Erythroclonium muelleri
Sonder

Techniques needed and shape

Classification
*Descriptive name
Features

Phylum: Rhodophyta; Order: Gigartinales; Family: Areschougiaceae
ringed bead weed

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 spermangia 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

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 slide 3877)
3. a cross section of a sporangial plant, showing large, zonately divided tetrasporangia (t sp) in the cortex (A6218 slide 3888)
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 spermangia (two arrowed) (A39122 slide 3878).

Erythroclonium muelleri stained blue and viewed microscopically.

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

“Algae Revealed” R N Baldock, S Australian State Herbarium, February 2008
* 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 72563)