

Techniques needed and shape



Classification

Phylum: Rhodophyta; Order: Gigartinales; Family: Areschougiaceae  
tough red sea fern; § narrow-leaved fishbone

\*Descriptive name

Features



- plants dark red-brown, 100-300mm tall, usually with a stubby, cylindrical *stalk* from which *several* sturdy, compressed main upright branches (axes) **4-5mm** broad arise
- side branches are **distinctly** narrower, flat-branched oppositely twice over (bi-pinnate), cylindrical or compressed, often dense (proliferous), **1-2mm broad** from Geraldton, W Australia to Kangaroo I., S Australia

Occurrences

Special requirements



- cut a cross section and view microscopically to find
  - the central core (medulla) of *threads*, and rhizoids
  - an outer layer (cortex) of inner large and outer small cells
- if possible find cystocarps, the products of fertilisation in female plants **bulging** at the edges of smaller branches (pinnules), often **grouped** together
- if possible, cut a cross section and view microscopically a sporangial plant to find the small, cigar-shaped tetrasporangia, divided into rows (zonately) among **elongate, sterile** outer (cortical) cells

Usual Habitat

possibly a deep water species (collected to 38m deep)

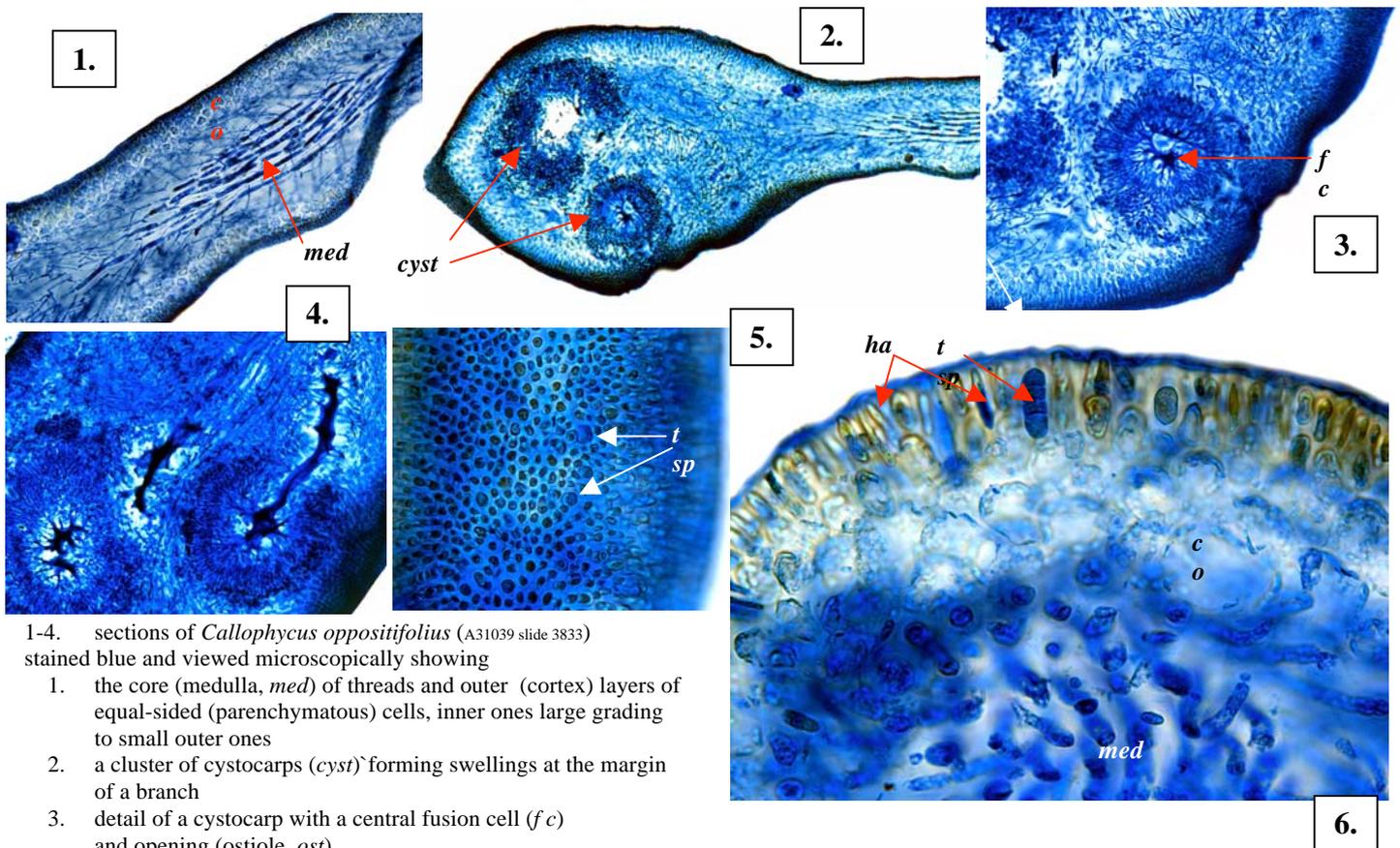
Similar Species

*Callophycus laxus*, but that species has less dense side branches similar in width to main axes

Description in the Benthic Flora

Part IIIA, pages 334-338

Details of Anatomy



1-4. sections of *Callophycus oppositifolius* (A31039 slide 3833) stained blue and viewed microscopically showing

- the core (medulla, *med*) of threads and outer (cortex) layers of equal-sided (parenchymatous) cells, inner ones large grading to small outer ones
- a cluster of cystocarps (*cyst*) forming swellings at the margin of a branch
- detail of a cystocarp with a central fusion cell (*fc*) and opening (ostiole, *ost*)
- detail of a fusion cell with a stalk formed by fusions of medullary threads

5, 6. *Callophycus oppositifolius* (A34329 slide 3834) stained blue and viewed microscopically showing

- surface view of tetrasporangia (*t sp*) amongst cortical cells
- cross section showing a zonately divided sporangium amongst elongate cortical cells ("hairs", *ha*)

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

§name used by Edgar, G (2008) in Australian Marine Life (2<sup>nd</sup> ed)

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- 7, 8 two views of *Callophycus oppositifolius* (C Agardh) Silva, (A56647), from Rottneest I., W Australia showing the flat-branching pattern, and wide main axes by comparison to side branches (pinnae and pinnules)
- 9, 10. two views of *Callophycus oppositifolius* (A68471) showing:
9. the basal attachment pad, short stalk and several wide, flat, denuded main branches (axes)
10. the dense bi-pinnate branching and compressed shape of branches near the plant tips

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