Craspedocarpus ramentaceus
(C Agardh) Min-Thein & Womersley

45.540

Techniques needed and shape

MACRO PLANT

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

***Descriptive name** small filmy forked fronds

Features

1. plants are red or fading to grey-red, 100-200mm tall, soft, ***thin*** and ***flat-branched***
2. fronds are up to ***20mm*** wide, ***irregularly*** branched tapering to 1-2mm wide
3. fronds are fringed with ***prominent*** pointed proliferations up to 5mm long, 1mm wide

Occurrences Safety Bay, W Australia to Victoria and around Tasmania

Usual Habitat a deep water species (38m) on open coasts with strong water movement

Similar Species members of the Delesseriaceae ("filmy reds") for example *Hemineura frondosa*, but differing in the presence of cell rings (rosettes) in surface view. Differing in female reproductive features from *Rhodophyllis*

Description in the Benthic Flora Part IIIA, pages 424-427

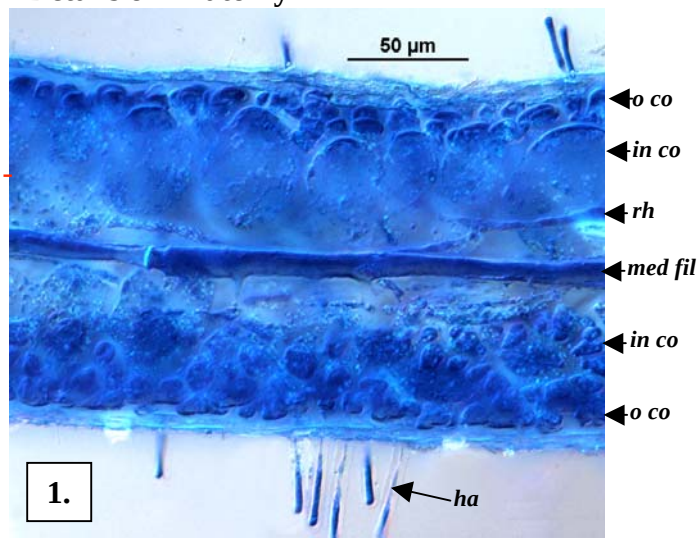
Special Requirements

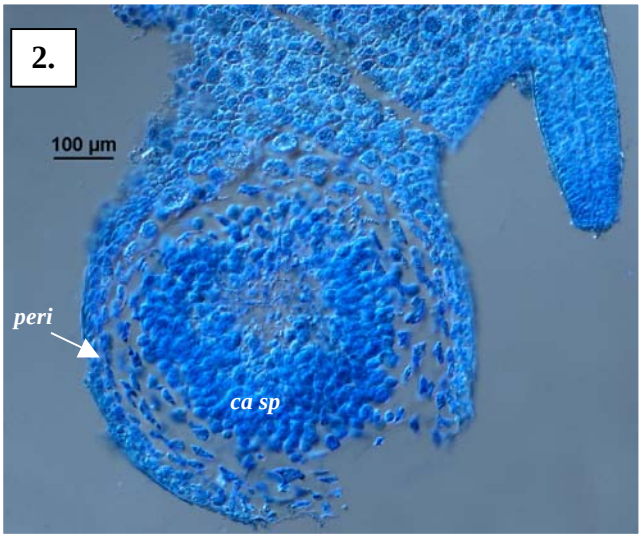
1. view microscopically the frond tips in surface view to see
   - the ***pointed*** tip of fronds
   - central, flat-branched (pinnate) threads ("***veins***") (best seen when stained blue)
   - ***prominent*** rings (***rosettes***) of small cells ringing larger ones
2. cut a slice of a main frond and view microscopically to find:
   - the core (medulla) of a single prominent thread loosely wrapped in thin rhizoids
   - obvious outer (cortex) layers of inner ***large spherical*** cells and ***smaller, outer ones*** (forming 2-3 concentric rings or rosettes in surface view), ***no*** bright (gland) cells) but short, extremely fine ***hairs*** jut out from the surface

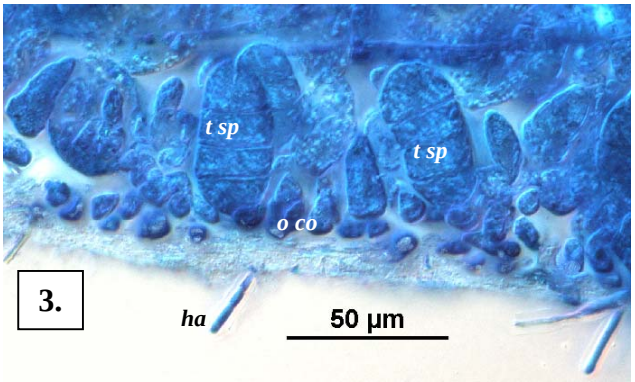
3. if possible find female plants with spherical swellings ***protruding*** from the ***edges*** of the fringing proliferations, cut a section through these and view microscopically to find
   - central masses of cells and ***chains*** of sporangia spreading outwards
   - a ***distinct wall*** of cells (pericarp) but ***no*** opening (ostiole)

4. if possible, find ***large***, tetrasporangia ***scattered*** in the cortex of fringing proliferations, and divided across into four sporangia (***zonate***)

Details of Anatomy



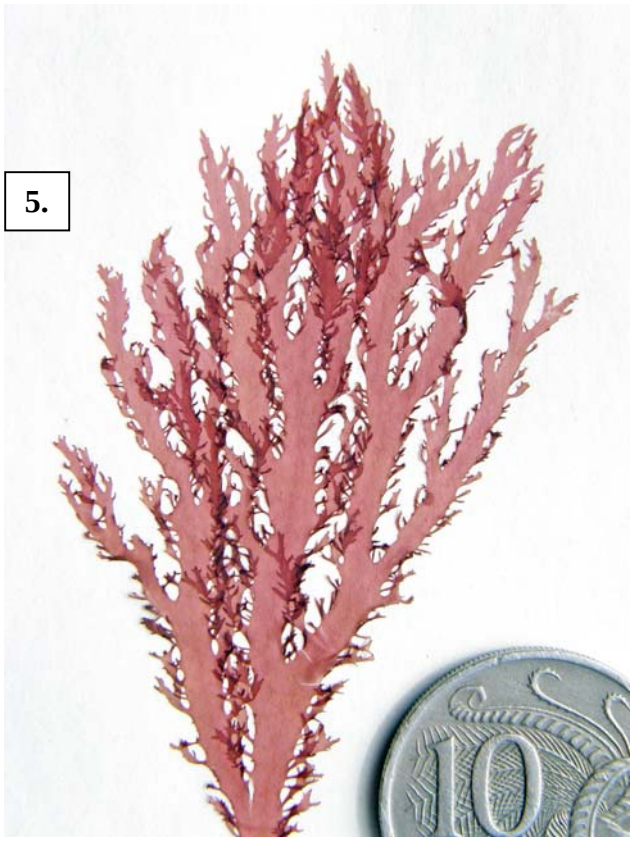


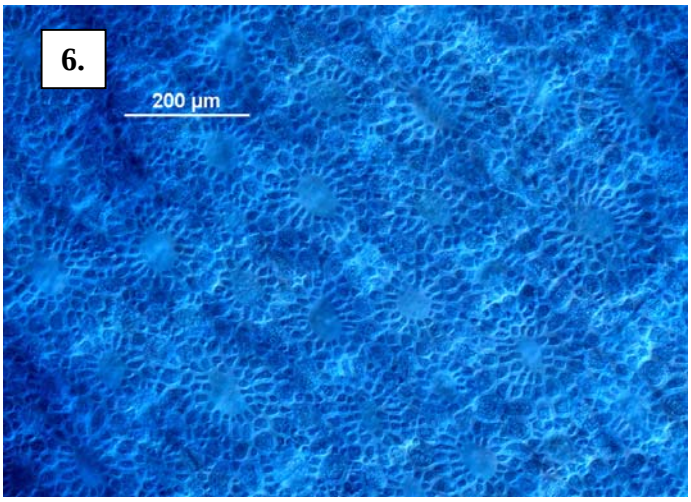


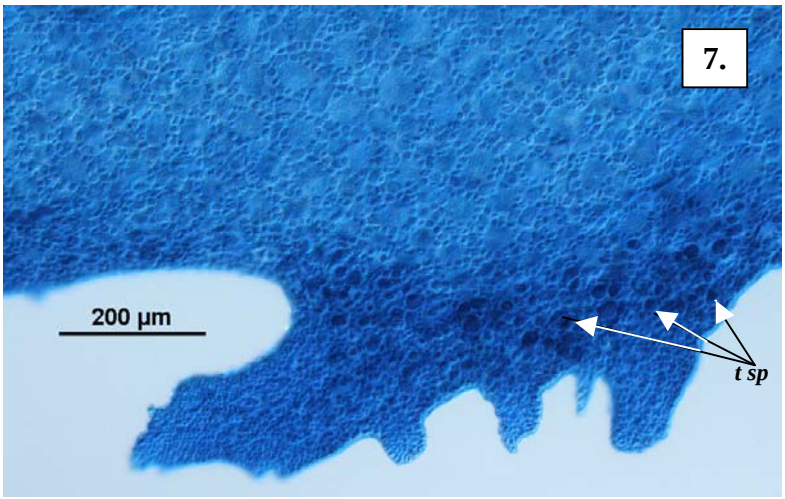
Cross sections of *Craspedocarpus ramentaceus* stained blue and viewed with interference microscopy showing:

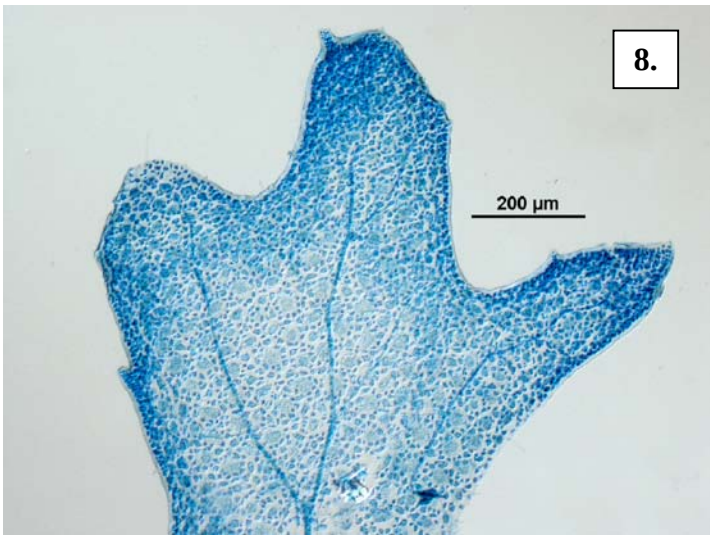
1. a prominent core thread (medullary filament, *med fil*) loosely wrapped in fine rhizoids (*rh*); outer layers of inner large cells (inner cortex, *in co*), outer small cells (outer cortex, *o* co, forming the rosettes seen in surface view) and fine surface hairs (*ha*) (A 37770 slide 4831)
2. a female cystocarp (with partly broken edge) showing the cellular wall (pericarp, *peri*) and radiating chains of carposporangia (*ca sp*) (A 37770 slide 4829)
3. tetrasporangia dividing across into four in a portion of the cortex (A 37770 slide 4831)

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









4, 5. Two views of specimens of *Craspedocarpus ramentaceus* (C Agardh) Min-Thein & Womersley, 15m deep, 1300m off Cape Northumberland, South Australia showing the prominent fringing protuberances

6-8. surfaces of specimens stained blue and viewed with interference microscopy to highlight cell details.

6. prominent rings (rosettes) of cortical cells (A 33245 slide 13182)
7. fringing protuberances with embedded tetrasporangia (*t* sp) (A 37770 slide 4831)
8. a tip of a frond with prominent, branched core threads (A37770 slide 4826)

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