Kallymenia tasmanica Harvey

45.320

Techniques needed and shape


MACRO PLANT

squash


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

***Descriptive name** §red lettuce

Features

1. plants are dark red, 50-300mm tall and about the same width
2. they consist of ***firm*** leafy blades ***lobed*** at the edges, some edges ***ruffled*** with small points
3. main blades arise from short stalks and blade lobes ***overlap***

Occurrences Gulf St Vincent, S Australia to Victoria and around Tasmania

Usual Habitat from shallow to moderately deep water

Special requirements make squashes of tissue of different plants under the microscope to see


squash


- ***loosely arranged*** thread like cells developing from the pointed ends of star-shaped (***stellate***) cells with densely staining contents located in the core
- ***small***, round cells in several layers of the outermost parts (cortex)
- numerous, young, amoeba-like female structures (carpogonial branch systems, *cbs*) in the cortex with dense contents bearing ***single*** threads (carpogonia)
- ***scattered*** tetrasporangia divided in a cross (***cruciate***) pattern

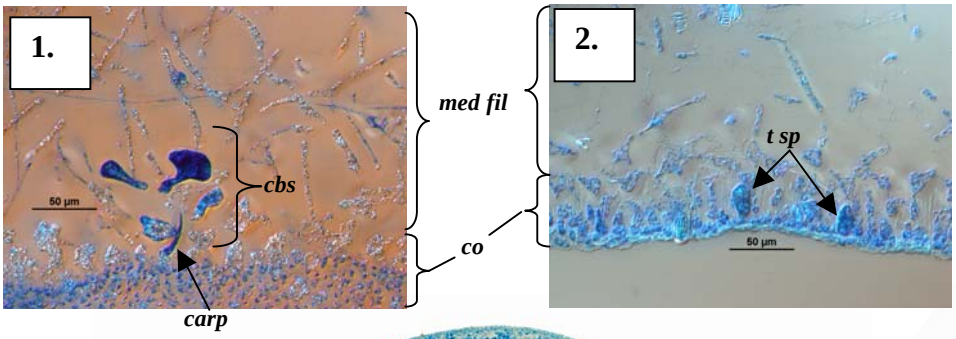
Similar Species

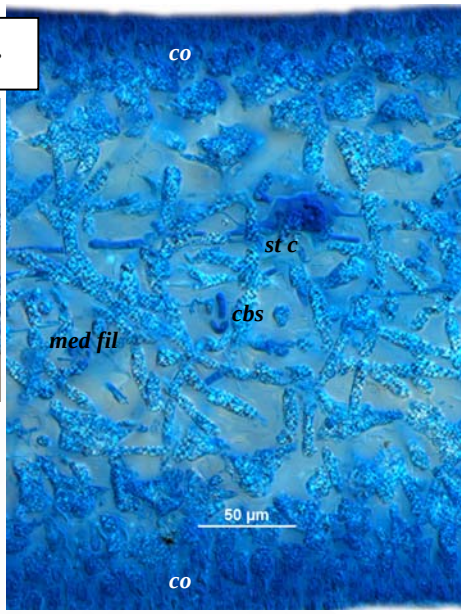

Diagnosis can be difficult

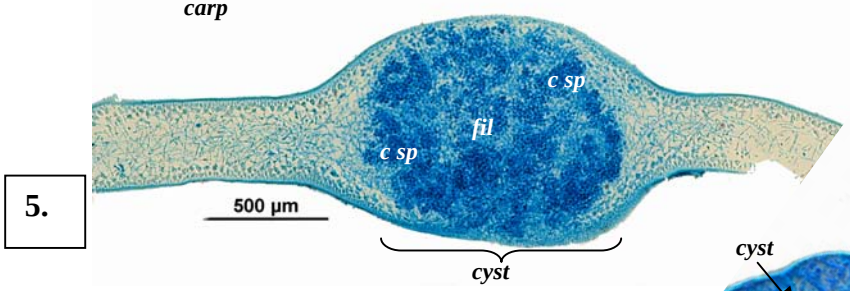
Kallymenia rubra also with single carpogonium per cbs but that species has separate female reproductive (auxiliary cell) systems that receive the fertilized nucleus, the core of threads is more compact and blade lobes do not overlap. Highly lobed *K. tasmanica* may also resemble *Thamnophyllis laciniata.*

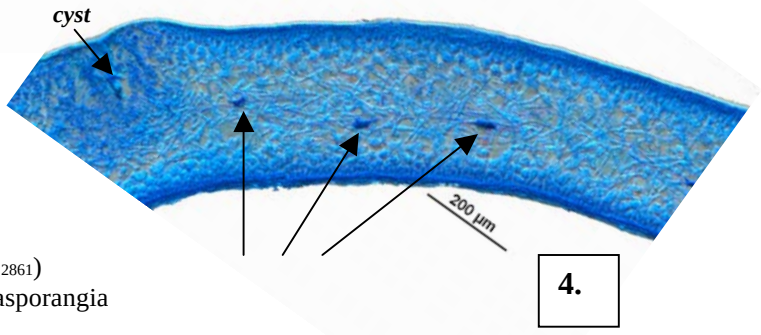
Description in the Benthic Flora Part IIIA, pages 232, 234-236

Details of Anatomy









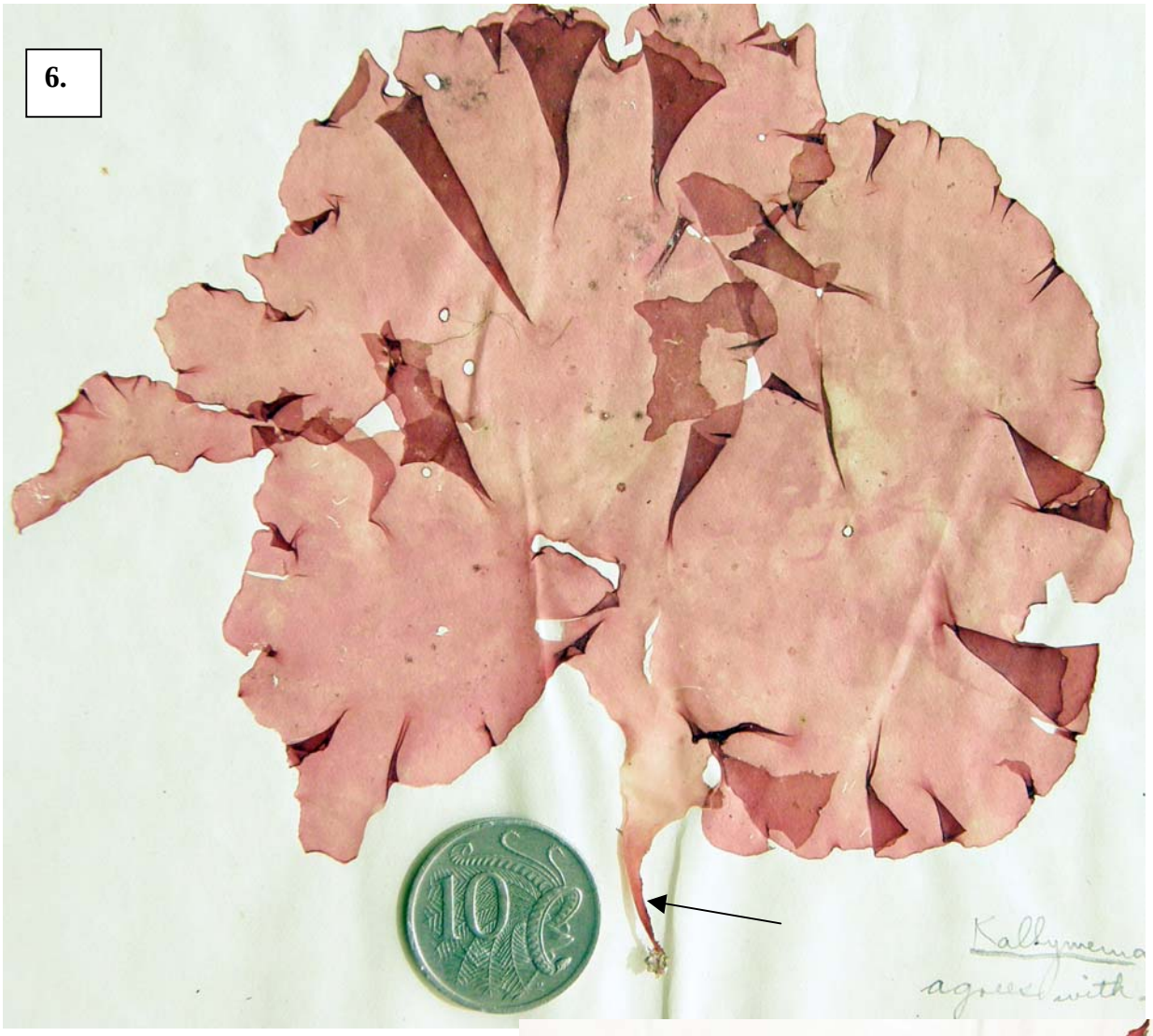
Kallymenia tasmanica stained blue and viewed microscopically

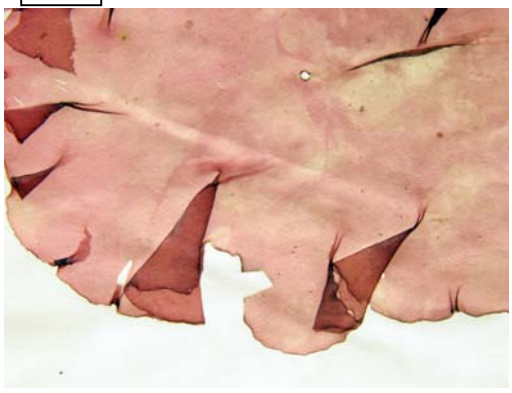
1. a partial cross section showing several layers of outer cells (cortex, *co*), loose threads of the core (medulla filaments, *med fil*) and a young female structure (carpogonial branch system, *cbs*) with a single thread-like carpogonium (*carp*) characteristic of the species (A34632 slide 2861)
2. a partial cross section through a sporangial plant with tetrasporangia (*t sp*) in the cortex (A34270 slide 2864)
3. a cross section with a central star-shaped cell (stellate cell, *st c*) and a developing cbs (A34362 slide 2861)
4. a cross section showing a string of stellate cells in the medulla (arrowed) and a female structure developing after fertilization (cystocarp, cyst) (A34362 slide 2861)
5. a cross section through a mature female structure (cystocarp, *cyst*) showing the patches of carposporangia (*c sp*) separated by threads (filaments, *fil*) (A33060 slide 2860)

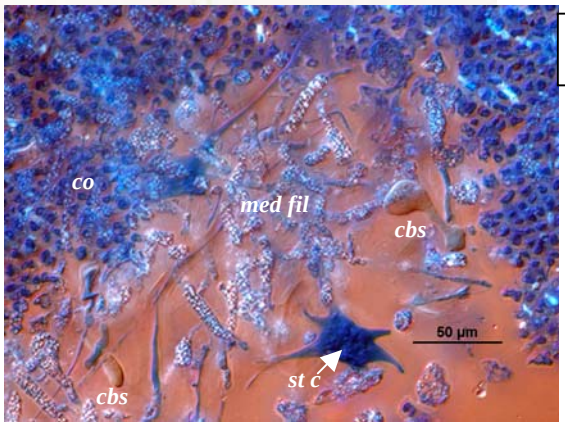
Descriptive names are inventions to aid identification, and are not commonly used.

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

Prepared April 2009







Different magnifications of *Kallymenia tasmanica* Harvey from S Australia

6, 7. from 50m deep, Gulf St Vincent (A16142) showing ruffled edges and the slender basal stalk (arrowed)

8. a drift plant from Port Elliott, with divided blades, points on the blade edge and basal stalk (arrowed) (A11122)

9. a tissue squash stained blue showing a mix of small outer cells (cortex, co) core (medulla) threads (*med* fil) with a densely stained stellate cell (*st* c) a and 2 developing carpogonial branch systems (cbs) (A34362 slide 2862)

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