Styela clava

Taxon	Family / Order / Class / Phylum
Styela clava Herdman, 1882	Styelidae / Pleurogona / Ascidiacea / Chordata

COMMON NAMES (English only)
Asian sea-squirt
Leathery sea-squirt
Club tunicate

SYNONYMS
Bostryorchis clava Redikorzev, 1916,
Styela barnharti Ritter & Forsyth, 1917,
Styela mammiculata Carlisle 1954,
Styela clava clava Nishikawa, 1991.

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.

***Styela clava* on a floating pontoon in Dublin Bay, Ireland**

Photo: Dan Minchin

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)
A1: Littoral rock and other hard substrata, A3: Sublittoral rock and other hard substrata, A4: Sublittoral sediments. Shallow sheltered environments to ~ 20m on firm surfaces.

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 >26psu and lower salinities for short periods.

DISTRIBUTION

Native Range
The Sea of Othotsk, Korea and Siberia.

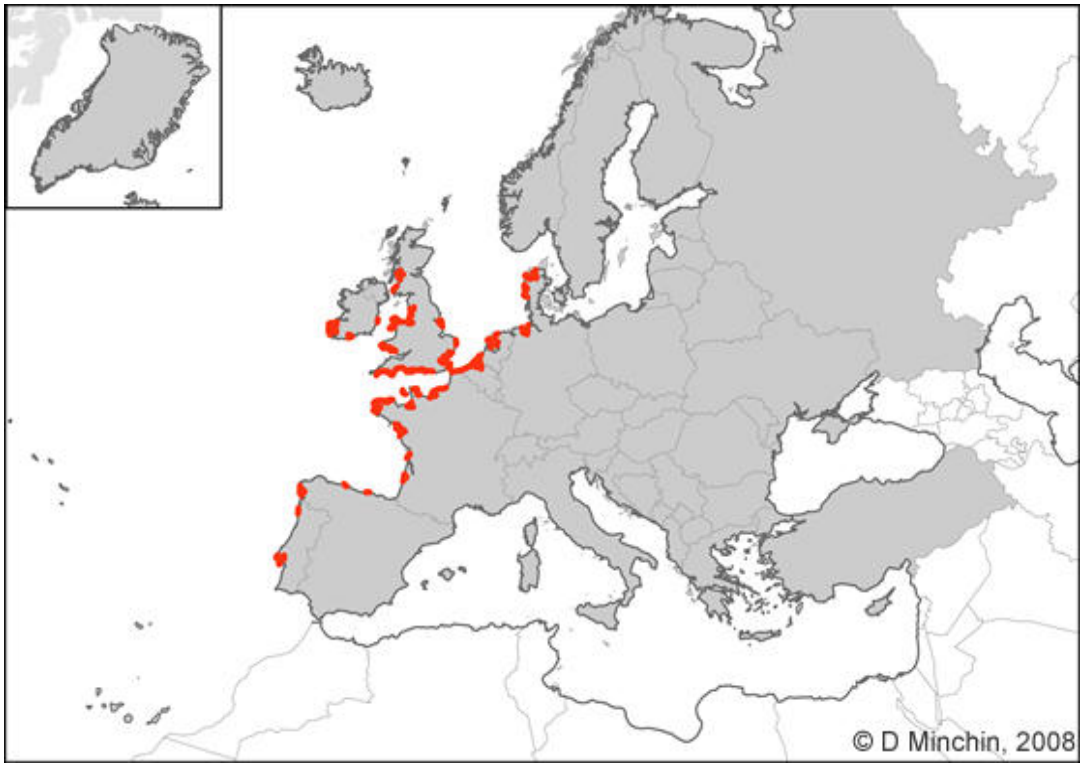
Known Introduced Range

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



Legend

	Known in country		Known in CGRS square		Known in sea

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.

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