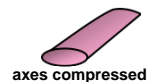


Techniques needed and plant shape



MACRO  
PLANT



axes compressed

Classification

\*Descriptive name

Features

Phylum: Rhodophyta; Order: Bonnemaisoniales; Family: Bonnemaisoniaceae  
§plumed forkweed; Tasmanian delisea

1. dark red-brown, 120-300mm tall, flat-branched, consisting of
  - **compressed** main branches (axes), 0.5-1.5mm wide
  - ultimate branches (ramuli) along axis edges, pointed, compressed near plant tips, more cylindrical near plant bases, about 1mm long, occasionally short and spiny,
  - side branches, **alternating regularly** along axes, separated by 2-6 ramuli
2. reproductive structures found as swellings or patches, **near axis tips**



Occurrences

Usual Habitat

Special requirements

S New Zealand. In southern Australia, SE and SW Tasmania  
in shallow to deep water (20m)

1. focus through the surface of plants microscopically to find:-
  - a single, **tiny** tip cell forming an obscure central thread, initially and characteristic **alternating curved ultimate branches** (ramuli)
  - minute spermatangia in pustule-like masses on ramuli bases, **near branch tips**
  - swollen products of fertilisation (cystocarps) **near tips** on axis surfaces, between side branches producing a horned appearance
  - irregular patches (sori) of tetrasporangia on the flat axis surface
2. cut a cross section to find a central thread encircled and obscured by fine threads, large inner colourless cells and a thin outer band of very small, coloured cells

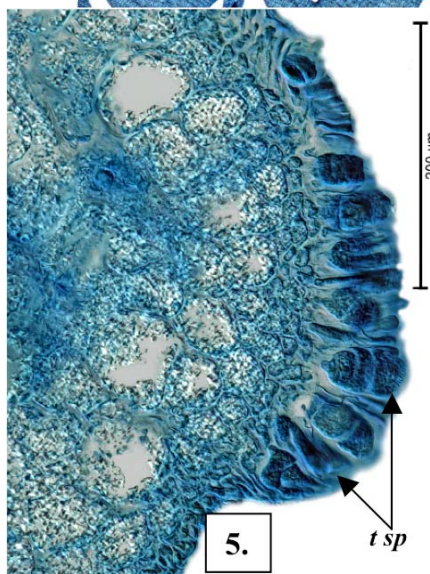
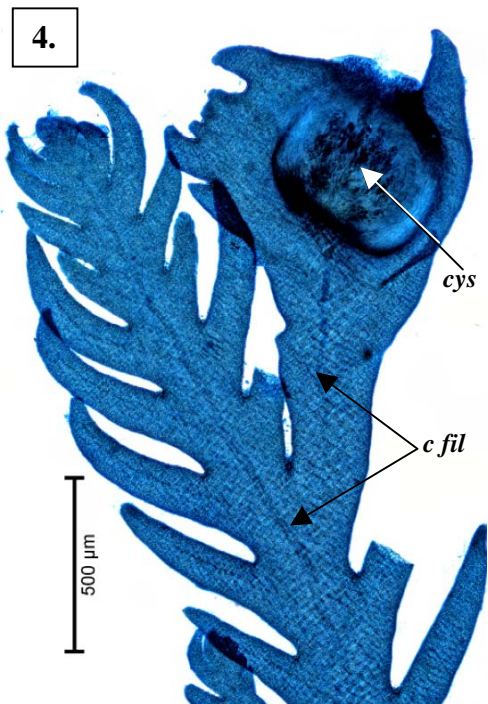
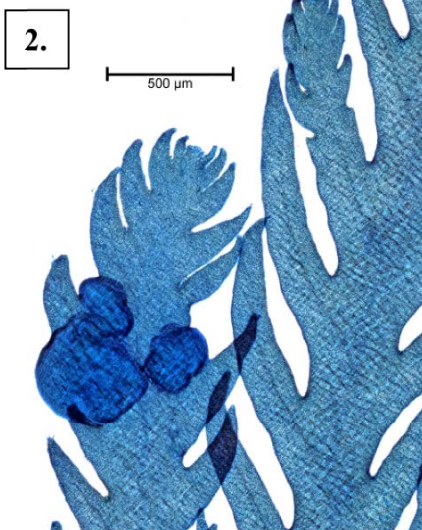
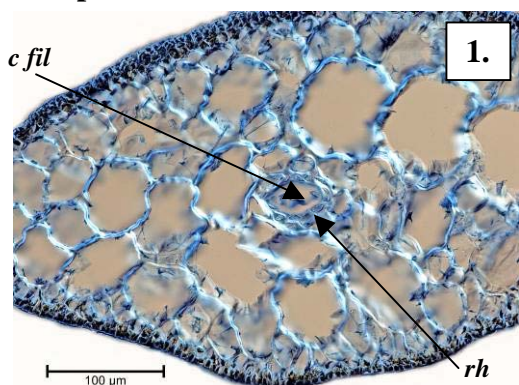


Similar Species

Description in the Benthic Flora

*Delisea elegans* but in that, ramuli are cylindrical and side branches arise irregularly

Part IIIB, pages 345, 346, 348



Microscope views of *Delisea plumosa* stained blue:

1. cross section: central thread (*c fil*) ringed by fine threads (rhizoids, *rh*), large inner cells and small outward facing cells (A3921 slide 13863)
2. surface view of male pustules (A63353 slide 14172)
3. surface view of scattered sporangial clusters (sori) (A63870 slide 15048)
4. cross section of a sporangial cluster (sorus): tetrasporangia (*t sp*), inner walls sloping (A358490 slide 13865)
5. surface view of product of fertilisation (cystocarp, *cys*) (A63353 slide 14170)

\*Descriptive names are inventions to aid identification, and are not commonly used

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

“Algae Revealed”, R N Baldock, S Australian State Herbarium March 2012

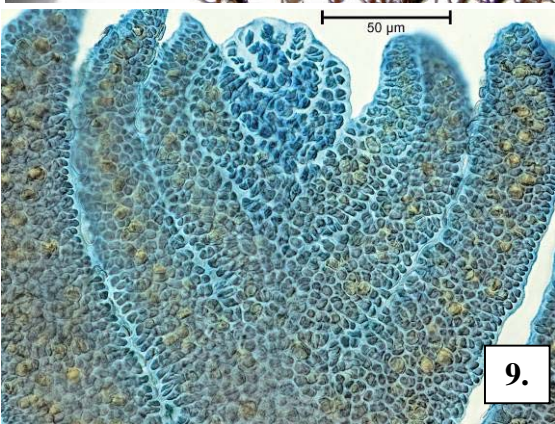




6.



7.



9.



8.

*Delisea plumosa* Levring at different magnifications  
 6, 7. from Governor I., Bicheno Tasmania, (A63849) 8-16m deep; bracketed part of an axis showing regularly spaced side branches (in this case 2 ramuli apart)  
 8. from Eaglehawk Neck, Tasmania (A58491) 10m deep, with sparser branching  
 9. microscope view of tip of a specimen stained blue: characteristic alternate flat branching pattern; scattered, bright, yellowish gland cells (A3921 slide 13863)

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