**Glaphyrymenia pustulosa**

**J Agardh**

**Techniques needed and shape**

**Classification**

*Descriptive name*

**Features**

**Occurrences**

**Usual Habitat**

**Special requirements**

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**Phylum:** Rhodophyta; **Order:** Gigartinales; **Family:** Kallymeniaceae

1. plants are rose red to red, 100-600mm tall, with a flat blade often broader than long
2. blades attached by a tiny disc-shaped holdfast become **lobed** or cut into broad lobes with age, are often ruffled at the edges and **firm** when fresh but rapidly **disintegrate**

**West Coast, S Australia to Victoria and SE Tasmania. New Zealand from shallow to deep water (22m) on rough water coasts**

1. make squashes of tissue of different plants under the microscope to see
   - a network of branching threads in a broad and loosely-packed core (**medulla**) 
   - outermost (**cortex**) layers of **short chains** of small cells, facing outwards at the ends of branched threads
   - numerous, young, female structures (carpogonial branch systems, **cbs**) in the cortex with dense contents bearing **one** (or two) threads (**carpogonia**) 
   - **scattered** tetrasporangia divided in a cross (**cruciate**) pattern

2. if possible, cut a cross section through an **imbedded** mature female structure (cystocarp) to find a **central** mass of threads, **peripheral** carposporangia and loose envelope (**pericarp**) of threads, features separating Glaphyrymenia from Kallymenia

**Similar Species**

**Description in the Benthic Flora** Part IIIA, pages 237, 238-240

**Details of Anatomy**

**Glaphyrymenia pustulosa** stained blue or purple and viewed microscopically

1. a partial cross section of part blade showing short chains of cells in the outer layer (**cortex**, **co**) loose network of branched threads in the core (**medulla**, **med**) and a young female structure (carpogonial branch system, **cbs**) (A18558 slide 076)
2. a tissue squash that has isolated a carpogonial branch system (**cbs**) with a single 3-celled carpogonial branch (**carp br**) (A18558 slide 082)
3. a cross section through 2 mature female structures (cystocarps) showing the loose envelope of threads (**pericarp**, **peri**) central mass of threads (**gonimoblast filaments**, **gon fil**) and peripheral carposporangia (**c sp**) (A18558 slide 077)
4. a tissue squash with detached tetrasporangium dividing in a cross-shaped (**cruciate**) pattern (A61370 slide 12336)

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§ name used in Edgar, G. *Australian Marine Life, 2nd Ed.* (2008)

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Different magnifications of *Glaphyrymenia pustulosa* J Agardh specimens from S Australia

5. from 27m deep, Topgallant I., Investigator Group (A53066).

6. close up of the stubby holdfast (arrowed) of a specimen from 8-10m deep off Walkers Rock, Anxious Bay (A53678).

7. detail of a blade edge showing the tendency for tissues to disintegrate (A59258)