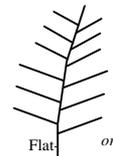


**Techniques needed and shape**



**MACRO  
PLANT**



**Classification**

Phylum: Rhodophyta; Order: Gigartinales; Family: Kallymeniaceae

**\*Descriptive name**

red fern; § Turner's red alga

**Features**

1. plants are red, 50-250mm tall and flat-branched
2. main branches (axes) are flat, **3-6mm** wide often denuded
3. side branches are dense, fan-shaped, narrowing rapidly to points

**Occurrences**

mid W Australian coast to NSW and around Tasmania. Possibly Chatham I., New Zealand shallow to deep water in moderately rough coasts

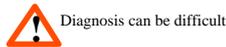
**Usual Habitat**

**Special requirements**



1. cut a slice across a branch and view under the microscope to find the **wide** core (medulla) with a mix of small and large compact cells with thick walls, cells decreasing in size to narrow outer-most (cortex) layers of **very small**, cells facing outwards
3. find protruding ball-shaped mature female structures (cystocarps) a short distance from tips. Cut a cross section to see clumps of carposporangia with a few threads between, with an opening (**ostiole**) (a very early stage will show an **amoeba-like** group of cells with dense contents)
4. view the surface of sporangial plants under the microscope to see **scattered** tetrasporangia divided in a cross (cruciate) pattern

**Similar Species**

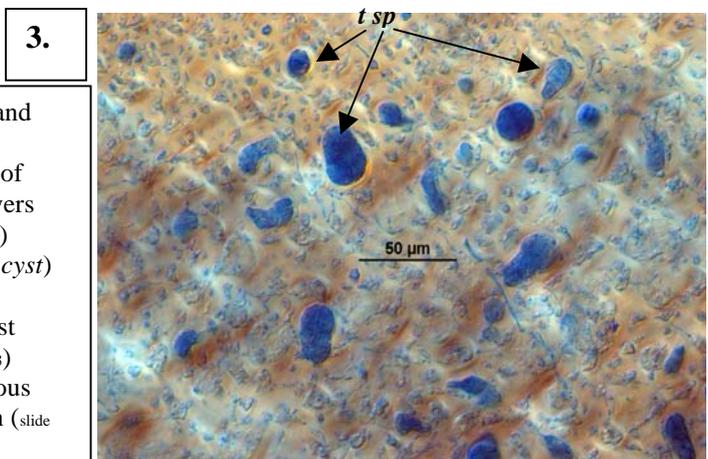
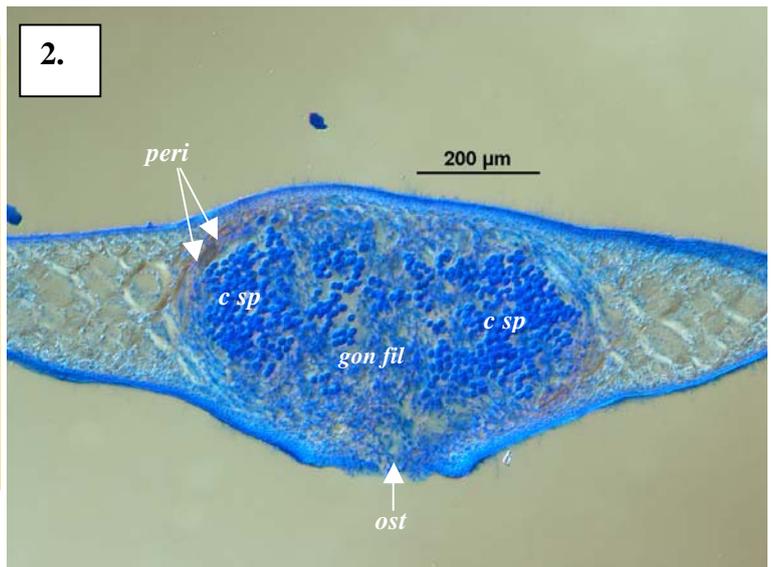
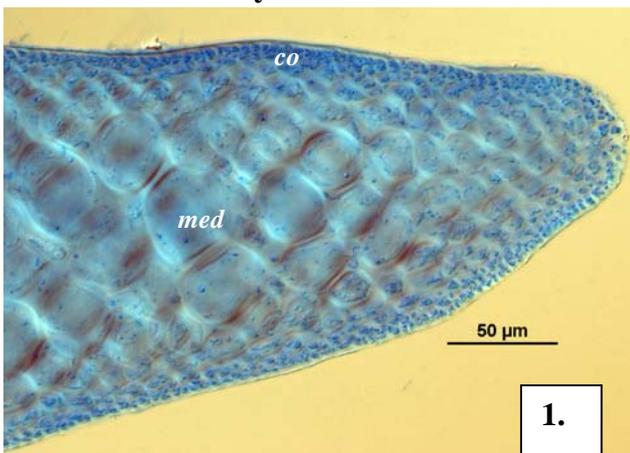


Diagnosis can be difficult

*Callophyllis lambertii* which has broader branches and *C. cervicornis*.

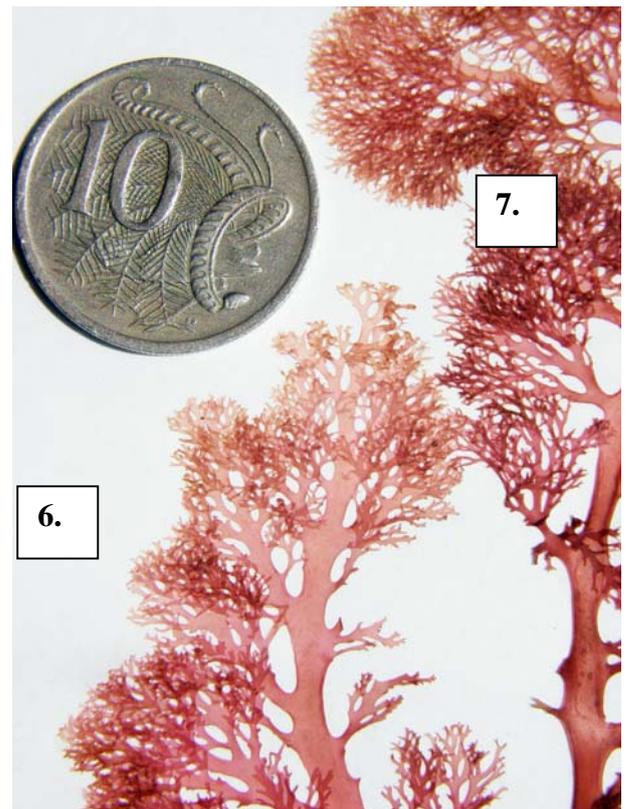
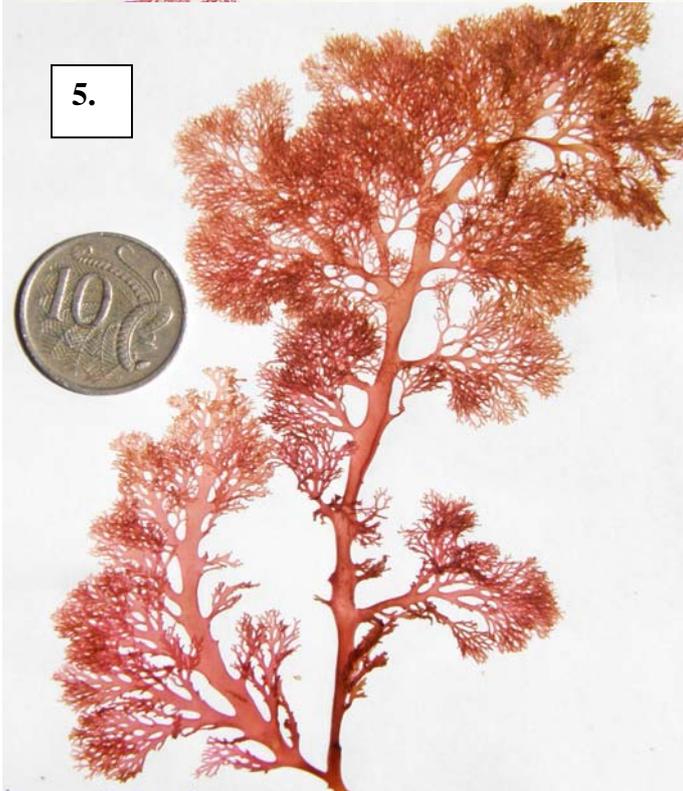
**Description in the Benthic Flora Part IIIA, pages 253, 256-259**

**Details of Anatomy**



Specimens of *Callophyllis rangiferina* (A32988) stained blue and viewed microscopically:

1. a cross section showing the broad core (medulla, *med*) of large and smaller cells, grading in size to outermost layers (cortex, *co*) of very small cells facing outwards (slide 2902)
2. a cross section of a mature female structure (cystocarp, *cyst*) with wall of threads (pericarp, *peri*) groups of carposporangia (*c sp*) separated by threads (gonimoblast filaments, *gon fil*) and an opening, (ostiole, *ost*) (slide 2903)
3. a surface view of scattered tetrasporangia (*t sp*) in various stages of dividing into a cross-shaped (cruciate) pattern (slide 2902)



Different magnifications of *Callophyllis rangiferina* (Turner) Womersley

- 4, 5. from 27m deep, Topgallant I., West Coast S Australia (A5305b)  
 6, 7 from 10m deep at Haystack Rock, S Yorke Peninsula, S Australia (A65502)