

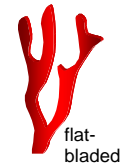
Rhodymenia obtusa
(Greville) Womersley

45.660

Techniques needed and plant shape



MACRO
PLANT



Classification

Phylum: Rhodophyta; Order: Rhodymeniales; Family: Rhodymeniaceae

*Descriptive name

§ a red forkweed; leafy forkweed

Features

1. plants red-brown, 100-250 mm long, with a short stalk, blades flat-bladed, 5-15mm broad, forked or alternate, often with broadly **rounded tips**, lower blades with **mid-rib**
2. small to large leafy blades arise also from the **centre** of main blade surfaces
3. **fertile** structures often on clusters of **smaller**, branched oval blades, from blade centres

Occurrences

South Africa, New Zealand, southern S America. Topgallant I., S Australia to Victoria and Tasmania

Usual Habitat

shallow to deep water (27m) on rock and jetty piles

Special requirements



1. cut cross sections of large blades and examine microscopically to find
 - narrow outer (cortical) 2-3 layers of small cells facing outwards, grading to large inner (medulla) cells, midribs and blade stalks with more layers of cortex
2. cut cross sections of small, central blades and examine microscopically to find
 - scattered patches of tetrasporangia, sporangia irregularly decussately divided, mixed with small, elongated outer (cortical) cells
 - ball-shaped mature female structures (cystocarps) on both sides of fertile blades, protruding, with inner circularly arranged large cells and outer rows of small cells forming a wall (pericarp), single very much depressed external opening (ostiole), and mass of carposporangia with small group of basal nutritive cells



Similar Species

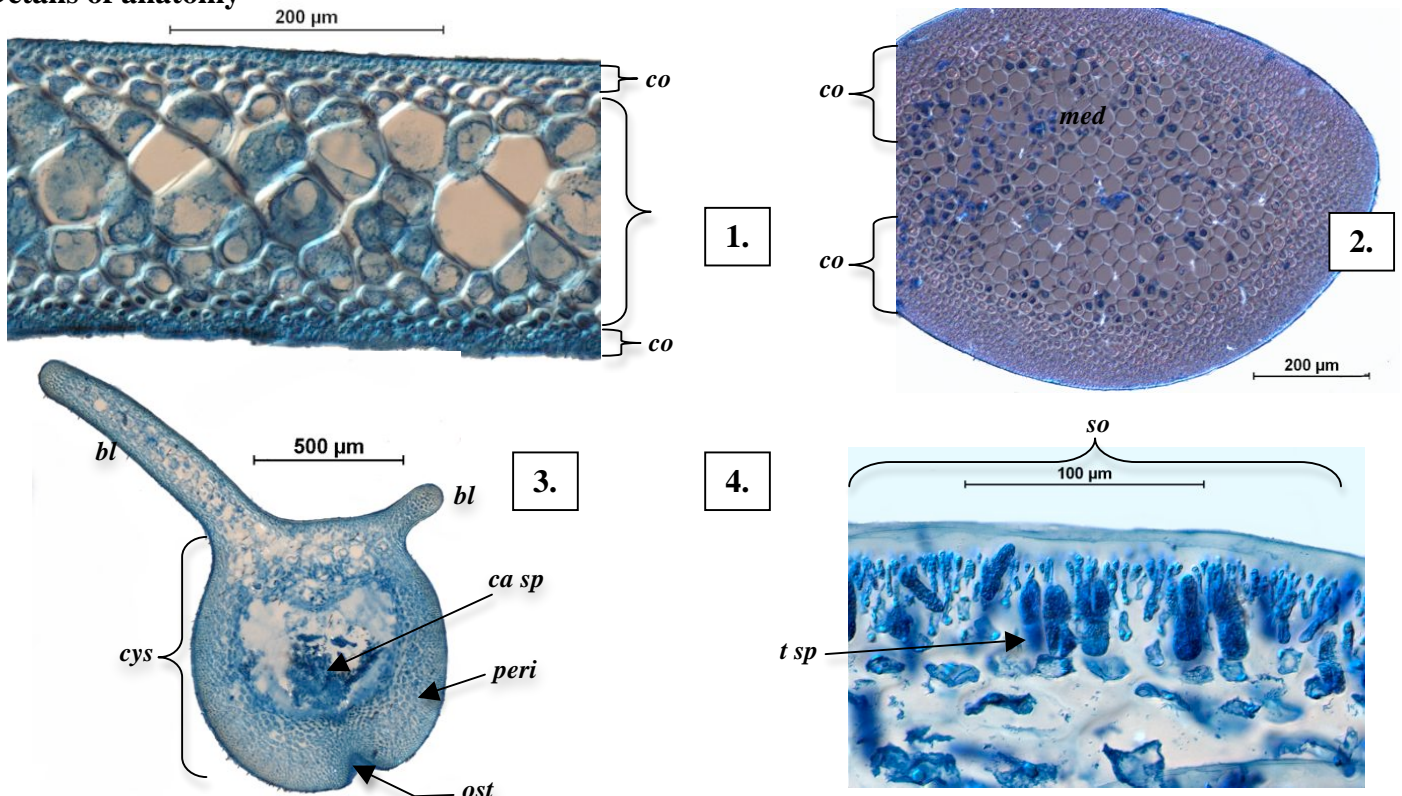
Rhodymenia prolificans but that has fertile blades from main blade edges, midribs absent

Description in the Benthic Flora

Part IIIB, pages 78-80

§NOTE: Saunders, G W & B McDonald (2010) *Botany* vol. 88, pp 639-667 using DNA sequencing found hidden species within *Rhodymenia* including *Rhodymenia wilsonis* from Tasmania and Victoria previously assigned to *R. obtusa*

Details of anatomy



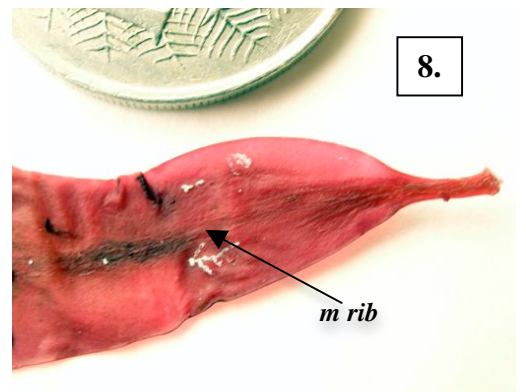
Cross sections of *Rhodymenia obtusa* stained blue and viewed microscopically (#1-3, A6325)

1. blade, showing narrow outer layers (cortex, *co*) of small cells grading to large cells of the core (medulla, *med*) (slide 14002)
2. stalk with expanded cortex (slide 14003)
3. blade (*bl*) bearing a mature female structure (cystocarp, *cys*) with cellular wall of inner peripheral cells and outer small cells in chains, depressed opening (ostiole, *ost*) and mass of carposporangial (*ca sp*) (slide 14003)
4. sporangial patch (sorus, *so*) with tetrasporangia (*t sp*) mixed with elongate cortical cells (A64463 slide 15423)

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

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

“Algae Revealed”, R N Baldock, State Herbarium S Australia, November 2010; edit. November 2013



- Rhodymenia obtusa* (Greville) Womersley showing variations in shape of plants 5-8. from a shaded reef pool, Cape Northumberland, S Australia (A61616b)
- 5. whole plant showing short stalk (*st*) basal midrib, *m rib* and additional blades from the centre of main blades (arrowed)
 - 6. blade tips
 - 7. fertile proliferations from the blade centre
 - 8. plant base with short stalk and midrib (*m rib*)
 - 9. typical broad blade tips of a plant
10. narrow bladed plant from 27m deep, Topgallant I., SA (A53057)
11. blades heavily encrusted with bryozoan and hydroid animals from Robe jetty, SA (A62828)