



MACRO
PLANT



Techniques needed and shape

Classification

Phylum: Rhodophyta; Order: Nemaliales; Family: Liagoraceae

***Descriptive name**

codium epiphyte

Features

1. red-brown with only slight chalky white covering, 50 – 300mm tall
2. main branches (axes) 0.6-2.0mm wide, irregularly branched, **soft**
3. **on velvet weed**, *Codium* or the brown alga *Cystophora*

Occurrences

near Port Lincoln, S Australia to Victoria

Usual Habitat

on *Codium* and *Cystophora* in shallow water

Similar Species

Ganonema farinosa, but in that species, forks are up to 20mm apart, with more chalky (calcified) coating, not soft, and cells in outer tufts are cylindrical, not barrel-shaped

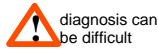
Description in the Benthic Flora

Part IIIA, pages 93 - 95

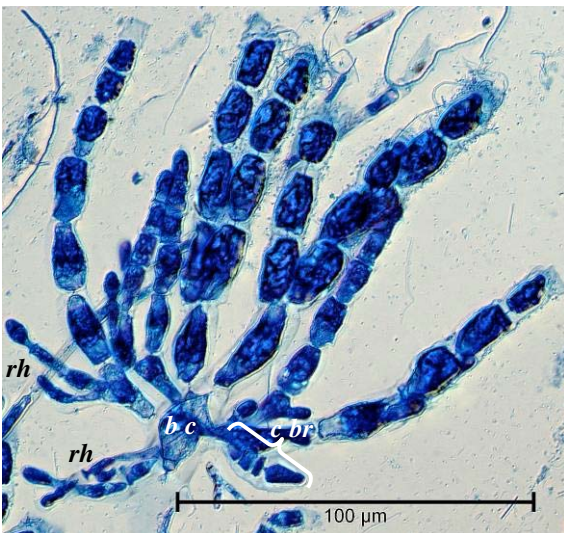
Special Requirements

view a tissue squash microscopically to find:

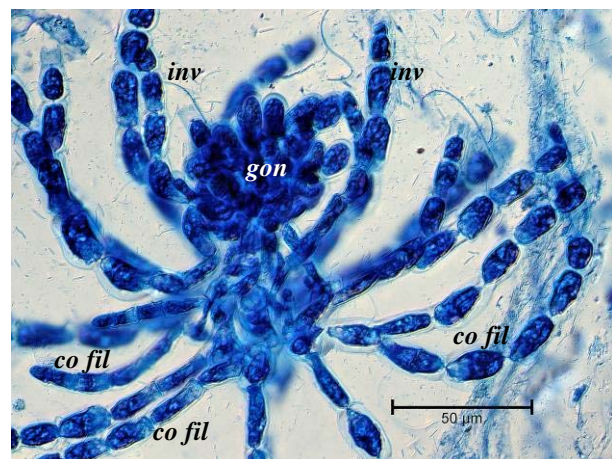
1. core (medulla) of **torpedo-shaped** cells running lengthwise, (mixed with rhizoidal threads when mature)
2. outer layers (cortex) of forked tufts of **barrel-shaped** cells often **unbranched** at the tips, larger basal cells attached to **upper ends** of medulla cells, producing rhizoidal threads
3. in the cortex of female plants, spider-like masses, the products of fertilisation consisting of a dense bunch of fertile cells ending in carposporangia, and, arising below, sterile threads (involucre) largely unbranched, similar in shape to surrounding cortical threads
3. early female stages with **practically straight**, 4-celled chains of cells (carpogonial branches) attached to the lower parts of cortical branches
4. male plants with **heads** of spermatangia near the ends of cortical branches



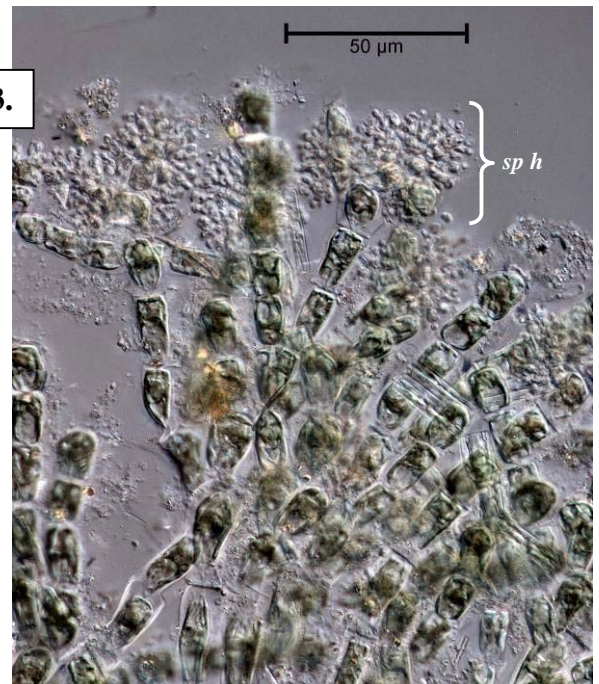
Details of Anatomy



1.



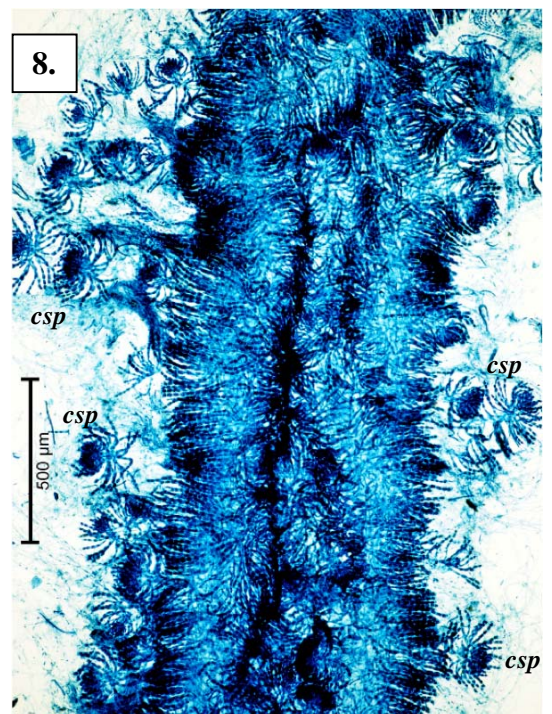
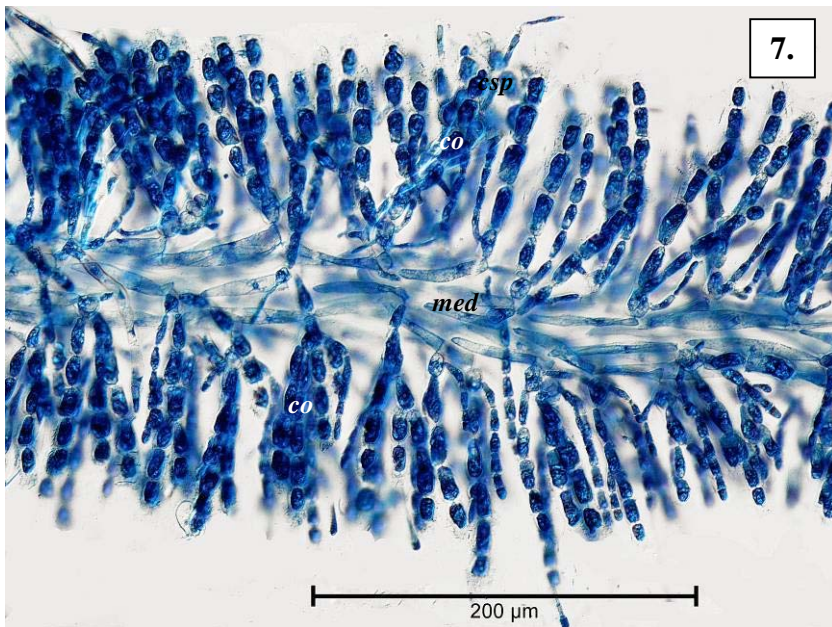
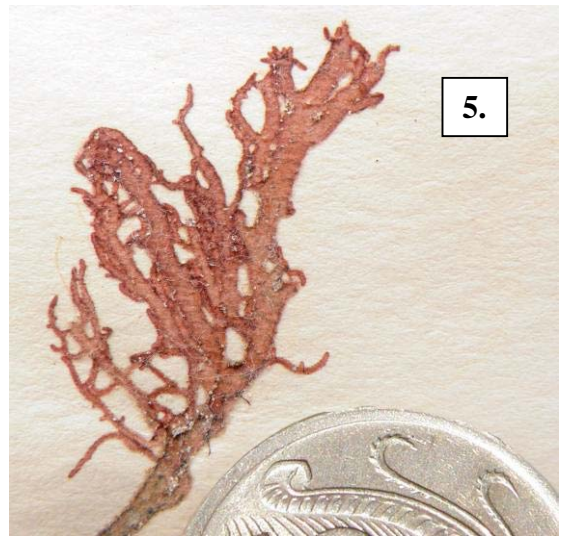
2.



3.

Tissue squashes of *Ganonema codii*, stained blue and viewed microscopically

- 1, 2. female structures (A59609 slide 1795):
 1. detached cortical tuft with larger basal cell (*b c*) producing threads (rhizoids, *rh*) and a female carpogonial branch (*c br*) in a side branch
 2. spider-like stage after fertilisation with mass of fertile cells (gonimoblast, *gon*) and, basal origin of sterile branches (involucre, *inv*) similar to surrounding cortical threads (*co fil*)
3. male heads (*sp h*) in detached cortical branches



- 4 - 6. *Ganonema codii* (Womersley) Huisman & Kraft on *Codium duthiae* from S Australia at Snapper Rock, near Cape Donington, 6-8m deep (A27081)
5. drift plants from Nora Creina (A29633)
6. detail of branching (A27081 isotype)
- 7-8. lengthwise microscope views of tissue squashes stained blue (A59609 slide 1795)
7. core (medulla, *med*) of torpedo-shaped cells, and outer layers (cortex, *co*) of bunches of barrel-shaped cells
8. plant with slightly displaced, spider-like, mature female structures (carposporophytes, *csp*)