Techniques needed and plant shape

Classification

Phylum: Rhodophyta; Order: Ceramiales; Family: Rhodomelaceae

Tribe: Chondrieae

*Descriptive name

scribbly Chondria

Features

plants dark red, main branches 1-2mm across, radially branched with spreading, narrow, cylindrical side branches

Special requirements

view plants microscopically to find:

1. rounded tips and internal rings and lobed thickenings (of cell walls) forming a scribbly pattern just visible through the surface layers (cortex)
2. cut a cross section of a main branch to view microscopically a central filament, surrounded by 5 flanking (pericentral) cells, intermingled with rhizoids in older branches and distinct outer (cortical) layer
3. short tetrasporangial branches (stichidia), narrow at their bases
4. flask-shaped cystocarps, the results of fertilisation, on short stalks open at the tips, club-shaped carposporangia within

Occurrences

Port Phillip Heads to Walkerville, and Westernport, Victoria. (Male plants unknown.)

Usual Habitat

unknown (drift plants only found)

Similar Species

Chondria capreolis and Ch. bulbosa also have cell wall thickenings but in Ch. hieroglyphica these are more complex, and tetrasporangia are smaller (about 100μm across)

Description in the Benthic Flora

Part IIID, pages 432, 433

Details of Anatomy

Chondria hieroglyphica viewed microscopically at different magnifications

1. rounded plant tip with cell wall thickenings of internal (pericentral) cells (arrowed) visible through the surface layers (A53712 slide 7798)
2. cross section of a main branch stained blue, showing the central filament (c fil) surrounded by 5 flanking (pericentral) cells, (pc1-5) with some rhizoids (rh) between them, and a distinct outer layer (cortex, co) (A53712 slide 7798)
3. tetrasporangial branches (stichidia, stich) (A53362 slide 92389)
4. female structure produced after fertilisation (cystocarp, cyst) showing the opening (ostiole, ost), club-shaped spores (carposporangia, ca sp) and short basal stalk (pedicel, ped) (A53712 slide 7796)
5. Drift plant of *Chondria hieroglyphica* Gordon-Mills & Womersley, A53712 a from Walkerville, Victoria, with numerous flask-shaped cystocarps.

6, 7. *Chondria hieroglyphica* viewed microscopically at different magnifications, focussing through the surface to see the rings and lobes of thickening (some arrowed) of the flanking (pericentral) cells inside (A53712, slide 7366).

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

"Algae Revealed" R N Baldock, S Australian State Herbarium, April 2007