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PRESENCE OF *PENAEUS SEMISULCATUS* (DECAPODA
PENEIDAE) IN THE NORTH-WESTERN IONIAN SEA
(CENTRAL MEDITERRANEAN)

PRESENZA DI *PENAEUS SEMISULCATUS* (DECAPODA PENEIDAE)
NEL MAR IONIO CENTRO-SETTENTRIONALE
(MEDITERRANEO CENTRALE)

Abstract - Green tiger prawn is a Lessepsian species with a distribution restricted in the eastern part of the Mediterranean. In this note was reported for the first time the caught of this species (76 females, 71 males) in the Gulf of Taranto (North-West Ionian Sea). The spatial expansion of this species to North-West represents one of the changing, in Mediterranean fish distribution, observed in the last decades.

Key-words: *Penaeus semisulcatus*, sex ratio, length frequency distribution, geographical distribution.

Introduction - The Lessepsian green tiger prawn (*Penaeus semisulcatus* De Haan, 1844) is an Indo-Pacific species established along the coast of the eastern Mediterranean Sea (Egyptian, Israeli, Syrian and Turkish Levantine coast), where is one of the most important commercial species for its economic value (Öztürk, 2010). In the present contribution we documented the first records of the species along the Italian coasts. Observations were recorded during 2014 in the Data Collection Framework context in the North-western Ionian Sea (DCF EU Reg. 199/2008). In particular on the sampled specimens were reported, the length frequency distribution (LFD), the maturity stage, length-weight relationship and the vectorial sex ratio.

Materials and methods - Observations of commercial catches (onshore and onboard) of *P. semisulcatus* were carried out in the Gulf of Taranto during 3 fishing trips from September to December 2014. Specimens were measured at the nearest mm of carapace length (CL) and nearest g of the weight, recording sex and gonads maturity stage. The maturity was classified adopting the female macroscopic scale reported by King (1995). The length-weight parameters were calculated by a non-linear (weighted) least-squares estimate of a power model (R cran stats library). The sex ratio (FF/FF+MM) by length classes was also calculated.

Results - A total of 147 specimens of *P. semisulcatus* were examined from two samples sites: off Taranto (specimens caught by trammel nets and trawler at a depth ranged between 15 to 45 m) and off Schiavonea (specimens caught by trawler at 40 m depth). The CL sizes ranged between 23 and 32 mm CL in males and between 27 and 43 mm CL in females. The LFD show (Fig. 1) a peak included between 27 and 30 mm of CL for the male and at 38 mm for the female. The vectorial sex ratio indicated an exclusive presence of females starting from 33 mm CL. The parameters a and b of length-weight relationship were reported in Tab. 1. Regarding the maturity stages, the higher number of ripe females occurred in the sample of December (72%), while in September and October developing (65%) and nearly ripe (55%) were respectively the maturity stage more frequent. In general an increasing percentage of mature/ripe females were observed from October to December in accordance with a winter-early spring reproduction period observed in Turkish Levantine coast (Manasirli *et al.*,

2014). The smallest ripe female was 31.7 mm CL. All males showed a completed joint *petasma* with spermatic masses in the seminar *ampullae*.

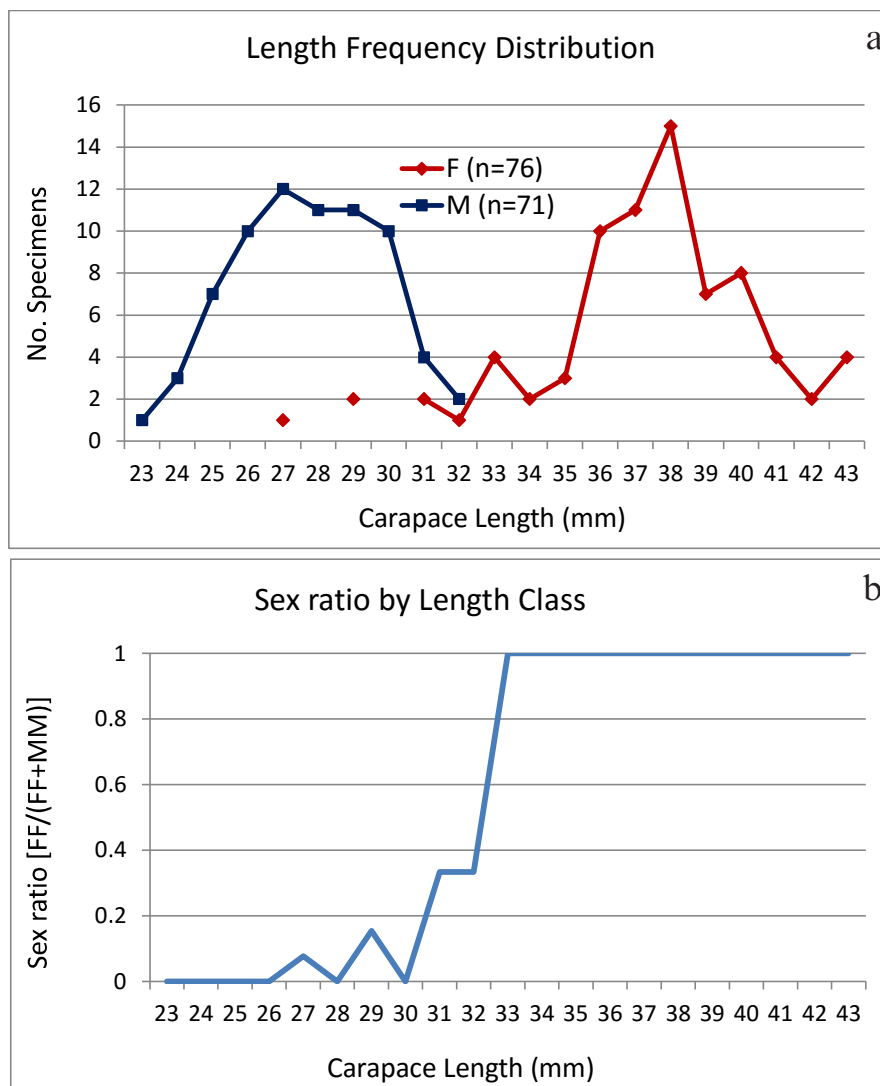


Fig. 1 - a) LFD by sex and b) sex ratio of *P. semisulcatus* caught in the Gulf of Taranto.
a) LFD per sesso e b) rapporto sessi di *P. semisulcatus* catturati nel Golfo di Taranto.

Tab. 1 - The parameters a and b of the length-weight relationship of *P. semisulcatus*.
Parametri a e b della relazione lunghezza-peso di *P. semisulcatus*.

	a	b	R ²	N° specimens	p
Female	0.0028	2.6119	0.93	76	0.021
Male	0.0026	2.6286	0.98	71	0.014
Combined	0.0025	2.6403	0.98	147	4.03E-10

Conclusions - The spatial expansion from the eastern to north-west was documented for several species in the Mediterranean (Bianchi, 2007; Azzurro *et al.*, 2011). This phenomenon, which has been named as meridionalization (Azzurro *et al.*, 2011) and/or tropicalization (Bianchi, 2007) within the literature, seem manly

linked to the warm up of the Mediterranean basin (CIESM, 2008). Moreover Galil and Kevrekidis (2002) attributed to changing of the water circulation pattern in the Ionian Sea, known as eastern Mediterranean Transient, the penetration of Indo-Pacific crustacean species into the south-eastern Aegean. These authors noted, also, that the Lessepsian species showed in most cases the first appear at the Rodos Island, before the expansion in North-West direction (Kevrekidis and Galil, 2003). Another possible cause of the expansion of this species could be, also, the increasing of aquaculture activity of green tiger prawn along the west coast of Turkey (Gürel, 2007).

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This work was carried out within DCF, supported by the Italian Ministry of Agriculture (Mipaaf) and the EC.