

Gloiocladia australis (J Agardh)

R E Norris (as *G australe* in the Flora)

45.660

Techniques needed and plant shape



MACRO
PLANT



Classification

*Descriptive name

Features

Phylum: Rhodophyta; Order: Rhodymeniales; Family: Rhodymeniaceae
slimy reds

1. plants dark red, fading to grey-red, 200-400 mm tall, soft, *slimy*, flat-branched
 2. main branches *flat*, 6-10mm wide, branched along edges (*pinnate*) several times over, also with simple branchlets. Some ultimate branchlets ending in small *adhesive knobs*
 3. mature female structures (cystocarps), if present, mainly marginal, with **2-4 horns**
- just N of Perth, W Australia to Victoria and N coast of Tasmania
usually in deep water (to 15m) on seagrasses

Occurrences

Usual Habitat

Special requirements



1. cut cross sections of blades and examine microscopically to find
 - narrow outer (cortical) layers of *loose*, branched *chains* of small cells facing outwards, sometimes with additional hairs
 - inner layer (medulla) of **3-5 rows** of large cells of irregular size, often with thin threads between cells
2. cut sections of pustulate mature female structures (cystocarps) bearing 2-4 small horns protruding from blade edges to find loosely arranged chains of small cells forming a wall (pericarp), single external opening (ostiole), mass of carposporangia wrapped in *spidery threads* and a small group of basal nutritive cells basally
3. scattered sporangia, divided decussately (also? in a cross pattern - cruciate?)



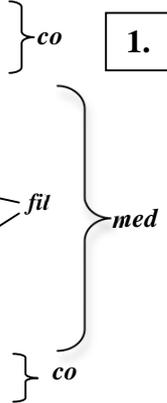
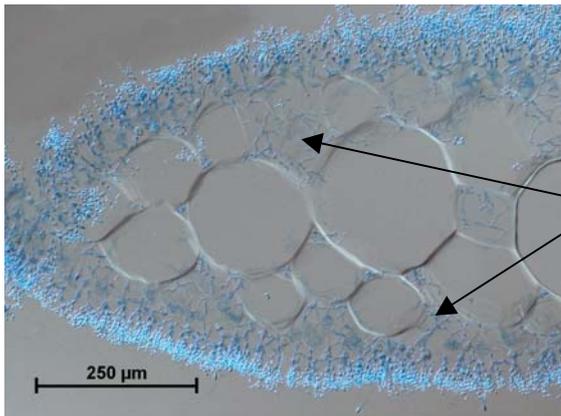
decussate

Similar Species

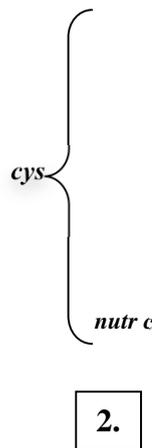
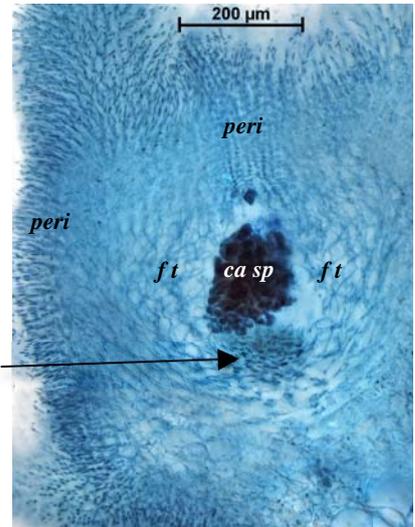
Gloiocladia halymenioides but that is usually on rock, is more regularly pinnate and has no adhesive pads on ultimate branches

Description in the Benthic Flora

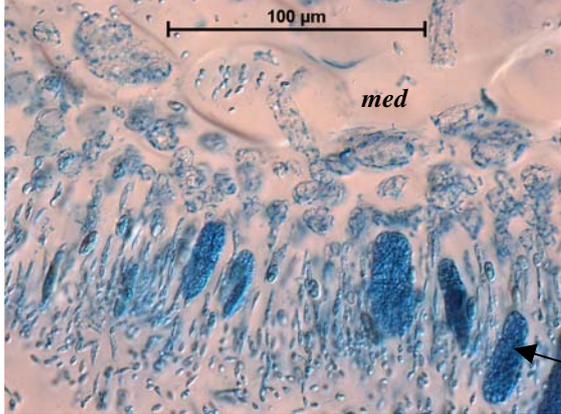
Part IIIB, pages 98-101



1.

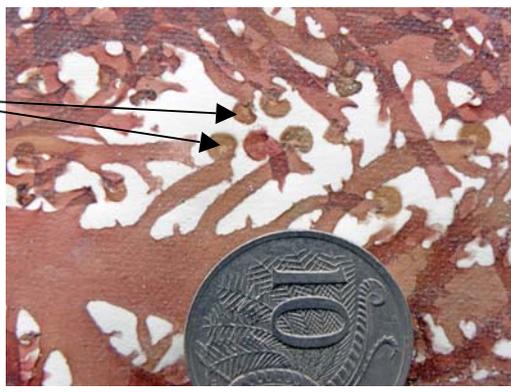


2.



3.

4.



- 1-3. Cross sections of *Gloiocladia australis* stained blue and viewed microscopically
 1. blade edge with outer layers (cortex, *co*) of branched chains of small cells loosely held together, and core (medulla, *med*) of large cells with some fine threads (filaments, *fil*) (A33408)
 2. detail of a mature female structure (cystocarp, *cys*) with central mass of carposporangia (*ca sp*), basal nutritive cells (*nutr c*) wrapping of fine threads (*ft*) and cystocarp wall (pericarp, *peri*) (A667914)
 3. part of a blade with tetrasporangia (*t sp*) lying between branched chains of cortical cells (A20060)
4. Magnified view of ultimate branchlets with adhesive pads (*a p*) (A34193)

*Descriptive names are inventions to aid identification, and are not commonly used
"Algae Revealed", R N Baldock, S Australian State Herbarium December 2010

5.



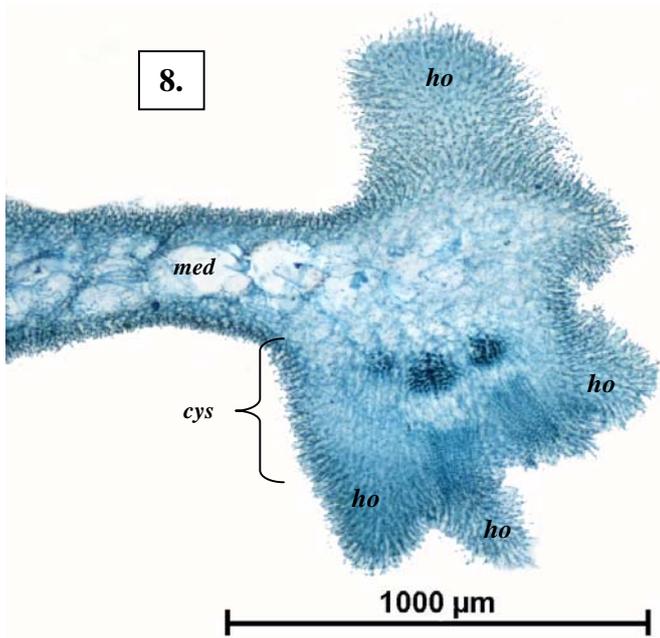
6.



7.



8.



5, 6. Drift plants of *Gloiocladia australis* (J Agardh) R E Norris from the Head of the Great Australian Bight, S Australia showing the broad main branches and irregular pinnate branching (A34193, A19218 respectively)
 7. magnified view of horned cystocarps (some arrowed) mainly along branch edges (A19218)
 8. section through a cystocarp (*cys*), stained blue and viewed microscopically showing extension of the outer layers forming horns (*ho*) (A67914 slide 17115)

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