

Techniques needed and shape



Classification

Phylum: Rhodophyta; Order: Gigartinales; Family: Acrotylaceae

\*Descriptive name

forked gristle weed

Features

1. plants **red-brown**, 50-200mm tall
2. branching **compressed, gristly, flat-bladed** and regularly **forked**
3. additional short branches at right angles may occur from edges of main branches

Occurrences

West coast, S Australia, around Tasmania to Sydney, NSW

Usual Habitat

a rough water species in deep water or shaded situations often on the brown alga *Acrocarpia* but also on other red algae

Similar Species

*Peltasta australis* in the Dicranemataceae (which has a narrow core filled with threads and a creeping base) and *Adelophycus corneus* in the Nemastomataceae in which the core merges with the outer (cortex) layer and has glands

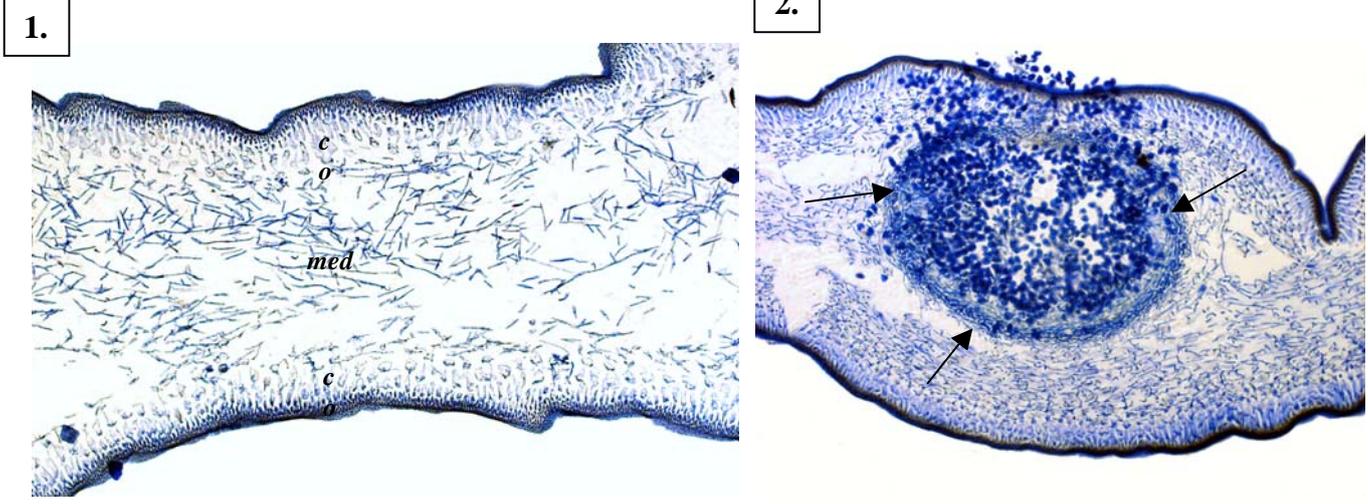
Description in the Benthic Flora Part IIIA, pages 365-3697

Special Requirements



1. slice a cross section of a blade and view microscopically to find a **broad** core of threads and outer (cortex) layer consisting of inner rows of larger cells **slightly separated** from each other and small, **compact** surface cells
2. if possible, slice a cross section of a female plant through the **scattered**, swollen cystocarps, and view microscopically to find them deeply **embedded**, with an envelope of **threads** and outlet (ostiole) formed by **breakdown** of the surface cells
3. if possible, find a sporangial plant and locate **blister-like masses** of tetrasporangia near branch tips. Cut a cross section to view small cigar-shaped tetrasporangia divided across (zonately)

Details of Anatomy



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

1. a blade with **broad** core (medulla, *med*) and outer layers (cortex, *co*) of inner separated cells grading to more compact surface cells (A44746 slide 3783)
2. an embedded cystocarp with prominent envelope of threads (arrowed) (A44746 slide 3785)
3. part of the cortex showing cigar-shaped tetrasporangia (*t sp*) divided across (zonately) (A11020 slide 12676)

\* Descriptive names are inventions to aid identification, and are not commonly used "Algae Revealed" R N Baldock, S Australian State Herbarium, October 2008

4.



4, 5. two views of drift plant of *Acrotylus australis* J Agardh, (A10894a) from Robe, S Australia, showing the flat, fairly regular forked branching pattern

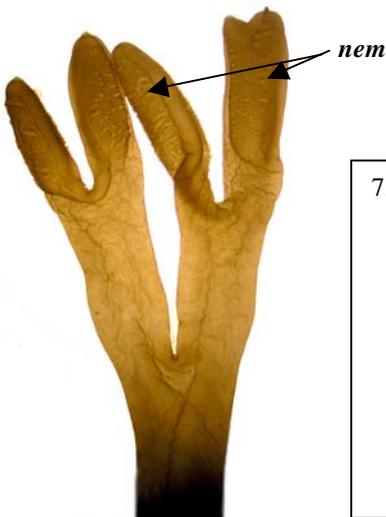
6. *Acrotylus australis* (A03754) from Encounter Bay, S Australia with detail of additional very short side branches arising at right angles to main branches (arrowed), found in some specimens



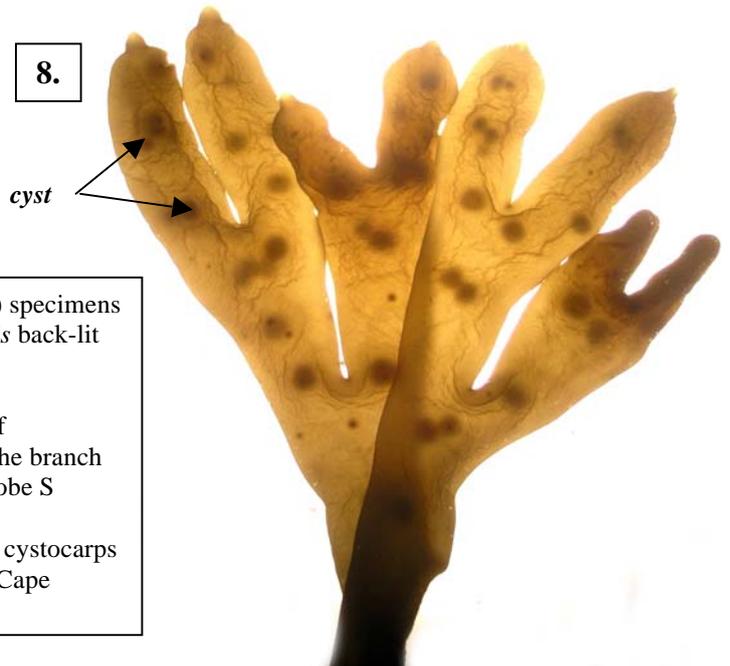
5.

6.

7.



8.



7, 8. preserved (bleached) specimens of *Acrotylus australis* back-lit to show:-  
 7. blister-like masses (nemathecium, *nem*) of tetrasporangia near the branch tips (A11020) from Robe S Australia  
 8. scattered, embedded cystocarps (*cyst*) (A44746) from Cape Lannes, S Australia

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