

Techniques needed and shape



MACRO PLANT



Classification

Phylum: Rhodophyta; Order: Gigartinales; Family: Halymeniaceae
false cellophane weed

*Descriptive name

Features

1. plants are red-brown fading to yellow-green and 50-220mm tall
2. they consist of **ruffled**, thin, **flat** blades about 10mm across, variously divided and lobed, containing **midribs** that become **tough** basal stalks about 1mm wide as the ruffled margins near the plant base are eroded

Occurrences

Geraldton, W Australian to Westernport Bay, Victoria.

Usual Habitat

in reef pools to 8m deep

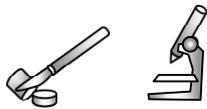
Similar Species

Cryptonemia undulata could possibly be confused with specimens of *C. kallymenioides* with small blades but midribs do not extend into the blades in the latter species

Description in the Benthic Flora Part IIIA, pages 182-184, 187

Special Requirements

1. focus microscopically on the surface and edge of a blade to see bright (**refractive**) spidery (**ganglionic**) cells with **straight arms** beneath clusters of tiny surface cells
2. if possible, cut cross sections of blades and view microscopically:-
 - a large core (medulla) of **densely entwined** threads and **bright** ganglionic cells
 - outermost layers of slightly elongate, outwardly facing, closely packed **small cells**
 - inner layers (inner cortex) of **looser**, egg-shaped cells
3. if possible find female plants, cut cross sections and view microscopically the flask-shaped structures (**ampullae**) protruding into the blade core from the cortex, in a **loose envelope** (involucre) of threads, with a **narrow** opening (ostiole) to the surface
4. if possible find spore plants, cut cross sections and view microscopically the **sparse**, **scattered** tetrasporangia in the outer layers, finally divided in a cross (**cruciate**) pattern

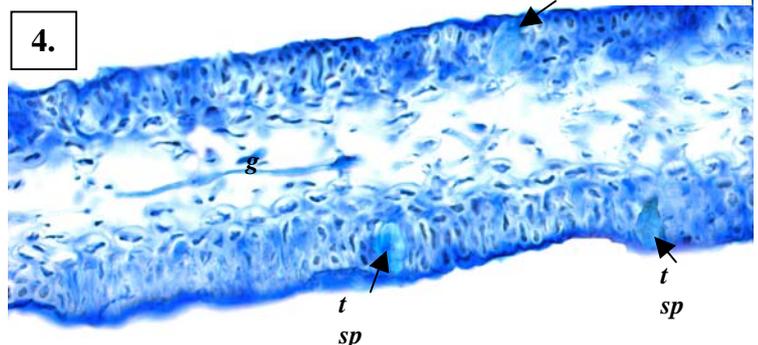
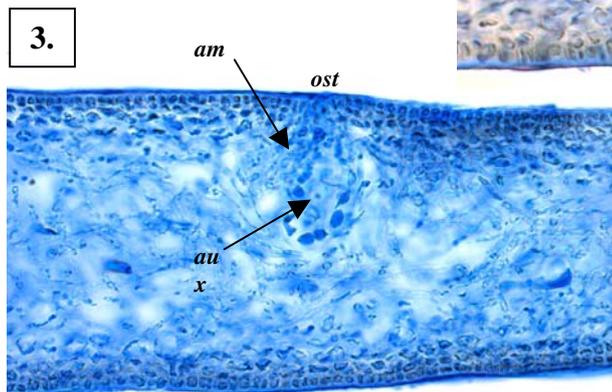
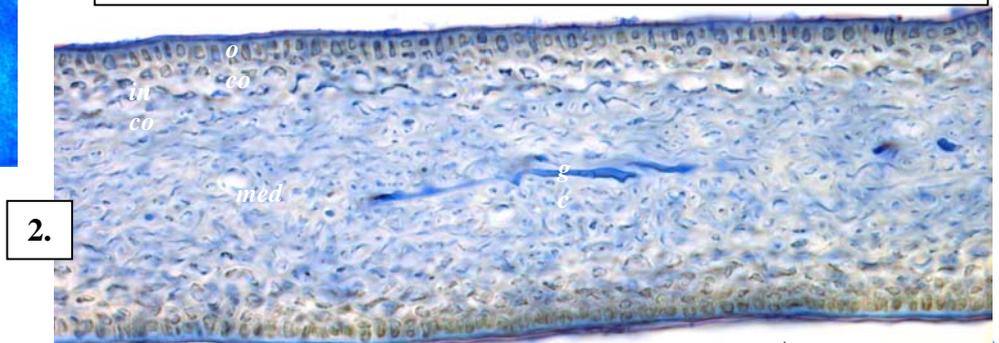
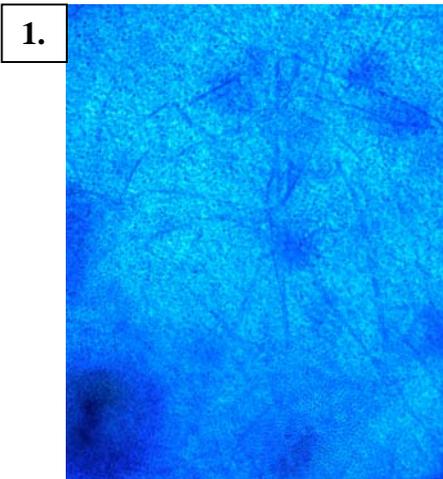


Diagnosis can be difficult

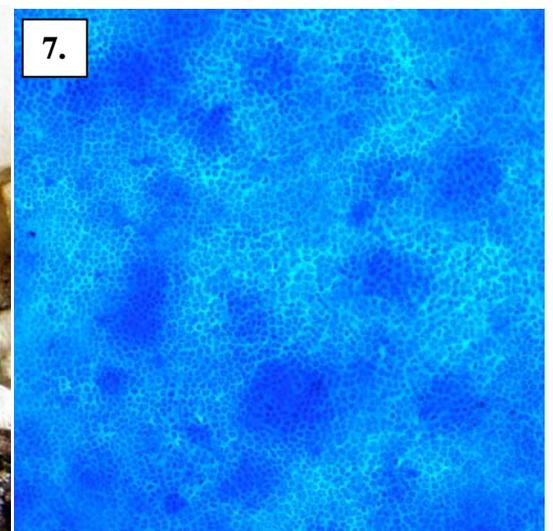
Details of Anatomy

Cryptonemia undulata stained blue and viewed microscopically showing:-

1. a surface view with long, straight-armed ganglionic cells visible beneath the small cortex cells (A22836 slide 11852)
- 2-4. cross sections showing:-
 2. the outer cortex (*o co*) of small, slightly elongated cells, larger cells of the inner cortex (*in co*), central core (medulla, *med*) of entwined threads, and bright ganglionic cells (*g c*) (A22836 slide 11853)
 3. an ampulla (*amp*) of a female plant, with several long threads of the involucre reaching the surface, a narrow opening (ostiole, *ost*) and persistent auxiliary cell (*aux*) (A22836 slide 11853)
 4. a sporangial plant with colour enhanced tetrasporangia (*t sp*) in various stages of dividing into a cross (cruciate) pattern (A18754 slide 11863)



* Descriptive names are inventions to aid identification, and are not commonly used
Prepared July 2008



Views of *Cryptonemia undulata* Sonder

5. a plant, (A34315), from Crawfish Rock, Westernport, Victoria showing the midribs of denuded fronds that form basal stalks (arrowed)
6. detail of fronds of a plant attached to the sea grass *Amphibolis* 2m deep at St Francis I., S Australia (A38409), showing the frilled (undulate) edges. A thick coating of encrusting bryozoan (arrowed) is present on lower parts of some of the fronds
7. surface microscope view of a blue-stained specimen, showing female structures (cystocarps) forming blotches beneath the minute surface cells (A18706 slide11854)