

Techniques needed and shape



Classification

Phylum: Rhodophyta; Order: Gigartinales; Family: Areschougiaceae
 dark sea moss

***Descriptive name**

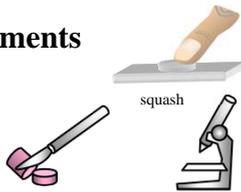
Features

1. plants are dark red-brown, drying black, gristly, 50-100mm tall **much branched** radially and irregularly, forming loose mats
2. main branches about **1mm** wide, smaller side ones distinctly **narrower, 200µm** wide

Radial pattern difficult to see in pressed specimens

Occurrences

Special requirements



1. squash the tips and view microscopically to locate the **single** central threads each cell of which produces a **single** branched thread splaying **outwards**
2. cut a cross section of a main branch and view microscopically to find
 - a central, large, prominent thread
 - a **wide core** of threads mixed with rhizoids **merging** with an outer (cortex) layer
 - outer layers (cortex) of small elongate cells facing outwards
3. if possible find the products of fertilisation in female plants (cystocarps)
 - cut a cross section of the **swollen** parts of the branch and view microscopically
 - cystocarps are found in the medulla and have **no** envelope of threads
 - there is a **large** fusion cell bearing short chains of carposporangia
3. if possible, make a squash of a piece of sporangial plant to view the **scattered**, small, cigar-shaped tetrasporangia found between short hairs in the outer (cortex) layers and divided in rows (zonately)

Usual Habitat

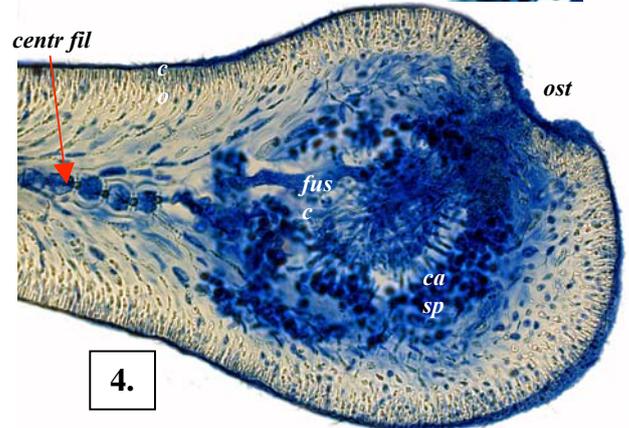
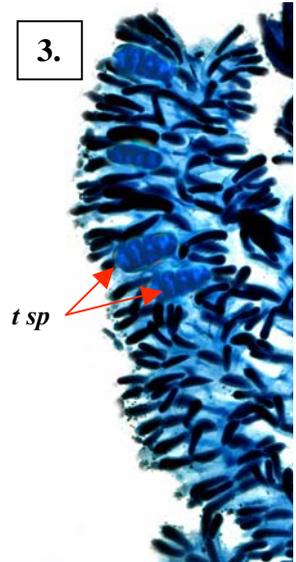
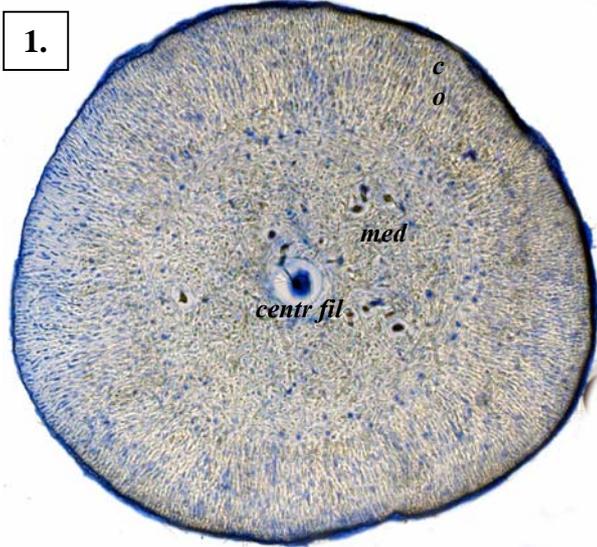
from shaded pools to 20m deep

Similar Species

Melanema has a distinctive habit; it is separated from the genus *Areschougia* on early female reproductive stages

Description in the Benthic Flora Part IIIA, pages 357, 361, 362-363

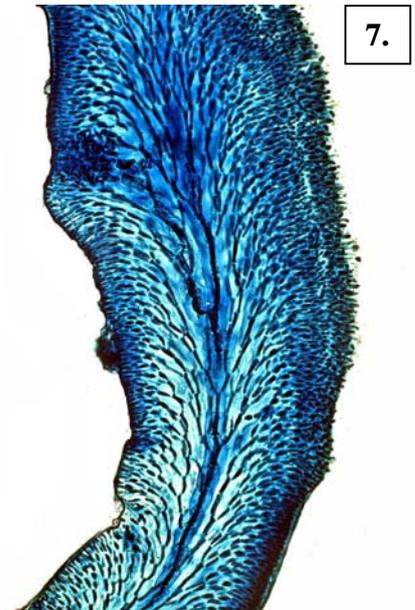
Details of Anatomy



Melanema dumosum stained blue and viewed microscopically

1. a cross section of a mature branch with prominent central thread (*centr fil*) and wide core (medulla, *med*) of branched threads and rhizoids merging with the outward-facing cortical cells (*co*) (A22996 slide 12644)
2. a squash of a young branch exposing the central thread with single branches from each cell (arrowed) (A31646 slide 4854)
3. a squash of outer branch cells with scattered tetrasporangia (*t sp*) amongst darkly stained hairs (A11068 slide 4857)
4. a section through a cystocarp with fusion cell (*fus c*) short chains of carposporangia (*ca sp*) and opening (ostiole, *ost*) (A22996 slide 12644)

* Descriptive names are inventions to aid identification, and are not commonly used
 "Algae Revealed" R N Baldock, S Australian State Herbarium, March 2008



- 5, 6. two views of a plant of *Melanema dumosum* (Harvey) Min-Thein & Womersley, (A31616), 16-20m deep, from Lands End, West I., Victor Harbor, S Australia
7. a lengthwise section of a young branch stained blue and viewed microscopically, showing the prominent central thread producing outwardly splayed branched threads ending in small cortical cells (A31646 slide 4853)
8. a preserved (bleached) piece of plant (A31616) showing the irregular branching pattern