**Musculista senhousia**

<table>
<thead>
<tr>
<th>Taxon</th>
<th>Family / Order / Class / Phylum</th>
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<td>Musculista senhousia (Benson in Cantor, 1842)</td>
<td>Mytilidae / Mytiloida / Bivalvia / Mollusca</td>
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**COMMON NAMES (English only)**
Asian date mussel

**SYNONYMS**
- Modiola senhousia Benson in Cantor, 1842
- Arcuatula cf. senhousia (Benson, 1842)
- Modiola bellardiana Tupperone-Canefri, 1874.

**SHORT DESCRIPTION**
A small (10-25 x 12 mm) intertidal bivalve with thin shell, equivalve, oval, elongate with sculpture of radiating lines posteriorly. Outline modioliform; umbones subterminal; ligament and dorsal margins not continuous, slightly angled; anterior end rounded. Ventral margin slightly concave. Shell pale olive-green with irregular brownish-purple markings.

**BIOLOGY/ECOLOGY**

**Dispersal mechanisms**
Larvae spend 3-6 weeks in plankton, larvae are dispersed by water currents.

**Reproduction**
A broadcast spawner, with fertilization occurring in the water column, spawning in the Mediterranean in September-November. Larvae settle after 14-55 days on hard surfaces to which they become cemented. They mature in about 9 months and can live for 2 years.

**Known predators**
Larvae are fed upon filter feeding biota and by cnidarians. Juveniles and adults are consumed by a wide range of species - snails, crabs, lobsters, starfish, fish, shorebirds and diving ducks.

**Resistant stages (seeds, spores etc.)**
Adults can survive several days in air.

**HABITAT**

**Native (EUNIS codes)**

**Habitat occupied in invaded range (EUNIS codes)**
- A1: Littoral rock and other hard substrata, A3: Sublittoral rock and other hard substrata. Hard and soft substrates in the intertidal and shallow subtidal zones to 20 m depth. They may settle on hard surfaces, but mostly settle gregariously on soft substrates, burrowing until only the hind part of their shell protrudes, and then secrete fibrous threads that attach to sediment particles to form a kind of nest or bag around them.

**Habitat requirements**
Tolerant of low salinity and low oxygen levels. Euryhaline (17-37 psu, optimum range 20-25 psu) and tolerant of a wide range of temperatures (5 – 30 °C).
DISTRIBUTION

Native Range

W Pacific, from Siberia, the Kurile Islands, Japan, and Korea along the China coast to Singapore.

Known Introduced Range

It was first recorded in the Mediterranean in Israel [1964] and Egypt [1971]. It arrived on the Atlantic coast of France in the early 1970s with shipments of the Japanese oyster *Crassostrea gigas*, then, in the early 1980s it was reported from the French Mediterranean coastal shellfish growing lagoons. In the Adriatic Sea it was recorded from Ravenna Lagoon [1980s], the Po deltaic lagoons [1990s], Slovenia [1997]; as well as from the Gulf of Olbia, Sardinia [2000] and the Gulf of Taranto [2001]. Present in the American Pacific coast (British Columbia to Baja California), where it was first recorded from beds of transplanted Japanese oysters (*Crassostrea gigas*) in Puget Sound, in 1924; Australia [1983] and New Zealand [1978].

Trend

Spreading with shellfish culture and shipping.

MAP (European distribution)

![Map of Europe showing distribution areas](image)

Legend

<table>
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<tr>
<th>Known in country</th>
<th>Known in CGRS square</th>
<th>Known in sea</th>
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<tr>
<td>Key distribution area</td>
<td>Infrequent</td>
<td>Unestablished</td>
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INTRODUCTION PATHWAY

It was probably introduced with plantings of Japanese oysters, since it has been collected in lagoons that are used for shellfish cultivation. Other possible mechanisms include transport in ships’ seawater systems or in ballast water, or as hull fouling.

IMPACT

Ecosystem Impact

The presence of this species at high densities increases the abundance of detritivorous amphipods, tanaids, small snails and polychaete worms, but the abundance of suspension-feeding and filter-feeding organisms may decline. When in large enough densities it shifts the community from suspension-feeding to primarily deposit-feeding.

Health and Social Impact

Unknown.
Economic Impact
It has been blamed for smothering and killing commercially important bivalves, including the manila clam (*Ruditapes philippinarum*).

MANAGEMENT
Prevention
Unknown.
Mechanical
Dredging as an eradication or control method is not practical as it will cause the mat to fragment, and individuals may be swept away and settle to form new mats. Scraping *M. senhousia* foulings from man-made substrates is similarly not efficacious.
Chemical
Unknown.
Biological
Unknown.

REFERENCES

OTHER REFERENCES

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