

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

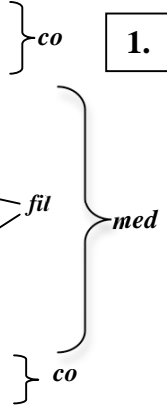
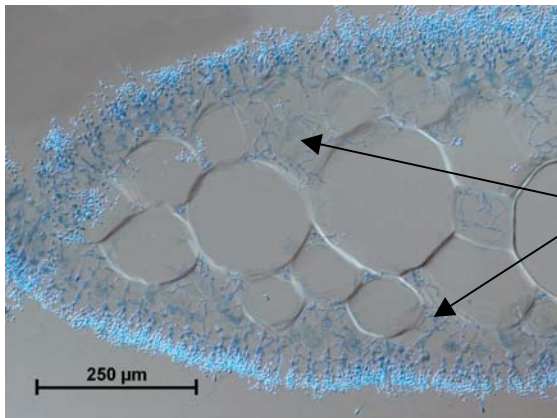


decussate

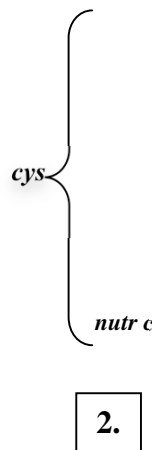
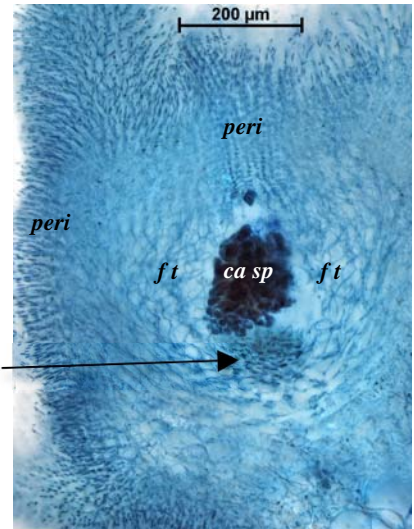
Similar Species

Description in the Benthic Flora

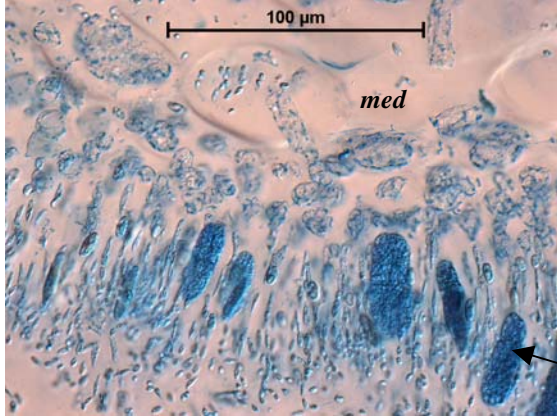
Part IIIB, pages 98-101



1.

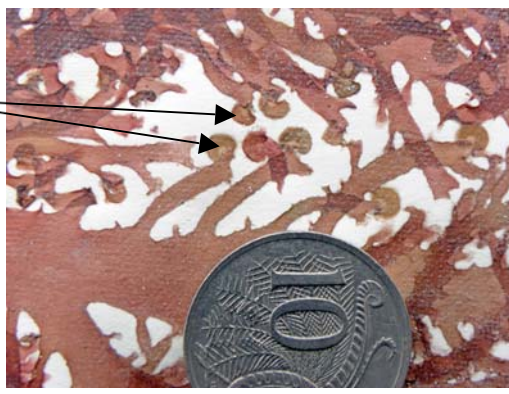


2.



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.



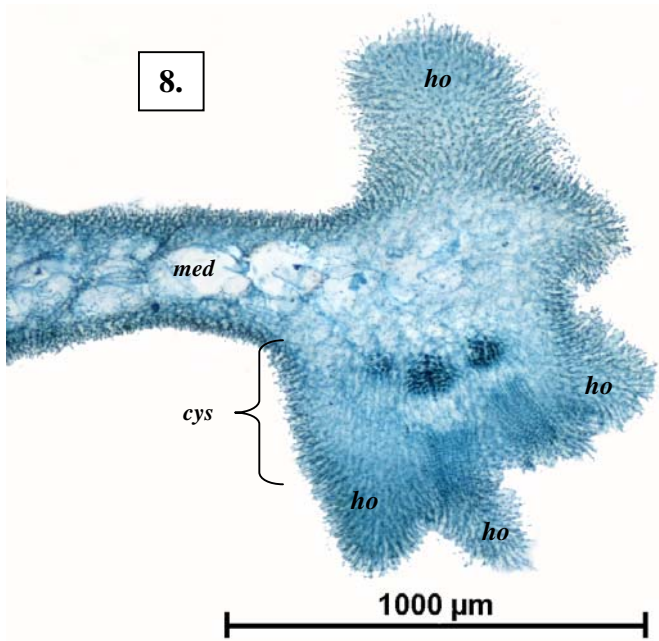
6.



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)