

Coeloclonium debile

(Harvey) Gordon-Mills & Womersley

A SPECIES WITH FEW RECORDS

45.940.77

Techniques needed and plant shape



Classification

Phylum: Rhodophyta; Order: Ceramiales; Family: Rhodomelaceae
Tribe: Chondrieae

*Descriptive name

pinched red tubes

Features

plants small, red-brown, slender, 20-40mm tall, irregularly branched with short side-branches **pinched** at their bases

Special requirements



1. view plants microscopically to find the **blunt** tips with tufts of branched filaments (**trichoblasts**) emerging from **pits**
2. cut a cross section of a main branch to view microscopically a central thread, **5** flanking (pericentral) cells **radiating** from the central filament and branching **tree-like** at their tips, numerous fine threads or rhizoids in older branches in the space between central filament and pericentral cells and an outer (cortical) layer 1-2 cells thick, cells in **long lines in surface view**
3. find tetrasporangial branches (“stichidia”), narrow at their bases, **blunt** with a **pit** at tips
4. find **ball-shaped** cystocarps the results of fertilisation with a **swollen** base and practically no stalk, **narrow** opening (ostiole) at the tip, producing club-shaped carposporangia internally

Occurrences

King George Sound, W Australia; Sceale Bay and Tiparra Reef, S. Australia on seagrass (*Posidonia*) and the brown alga *Dilophus*

Usual Habitat

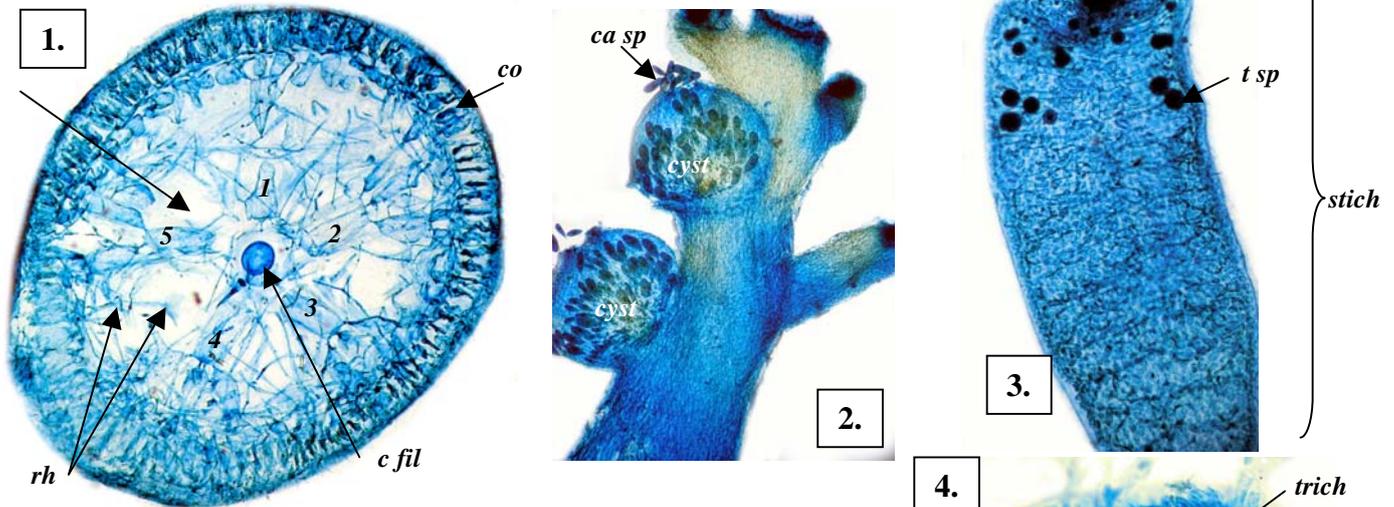
Similar Species

Coeloclonium umbellatum, and *C. verticillatum* but plants of *C. debile* are generally smaller with fewer, irregular (not ringed) branches

Description in the Benthic Flora

Part IIID, pages 412, 413, 415

Details of Anatomy



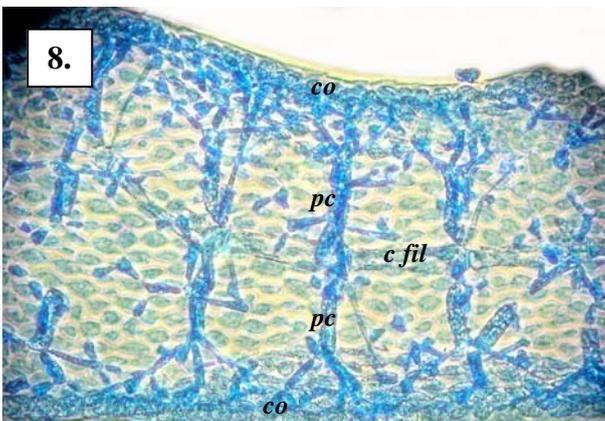
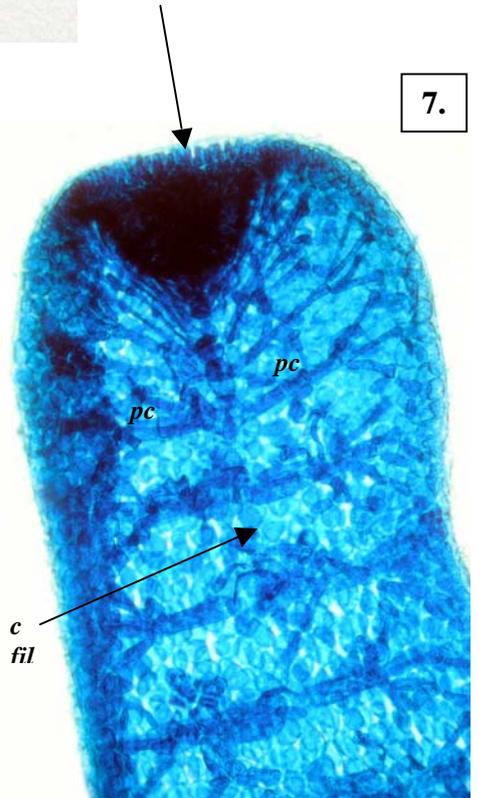
Coeloclonium debile A53373 stained blue and viewed microscopically:

1. cross section of old branch, showing a central thread (*c fil*), **5**, **radiating** spoke-like flanking (pericentral) cells (*1-5*), numerous rhizoids (*rh*, only in older parts), outer layer (cortex, *co*) and central fluid-filled space (arrowed) (slide 9795)
2. products of fertilisation (cystocarps, *cyst*) on very short stalks, with club-shaped spores (carposporangia, *ca sp*) internally (slide 9806)
- 3, 4. two magnifications of a short tetrasporangial branch (stichidium, *stich*) with branched filaments (trichoblasts, *trich*) in a pit at the tip and several tetrasporangia (*t sp*) at each ring of pericentral cells (slide 9796)



Two specimens of *Coeloclonium debile* (Harvey) Gordon-Mills & Womersley

- 5 A18281 on *Heterozostera*, from King George Sound, W Australia, with the pinched bases of several side branches (arrowed)
- 6. A53373, on *Dilophus* from Sceale Bay, Eyre Peninsula, S. Australia



- 7, 8. *Coeloclonium debile* A53373 stained blue and viewed microscopically
- 7. tip of a short side branch, showing the growing point in a depression (arrowed) and elongate flanking (pericentral) cells (*pc*) radiating outwards from the central thread (*c fil*) (slide 9799)
- 8. lengthwise slice through a branch showing the central filament, radiating pericentral (*pc*) cells ending in forked branches of small cells and outer layer (cortex, *co*) of rounded cells