

Techniques needed and plant shape



Classification

Phylum: Rhodophyta; Order: Bonnemaisoniales; Family: Bonnemaisoniaceae

*Descriptive name

§ Australasian red forkweed

Features

1. red to red-brown, 100-300mm tall, **flat-branched, compressed**, of **relatively thick** alternating branches, about 2-4mm wide, tips rounded, edges **smooth**
2. ball shaped products of fertilisation (cystocarps, *cys*) about 2mm wide, at ends of branches **or** on thin stalks



Occurrences

near Victor Harbor S Australia, to Victoria and Tasmania

Usual Habitat

a deep water species on rough coasts (collected at 100m)

Special requirements

focus through the surface of plants microscopically to find:-

- a **central thread** producing pairs of side threads (periaxials, *peri ax*) consisting of alternating large (obvious) and extremely fine (inconspicuous) threads
- minute spermatangia in surface patches **at branch tips** (not figured below)
- ball shaped products of fertilisation (cystocarps) at ends of branches **or** on thin stalks near branch tips

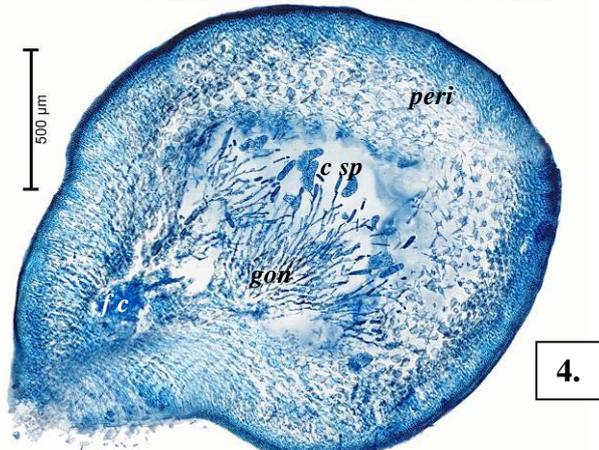
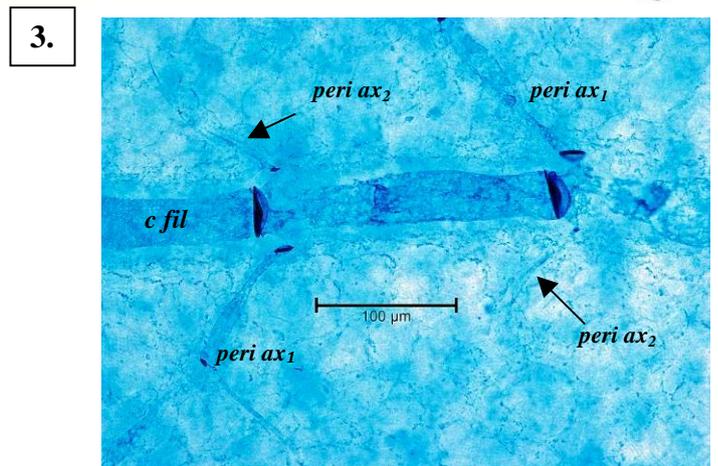
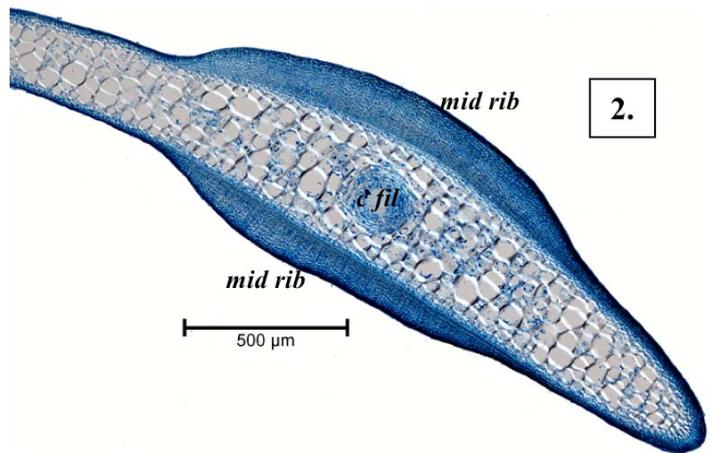
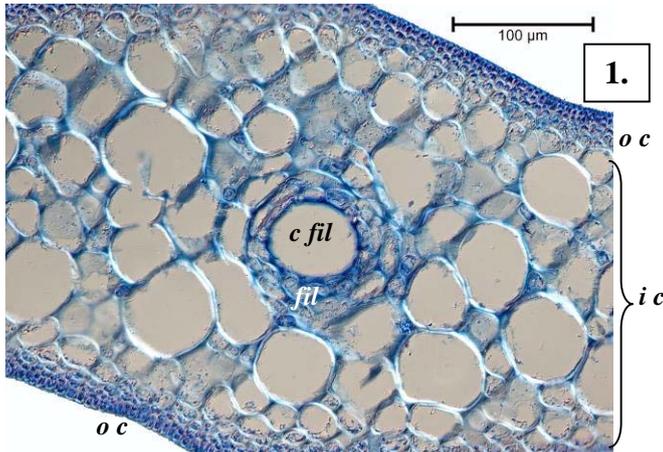
Similar Species

Ptilonia subulifera - branches are only about 1mm wide in that species; superficially like *Callophyllis* spp, these have no central thread; cystocarps are embedded in the blades

Description in the Benthic Flora

Part IIIB, pages 350, 351, 353

Details of Anatomy



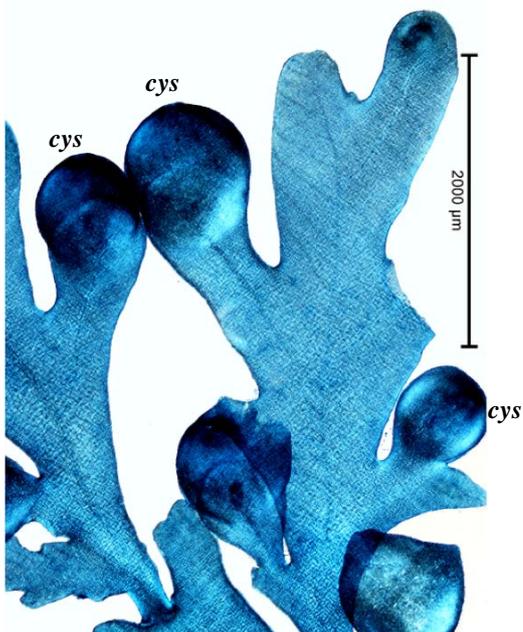
Microscope views of *Ptilonia australasica* stained blue:

1. cross section of young blade: central thread (*c fil*) encircled by fine threads (*fil*), large inner cells (*i c*) grading rapidly to small outer cells (*o c*) (A33104 slide 13809)
2. cross section of older blade; secondary growth forming a prominent midrib (A63194 slide 13823)
3. focus through a blade surface: central thread (*c fil*) producing pairs of side threads (periaxials, *peri ax*) consisting of alternating large (₁) and extremely fine threads (₂) (A33104 slide 13808)
4. cross section of the product of fertilisation (cystocarp): thick wall (pericarp, *peri*), basal fusion cell (*f c*), thread-like fertile cells (gonimoblast, *gon*) ending in large carposporangia (*c sp*) (A63194 slide 13826)

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

§ name used in Edgar, G. *Australian Marine Life*, 2nd Ed. (2008)

“Algae Revealed”, R N Baldock, S Australian State Herbarium March 2012



10.

Ptilonia australasica Harvey from South Australia, at different magnifications

5 -8. from 1300m off Cape Northumberland:

5, 6 (A46329); 60m deep, with prominent midrib (arrowed)

7, 8 (A46612) 15m deep with stalked products of fertilisation (cystocarps, cys) at the edges of leafy blades and on stalks (arrowed)

9. drift plant from Robe (A32721); with leafy regrowth at tips

10. specimen with stalked cystocarps (cys) stained blue and viewed microscopically (A33104 slide 13808)

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