Styela clava

<table>
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<tr>
<th>Taxon</th>
<th>Family / Order / Class / Phylum</th>
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<td><em>Styela clava</em> Herdman, 1882</td>
<td>Stylidae / Pleurogona / Asciidiacea / Chordata</td>
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COMMON NAMES (English only)
- Asian sea-squirt
- Leathery sea-squirt
- Club tunicate

SYNONYMS
- *Bostryorchis clava* Redikorzev, 1916,
- *Styela barnhartii* Ritter & Forsyth, 1917,
- *Styela mammiculata* Carlisle 1954,

SHORT DESCRIPTION
This Asian sea-squirt has a club-shaped body and a narrow base attaching by means of a membranous plate. The outer surface (test) is leathery and often wrinkled. Surfaces are often fouled. It is a filter-feeder occurring mainly in sheltered estuaries, docks and inlets.

BIOLOGY / ECOLOGY

Dispersal mechanisms
As larvae, attached to crabs, with drifting plants or as fouling on the hulls of ships or other floating structures.

Reproduction
This tunicate is a hermaphrodite surviving up to two years. It may spawn twice in its lifetime. Larvae hatch from released eggs in late summer to early autumn and settle after about a day. They are poor swimmers and normally settle near to parent populations.

Known predators
Spider crabs.

Resistant stages (seeds, spores etc.)
Under damp conditions can survive aerial exposure for some days but has no resistant stage.

HABITAT

Native (EUNIS code)

Habitat occupied in invaded range
- A1: Littoral rock and other hard substrata, A3: Sublittoral rock and other hard substrata, A4: Sublittoral sediments. Estuaries, channels and bays from mid-tide (on shaded shores) to ~25m attaching to shell, stones and rock and each other.

Habitat requirements
Tolerates from –2 to 23°C and salinities >26 psu and lower salinities for short periods.

DISTRIBUTION

Native Range
The Sea of Othotsk, Korea and Siberia.
**Known Introduced Range**
Arrived in Britain first and now occurs from Portugal to Denmark. Known from the east and west coasts of North America, southern Australia and New Zealand.

**Trend**
Spreading.

**MAP (European distribution) based on Davis et al. 2007**

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**INTRODUCTION PATHWAY**
Probably introduced to Europe as fouling on warships arriving during the Korean War. Known to occur on ship and leisure craft hulls and may be spread with oyster stock movements. Local transmissions in ships’ ballast water is possible. Movement of floating port structures may also result in spread.

**IMPACT**

**Ecosystem Impact**
It can attain densities >1000 m\(^2\) in sheltered areas, creating a high biomass that results in competition with other filter-feeders. Young individuals often attach to larger specimens (up to 200mm) to form clusters.

**Health and Social Impact**
Sprays produced from damaged tissues when removing them from oysters are known to result in a respiratory condition in humans.

**Economic Impact**
It can foul artificial structures in port regions. It can foul ranched oysters and shellfish held in hanging culture and attach to fish cages. It may also impede fishing activities. In the St Lawrence Estuary, Canada, their abundance has caused declines in cultured mussel production.

**MANAGEMENT**

**Prevention**
Stock movements of oysters or mussels from infested areas should be carefully monitored. Cleaning of equipment and boat hulls before transfers reduces risk.

**Mechanical**
Apart from scraping, no other physical method is known.
Chemical
   Brine dips kill tunicates associated with oysters. Tunicates are sensitive to copper salts.

Biological
   Unknown.

REFERENCES

OTHER REFERENCES

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Date Last Modified: January 7th, 2008