

Schizoporella errata

System: Marine

Kingdom	Phylum	Class	Order	Family
Animalia	Ectoprocta	Gymnolaemata	Cheilostomata	Schizoporellidae

Common name bryozoan (English), encrusting bryozoan (English), cheilostome bryozoan (English), branching bryozoan (English)

Synonym *Lepralia errata*

Similar species *Schizoporella unicornis*, *Schizoporella floridana*

Summary *Schizoporella errata* is a heavily calcified, encrusting cheilostome bryozoan. It colonises most freely available substratum, including artificial underwater structures and vessel hulls. Colonies may reach 25cm in height and are widely varying in growth form, sometimes dominating space in fouling assemblages.



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Species Description

Schizoporella errata is typically dark brick red with orange-red growing margins. This species may form heavy knobby encrustations on flexible surfaces such as algae or worm tubes, turning them into solid, sometimes erect branching structures. The thickness of the growth is dependent upon the age of the colony. Multilaminar encrustations of 1cm thick are common. The frontal surface of the zoecium (secreted exoskeleton housing of individual zooids) is porous with a wide semicircular aperture and proximal sinus. avicularia (beak-like structures) occur in varying density on colonies, located (one per zooid) to the right or left side of aperture sinus. Bleached specimens show the skeletal features clearly. Preserved specimens lose their colour.

S. errata forms massive colonies with variously shaped colony forms. Forms are determined by interactions with other organisms and hydrodynamic conditions. At exposed sites, colonies form a densely packed mass with no branching, while in calmer waters colonies are erect, highly branched and have thicker bases (Morgado and Tanaka 2001).

Lifecycle Stages

Bryozoans have swimming, lecithotrophic larvae that attach and metamorphose within 1 or 2 days following release from the colony. Larvae colonise a variety of artificial substrata including hulls (Mackie *et al.* 2006).

The new recruits of *S. errata* are vulnerable to predation immediately (hours to days) after metamorphosis and attachment to the substrate. Experiments show that predators such as the small gastropod *Mitrella lunata* can result in a high mortality (around 50%) by feeding exclusively on the first zooid or ancestrula of each *S. errata* colony (Osmana and Whitlatch 2004).

Habitat Description

Schizoporella errata is usually found in harbours and embayments in shallow water on hard substrates (pilings, hulls, coral rubble, etc.) and reefs (Bishop Museum 2002). In southeastern Brazil it occurs in shallow (0–10m) water attached to rocks or pier columns. *S. errata* occurs mainly in calm waters and is one of few bryozoans that occur in water of the pleiomesohaline region (water salinity around 18-8%) (Winston 1977).

Reproduction

Each bryozoan colony begins from a single, sexually produced, primary zooid. *Schizoporella* zooids bud in lines, forming unilaminar, bilaminar or multilaminar sheets. Like most bryozoans, *Schizoporella* are hermaphroditic. Each zooid is capable of producing sperm and eggs. Larvae are brooded in an external ovicell. Larvae are ciliated and non-feeding and attach and metamorphose within 1 or 2 days following release. *S. errata* larval settlement occurs throughout the year, except during midwinter (Sutherland and Karlson 1977). Cummings (1975) described zooidal regression and regeneration in colonies of *S. floridana*, suggesting a potentially important life history response to seasonal changes in temperature and food availability. New recruits of *S. errata* are vulnerable to predation immediately (hours to days) after metamorphosis and attachment to the substrate. Experiments show that predators such as the small gastropod *Mitrella lunata* can result in a high mortality (around 50%) by feeding exclusively on the first zooid or ancestrula of each *S. errata* colony (Osman and Whitlatch 2004).

Nutrition

Bryozoans are suspension feeders with retractable U-shaped crowns of tentacles (lophophores) that bear cilia. The movement of cilia create small currents that bring microscopic prey (plankton) and organic particles toward the animal. The particles are then guided into the mouth by action of the tentacles and cilia.

General Impacts

Bryozoans are one of the main groups of fouling organisms that form encrustations on ships, piers, buoys and other man-made structures in oceans (VMNH 2005). Exotic species may compete for space with natives. *Schizoporella errata* is known to inhibit the growth of adjacent species (Sutherland and Karlson 1977). Introductions in some areas could potentially contribute to community productivity by providing substratum. In southeastern Brazil *S. errata* forms colonies of up to 25cm in height and supply a diverse range of secondary structure used by cryptic faunal species, including polychaetes, crustaceans and echinoderms (Nalesso *et al.* 1995; Duarte and Nalesso 1996 in Morgado and Tanaka 2001).

S. errata has a high recruitment rate over the summer months and is common on pilings. In the US Atlantic, Sutherland (1978) noted colonies were particularly common in areas of space that are regularly cleared by urchin grazing; larvae appear to be relatively inefficient at recruiting into established fouling communities.



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Schizoporella errata*

Management Info

Preventative measures: A two-year study was undertaken for the Department of Environment and Heritage (Australia) by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) to identify and rank introduced marine species found within Australian waters and those not found within Australian waters.

All of the non-native potential target species identified in this report are ranked as high, medium and low priority, based on their invasion potential and impact potential. *Schizoporella errata* is identified as one of ten potential domestic target species most likely to be spread to uninfected bioregions by shipping. *S. errata* is also identified as one of ten most damaging potential domestic target species, based on overall impact potential (economic and environmental). A hazard ranking of potential domestic target species based on invasion potential from infected to uninfected bioregions identifies *S. errata* as a 'medium priority species' - these species have a reasonably high impact/or invasion potential.

For more details, please see [Hayes et al. 2005](#).

The rankings determined in Hayes et al. 2005 will be used by the National Introduced Marine Pest Coordinating Group in Australia to assist in the development of national control plans which could include options for control, eradication and/or long term management.

Ballast water control measures can help control the spread of *Schizoporella errata* from the oyster aquaculture industry (PWSRCAC 2004). Cu (copper) based antifouling coatings on boat hulls can prevent growth of *S. errata* and stop its spread to new locations (Piola and Johnston 2006).

Pathway

Principal source: [Bishop Museum 2002. *Schizoporella cf. errata* \(Waters, 1878\). Guidebook of introduced marine species of Hawaii.](#)

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Review: Dr. Josh Mackie, Invertebrate Zoology and Molecular Ecology Lab. Moss Landing Marine Laboratories. California USA

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ALIEN RANGE

[1] ATLANTIC COAST (NORTH AMERICA)
[3] AUSTRALIA
[1] CHINA
[1] GERMANY
[1] ISRAEL
[1] UNITED KINGDOM
[1] UNITED STATES MINOR OUTLYING ISLANDS
[1] WEST AFRICA

[1] ATLANTIC - WESTERN CENTRAL
[1] BRAZIL
[1] EGYPT
[2] INDIAN - OCEAN WESTERN
[1] NEW ZEALAND
[11] UNITED STATES
[1] VANUATU

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Management information

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[Centre for Environment, Fisheries & Aquaculture Science \(CEFAS\), 2008. Decision support tools-Identifying potentially invasive non-native marine and freshwater species: fish, invertebrates, amphibians.](#)

Summary: The electronic tool kits made available on the Cefas page for free download are Crown Copyright (2007-2008). As such, these are freeware and may be freely distributed provided this notice is retained. No warranty, expressed or implied, is made and users should satisfy themselves as to the applicability of the results in any given circumstance. Toolkits available include 1) FISK- Freshwater Fish Invasiveness Scoring Kit (English and Spanish language version); 2) MFISK- Marine Fish Invasiveness Scoring Kit; 3) MI-ISK- Marine invertebrate Invasiveness Scoring Kit; 4) FI-ISK- Freshwater Invertebrate Invasiveness Scoring Kit and AmphISK- Amphibian Invasiveness Scoring Kit. These tool kits were developed by Cefas, with new VisualBasic and computational programming by Lorenzo Vilizzi, David Cooper, Andy South and Gordon H. Copp, based on VisualBasic code in the original Weed Risk Assessment (WRA) tool kit of P.C. Sheloung, P.A. Williams & S.R. Halloy (1999).

The decision support tools are available from:

<http://cefas.defra.gov.uk/our-science/ecosystems-and-biodiversity/non-native-species/decision-support-tools.aspx> [Accessed 13 October 2011]

[The guidance document](#) is available from http://www.cefas.co.uk/media/118009/fisk_guide_v2.pdf [Accessed 13 January 2009].

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Summary: A review of copper tolerance in four species of bryozoans.

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[ITIS \(Integrated Taxonomic Information System\), 2005. Online Database *Schizoporella errata*](#)

Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.

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