§*Halopeltis (Rhodymenia) australis* (J.Agardh) G.W.Saunders

45.660

Techniques needed and plant shape

MACRO PLANT

Classification Phylum: Rhodophyta; Order: Rhodymeniales; Family: Rhodymeniaceae

***Descriptive name** § a red forkweed

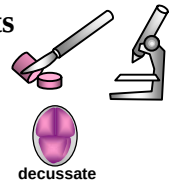
Features

1. plants red to red-brown, 40-100 (-200) mm long; blades flat, forked, 3-5mm wide and broadest near tips (except if fertile structures present), with short, often obscure, basal cylindrical stalks, slightly gristly, branches may regenerate from basal clumps of runners; blades often encrusted with bryozoans and hydroids
2. sporangia, if present, in scattered, diffuse patches
3. ball-shaped mature female structures (cystocarps), if present, protruding from blades

Occurrences Rottnest I., W Australia Victoria and around Tasmania. Possibly New Zealand

Usual Habitat shallow to deep water (50m) on rock and seagrasses

Special requirements cut cross sections and examine microscopically to find

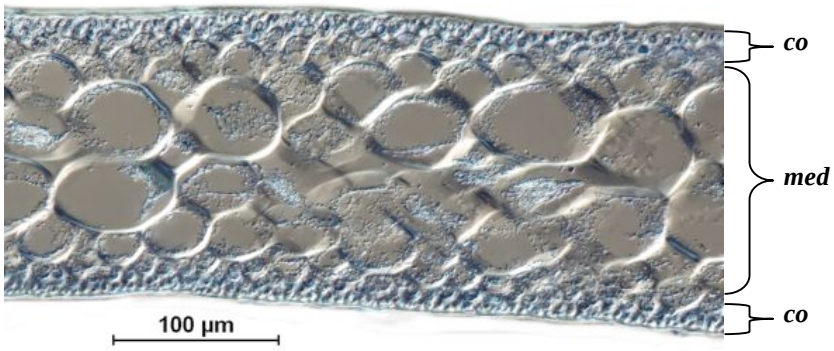


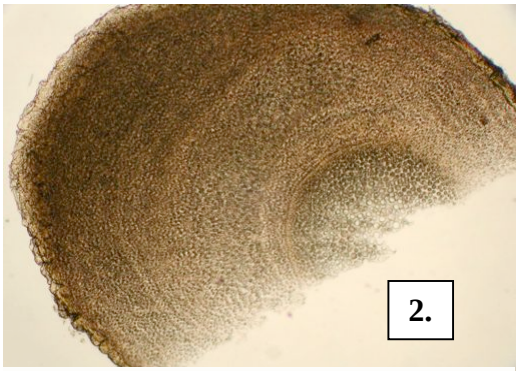
- narrow outer (cortical) layers of small cells facing outwards, grading to larger inner (medulla) cells with few gaps between cells
- scattered, diffuse patches of tetrasporangia, sporangia divided decussately, mixed with branched, small outer (cortical) cells
- ball-shaped mature female structures (cystocarps) protruding from blades, rows of small cells forming a wall (pericarp), single depressed external opening (ostiole), mass of angular carposporangia with group of basal nutritive cells

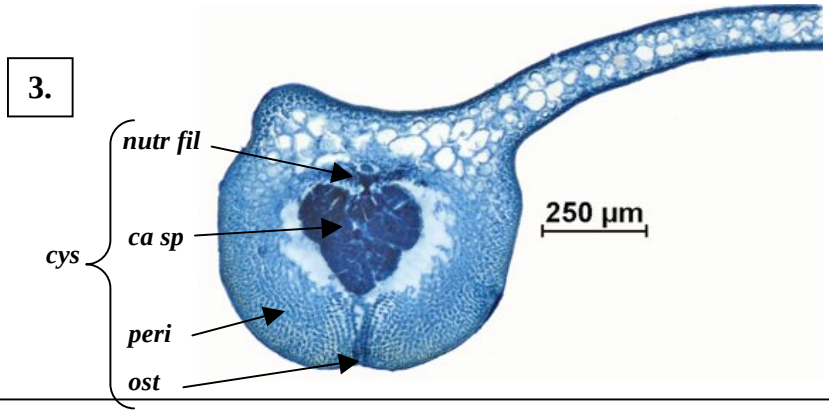
Similar Species *Rhodymenia verrucosa* and difficult to separate if cystocarps are absent

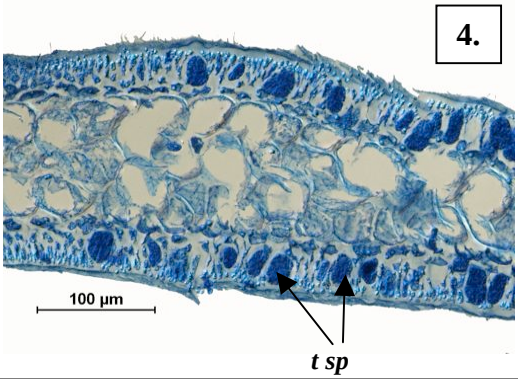
Description in the Benthic Flora Part IIIB, pages 74-75, 77 (as *Rhodymenia australis* Sonder)

§NOTE: Saunders, G W & B McDonald (2010) *Botany* vol. 88, pp 639-667 using DNA sequencing found hidden species within existing members of *Rhodymenia*. This required renaming some of the species described in the Marine Benthic Flora of SA







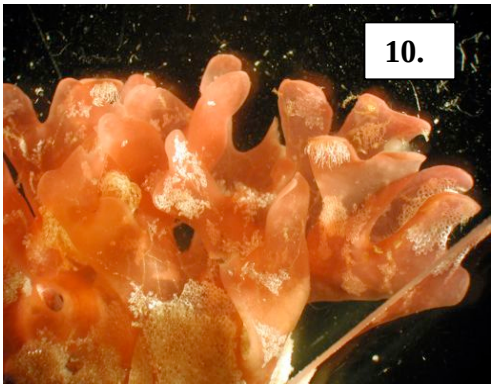


Cross sections of *Halopeltis australis* stained blue and viewed microscopically

1. blade showing narrow outer layers (cortex, *co*) with small cells, grading to the core (medulla, *med*) of large egg-shaped cells with few spaces between cells (A59571)
2. part of a perennial cylindrical stalk showing growth rings in the cortex
3. mature female structure (cystocarp, *cys*) protruding from the edge of a blade, showing central mass of angular carposporangial, *ca sp*), basal nutritive tissue (*nutr fil*) cellular wall (pericarp, *peri*) of chains of small cells facing outwards, and depressed opening (ostiole, *ost*) (A60404 slide 14504)
4. sporangial patch (sorus) showing tetrasporangia mixed with branched chains of small cells (A60404 slide 14505)

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

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



Halopeltis australis (J Agardh) G W Saunders showing variations in shape of plants from S Australia

5. from 5m deep, Glenelg Blocks (A72052)
6. small epiphytic plant 5m deep, on an exposed reef, Troubridge Hill (A66273)
7. 5m deep, Granite I. (A72162)
8, 9. from Brown Beach, Yorke Peninsula, showing encrusting bryozoans and narrow fertile tips (A26575)
10. from the Althorpe I. with numerous blades proliferating from damaged tips (A70419)

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