

## Occurrence of *Musculista senhousia* (Mollusca: Bivalvia) in the Taranto seas (eastern-central Mediterranean Sea)

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The first record of *Musculista senhousia* in the Taranto seas (eastern-central Mediterranean Sea) is reported. The species was mostly found on bottoms with pleustophytic algal felt where densities up to 3800 specimens per square metre were estimated. The sizes in the sampled population ranged from 5.16 to 30.59 mm. Two main modal components were detected around  $11.67 \pm 0.67$  mm and  $18.00 \pm 2.38$  mm.

*Musculista senhousia* (Benson in Cantor, 1842) is a small mussel widespread in several regions of the earth from the Asian continent (*locus typicus*) to the western coast of the USA, to the New Zealand and Australian coasts, along the Israel coast to the Red Sea, off the islands of Zanzibar and Madagascar as well as in Indo-China and Japan (Lazzari & Rinaldi, 1994). This small mussel was recorded as an immigrant species for the first time in the western Mediterranean along the French coast (Hoenselaar & Hoenselaar, 1989). Successively it was recorded in Italy, in the Adriatic Sea, in the brackish lagoons of Ravenna (Lazzari & Rinaldi, 1994), in the Sacca di Goro and Comacchio Bay (Turolla, 1999; Mistri et al., 2001) and in the Tyrrhenian Sea in the Gulf of Olbia (Savarino & Turolla, 2000).

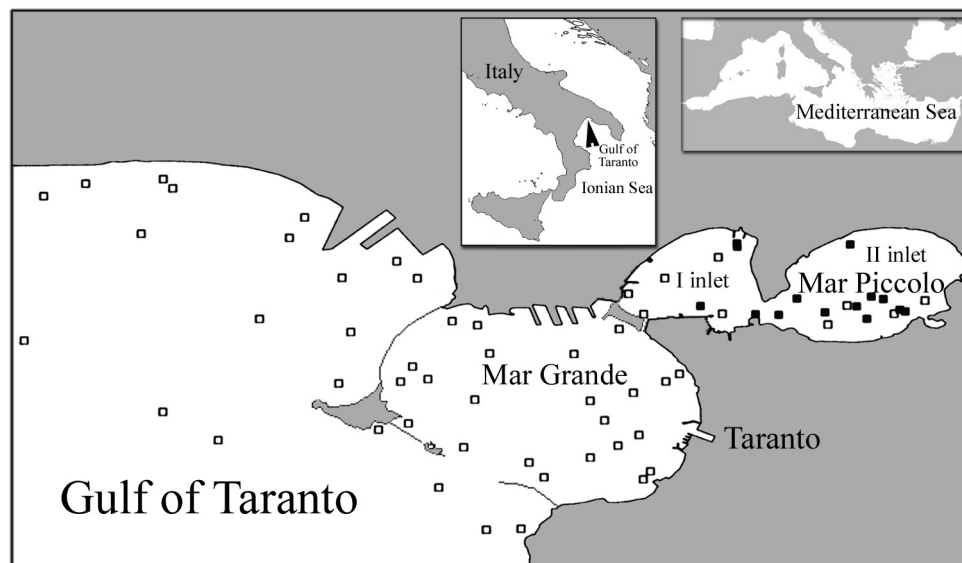
The first occurrence of *M. senhousia* in the Taranto seas (north-western Ionian Sea) is reported in this note.

The town of Taranto is located on the coast of the north-western Ionian Sea (eastern-central Mediterranean). To the south-west it overlooks the open sea in the Mar Grande basin and north-eastwards the basin of the Mar Piccolo which is made up of two smaller inlets (I and II seno) (Figure 1). The Mar Piccolo covers an area of 20.72 km<sup>2</sup>. Its maximum depth is

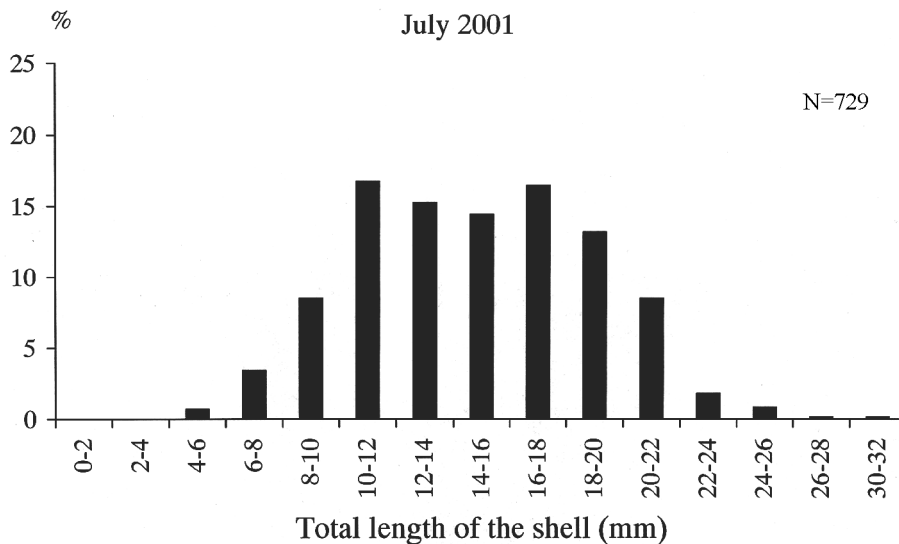
12 m in the first inlet (I seno) and 9 m in the second (II seno). The salinity and the temperature follow seasonal variations between 34 and 39 psu and between 10 and 30°C, respectively (Alabisio et al., 1997). The Mar Piccolo basin is connected to the Mar Grande through two small channels.

Intense naval traffic and aquaculture both occur in the Mar Piccolo and Mar Grande. The former is due to the presence of the Italian Navy base and to the activities of intercontinental shipping transport, the latter is linked to a great number of mussel breeding farms (*Mytilus galloprovincialis*).

A total of 65 sampling stations were allocated in the study area (23 in the Mar Piccolo, 19 in the Mar Grande and 23 in the northernmost side of the Gulf of Taranto) as part of a study project financed by the Ministry of University and Scientific Research (Figure 1). During July 2001, 110 samples were taken with a Van Veen grab (with a grabbing surface of ~0.1 m<sup>2</sup> and a volume of ~0.02 m<sup>3</sup>). Each sample was sorted by species. Individuals of *Musculista senhousia* were counted and measured. The density of individuals (N/m<sup>2</sup>) for each sample was computed. The total length of the shell was measured to the nearest mm by means of a digital calliper. The length–frequency distribution of



**Figure 1.** Map of study area (part of Taranto Gulf, Mar Grande and Mar Piccolo of Taranto) with sampling stations (□) and *Musculista senhousia* presence (■).



**Figure 2.** Length–frequency distribution of *Musculista senhousia* specimens collected in the Mar Piccolo of Taranto (north-western Ionian Sea) during July 2001.

the sampled population was performed. The modal components in the size–frequency distribution were separated by means of the Bhattacharya method as reported in the FiSAT program (Gayanilo et al., 1994).

A total of 729 specimens of *M. senhousia* were collected from 15 stations located in the Mar Piccolo, four of them in the first inlet (I seno) and 11 in the second (II seno) (Figure 1).

Although the species was found on different substrata, the greatest densities were estimated on bottoms with a pleustophytic algal felt (up to 3800 N/m<sup>2</sup>). Density values up to 240 N/m<sup>2</sup> and 60 N/m<sup>2</sup> were computed on *Caulerpa racemosa* beds and muddy bottoms, respectively. The sizes of the individuals ranged from 5.16 to 30.59 mm and were distributed around the modal components of 11.67 ± 0.67 mm and 18.00 ± 2.38 mm ( $\chi^2=20.48$ ;  $P < 0.05$ ) (Figure 2).

The present paper constitutes the first record of *M. senhousia* in the Taranto seas. It would indicate the immigration of this species into the Mar Piccolo of Taranto and its main distribution on bottoms with pleustophytic algal felt, which mostly consists of the chlorophyceae *Chaetomorpha linum* and *Cladophora hutchinsiae*. *Caulerpa racemosa* beds also seem to play an important role in the settlement of this invader species. These results are in agreement with observations in the Ravenna lagoons (Adriatic Sea) (Lazzari & Rinaldi, 1994).

The size composition of the Mar Piccolo population is comparable to that shown in the Sacca di Goro during July (Mistri, in press). Such a size composition seems to be the result of the prolonged spawning period of the species and of its high growth rate (Turolla, 1999; Sgro et al., 2002). In particular, the two cohorts observed in this study might be due to successive spawnings that occurred in the summer–autumn of the previous year.

Finally considering the invasive behaviour of *M. senhousia*, further monitoring studies are required with the aim of verifying whether a self-perpetuating population has settled in the Taranto seas.

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