

Rhodophyllis membranacea
(Harvey) Hooker & Harvey ex Harvey

45.540

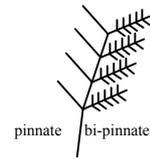
Techniques needed and shape



MACRO PLANT



flat-bladed



pinnate
bi-pinnate

Classification

Phylum: Rhodophyta; Order: Gigartinales; Family: Cystocloniaceae

***Descriptive name**

Features

1. plants are pale red or grey-brown, 100-150mm tall, of soft, thin and flat-branched
2. lower fronds are up to **20mm broad**, side branches flat-branched (pinnate), and only **4mm broad** with rounded or pointed tips

Occurrences

West Coast, S Australia to southern NSW and around Tasmania

Usual Habitat

on rock in deep water; sharpness of branch tips may depend on rough water

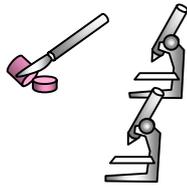
Similar Species

superficially similar to several foliose algae such as the Delesseriaceae

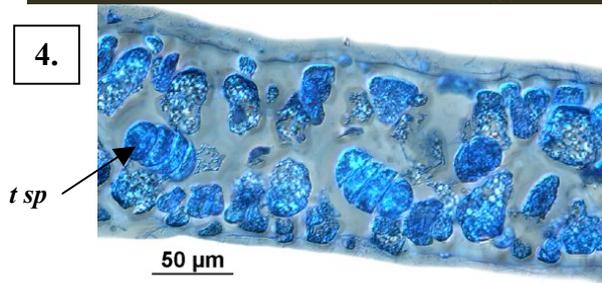
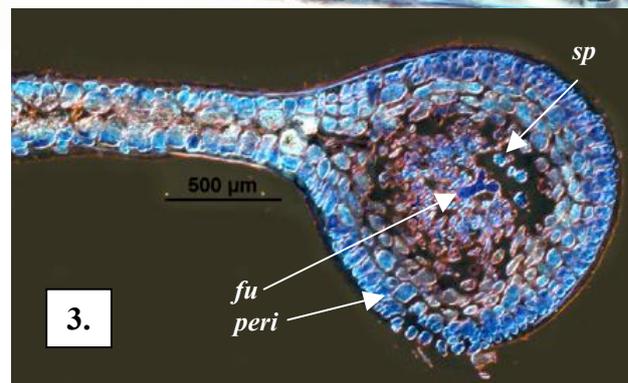
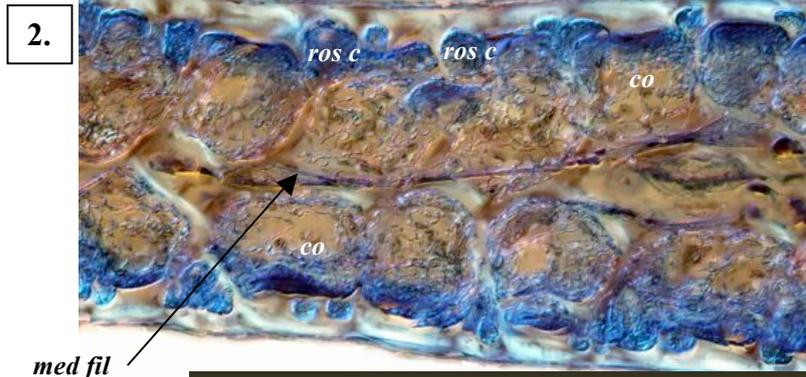
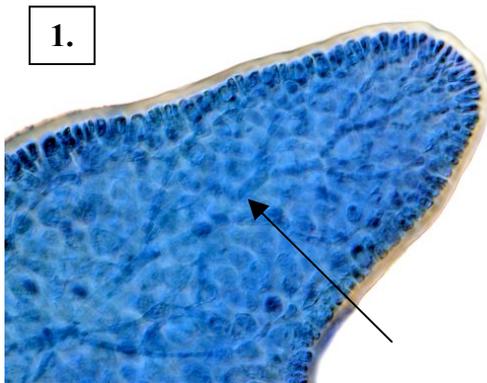
Description in the Benthic Flora Part IIIA, pages 411-416

Special Requirements

1. view the surface microscopically to see small cells ringing larger ones (**rosettes**), bright, **gland cells** and **single**, branching central threads (**uniaxial**) near branch tips
2. cut a slice of a main branch and view microscopically to find:
 - the obscure core (medulla) of **single threads**
 - outer (cortex) layers of **single** rows of **large spherical** cells; with smaller ones (of the rosettes) appearing **jammed between** them, and small, bright gland cells
3. if possible find female plants with spherical swellings at **edges** of branches, cut a section through these and view microscopically to find
 - a central large cell formed from fusions of several cells
 - radiating **chains** of sporangia
 - a **distinct wall** of cells (pericarp) but **no** opening (ostiole)
4. if possible, cut cross sections of sporangial plants to find the **large**, tetrasporangia (**zonate**) **scattered** in the cortex, and divided across into four (**zonate**)



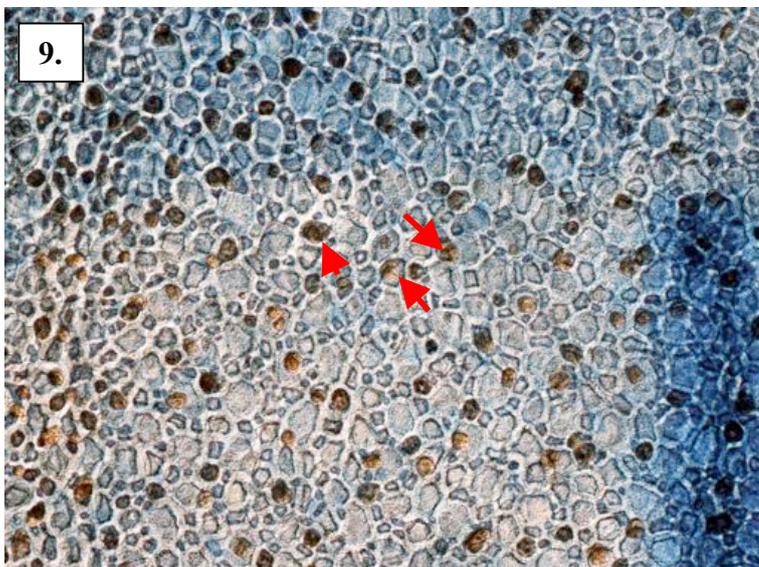
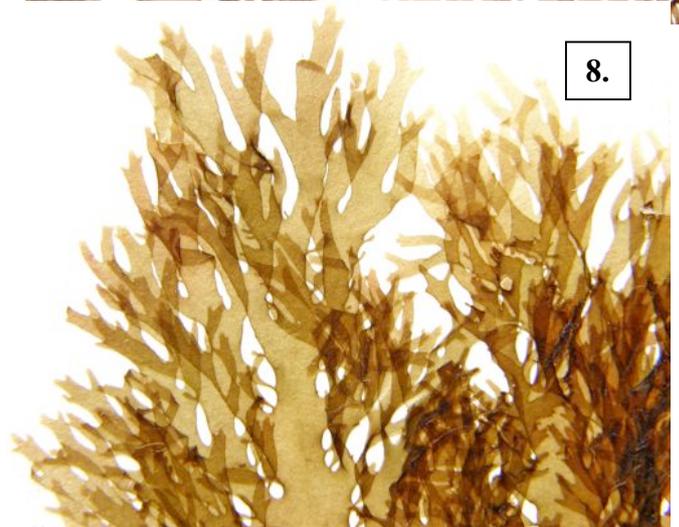
Details of Anatomy



Cross sections of *Rhodophyllis membranacea* stained blue and viewed by interference microscopy to contrast cell details:

1. a frond tip with the tree-like central thread (arrowed) (A30144 slide 13110)
2. a section of a frond showing the obscure core thread (medullary filament, *med fil*) and outer (cortex) layers of large cells (*co*) with smaller cells (*ros c*, forming a rosette in surface view) jammed in between (A41524 slide 13114)
3. a section through a female structure (cystocarp, *cy's*) found at the edge of a frond showing the cellular wall (pericarp, *peri*) central fusion cell (*fu*) and (scattered) sporangia, *sp*) (A41524 slide 13114)
4. section through a sporangial plant with large tetrasporangia (*t sp*) divided across (zonate) (A41524 slide 13113)

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



- 5-8. Specimens of *Rhodophyllis membranacea* (Harvey) Hooker & Harvey *ex* Harvey at different enlargements to show branching pattern and colour variation
- 5, 6. from Toad Head, West I., S Australia, 24m deep (A32878)
- 7, 8. from 1300m off Cape Northumberland, S Australia, 15m deep (A55168)
9. a specimen stained blue and viewed microscopically in surface view showing cell patterns (rosettes) and gland cells (arrowed) (A29864 slide 3894)