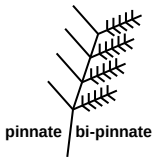
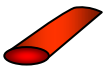
Sarcothalia crassifolia
(C Agardh) Edyvane & Womersley

45.380

Techniques needed and shape







Classification Phylum: Rhodophyta; Order: Gigartinales; Family: Gigartinaceae

***Descriptive name** red-brown gristle weed

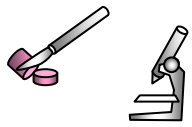
Features plants dark red to red-brown ***fading*** to yellow-brown, 80-300mm tall, slightly slimy but drying gristly, disintegrating if subsequently wet; of several ***flat*** upright main branches (axes) about 10mm wide; side branches 2-5mm wide, ***spreading***, ***flat-branched***, ***alternating*** along axis ***edges*** (pinnate), dividing again into short, cylindrical or slightly compressed branches, sometimes crowded, tips ***rounded***; stubby branches often occur from flat ***surfaces*** of older axes

Occurrences S coast of Kangaroo I., S Australia to Victoria and E coast Tasmania

Usual Habitat from shallow water to 10m deep on rough coasts

Special requirements cut cross sections and view microscopically to find

- a wide core (medulla) of ***inter-connecting***, branched threads; outer layers (cortex) of ***chains*** of ***small*** cells facing outwards
- in female plants: ***large, rounded cells*** with dense contents bearing 3-celled branches ending in a thread (trichogyne) (carpogonial branches) in early stages; in mature stages large, spherical female structures (cystocarps) embedded ***near tips*** of short branches; cystocarps with or without an envelope of threads (involucre), containing ***clumps*** of carposporangia separated by ***large threads***. In the ***same plants***, masses of threads producing spermatangia, lying close to cystocarps
- in sporangial plants: tetrasporangia in ***deep-seated*** masses (sori) on branch ends, sporangia dividing ultimately into a cross (***cruciate***) pattern, escaping through a common pore



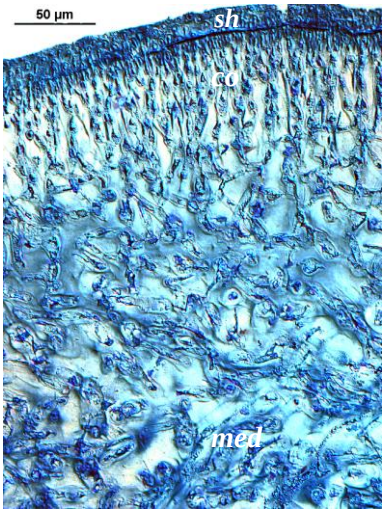
Similar Species 

Gigartina pinnata has similar branching and texture, but sporangial masses (sori) are ***irregular*** in outline, ***superficial*** (in the cortex) and escape by dissolving holes in the surface

Description in the Benthic Flora Part IIIA, pages 292, 295-297

Details of Anatomy

1.



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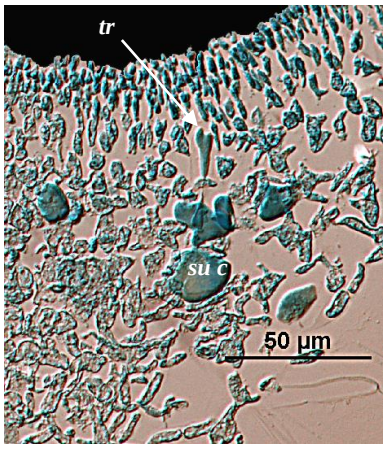

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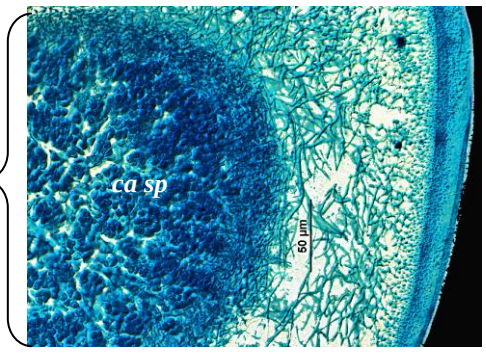

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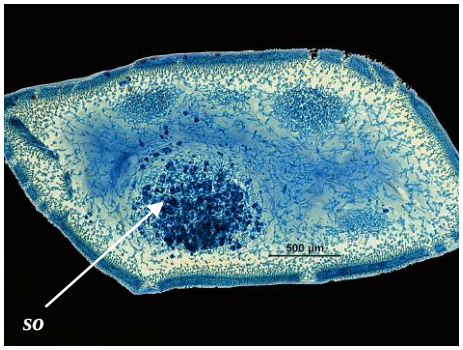


5.

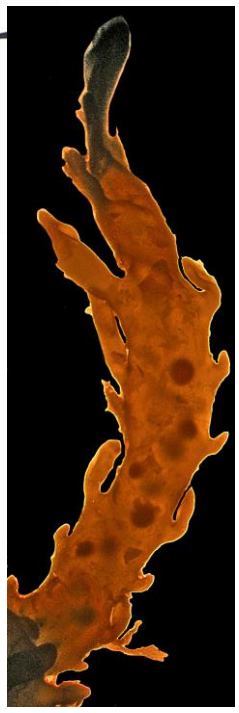
Cross sections of *Sarcothalia crassifolia* stained blue and viewed microscopically

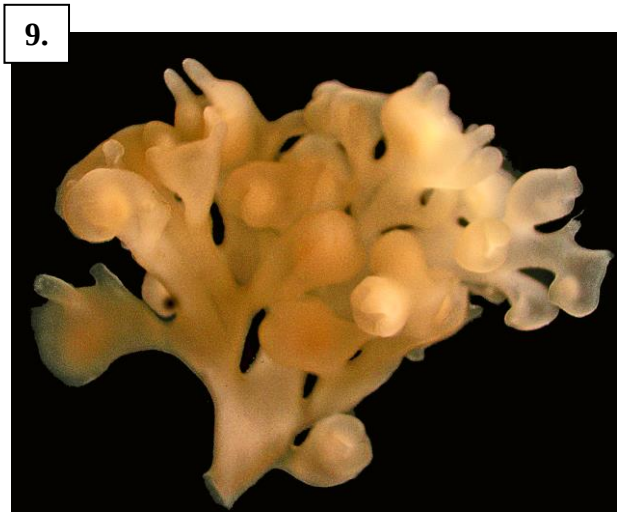
1. part of a cylindrical end branch: inter-connecting threads of the core (medulla, ***med***), chains of outward pointing small cells of the outer layer (cortex, ***co***) with end cells lying in a gelatinous "rind" (sheath, ***sh***) that often fragments during microscope preparation (slide 12456)
2. part of the cortex of a young female structure with a large supporting cell (***su c***) bearing a 3-celled carpogonial branch ending in a thread (trichogyne, ***tr***) (slide 5009)
3. part of a cylindrical branch: mature female structure (cystocarp, ***cys***), clusters of carposporangia (***ca sp***) separated by threads (slide 12460)

4, 5. deeply embedded, ball-shaped mass (sorus, ***so***) of tetrasporangia: enlargement of sporangia in various stages of division into cross shaped (cruciate) divisions (slide 12461)

Descriptive names are inventions to aid identification, and are not commonly used.

"Algae revealed", R N Baldock, State Herbarium S Australia, May 2009; revised May 2014





Sarcothalia crassifolia (C Agardh) Edyvane & Womersley from S Australia at different magnifications

6, 7. drift plant from Port MacDonnell (A61272): 3 times oppositely branched (tri-pinnate); outgrowths from the surface of the main branches

8. branchlet of a preserved (bleached) specimen, back-lit to emphasize the deeply embedded, dark sporangial masses (sori) (A41188)

9. branch tips of a preserved (bleached) specimen with swollen mature female structures (A41188)

10, 11. shallow water plant, Cape Lannes, Robe, (A37801), bleached yellow-brown: dense and crowded pinnate side branches

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