

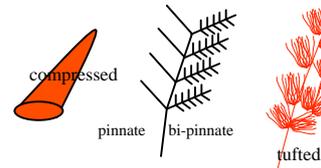
***Pterocladia rectangularis***  
(Lucas) Womersley & Guiry

45.180

**Techniques needed and shape**



**MACRO  
PLANT**



**Classification**

**\*Descriptive name**

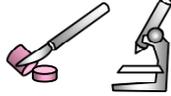
Phylum: Rhodophyta; Order: Gelidiales; Family: Gelidiaceae  
fringed red sea fern

**Features**

1. plants dark red, tufted 50-250mm tall, with a gristly texture
  2. flat, regular, opposite branching 1-2 times (pinnate to bi-pinnate) occurs
  3. smaller branches (pinnae and pinnules) arise at right angles
  4. small reproductive branches fringe medium sized branches (pinnules)
- Safety Bay, W Australia to the Isles of St Francis, S Australia

**Occurrences**

**Special requirements**



1. if possible, cut across a branch to view microscopically
  - the outer (cortex) of small, thick-walled cells in 2-3 layers
  - the inner (medulla) elongate cells mixed with thread-like rhizoids and many thick-walled rhizoids (**rhizines**) in older branches
2. if possible, find tetrasporangia
  - in stalked, rounded structures along the margins of smallest branches (pinnules)
  - divided in a cross-shaped pattern
3. if possible, find the products of fertilisation (cystocarps)
  - forming swellings near the ends of the smallest branches (pinnules)
  - slice across a cystocarp to view the **single** chamber (loculus) inside, spores in short **chains** from the **floor** of the chamber, and 1 opening (ostiole)
4. if possible, find patches of spermatangia on the upper parts of compressed, smallest branches (pinnules)

**Usual Habitat**

**Similar Species**

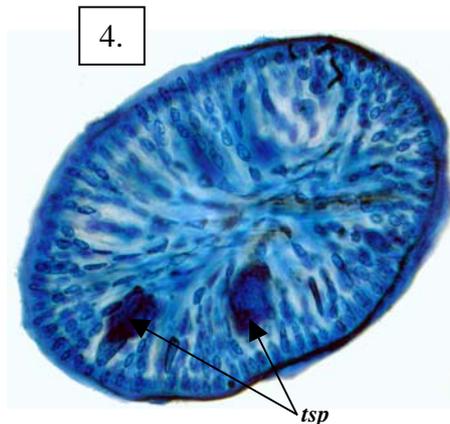
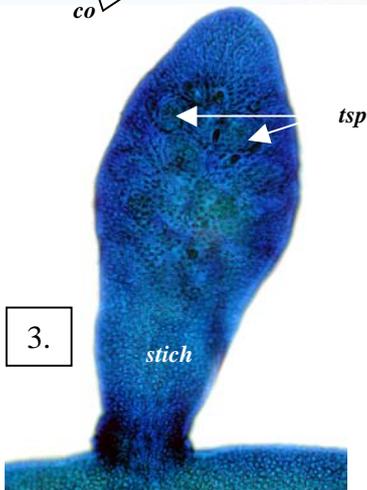
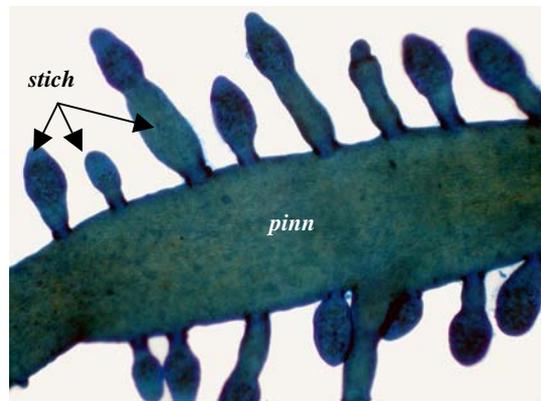
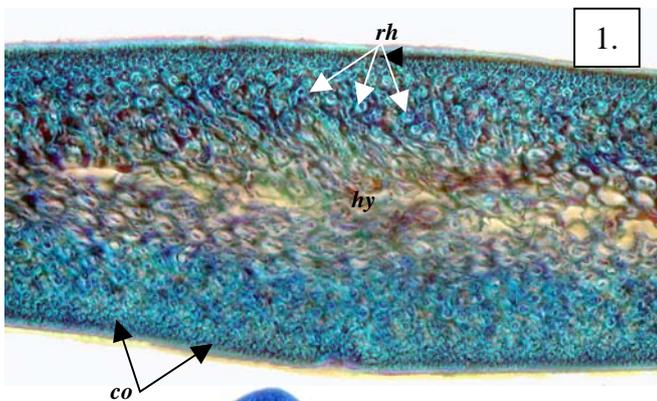
in deep pools to 37m deep

relatively distinct with narrow, regular, pinnate branches about 2mm broad and marginal reproductive structures

**Description in the Benthic Flora**

Part IIIA, pages 138, 140-142

**Details of Anatomy**



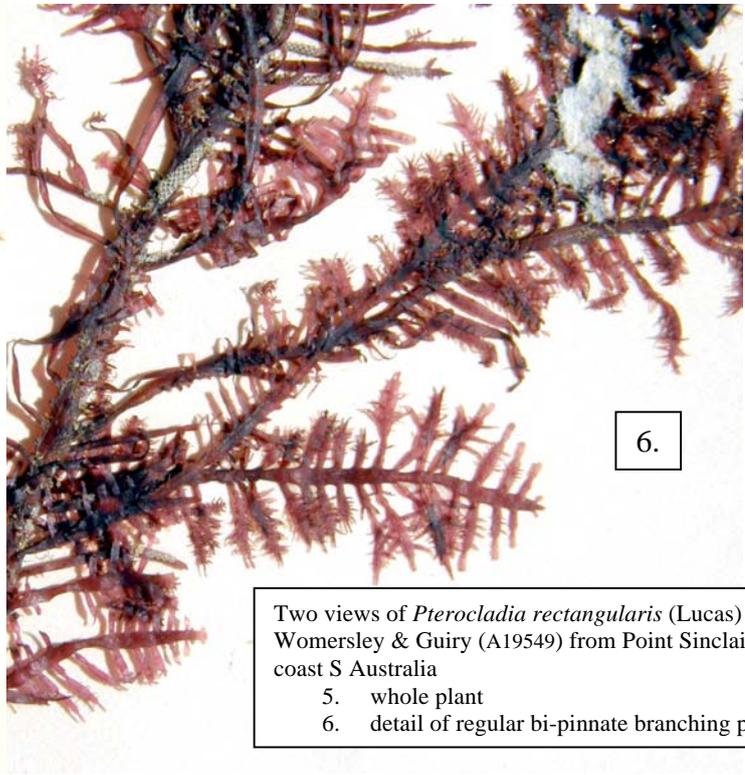
***Pterocladia rectangularis***

1. cross section of a branch, showing the outer (cortex, *co*) cells in about 3 layers, inner (medulla) part of thick-walled cells (rhizines, *rh*) and thread-like hyphae (*hy*) (A14009 slide 10857)
2. tetrasporangial structures (stichidia, *stich*) fringing a small branch (pinna, *pinn*) (A14009 slide 10852)
3. a single stichidium, with tetrasporangia (*tsp*) (A14009 slide 10852)
4. cross section of a stichidium (A14009 slide 10853)

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



5.



6.

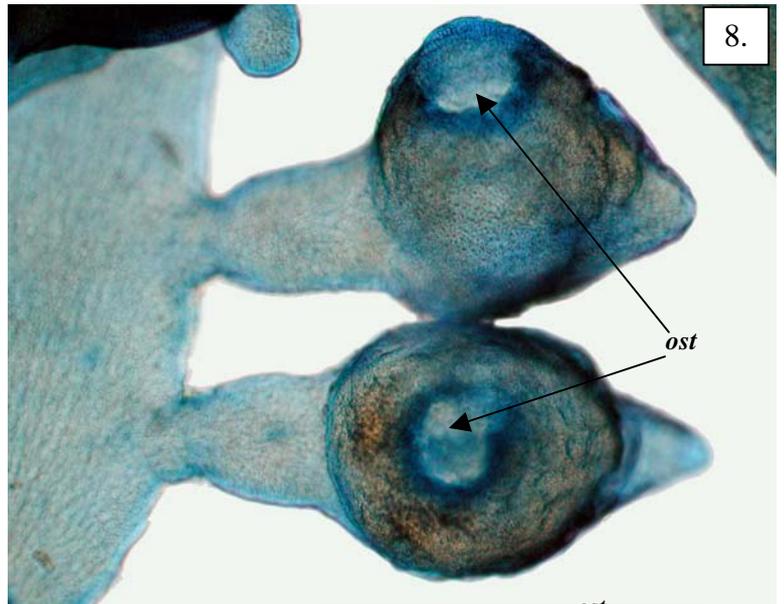
Two views of *Pterocladia rectangularis* (Lucas) Womersley & Guiry (A19549) from Point Sinclair, west coast S Australia  
 5. whole plant  
 6. detail of regular bi-pinnate branching pattern

*Pterocladia rectangularis* stained blue and viewed microscopically:

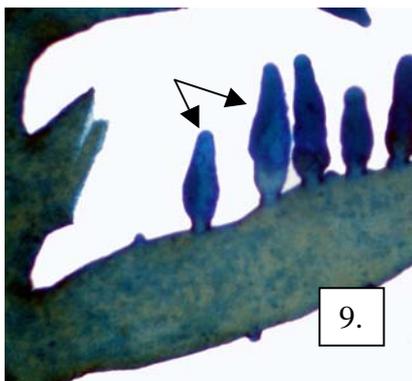
- 7, 8. two magnifications of the stalked products of fertilisation (cystocarps, *cys*) fringing smaller branches (pinnae, *pinn*), showing their single openings (ostioles, *ost*) (A59041 slide 10937)
- 9, 10. two magnifications of small male branches (arrowed), fringing a pinna, with spermatangial branches (*sp*) (A14009 slide 10854)
- 11. a composite of several sections, showing the single cavity (loculus, *loc*), basal gonimoblast tissue (*gon*), sporangia (*sp*) and a single opening (ostiole, *ost*) (A59041 slide 10938)



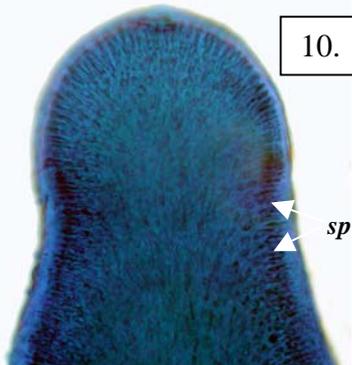
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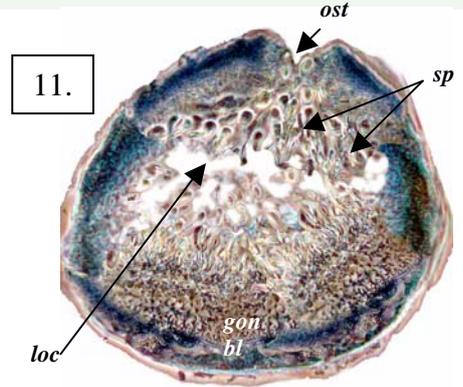
8.



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10.



11.

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