

Techniques needed and shape



MACRO PLANT



Classification

***Descriptive name**

Features

Occurrences

Usual Habitat

Special requirements

Phylum: Rhodophyta; Order: Gigartinales; Family: Kallymeniaceae
 §red lettuce

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*

Kallymenia rubra but with different blade anatomy and female reproductive features

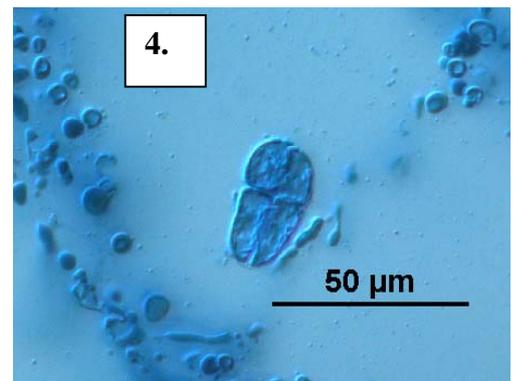
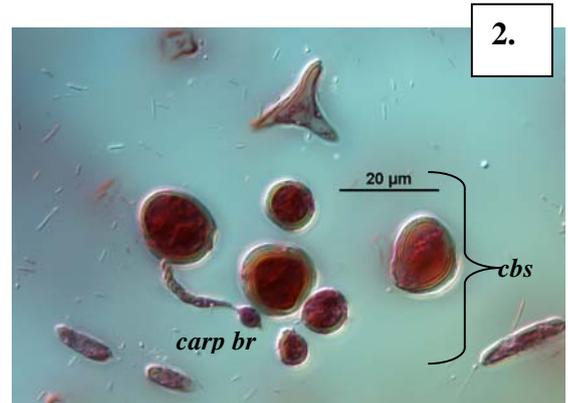
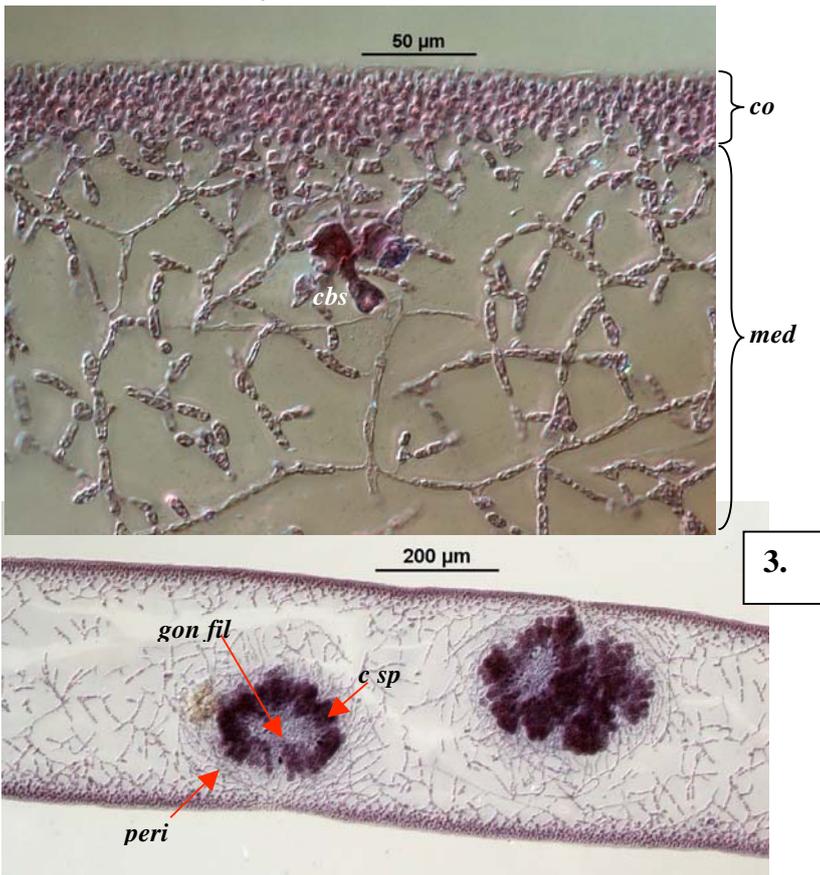
Similar Species

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

Details of Anatomy



Diagnosis can be difficult



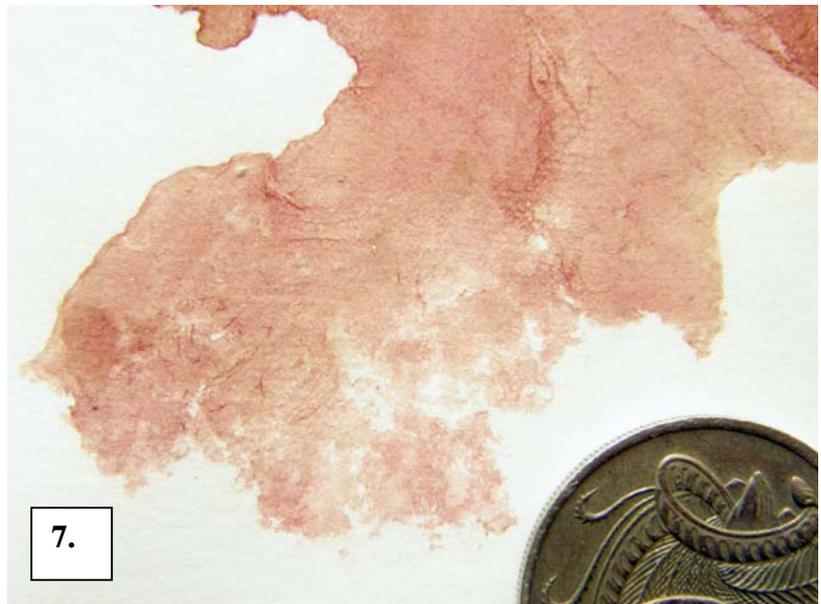
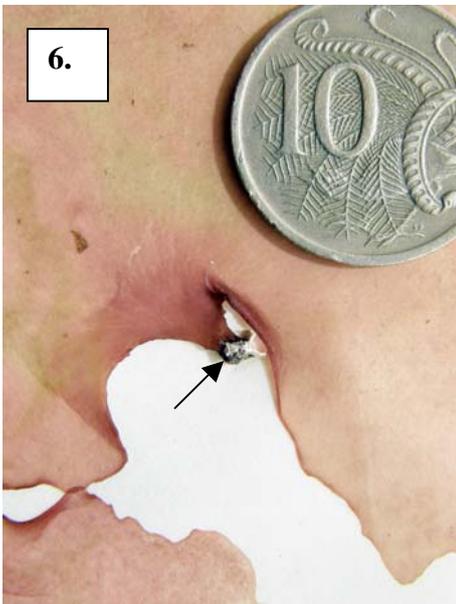
Glaphyrymenia pustulosa stained blue or purple and viewed microscopically

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)

Descriptive names are inventions to aid identification, and are not commonly used.

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

Prepared April 2009



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)

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