

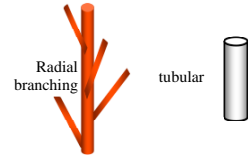
***Mychodea gracilaria***  
(Sonder) Kraft

45.600

Techniques needed and shape



MACRO  
PLANT



Classification  
\*Descriptive name

Phylum: Rhodophyta; Order: Gigartinales; Family: Mychodeaceae  
sea grass Mychodea

Features



1. plants 100-250mm tall grow *on sea grasses*, and sea squirts
2. they are red to yellow-brown, irregularly branched on all sides and dry gristly
2. side branches are cylindrical, **wide** at the base and taper to a point
3. female structures (cystocarps) form swellings **along** the length of side branches

Occurrences

Rottneest I., W Australia to Victoria and northern Tasmania

Usual Habitat

on sea grasses (mainly *Amphibolis*) and some sea squirts

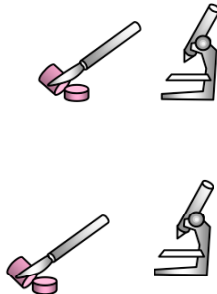
Similar Species

*Mychodea carnosa* but in that species side branches are narrow at the **base** and cystocarp swellings are near the **tips** of branches

Description in the Benthic Flora

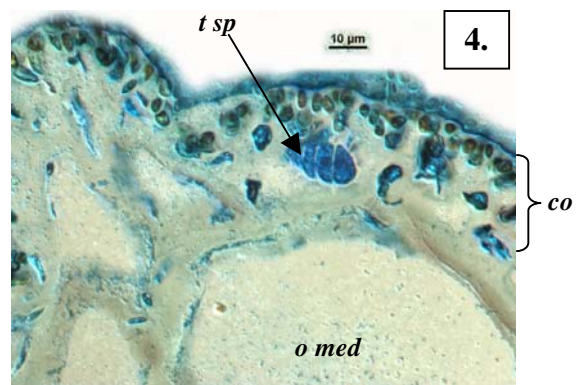
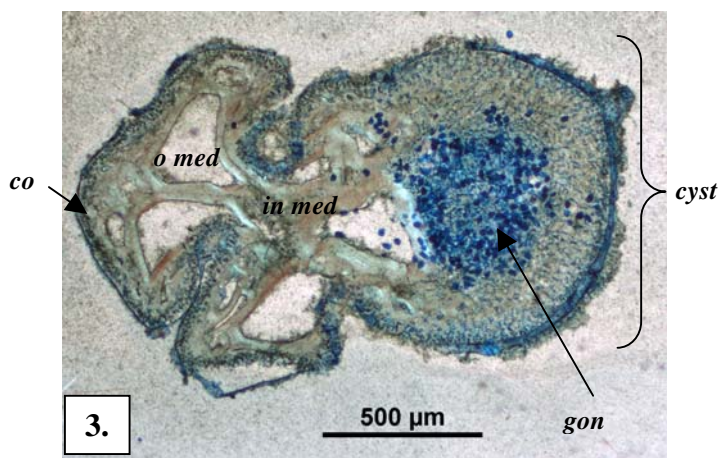
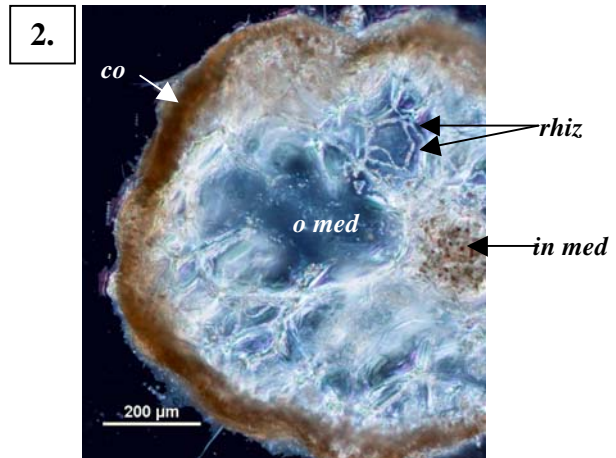
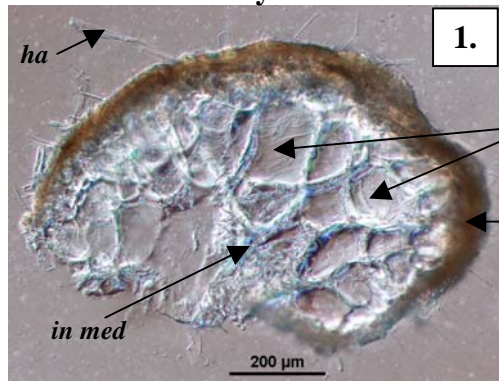
Part IIIA, pages 452, 454-456

Special Requirements



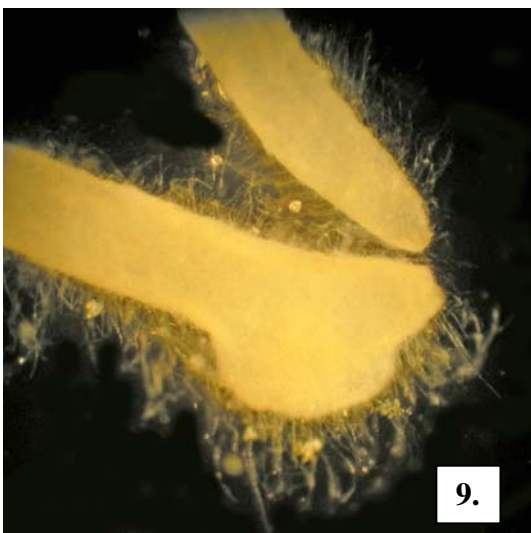
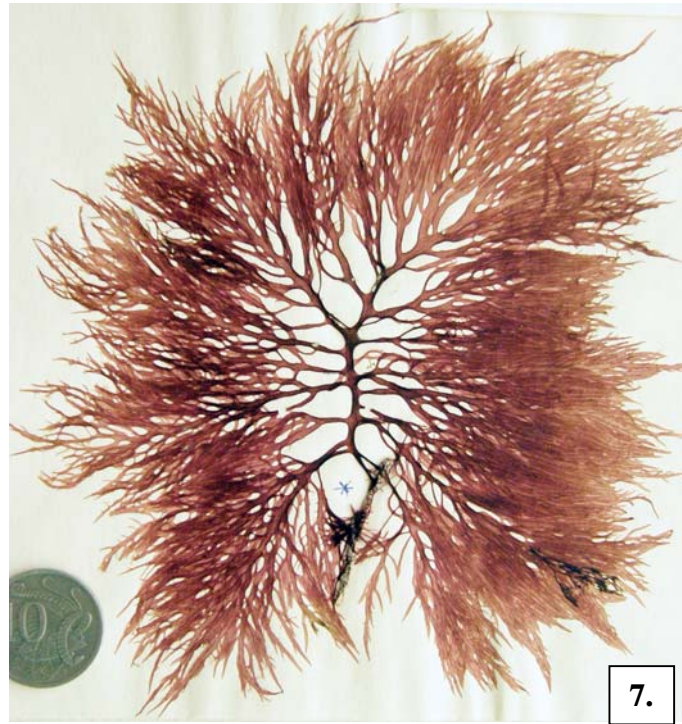
1. cut a cross section of a branch and view microscopically to find:
  - the innermost part of the core (medulla) originally with a single central thread, becoming indistinguishable because of additional surrounding rhizoids
  - **large** cells, sometimes **few** in number, in the outer part of the core
  - outermost (cortex) layers of very **small** cells in 2-3 rows, facing outwards, **not** forming rings in surface view, and numerous **surface hairs**
3. find female structures (cystocarps), forming swellings on **one side** of side branches **along** their length. Cut a cross section if possible to view:
  - central **chains** of spores
  - only a slight envelope of threads, and no opening (ostiole)
4. if possible, find sporangial plants with cigar-shaped tetrasporangia **scattered** near the surface, **between** cortex cells, divided across into four sporangia (**zonate**)

Details of Anatomy



- 1, 2. Thick (hand cut) cross sections *Mychodea gracilaria* (A 38245) viewed microscopically, showing the mass of threads and rhizoids in the innermost part of the core (inner medulla, *in med*), some (*rhiz*) radiating out around the large cells of the outer medulla (*o med*), dense outer layers (cortex, *co*) of small cells and surface hairs (*ha*)
- 3, 4. Cross sections stained blue and viewed microscopically: 3. a section through a cystocarp (*cyst*) with central mass of gonimoblast (*gon*) (A 44688 slide 3708) 4. an outer portion of a sporangial plant with a tetrasporangium (*t sp*) (A 54612 slide 3709)





*Mychodea gracilaria* (Sonder) Kraft

5, 6. two magnifications of a drift female plant (A1622) from Somerton Beach, S Australia showing the branching pattern and knobby appearance of side branches bearing cystocarps on one side

7. a redder plant from Rottnest I., W Australia (A44686)

8, 9. top lit, preserved, bleached specimens (A38245) from Tiparra Reef, S Australia, showing crooked branching pattern due to cystocarps on one side of branches, and surface coating of fine hairs

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