPITONE *et al.*, 2001), the species was included in the "list of exotic crustaceans species" by the CIESM Atlas of exotic species in the Mediterranean (GALIL *et al.*, 2002). Its introduction way in the Mediterranean Sea is not well known and could be linked to human activities, mostly by shipping transfer (GALIL *et al.*, 2002; CANNICCI *et al.*, 2006).

The Ionian Sea is viewed as a crossway between Western and Eastern Mediterranean basins (MUSCO and GIANGRANDE, 2005). Differently by the species of Indo-Pacific origin entered via Suez Canal which largely settle only in the Eastern Mediterranean basin, the Atlantic migrants often move from West to East and they can progressively be found also in the Ionian Sea (DENITTO *et al.*, 2010; GALIL *et al.*, 2002; STREFTARIS *et al.*, 2005). *Percnon gibbesi* can be considered as a good example of such migration.

The occurrence of these two specimen shows the progressive adaptation of the species at the environmental conditions of the Central-Eastern Mediterranean Sea. This adaptation success is confirmed by recent records made in the Aegean waters suggesting that this species seems to be well established along the Greek (CANNICCI *et al.*, 2006; THESSALOU-LEGAKI *et al.*, 2006) and Turkish coastal waters (YOKES and GALIL, 2006). The ability to establish large populations in anthropogenically impacted areas such as ports, as well as in natural habitats, indicates that it is probably spreading further.

Finally, although the two crabs were not collected, the pictures (Fig. 2a, b) show that they are adult specimens. While a juvenile specimen has been collected not far from our recording sites, thus suggesting a potential larval dispersion along the Salentine shores (CROCETTA and COLAMONACO, 2008), it cannot be excluded that the Salento Peninsula has been elected as one of the Mediterranean sites of reproduction by this invasive species. This assumption

would need, however, to be strengthened by future collection of ovigerous females in this area.

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