

Techniques needed and plant shape



MACRO PLANT



Classification

Phylum: Rhodophyta; Order: Gracilariales; Family: Gracilariaceae
§ fine leathery forkweed

*Descriptive name

Features

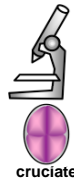


1. red brown, 100-300mm tall, flat-branched, branches tough, cylindrical to slightly oval-shaped in cross section, forked regularly (dichotomous), about 0.3-0.7mm wide
2. branch tips rounded, with a **thickened dark cap**
3. mature female structures (cystocarps) ball-shaped, about 1mm across, scattered

Occurrences

Usual Habitat

Special requirements



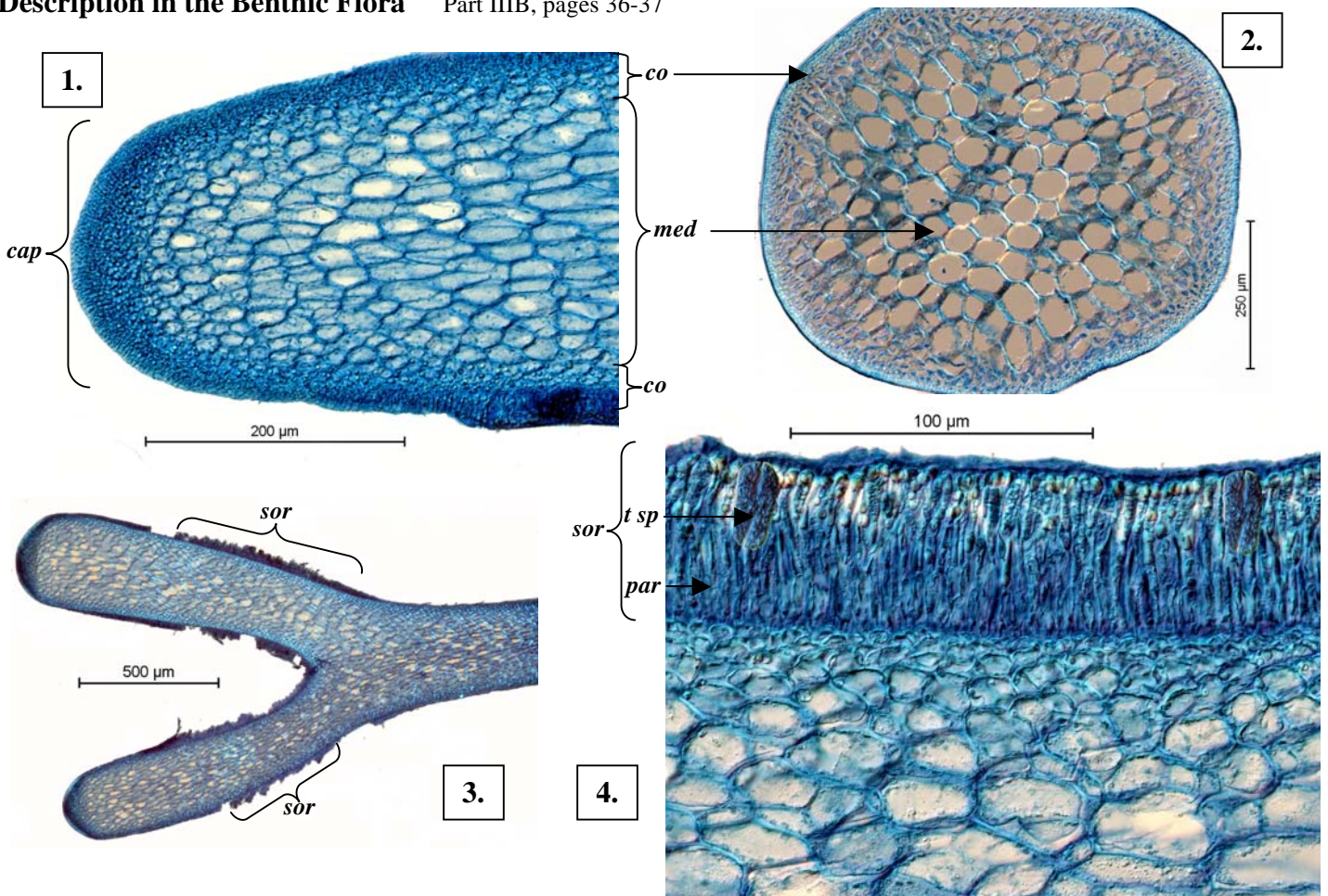
1. cut cross sections and view microscopically the wide core of large, equal-sided cells and distinct change to an outer layer of rows of much smaller cells facing outwards
2. cut longitudinal sections to view microscopically
 - branch tip with a **thickened cap** of cells containing **globules** in the cell contents
 - inconspicuous patches (sori) of small tetrasporangia divided in a cross-shaped pattern **mixed with hairs** each 2-3 cells long
 - cystocarp with central mass of threads ending in bead-like **chains** of carposporangia, surrounded by a thick wall of chains of cells radiating outwards, and a single opening

Similar Species

Melanthalia absissa, but branches are about 1mm wide in that species

Description in the Benthic Flora

Part IIIB, pages 36-37



Melanthalia concinna stained blue and viewed microscopically

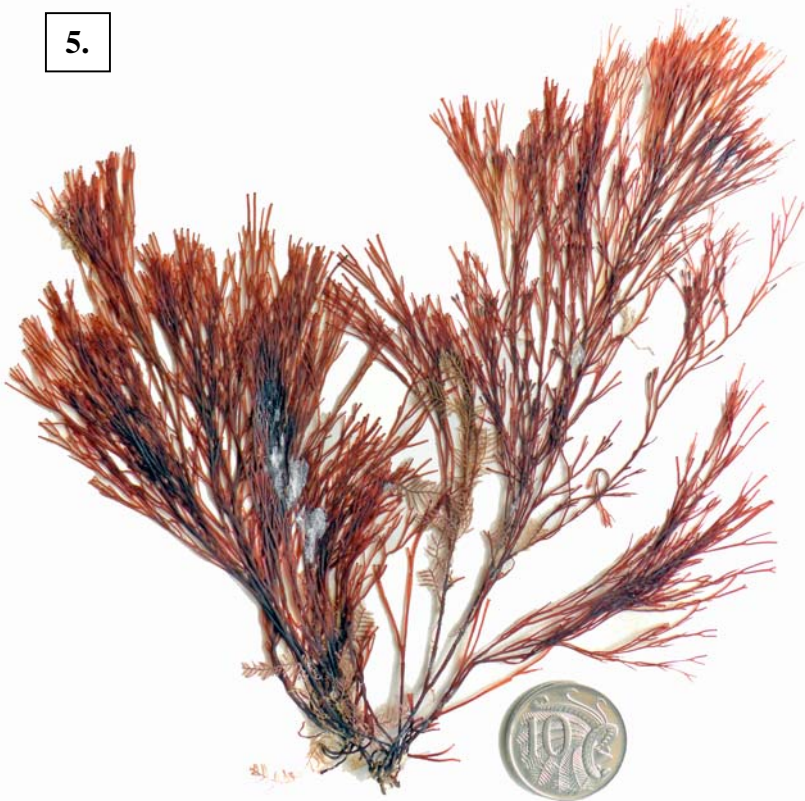
1. lengthwise section through the prominent apical cap (*cap*) with dense, small cells of the outer layer (cortex, *co*) and sudden change to the large cells of the core (medulla, *med*) (A23009 slide 13400)
2. cross section (A30612 slide 13548), practically circular in view
- 3, 4. lengthwise sections (A23009 slide 13400) at different magnifications through dark patches (sori, *sor*) of tetrasporangia (*t sp*) divided in a cross (cruciate) pattern, mixed with thin hairs (paraphyses, *par*)

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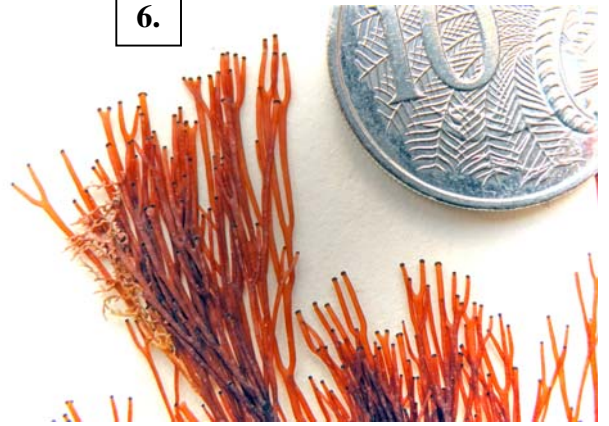
§ name used in Edgar, G. *Australian Marine Life, 2nd Ed.* (2008)

“Algae Revealed”, R N Baldock, S Australian State Herbarium April 2011

5.

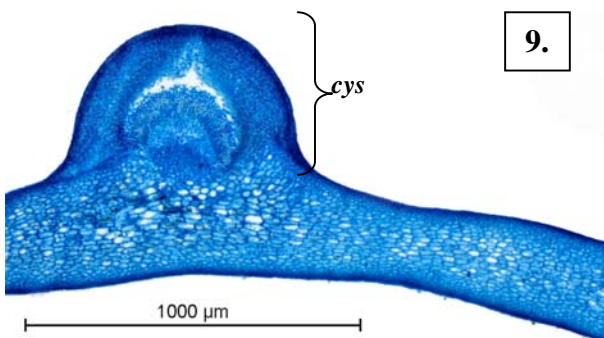


6.



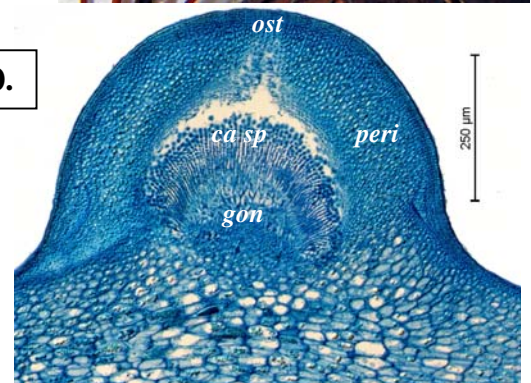
7.

8.



9.

10.



5-8. Pressed specimens of *Melanthalia concinna* J Agardh from West I., S Australia at different magnifications, showing linear, forked (dichotomous) branches (flattening an artefact of drying) and thick, dark tips characteristic of the genus
 5,6. from Toad Head, 13m deep (A31561); 7. from 2m deep, Pt Elliot; 8. from 5m deep, West I. (A72308)
 9, 10 lengthwise sections stained blue, at two magnifications, showing a protruding mature female structure (cystocarp, *cys*) with branching threads (gonimoblast, *gon*), chains of carposporangia (*ca sp*), thick wall (pericarp, *peri*) and single opening (ostiole, *ost*) (A24401 slide 13404)

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