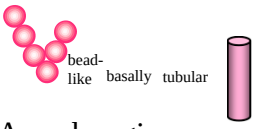
Erythroclonium muelleri
Sonder

45.440

Techniques needed and shape



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

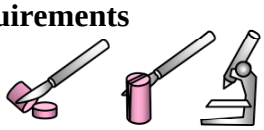
***Descriptive name** ringed bead weed

Features

1. plants are red to dark red, 50-220mm tall, with many main cylindrical, ***forked*** branches 1-2mm wide
2. smaller branches are ***egg-*** to ***club- shaped***, 3-5mm long in ***repeated rings*** from main branches, 2-4mm long and ending in ***single*** segments near plant tips

Occurrences from Geographe Bay, W Australia to Victoria and around Tasmania

Special requirements



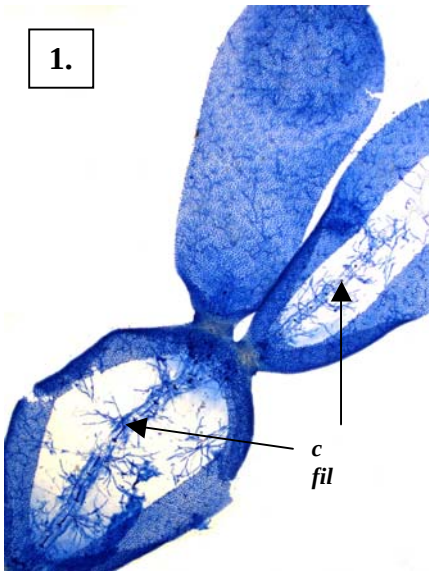
1. view the plant tips microscopically to find the rings of egg to club-shaped ***bead-like*** pieces and slice the outer layer of one piece lengthwise forming a window to find:
   - the ***single, wide*** central thread each cell of which produces 2 radiating ***much-branched*** threads crossing a central space
   - a "skin" layer of ***small***, equal-sided cells
2. if possible find the products of fertilisation in female plants (cystocarps), cut a cross section and view microscopically to find
   - a mass of carposporangia in the ***central*** core
   - a ***thin envelope*** of threads
   - a ***prominent*** fusion cell and ***stalk cell*** connected to the central core of filaments
3. if possible, view minute scattered spermatangia on surface layers of male plants
4. if possible, cut a cross section of a sporangial plant to find large, cigar-shaped tetrasporangia divided across (zonately) in the outer (cortex) layers

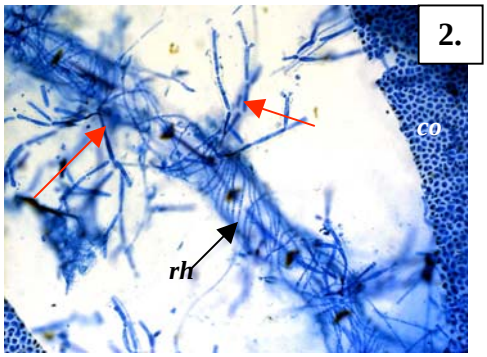
Usual Habitat on rock from shallow to deep water (23m)

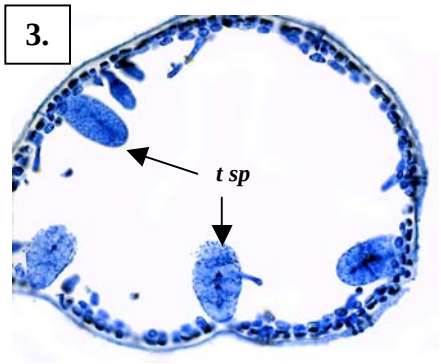
Similar Species ⚠ can be confused with *Rhabdonia verticillata*. The prominent, central, lengthwise thread through ***all*** segments of *Erythroclonium muelleri* should be found for a successful diagnosis

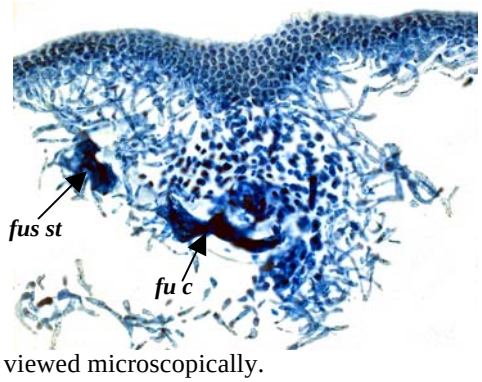
Description in the Benthic Flora Part IIIA, pages 351-353

Details of Anatomy

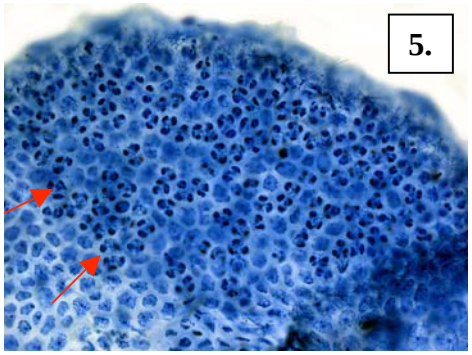








4.



Erythroclonium muelleri stained blue and viewed microscopically.

1. windows cut lengthwise to expose the prominent central filament (*c fil*) in the core (medulla) of segments (A6218 slide 3877)
2. detail of the chain of cells in a central filament each producing branching, radiating threads (arrowed) and wrapped in spirally wound rhizoids (*rh*), with a piece of outer layer (cortex, *co*) turned over showing a surface view of cells (A6218 slide3877)
3. a cross section of a sporangial plant, showing large, zonately divided tetrasporangia (*t sp*) in the cortex (A6218 slide 3886)
4. a cross section of a female plant showing detail of a cystocarp (slightly squashed) loosely surrounded by core (medulla) threads, with prominent fusion stalk (*fus st*) (slightly displaced) attaching the fusion cell (*fus c*) to medulla filaments (A35946 slide 3879)
5. surface view of a male plant with groups of 3-4 deeply staining cells that produce spermatangia (two arrowed) (A39122 slide 3878).

* Descriptive names are inventions to aid identification, and are not commonly used
"Algae Revealed" R N Baldock, S Australian State Herbarium, February 2008

Pressed specimens of *Erythroclonium muelleri* Sonder.

6. 7. two views of a specimen from Elliston Bay, S Australia, 10-11m deep, on limestone (A 35024)

8. detail of a specimen with large segments, from Waldegrave I., S Australia, 22m deep (A 37416)

9. detail of a specimen showing the colour change and shrinkage possible during pressing (A 72363)

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