



MACRO  
PLANT



Techniques needed and shape

Classification

\*Descriptive name

Features

Occurrences

Special requirements

Phylum: Rhodophyta; Order: Gelidiales; Family: Gelidiaceae  
sponge-coated red alga

1. plants are red-brown, 100-400mm tall, **flat-bladed**, irregularly branched from the edge or surfaces of blades
2. large blades are coated with **sponge**
3. smaller branches are about 10mm long with opposite, flat lobes, free of sponge  
SW W Australia



1. if possible, cut across a blade to view microscopically
  - the outermost layer (outer cortex) of **small cells** facing outwards
  - an inner cortex layer of **threads** branching outwardly
  - tiny clusters of **rhizines** wrapped about by the inner cortex threads
  - a narrow innermost (medulla) section of larger, thick-walled, **rounded cells**
2. if possible, find tetrasporangia
  - **scattered** in small, outgrowths from the main blades
  - divided in two pairs at right angles (decussate) or in a cross-shaped pattern
3. if possible, find the products of fertilisation (cystocarps) and cut a cross section
  - these form swellings in outgrowths of the main blades
  - they have **two** cavities separated by a thin partition, with sporangia on **both** sides



Usual Habitat

Similar Species

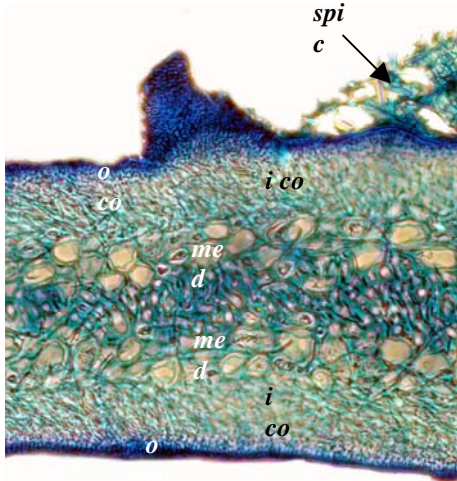
Description in the Benthic Flora Part IIIA, pages 124-126

Details of Anatomy

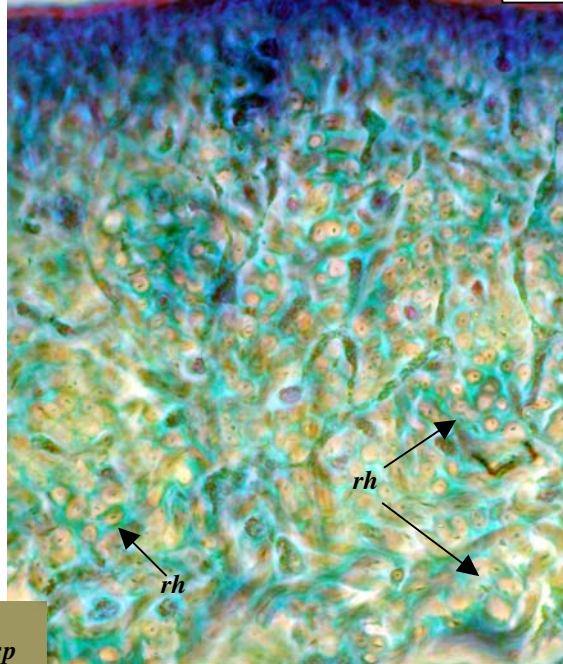
on rock, 7-14m deep

superficially like *Pterocladia lucida* unless heavily coated with sponge

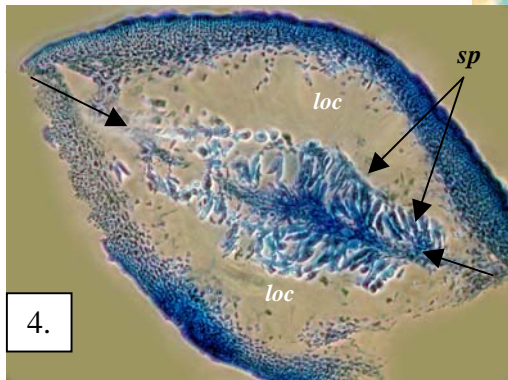
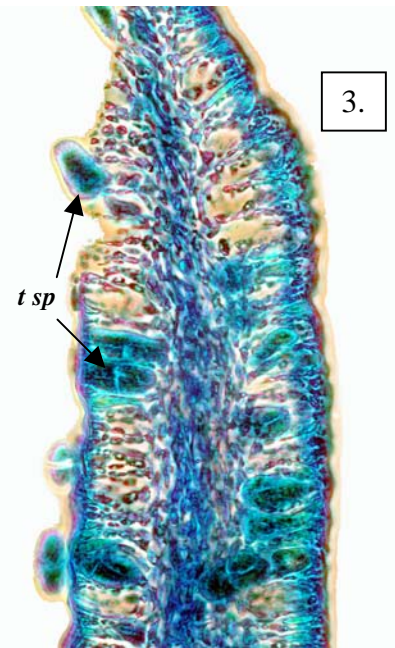
1.



2.



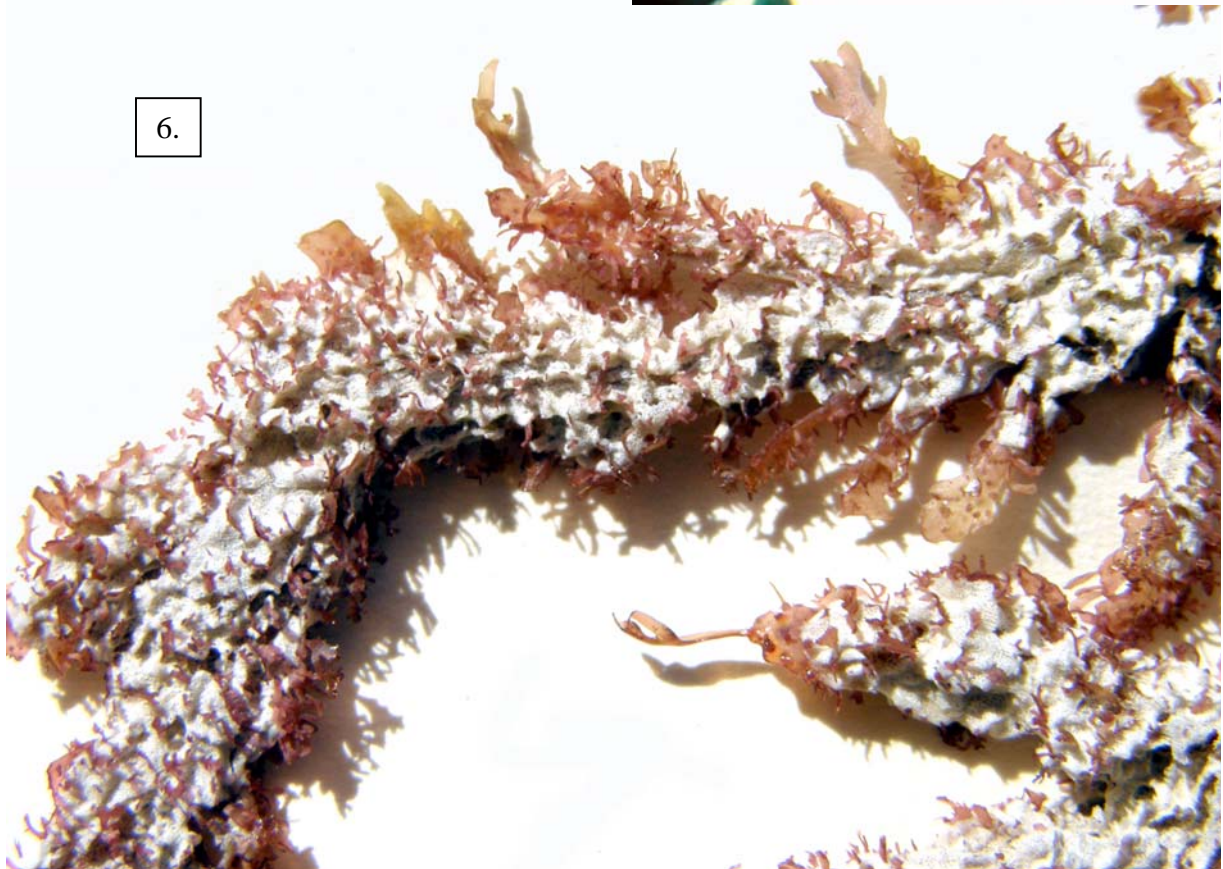
3.



4.

Cross sections of *Ptilophora prolifera* stained blue and viewed microscopically

1. showing
  - the outermost (cortex) layer of small cells (*o co*),
  - inner layer (inner cortex, *i co*) of threads
  - centre (medulla, *med*) of large cells
  - sponge spicules on the blade surface (*spic*) (A31045 slide 10878)
2. clusters of bright, rhizines (*rh*) between thread-like outer cortex cells (A31045 slide 10878)
3. an outgrowth of a blade with tetrasporangia (*t sp*) (A15475 slide 12652)
4. the product of fertilisation (cystocarp, *cys*) with 2 cavities (loculi, *loc*) separated by a central partition (arrowed) and club-shaped sporangia (*sp*) (A15475 slide 12651)



- 5., 6. two views of a drift plant of *Ptilophora prolifera* (Harvey) J Agardh (A31045) from Flat Rocks, 40km S of Geraldton, W Australia, heavily coated with white sponge
7. a specimen stained blue and viewed microscopically, showing small flat and oppositely branched blades arising from the edges and surface of main blades (A31045slide 10877)

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