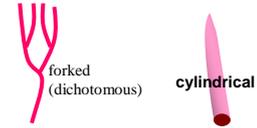


Techniques needed and shape



MACRO
PLANT



Classification

Phylum: Rhodophyta; Family: Gigartinaceae

forked gristle weed

*Descriptive name

Features

plants dark red-brown, fading to yellow, 50-150mm high, **gristly**, with upright, **forked**, **rigid**, narrow, cylindrical or slightly compressed branches \approx 3mm wide, tips rounded

Occurrences

Robe S Australia to Victoria and around Tasmania

Usual Habitat

on rough coasts usually in **shallow** water

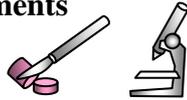
Similar Species

Gigartina disticha but in that species only the main branches are irregularly forked and short, twiggy branches occur in 2 rows along the their edges

Description in the Benthic Flora

Part IIIA, pages 307-308, 313

Special Requirements



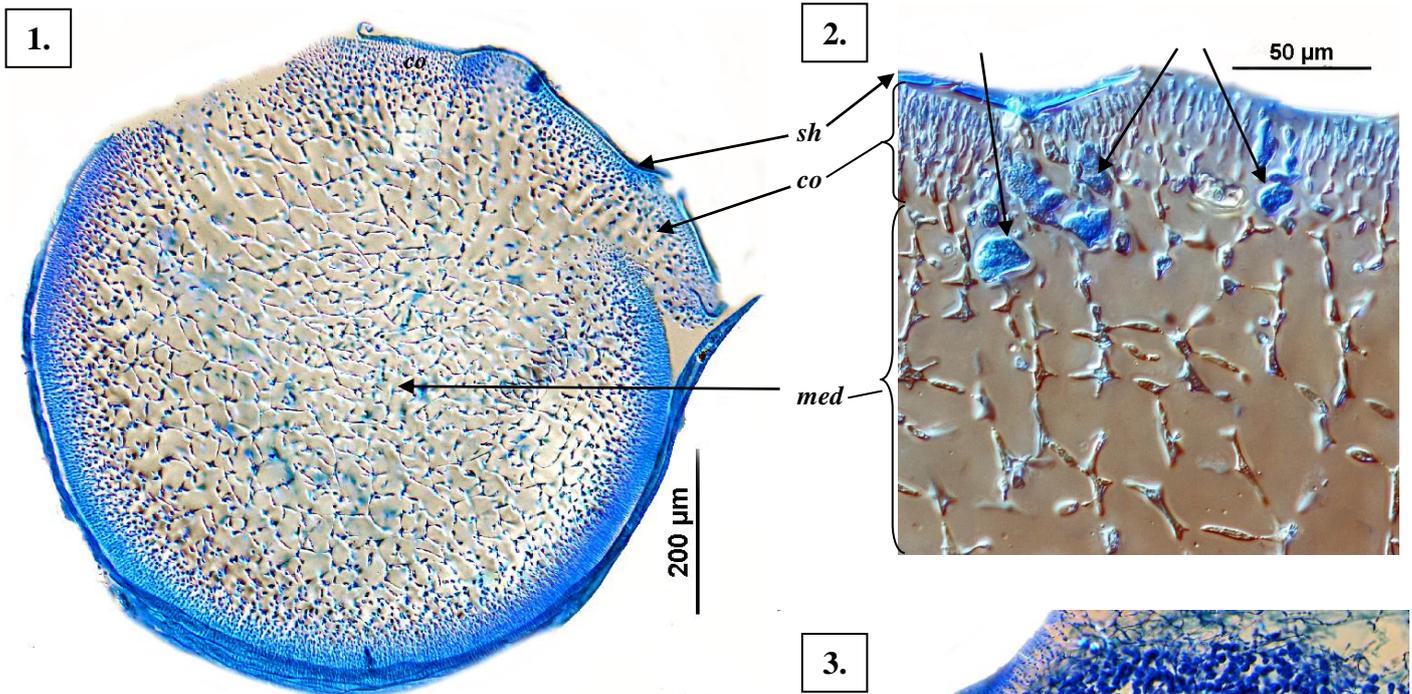
cut cross sections and view microscopically to find:



cruciate

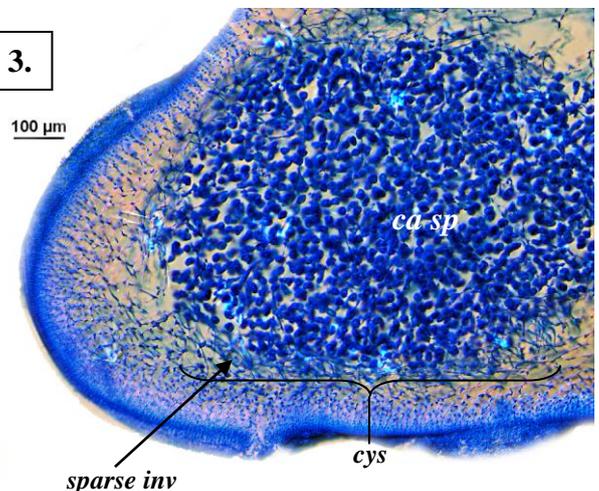
1. the **wide** core of loose threads connected by short cross threads; branched **chains** of small cells facing outwards forming the outer (cortex) layers; a thick, non-cellular sheath (often broken into segments in stained preparations)
2. in swollen female structures (cystocarps) **imbedded** near **rounded** tips of **short** side branches: central clusters of spores, with a **sparse** wrapping of threads (involucre)
3. in sporangial plants: rings or streaks of tetrasporangia on slightly flattened branches; **massed** tetrasporangia, formed from the core (medullary) threads, dividing into cross shaped patterns (cruciate) when mature

Details of Anatomy



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

1. cylindrical branch: wide core (medulla, **med**) of interconnected threads, outer layers (cortex, **co**) of outwardly facing short chains of small cells, rind-like sheath (**sh**) (slide 12444)
2. outer part of a branch: several young female fertile structures (**arrowed**) (slide 12450)
3. mature female structure (cystocarp, **cys**) imbedded in a branch: sparse envelope of threads (involucre, **inv**), mass of carposporangia (**ca sp**) (slide 12334)



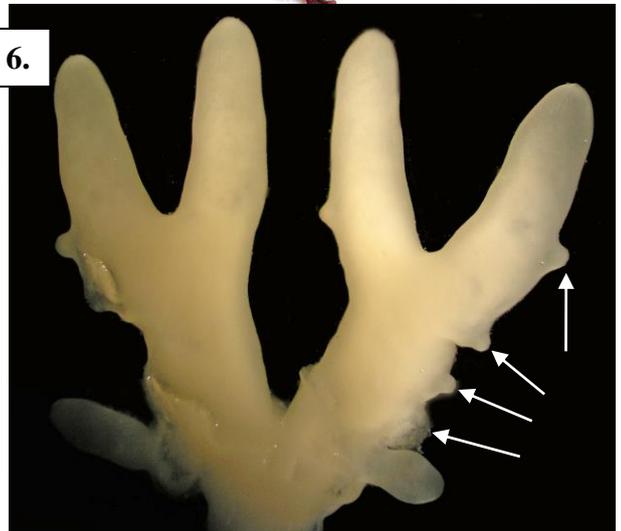
4.



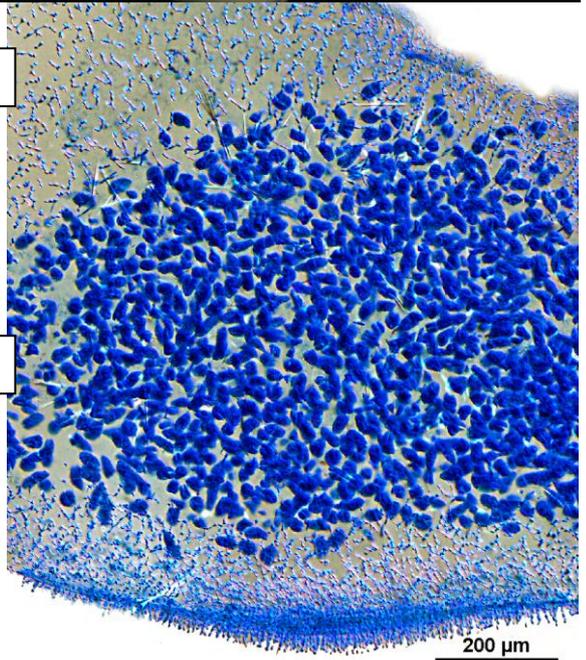
5.



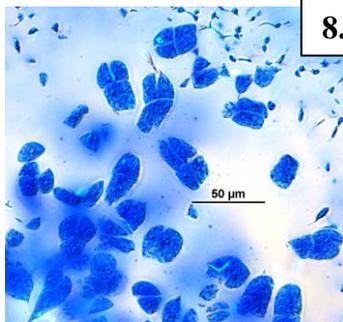
6.



7.



8.



4, 5. two magnifications of *Gigartina muelleriana* Setchell & Gardner
 6. preserved (bleached) specimen: forked, rounded tips; bumps (arrowed) that develop into short branches bearing cystocarps (A41189)
 7. cross section of a patch (sorus) of tetrasporangia (slide 12334)
 8. tetrasporangia from the above sorus in various states of division into a cruciate pattern of spores