



MACRO PLANT



flat bladed



compressed

Techniques needed and plant shape

Classification

Phylum: Rhodophyta; Order: Bonnemaisoniales; Family: Bonnemaisoniaceae

*Descriptive name

Features

1. red-brown fading to yellow-brown, 100-350mm tall, **flat-branched, compressed**, of **relatively thick** alternating branches, about 1mm wide, tips narrow, edges **smooth**
2. ball shaped products of fertilisation (cystocarps) about 1mm wide, at ends of branches, some branches narrow, stalk-like



Occurrences

near Victor Harbor S Australia, to Victoria and Tasmania
a deep water species on rough coasts (collected at 25m)

Usual Habitat

Special requirements



1. focus through the surface of plants microscopically to find:-

- a **central thread** producing side threads (periaxials, *peri ax*) consisting of fine (inconspicuous) threads **alternating** along the central thread
- ball shaped products of fertilisation (cystocarps) at **ends of branches** some branches thin, appearing like thin stalks



2. cut cross sections to locate the central thread encircled by fine threads when mature, inner large, colourless cells, circular to egg-shaped, grading rapidly to small, coloured, outermost cells

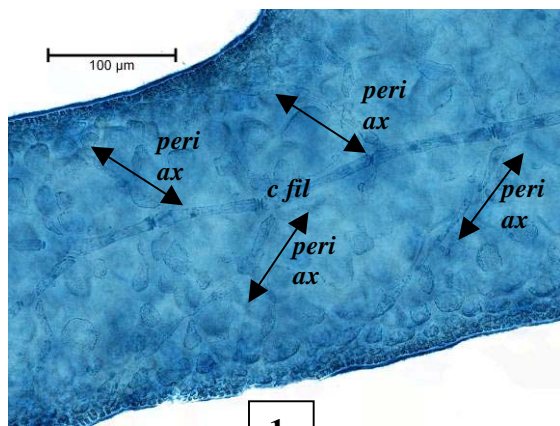
Similar Species

superficially like *Delisea hypneoides* - branches are cylindrical in that species, and side threads (periaxials) run into separate side branches

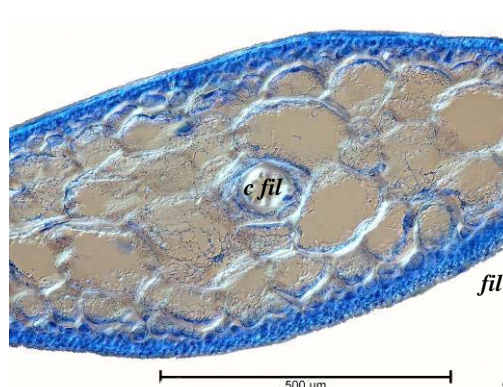
Description in the Benthic Flora

Part IIIB, pages 352 - 354

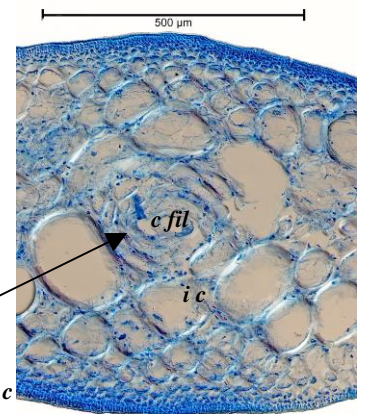
Details of Anatomy



1.



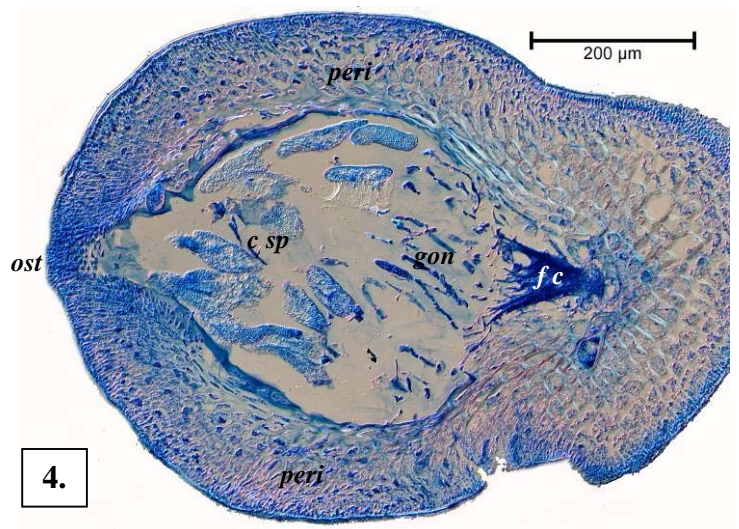
2.



3.

Microscope views of *Ptilonia subulifera* stained blue:

1. focus through the surface of a branch: central thread (*c fil*), pairs of inconspicuous side threads (periaxials, *peri ax*) (A34075 slide 13803)
- 2, 3. cross sections of young and mature branches: central thread (*c fil*); encircling threads (*fil*), inner large cells (*i c*), outer small cells (*o c*) (A27475 slide 13806)
4. cross section of a product of fertilisation (cystocarp): basal fusion cell (*fc*), threadlike fertile cells (gonimoblast, *gon*) ending in large carposporangia (*c sp*); thick wall (pericarp, *peri*) with opening (ostiole, *ost*)



4.



5.
6.
7.
8.
9.

Ptilonia subulifera J Agardh from South Australia, at different magnifications
 5 -6. from West I., near Victor Harbor, 20-25m deep (A60747)
 7 – 8. drift plant from Port Elliot, with cystocarps at the end of stalks (A27457)
 9. microscope view of branch tips stained blue with branches ending in ball-shaped cystocarps (A25429 slide 13804)

*Descriptive names are inventions to aid identification, and are not commonly used
 "Algae Revealed", R N Baldock, S Australian State Herbarium March 2012