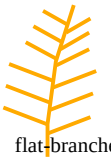
Hymenocladia divaricata Harvey

45.660

Techniques needed and plant shape

MACRO PLANT



Classification Phylum: Rhodophyta; Order: Rhodymeniales; Family: Rhodymeniaceae

***Descriptive name** spiky strapweed

Features

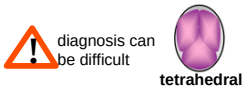
1. yellow-brown red to red-brown, 50-180 mm tall, flat-branched
2. main parts (axes), strap-like, 2-5 mm wide, side branches 20-100mm long, diverging from axial edges, some at right angles,
3. ultimate branches (ramuli) 1-2 mm long, < ***1mm wide***, almost ***cylindrical***, some forked, on branch edges ***and*** on surfaces, pointing upwards or downwards
4. mature female structures (cystocarps) pustulate, on surfaces or edges of smaller branches

Occurrences Albany, W Australia to Cape Jaffa, S Australia

Usual Habitat on seagrasses, or rock? to 11 m deep

Special requirements

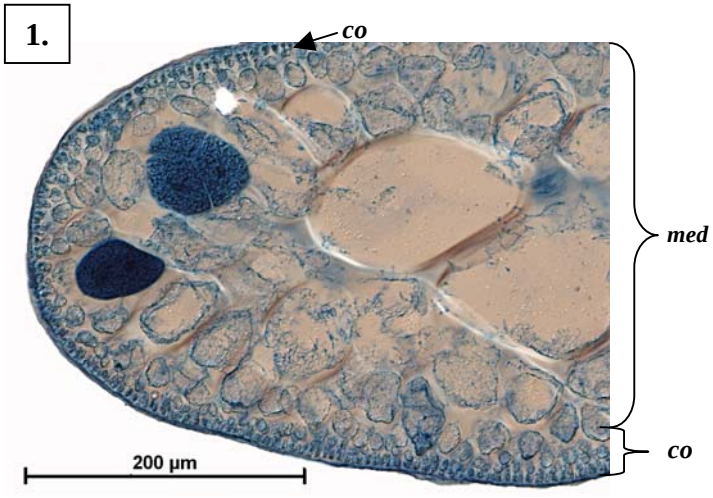
1. cut sections of blades and examine microscopically to find narrow outer (cortical) layers of 1-2 layers of small cells grading in size to ***thin-walled*** large cells of the core (medulla) ***4-6*** cells wide
2. cut sections of pustulate, mature female structures (cystocarps) to find small egg-shaped cells forming a wall (pericarp), single prominent external opening (ostiole), mass of carposporangia, prominent nutritive cells basally, complex branched fusion cell and envelope of threads initially present, but disintegrating
3. sporangia scattered in the ***outer part of the medulla***, divided tetrahedrally



Similar Species *Hymenocladia usnea* but main branches are wider and ultimate branchlets (ramuli) much longer in that species

Description in the Benthic Flora Part IIIB, pages 109-111

1.



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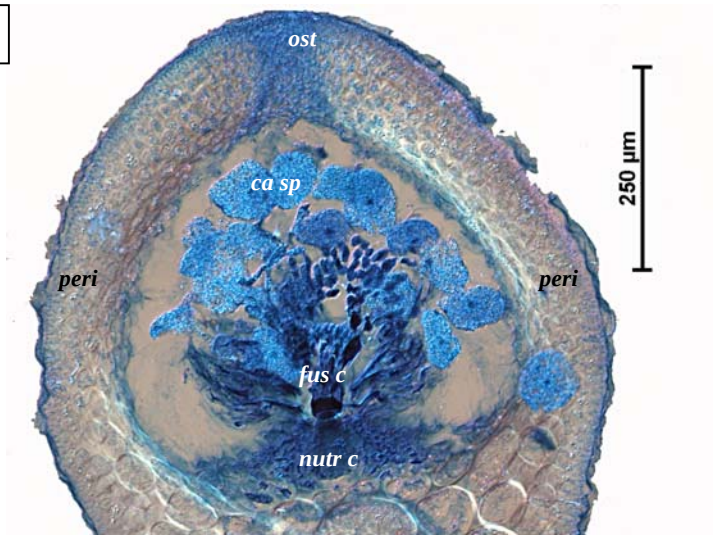

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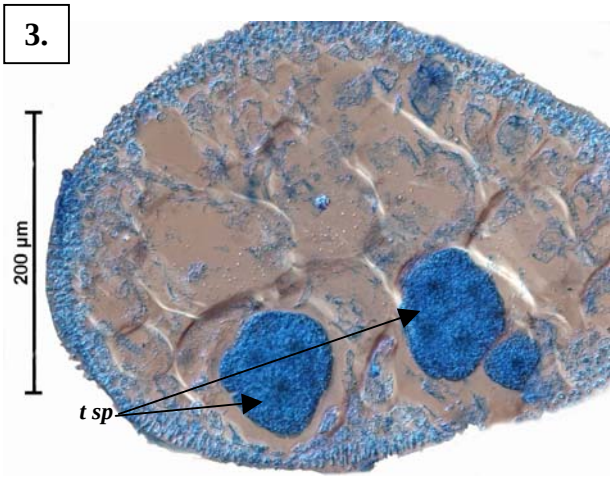

Cross sections of *Hymenocladia divaricata* stained blue and viewed microscopically

1. edge of a flattened main branch with tetrasporangia, showing narrow outer layers (cortex, *co*) of small cells grading in size to large, thin-walled cells of the core (medulla, *med*) (A61793 slide 14589)
2. mature female structure (cystocarp) showing cellular wall (pericarp, *peri*) with single opening (ostiole, *ost*) prominent basal nutritive layer (*nutr c*) branched fusion cell (*fus c*) and carposporangia (*ca sp*) (A16098 slide 14592)
3. smaller branch (almost cylindrical) showing tetrasporangia (*t sp*) (A16098 slide 14593)

*Descriptive names are inventions to aid identification, and are not commonly used
"Algae Revealed", R N Baldock, S Australian State Herbarium December 2010

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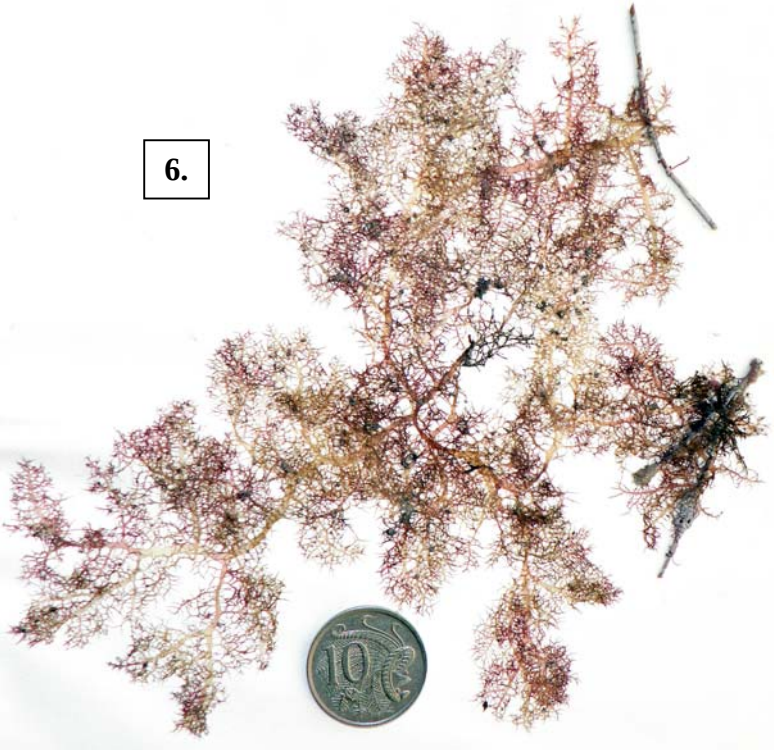
7.



6.

Hymenocladia divaricata Harvey from South Australia

4. 10m deep in sheltered situation, Haystack I., (Althorpe Islands) (A66264) with short ultimate branches (ramuli) on the main branch surface
5. 11m deep, Tiparra Reef on seagrass (*Amphibolis*) (A39266)
6, 7. two magnifications of darker specimens also from Tiparra Reef (A38242) showing the short, spreading ultimate branches

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