

Tolypocladia penningtonensis

Womersley

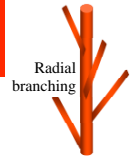
A SPECIES WITH FEW RECORDS

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Techniques needed and plant shape



MACRO PLANT



Classification

*Descriptive name

Division: Rhodophyta; Family: Rhodomelaceae; Tribe: Polysiphonieae
shaggy threads

Features



plants dark red-brown, 20-50mm tall, of many upright main branches densely clothed in short, spreading branches giving them a shaggy appearance

Special requirements

View the branches microscopically, to find

- all branches **naked** and, thread-like (**filamentous**), generally ending in colourless branched "hairs" (**trichoblasts**), of a fine central thread (central filament) flanked by **4** (pericentral) cells in banks, producing a banded appearance (**segments**); continuously growing (**indeterminate**) branches densely surrounded by **radially** arranged, short branches of limited (**determinate**) growth
- tetrasporangia **one** per segment in the short side branches **spirally** arranged, slightly **distorting** the branch
- cystocarps, the products of fertilisation, **urn-shaped**, (ball-shaped, with a neck), opening (**ostiole**) at the tip

(male structures are unknown)

Occurrences

only known from Kangaroo I., S. Australia

Usual Habitat

epiphytic on small entangled algae but possibly also on rock, in the region of wave wash, at the edge of the subtidal

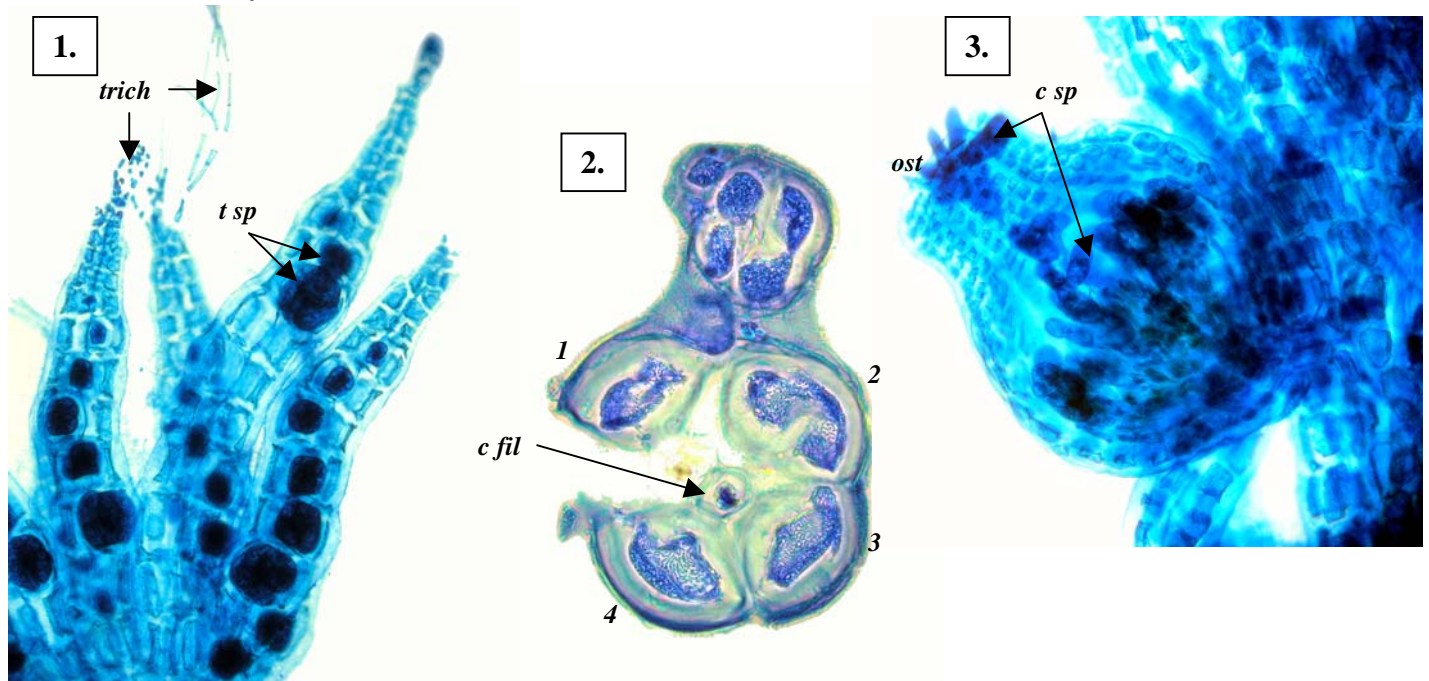
Similar Species

Echinothamnion spp, but in that genus branches of unlimited growth have an outer are **corticated**

Description in the Benthic Flora

Part IIID, pages 220-222

Details of anatomy



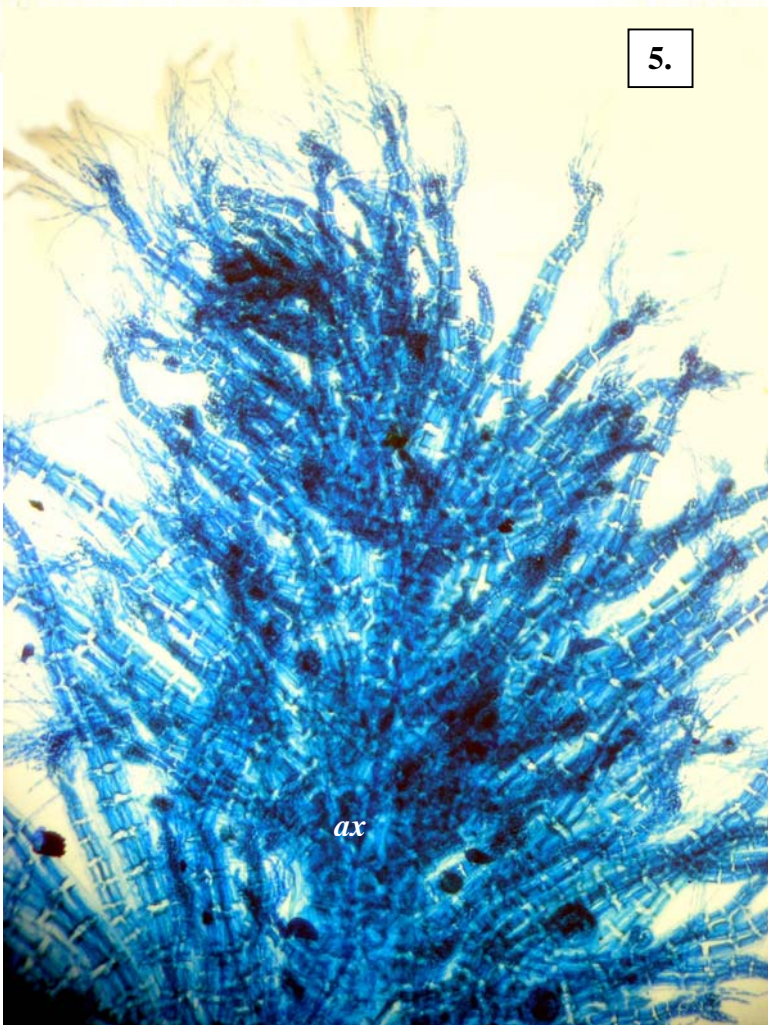
Tolypocladia penningtonensis (A8736 slide 19008) stained blue and viewed microscopically:

1. short radially arranged branches of limited growth ending in trichoblasts (*trich*), tetrasporangia spiral, single per segment (*t sp*)
2. cross sections of two branches showing a central fine thread (*c fil*) and **4** flanking (pericentral) cells (*1,2,3,4*) in the larger branch
3. cystocarp the product of fertilisation, showing club-shaped spores (carposporangia, *c sp*) and opening (ostiole, *ost*)

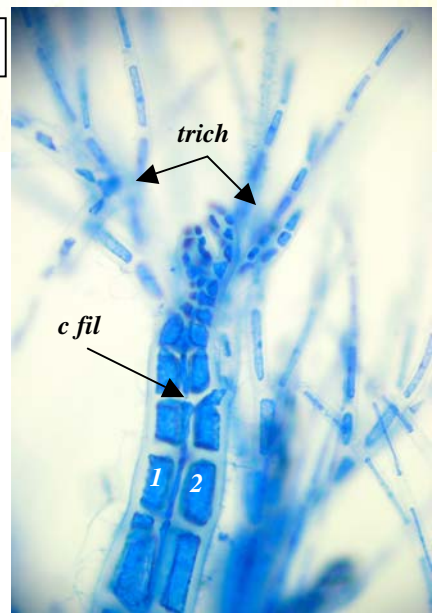
4.



5.



6.



Tolypocladia penningtonensis Womersley, A8736a
 4. specimen from Pennington Bay, Kangaroo I., S. Australia
 5, 6 slide 19008 stained blue and viewed microscopically
 5. main branch (axis, *ax*) of unlimited growth, side branches of limited (determinate) growth densely surrounding the axes
 6. detail of a branch tip, showing apical trichoblast (*trich*), fine, central filament (*c fil*), flanking (pericentral) cells; two shown in this face view of the thread

* Descriptive names are inventions to aid identification, and are not commonly used
 "Algae Revealed" R N Baldock, S Australian State Herbarium, May 2007