Polycoelia laciniata C Agardh

45.320

Techniques needed and shape



squash

flat-bladed
to


Classification

Phylum: Rhodophyta; Order: Gigartinales; Family: Kallymeniaceae

*Descriptive name

§Gelatinous forkweed; variable gel sheets

Features


Plants can show considerable variation

plants dark red, 50-200mm tall, ***flat-branched***, ***variable*** in shape, attached by an, ***inconspicuous*** stalk, of ***leafy*** or narrow and irregularly ***forked*** blades, ***firm*** when fresh, adhering to paper when dried and tending to disintegrate when subsequently wet; branches gradually narrow to fringing tufts or narrow lobes, but may be lost leaving a broad blade with few, tattered fringing lobes

Occurrences

SW W Australia to Victoria and around Tasmania

Usual Habitat

on rough coasts. Narrowly branched forms may occur in deep (50m) water and broader bladed forms in shallow water

Special requirements


squash


make squashes of tissue of different plants under the microscope to find

- ***giant*** cells with thick, gelatinous walls in the core (medulla), cells fringed with fine, branched ***threads*** (filaments) ending in very ***small cells*** forming the outermost layers (cortex)
- in spore plants: scattered tetrasporangia divided in a cross (***cruciate***) pattern
- immature female structures, form numerous ,minute, radiating clusters of egg-shaped cells (auxiliary cell systems which receive the fertilized zygote nuclei) imbedded in the cortex; mature structures form large, rounded masses of carposporangia

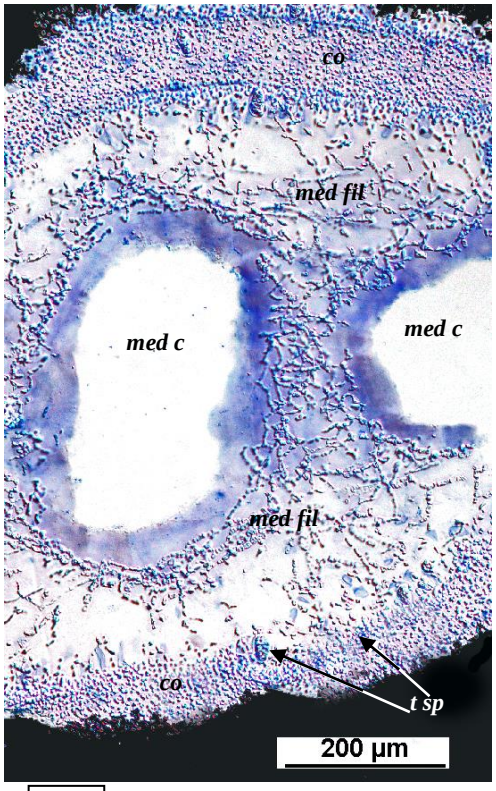
Similar Species

broad forms may look superficially like *Cirrulicarpus polycoelioides* but the giant medulla cells of *Polycoelia* are unique

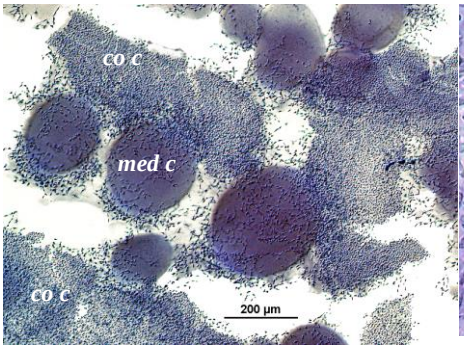
Description in the Benthic Flora

Part IIIA, pages 243-247

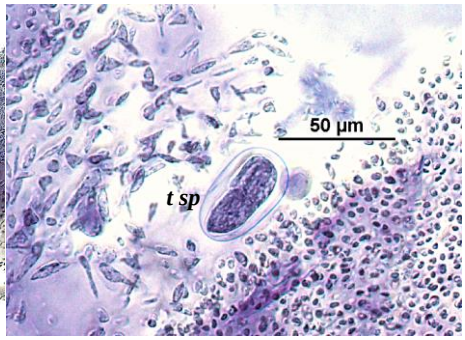
Details of Anatomy



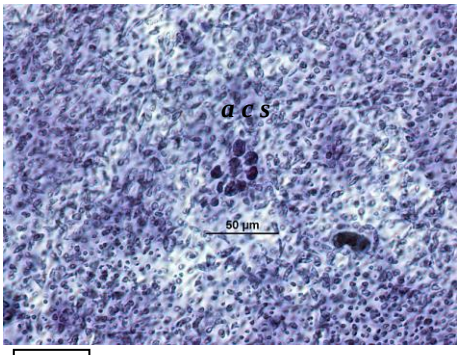
1.



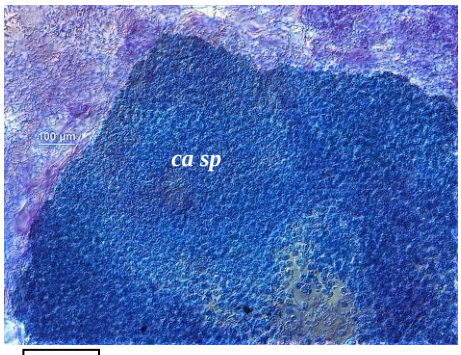
2.



3.



4.



5.

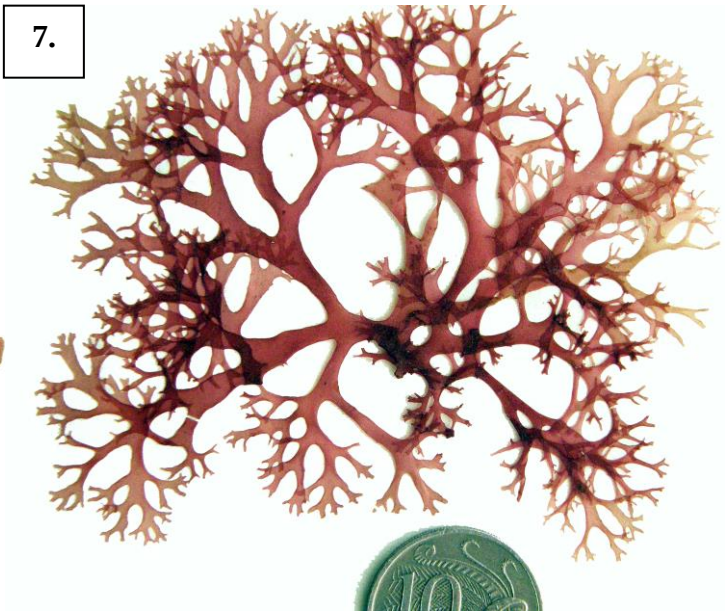
Polycoelia laciniata stained blue and viewed microscopically

1. cross section (of a sporangial plant): giant core cells (medullary cells, ***med c***) fringed with fine threads (***med fil***) ending in tiny outermost cells (cortical cells, ***co***); embedded tetrasporangia (***t sp***) (slide 0254)
2. tissue squash: giant core cells (***med c***), minute cortical cells (***co c***) (slide 0245)
3. tissue squash containing a tetrasporangium divided in a cross (cruciate) pattern (slide 0244)
4. immature female structure (auxiliary cell system, ***a c s***) of several , radiating egg-shaped cells (which receives the zygote nucleus after fertilization) (slide 0244)
5. tissue squash of part of a mature female structure (cystocarp) embedded in a blade: masses of carposporangia (***ca sp***) (slide 0243)

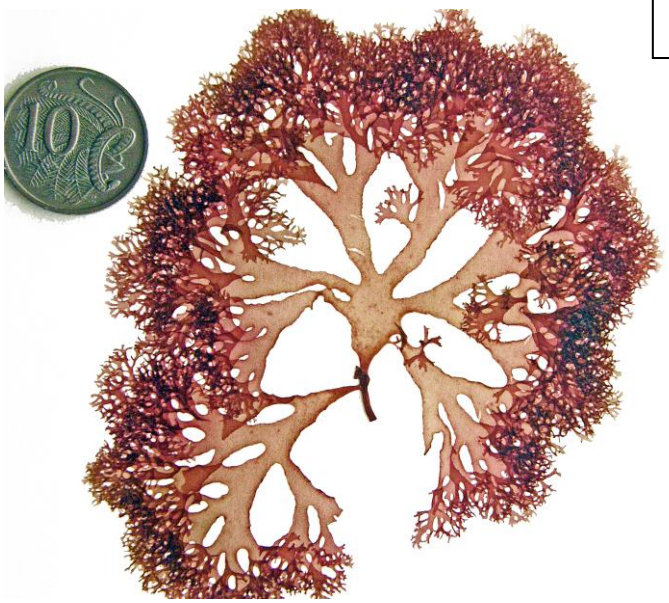
Descriptive names are inventions to aid identification, and are not commonly used.
§ name used in Edgar, G. *Australian Marine Life, 2nd Ed.* (2008)
"Algae revealed" R N Baldock State Herbarium S Australia, May 2009; revised March 2014

6.

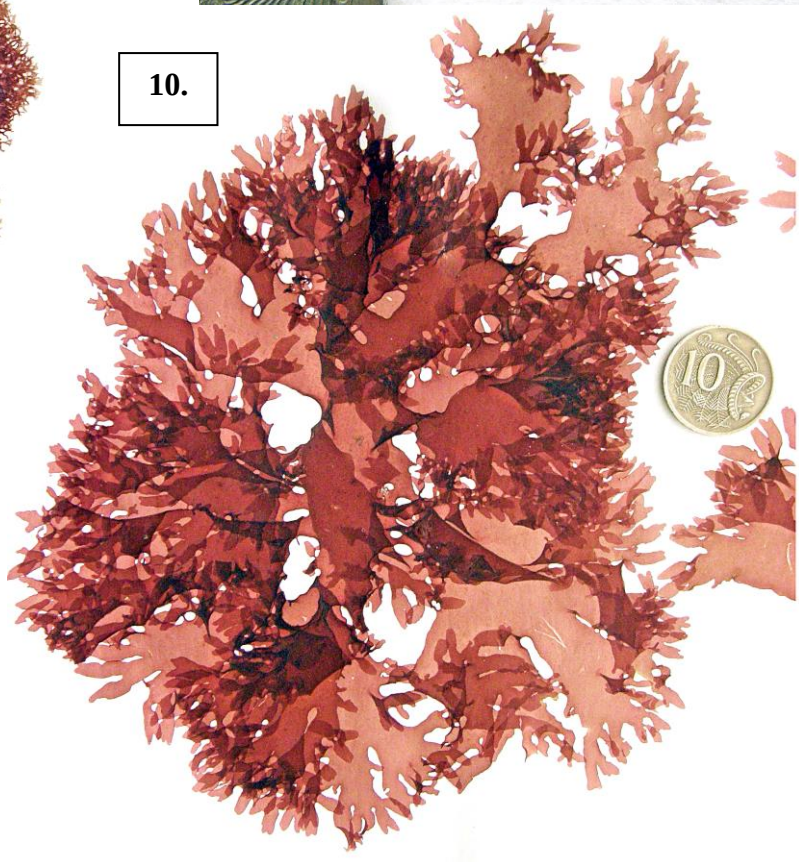
7.



8. **9.**



10.



Specimens of *Polycoelia laciniata* C Agardh, all from S Australia

6. drift plant from Port MacDonnell (A42386), with edges of the main blade denuded
7. narrow-bladed plant from 50m deep at Pearson I. (A33880)
8, 9. two magnifications of a drift plant from Point Avoid, Eyre peninsula: dense branch proliferation at blade tips (A46911)
10. drift plant with broader branch tips from Stinky Bay, Nora Creina (A68080).

Descriptive names are inventions to aid identification, and are not commonly used.
§ name used in Edgar, G. *Australian Marine Life, 2nd Ed.* (2008)
"Algae revealed" R N Baldock State Herbarium S Australia, May 2009; revised March 2014