

Techniques needed and shape



MACRO  
PLANT



Classification

Phylum: Rhodophyta; Order: Gigartinales; Family: Halymeniaceae  
red forked blades

\*Descriptive name

Features

1. plants are dark red-brown, 40-250mm long, of **flat-branched**, alternately **forked** blades 2-5mm wide
2. in some plants, blades may be
3. denuded back to a thickened midrib at the base  
some sponge may grow on plant bases

Occurrences

Usual Habitat

Similar Species

Geraldton W Australia to Victoria and Tasmania

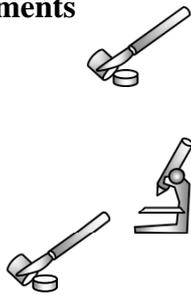
on rough coasts from shallow water in shade to deep water (38m)

*Rhodymenia australis*, but that species has a core of large equal-sided cells.

*Carpopeltis elata* has narrow blades and often longer, denuded basal branches

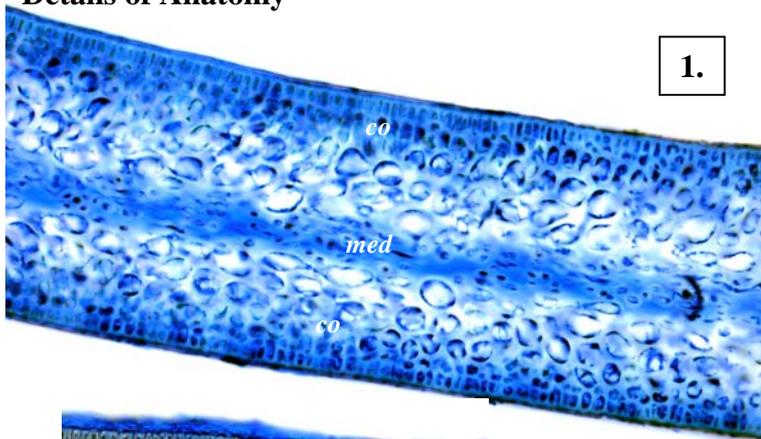
Description in the Benthic Flora Part IIIA, pages 169-171, 173

Special Requirements



1. cut a cross section of a branch and view microscopically:
  - the **firm** outer layer (cortex) of equal-sided cells, inner ones large, outer small
  - a **narrow** core (medulla) of **densely entwined** threads
2. cut a section of the swollen ends of branches (products of fertilisation - cystocarps)
  - at first, small, flask-shaped spaces (auxiliary cell ampullae) enveloped by threads, form in the inner cortex
  - the envelopes become prominent, and a dense mass of carposporangia form inside, escaping through a small opening (ostiole)
3. find sporangial plants with patches (nemathecia) of spores in branch tips and cut a cross section revealing small elongate tetrasporangia divided in a cross (cruciate) pattern, lying between the short threads (paraphyses) in the cortex

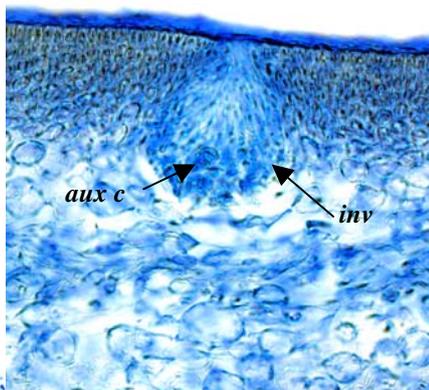
Details of Anatomy



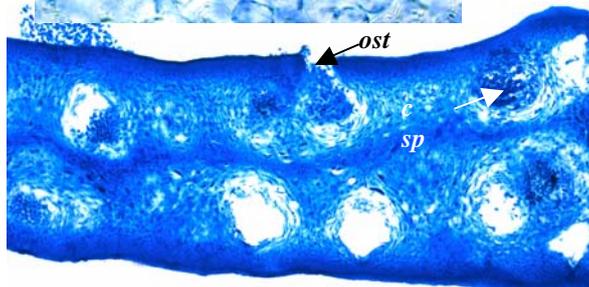
1.

Cross sections of *Carpopeltis phyllophora* stained blue and viewed microscopically:

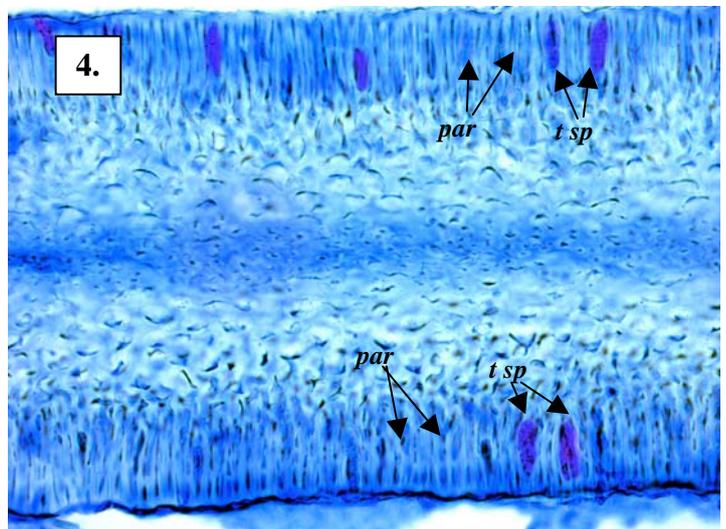
1. showing the relatively narrow core (medulla, *med*) of tightly packed threads, and outer layer (cortex, *co*) of inner large and outer small equal-sided cells (A 26462 slide 11780)
2. part of a frond with a flask-shaped space (ampulla) lying in the cortex, containing a dividing auxiliary cell (*aux c*) enveloped by threads (involucre, *inv*) (A 55120 slide 11875)
3. mature ampullae (some empty) forming cystocarp extending to the medulla, with masses of carposporangia (*c sp*) released through a small ostiole (*ost*) (A21115 slide 11781)
4. a sporangial plant with elongate tetrasporangia (*t sp*) in the outer cortex, lying amongst short hairs (paraphyses, *par*) (A1763 slide 11865)



2.



3.



4.

\* Descriptive names are inventions to aid identification, and are not commonly used  
Prepared June 2008



5, 6. Drift plants of *Carpopeltis phyllophora* (Hooker & Harvey) Schmitz.  
 5. A10652, from Vivonne Bay, Kangaroo I., S Australia, with a thickened mid-rib arrowed  
 6. detail of the base of A21115 from Port Elliott, S Australia, showing encrustations of sponge