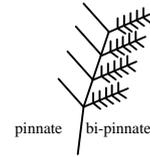


Techniques needed and shape



MACRO
PLANT



Classification

*Descriptive name

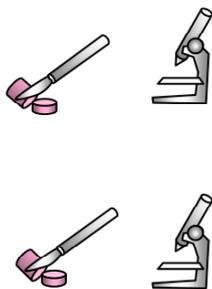
Phylum: Rhodophyta; Order: Gelidiales; Family: Gelidiaceae
feathery Gelidium, referring to the regular pinnate branching pattern

Features

1. plants dark red, 100-300mm tall, **gristly**, densely flat-branched twice over (bi-pinnate)
 2. main branches are **regularly** and alternately branched and about 0.5mm wide: side branches are irregularly branched and spreading
 3. tiny fertile structures densely line the **edges** of small branches
- from W. Australia to Victoria, Tasmania and possibly S Queensland

Occurrences

Special requirements



1. if possible, cut across a branch to view microscopically
 - the outer layer (cortex) of small cells in 2-4 layers, innermost ones ringed with very small thick-walled cells (**rhizines**) appearing as bright specks and are thread-like viewed lengthwise
 - the larger inner (medulla) layer of cells with only a few thick-walled **rhizines**
2. if possible, find tetrasporangia
 - **scattered** in small, stalked, club-shaped branches (stichidia)
 - stichidia are only on **margins** of branches
3. if possible, find the products of fertilisation (cystocarps) and cut a cross section
 - these form swellings in the **lower** part of smallest branches, opening on **both** sides.
 - **two** cavities separated by a thin partition, with sporangia on **both** sides occur

Usual Habitat

recorded from shallow water to 13m deep on rock

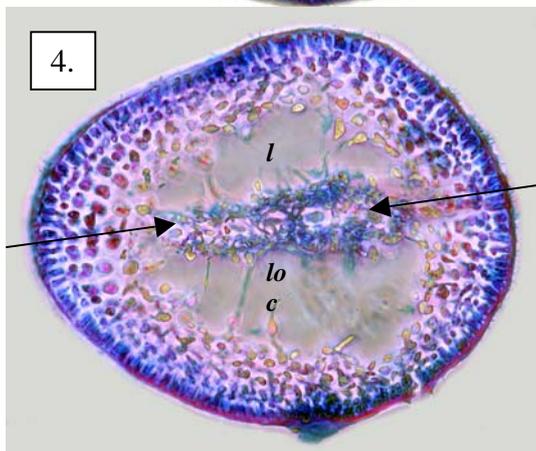
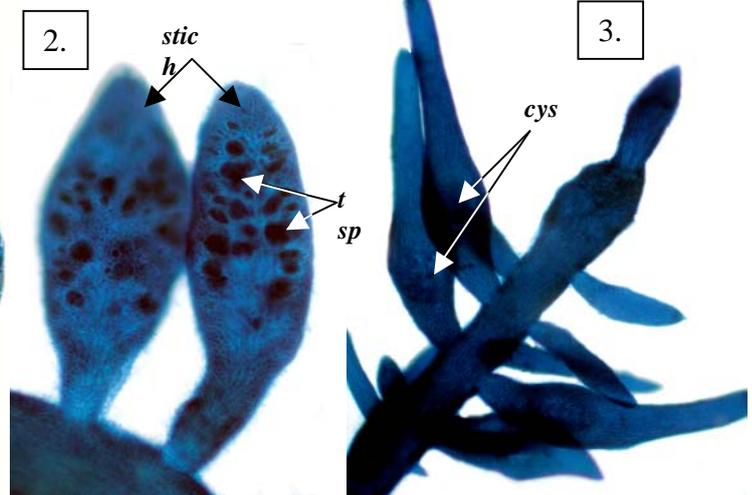
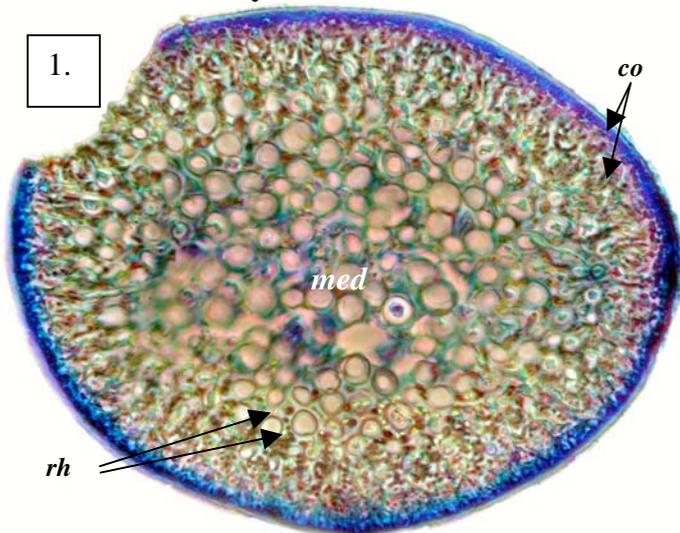
Similar Species

Gelidium asperum but that species has an irregular, more parallel branching pattern

Description in the Benthic Flora

Part IIIA, pages 130, 132

Details of Anatomy



Gelidium australe stained blue and viewed microscopically:

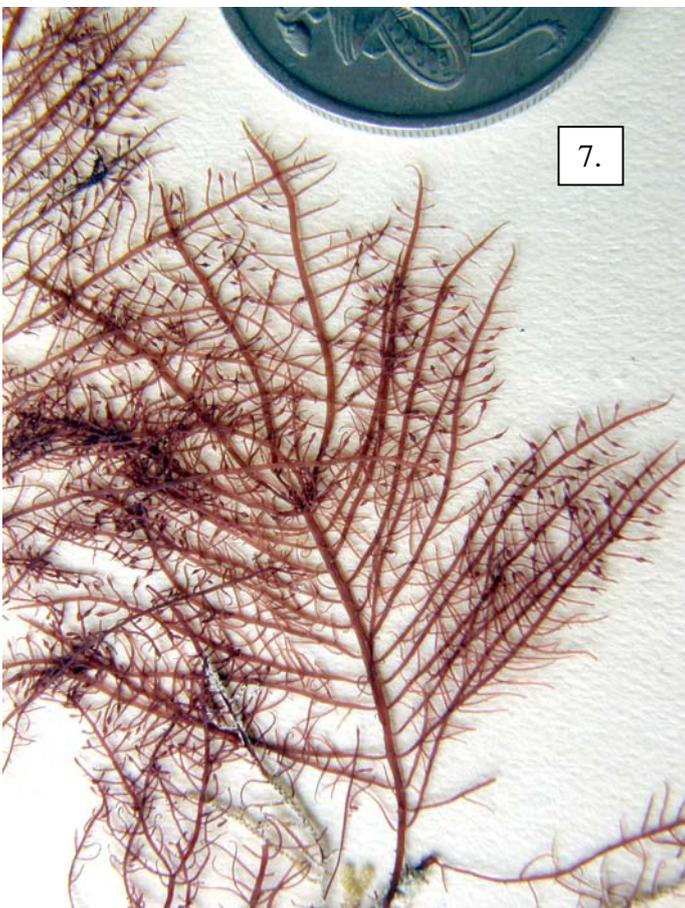
1. a cross section showing the outer layer (cortex, *co*) of small cells, some ringed by thick-walled **rhizines** (*rh*, bright specks, catching the light); and central (medulla, *med*) region with very few rhizines (A19618 slide 10865)
- 2 – 4. (A57055)
 2. small tetrasporangial branchlets (stichidia, *stich*) with scattered sporangia (*t sp*) (slide 10866)
 3. branchlets bearing products of fertilisation (cystocarps, *cys*) as swellings near their bases (A57055 slide 10868)
 4. a cross section of a cystocarp, showing the **two** cavities (loculi, *loc*) separated by a central partition (arrowed). The single openings (ostioles) on each side are not visible. (slide 10869)

5.

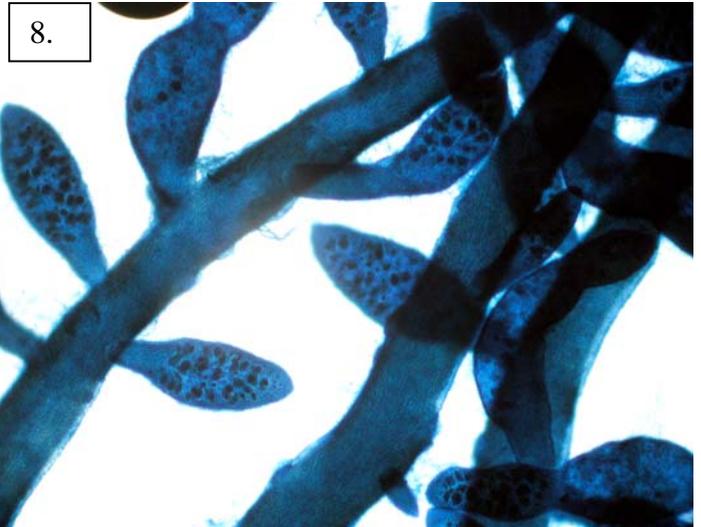


Gelidium australe J.

6.



7.



8.

Gelidium australe

- 5.-6. two views of *Gelidium australe* J Agardh at 1.5-2.0m depth, Blackfellows Caves, SE of S. Australia (A63004)
- 7. magnified view of the regularly pinnate branching with some branches bearing swollen cystocarps (A63004)
- 8. a microscope view of a blue-stained specimen showing the tetrasporangial branches (stichidia) in a regular, alternating, flat-branched pattern (pinnate) (slide 10866)

* Descriptive names are inventions to aid identification, and are not commonly used
 "Algae Revealed" R N Baldock, S Australian State Herbarium, September 2007