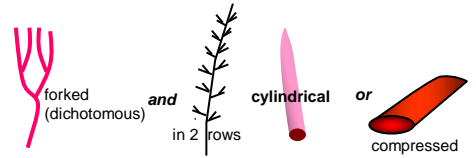


Techniques needed and shape



MACRO PLANT



Classification

Phylum: Rhodophyta; Family: Gigartinaceae
twiggy gristle weed

*Descriptive name

Features

1. plants dark red, fading to yellow, 200-300mm high, **gristly** with **forked** and rigid main branches largely cylindrical, bearing **compressed**, short **twiggy** side branches in **2 rows** from their **edges**
2. male and female structures occur on the one plant. Tetrasporangia sometimes occur with female structures (cystocarps)



Occurrences

Fremantle, W Australia to Victoria

Usual Habitat

on rough coasts in relatively deep water

Similar Species

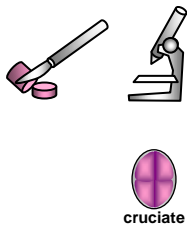
Gigartina muelleriana but in that species branches are forked without side branches

Description in the Benthic Flora

Part IIIA, pages 309, 310, 313

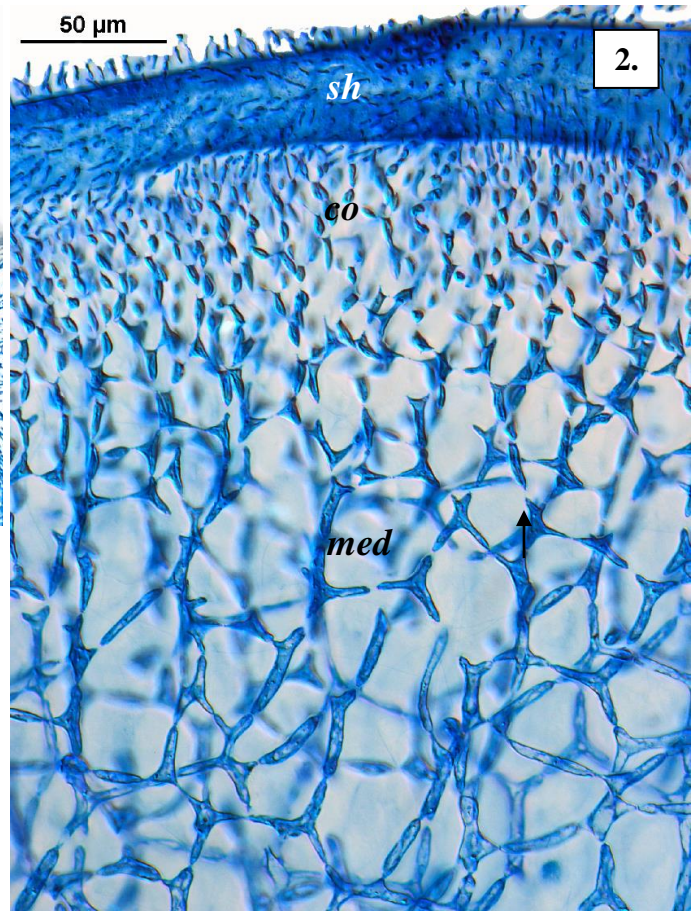
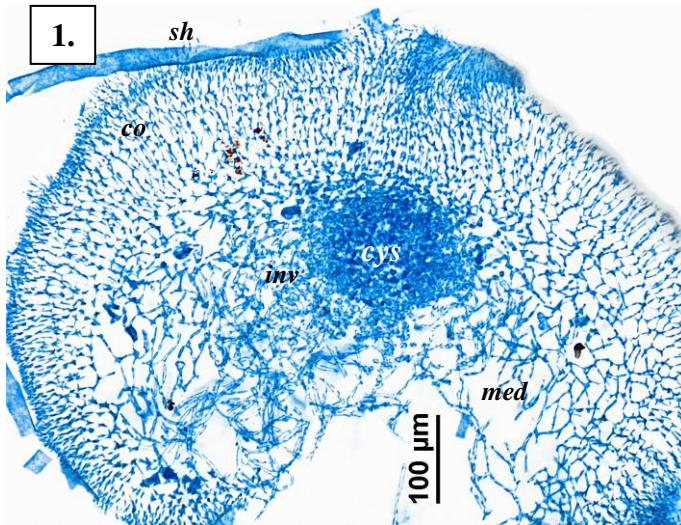
Special Requirements

cut cross sections and view microscopically to find:



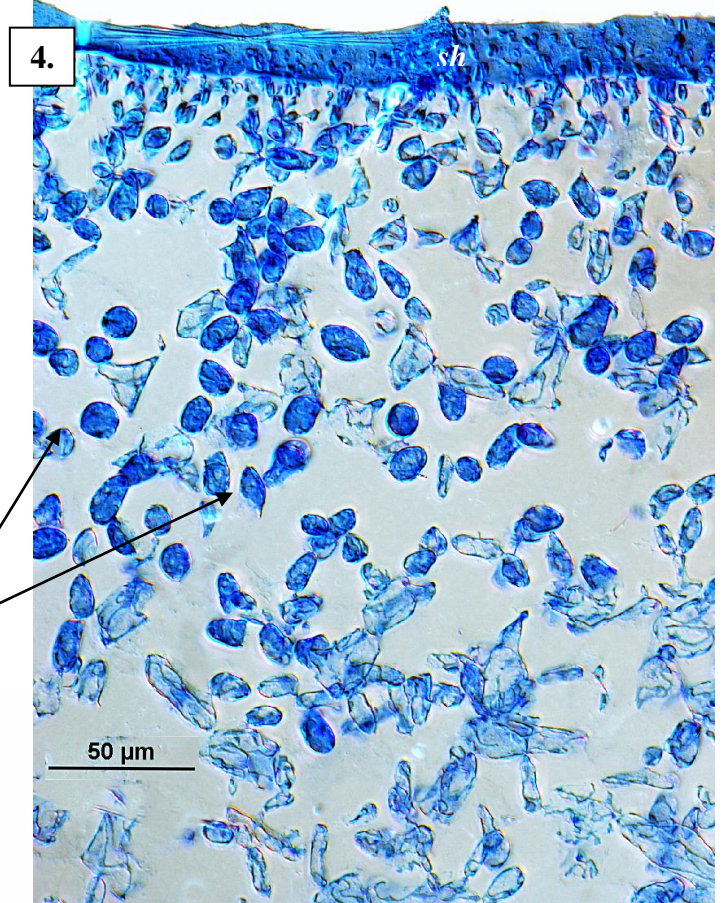
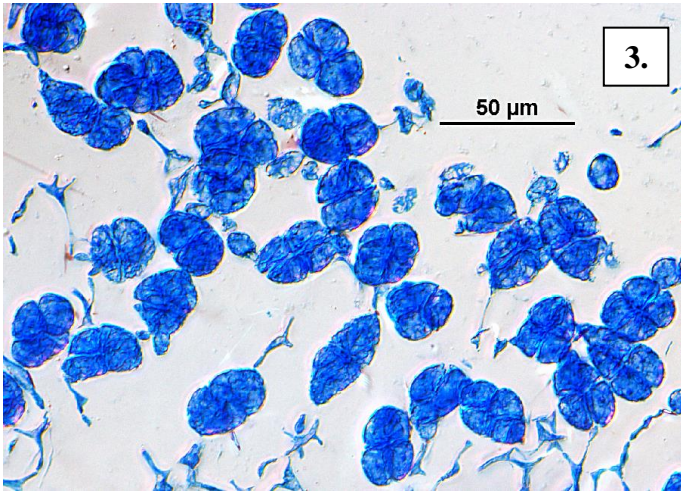
1. a **wide** core of loose threads connected by short cross threads; branched **chains** of small cells facing outwards forming the outer (cortex) layers; thick, non-cellular sheath (often broken into segments in stained preparations)
2. swollen female structures (cystocarps) that have a shallow **dimple** on the outward side, **imbedded** below forked tips of side branches; central clusters of spores, with a **sparse** wrapping of threads (involucre)
3. patch (sorus) of tetrasporangia : **scattered** tetrasporangia in the outer layers with cross shaped patterns (cruciate) when mature

Details of Anatomy

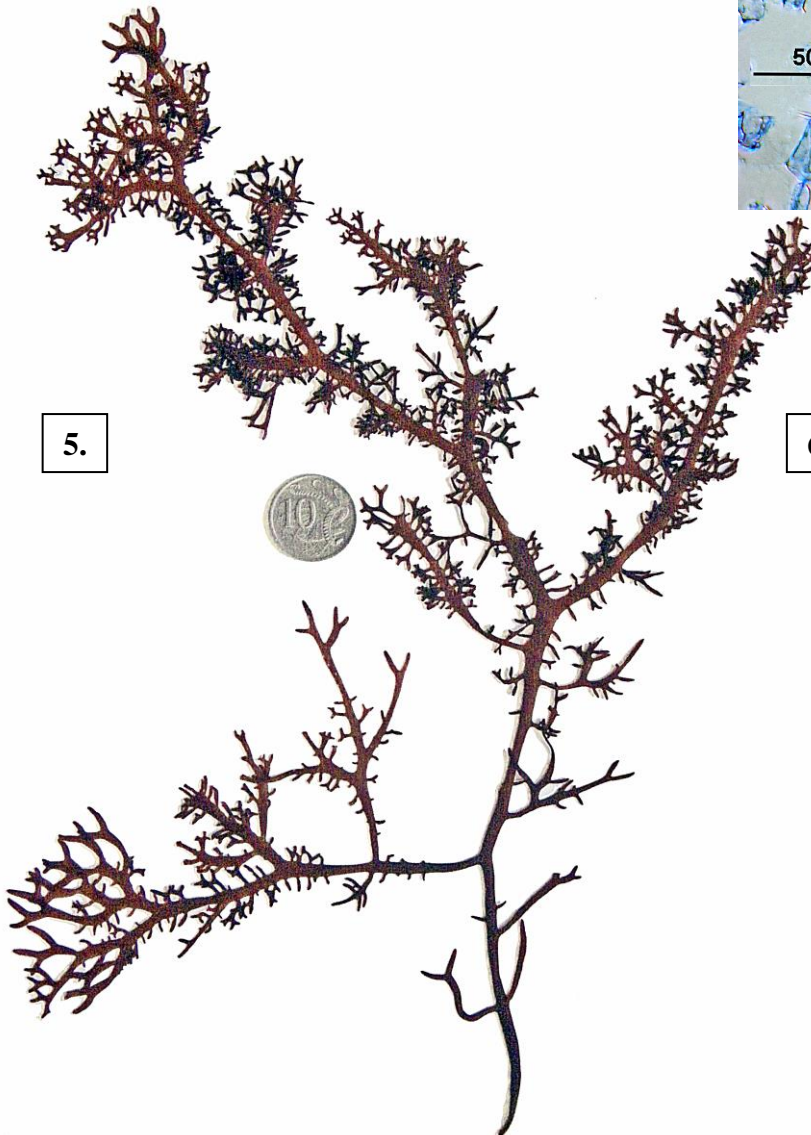


Cross sections of *Gigartina disticha* stained blue and viewed microscopically

1. branch with imbedded female structure (cystocarp, *cys*): obscure envelope of threads (involucre, *inv*), (carposporangia, *ca sp*) to escape (slide 12493)
2. outer part branch: core (medulla, *med*), of inter-connected threads, outer layer (cortex, *co*) of outwardly facing, branched threads of small cells, slightly displaced outer "rind" or gelatinous sheath (*sh*) (slide 12492)



t sp



3. tetrasporangia in various stages of division into cross-shaped (cruciate, decussate) patterns (slide 12527)
 4. outer layer (cortex) with a mass (sorus) of developing tetrasporangia (*t sp*) amongst branched threads (slide 12941)
 5, 6. *Gigartina disticha* Sonder, (A5431) 20m deep, Waller Shoals, Pandalowie Bay, S Australia

* Descriptive names are inventions to aid identification, and are not commonly used
 "Algae revealed", R N Baldock, State Herbarium S Australia, February 2009; edited May 2014