

Techniques needed and shape



MACRO
PLANT



Classification
*Descriptive name

Phylum: Rhodophyta; Order: Gigartinales; Family: Mychodeaceae
comb Mychodea

Features



1. plants are dark red-brown, relatively large, 200-450mm tall, **flat-branched** and gristly
2. main branches (axes) are **slightly compressed** and 1-4mm wide
3. **straight**, pointed side-branches arise at **right angles** from axis edges in **2 rows**
4. female structures (cystocarps) form swellings **near branch tips**

Occurrences

SW W Australia to Victoria and around Tasmania

Usual Habitat

a deep, rough water species, on rocks, sea grass (*Amphibolis*) and algae

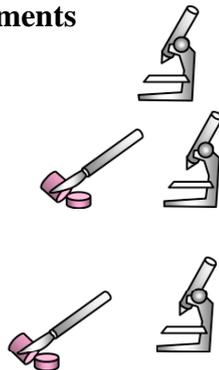
Similar Species

Mychodea hamata but that species has hooked tendrils

Description in the Benthic Flora

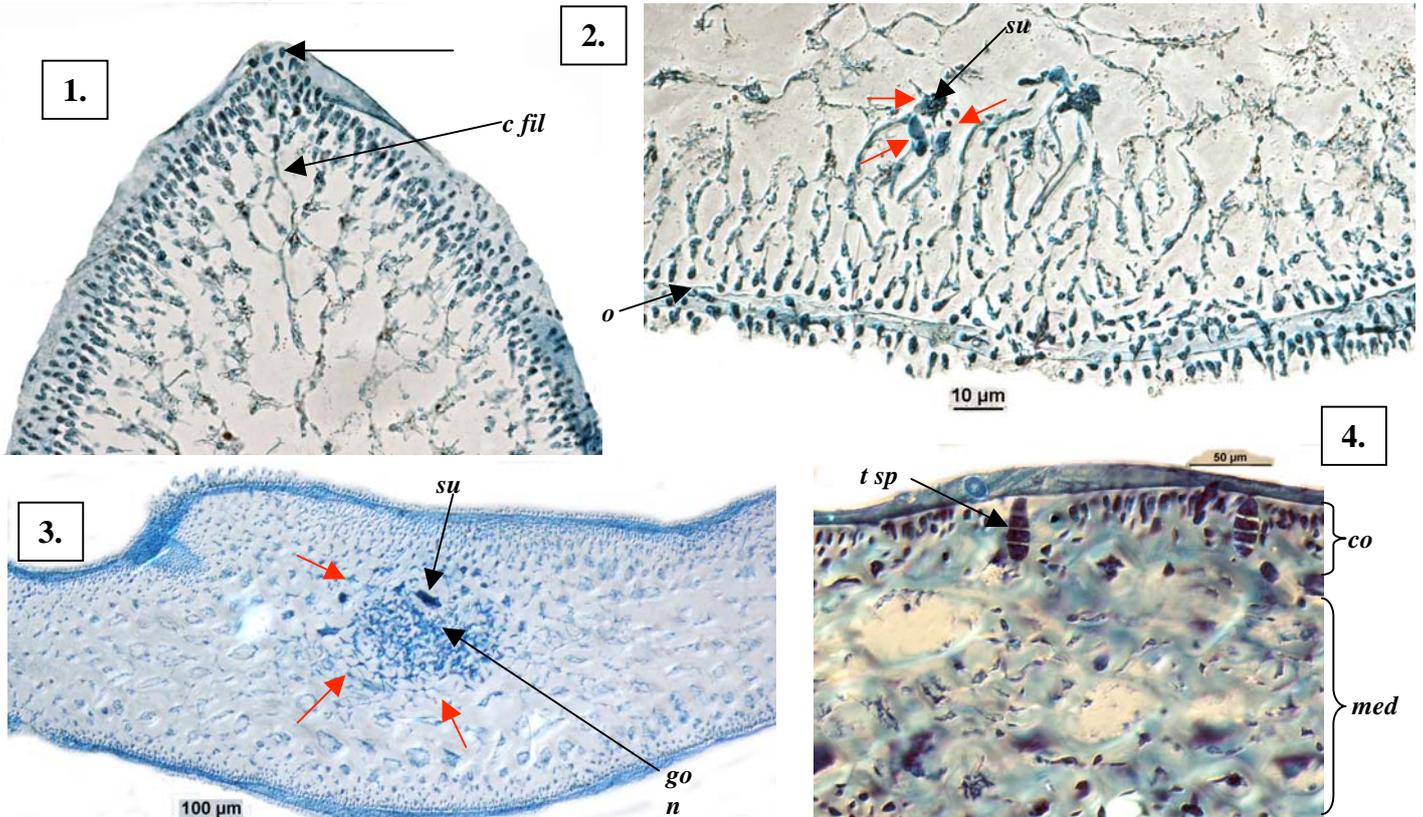
Part IIIA, pages 457-460

Special Requirements



1. view a branch tip microscopically. Find the small but prominent **single** apical cell and obscure **central thread** running lengthwise
2. cut a cross section of a branch and view microscopically to find:
 - the core (medulla) with a single central thread innermost, becoming indistinguishable because of additional surrounding rhizoids
 - **large** cells in the outer part of the core
 - outermost (cortex) layers of very **small** cells in 2-3 rows, facing outwards
3. find female structures (cystocarps), forming swellings **equally** on both sides of side branches near their **ends**. Cut a cross section if possible to view:
 - central **clusters** of spores
 - only a slight envelope of threads
4. if possible, find sporangial plants with cigar-shaped tetrasporangia **scattered** near the surface, divided across into four sporangia (**zonate**)

Details of Anatomy

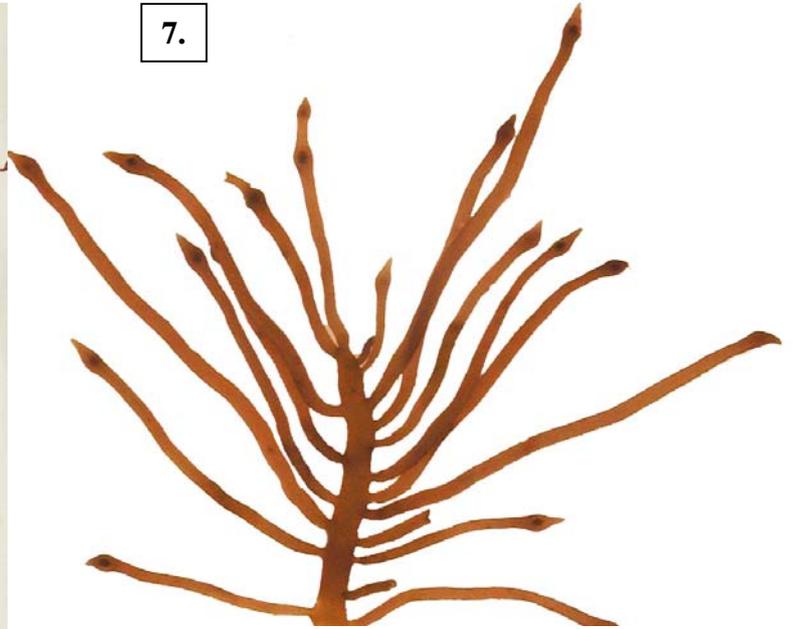


Mychodea disticha stained blue and viewed microscopically

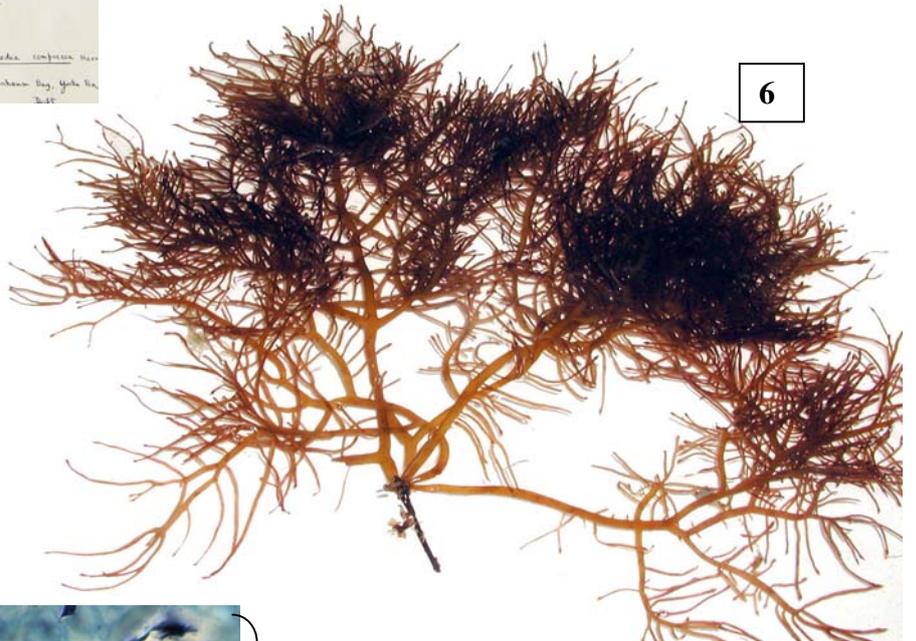
1. a squash of a pointed tip with a single apical cell (arrowed) and central thread in the core (*c fil*) (A45012 slide 3730)
2. a squash of the outer layers (cortex, *co*) with developing female structures (procarp) consisting of a darkly staining supporting cell (*su*) with several 3-celled carpogonial branches attached (arrowed) (A45012 slide 3730)
3. a section through a female structure (cystocarp) with prominent basal cell (*bas c*), inwardly growing threads (gonimoblast, *gon*) and weakly developed envelope of threads (arrowed) (A45012 slide 3731)
4. part of a cross section with 2 tetrasporangia (*t sp*) in the cortex (*co*) above large cells of the core (medulla, *med*) (A45012 slide 3733)



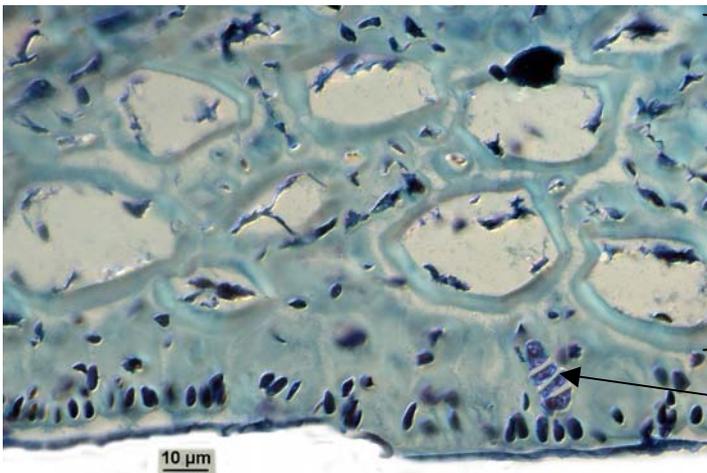
7.



6



8.



med

t sp

- 5-7. Specimens of *Mychodea disticha* Harvey
 5. a drift plant from Stenhouse Bay, Yorke Peninsula, S Australia (A13184) (A45012 sl3733 t sect t sp copy
 6, 7 two magnifications of a drift plant from Goolwa, S Australia showing the characteristic outspread side branches with swollen cystocarps near the tips
 8. a portion of a cross section stained blue and viewed microscopically showing single tetrasporangium (*t sp*)

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