Techniques needed and plant shape

Classification

*Descriptive name

Features

Phylum: Rhodophyta; Order: Rhodymeniales; Family: Rhodymeniaceae

§ a red forkweed; leafy forkweed

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

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)

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