



Techniques needed and shape

Classification

***Descriptive name**

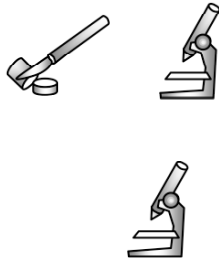
Phylum: Rhodophyta; Order: Gelidiales; Family: Gelidiaceae
§ winged red sea-fern

Features

1. a red to red-brown, alga 80-400mm tall, with a gristly texture
 2. main branches flat, with a thicker mid-rib, and broad tips when actively growing
 3. alternating, flat side-branches are branched once or twice; branches constricted at base
- New Zealand. In Australia, from Kalbarri, W. Australia around southern coasts and Tasmania, to Coffs Harbour, NSW

Occurrences

Special requirements



1. view the tips of branches microscopically to find, single apical cells in a depression, characteristic of the genus
2. if possible, cut across a branch to view microscopically the
 - The outer (cortex) small cells in 3-5 layers
 - The inner (medulla) larger cells mixed with thick-walled rhizoids (*rhizines*) especially on the mid-ribs of older main branches
3. if possible, find tetrasporangia in
 - swollen branch ends or in rounded structures along the margins of smallest branches
 - cross-shaped tetrasporangia are at first regularly arranged near the dimpled apex of branches
4. if possible, find the products of fertilisation (cystocarps) forming
 - swollen ends to the smallest branching (pinnules)
 - slice across a cystocarp to view the **single** chamber (loculus) inside, spores in short **chains** from the **floor** of the chamber, and 1-4 openings (ostioles)

Usual Habitat

a common rough water species in shallow water to 16m deep

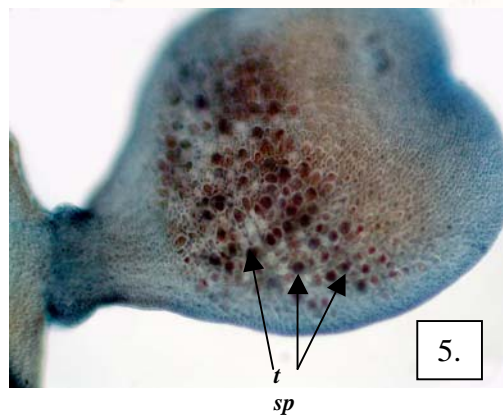
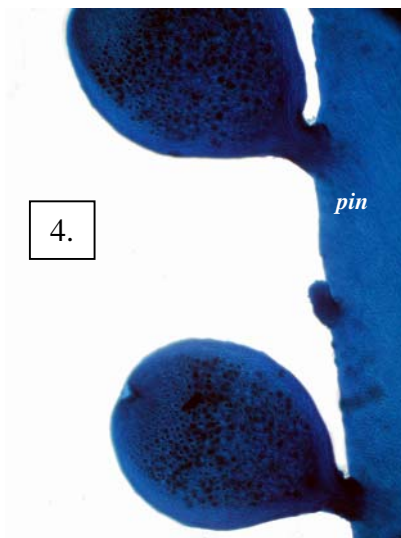
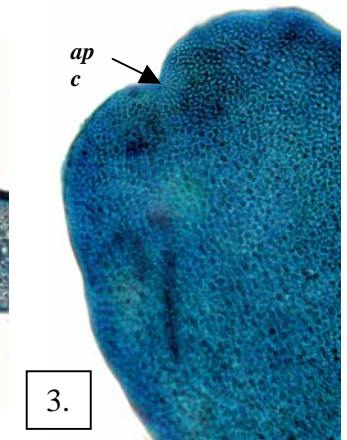
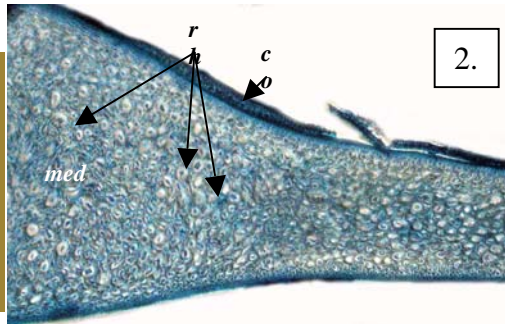
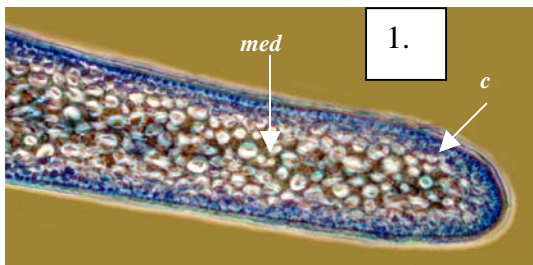
Similar Species

relatively distinct with flat, pinnate branches 3-4mm broad

Description in the Benthic Flora

Part IIIA, pages 137-139, 140

Details of Anatomy



Pterocladia lucida stained blue and viewed microscopically

1. cross section of a young blade (A32644 slide 10910)
2. cross section of an old blade partly through the mid-rib, showing the outer layers of small cells (cortex, *co*) and inner (medulla, *med*) layer with thick-walled rhizoids (rhizines, *rh*) (A31951 slide 10905)
3. tip of a branch with a single apical (*ap c*) cell in a depression (A32644 slide 10909)
4. flat and oval-shaped branches with tetrasporangia, along the margins of a pinnule (*pinn*) (A31948 slide 10919)
5. tetrasporangia (*t sp*), initially in rows radiating out from the apical cell of an oval shaped branch (A31948 slide 10920)



6.



7.



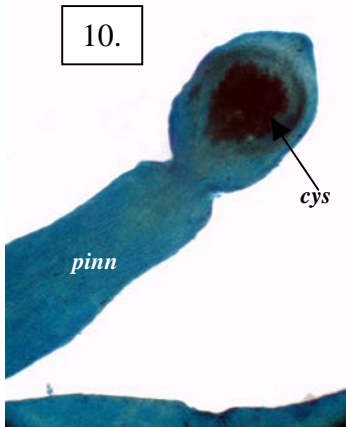
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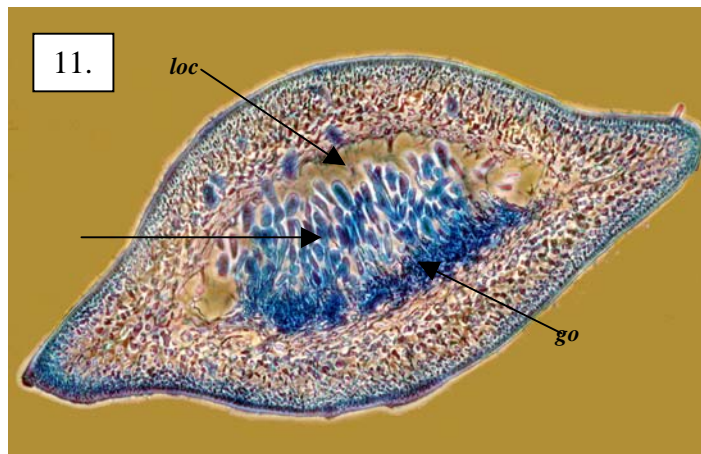
9.

variation in shape of specimens of *Pterocladia lucida* (Turner) J Agardh:

- 6. from Seal Rock, West I., SA: irregular pinnate branching (A30445)
- 7. from Lands End, West I., SA: with flat tips (A31617)
- 8. fairly regular bi-pinnate branching (A61113)
- 9. from Oedipus Rock, West I., SA: pointed tips on pinnules bearing swollen cystocarps (A31948)



10.



11.

Pterocladia lucida stained blue and viewed microscopically:

- 10. a cystocarp (cys), the product of fertilisation, at the tip of a pinnule
- 11. section through a cystocarp to show:-
 - the single cavity (loculus, loc)
 - spores in (vague) chains (arrowed)
 - fertile tissue (gonimoblast, go) arising from the floor of the cystocarp