

***Asparagopsis armata* Harvey**
(including *Falkenbergia* spore stage)

45.760

two stage in the whole life cycle of the species

Techniques needed and plant shape



Classification

Phylum: Rhodophyta; Order: Bonnemaisoniales; Family: Bonnemaisoniaceae
hooked red asparagus weed; §foxtails (sexual plants only)

***Descriptive name**

Features of the sexual plants

1. pink to red when fresh, drying grey-brown to dark red, 80-250mm tall, with long, **feathery** main branches covered with dense, irregular, radial, short tapering side tufts
2. attached to algae by branches naked except for radial, **hooked spines** up to 1mm long

Features of the sporangial plants

(previously called *Falkenbergia*) tufted, **threadlike**, to 20mm tall on rock or algae

Occurrences

western Europe, Chile, New Zealand. In Australia, Perth, W Australia to Victoria, Tasmania and N of Sydney; possibly N Territory

Usual Habitat

sexual plants hooked to other plants in shallow to relatively deep water.

Special requirements



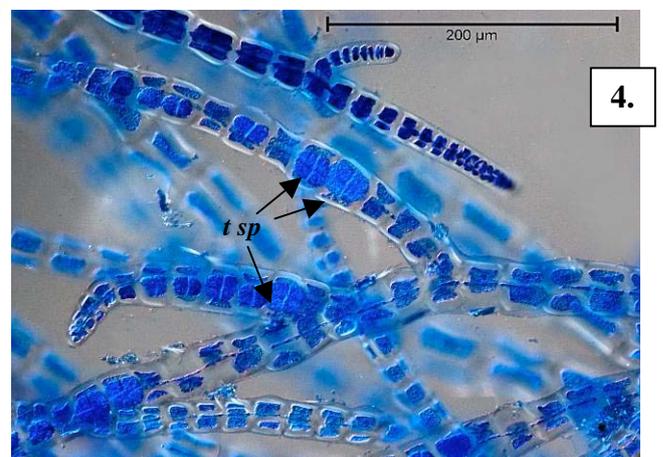
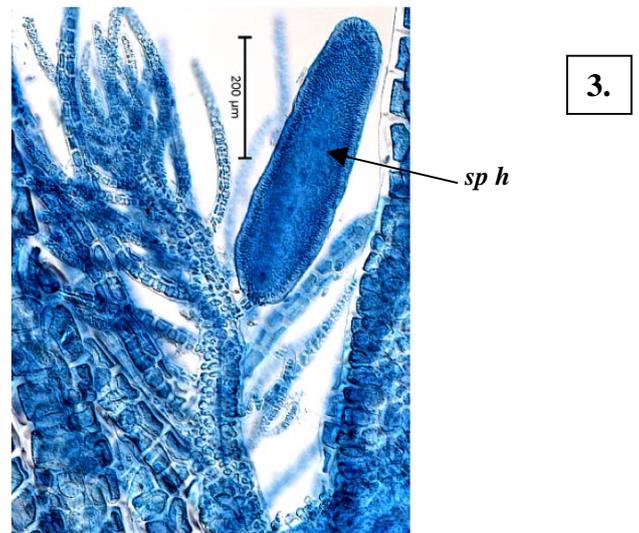
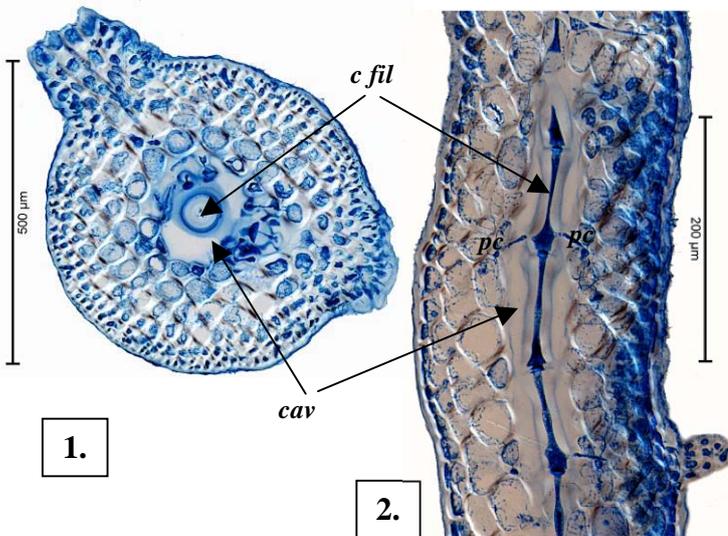
1. view sporangiate (small, tufted) plants microscopically to find prominent apical cells, branched threads; cells each with 3 flanking (pericentral) cells, some producing gland cells inwardly; large tetrasporangia divided in a cross shape (cruciate) pattern
2. view mature branches of the large, feathery sexual plants microscopically:-
 - in cross section, showing prominent, thick-walled central thread surrounded by concentric rings of cells grading from central large to very small outer cells
 - focussing through or cutting a lengthwise section to expose elongate cells lying in a space each with 5 arm-like cells at right angles from their upper ends, 2 opposite ones in single view
3. find cigar-shaped heads of spermatangia to 150 wide x 450µm long, on short stalks
4. find stalked, globose mature female structures, often paired, each with a single opening, amoeba-like central fusion cell and radiating chains of carposporangia

Similar Species

Asparagopsis taxiformis but that species is attached by basal runners, spiny branches are **absent**, and male heads larger (to 650µm long)

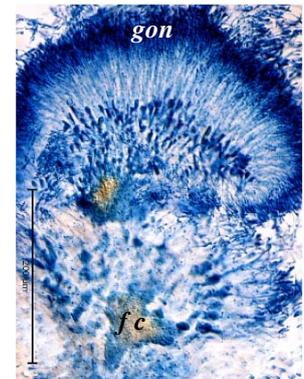
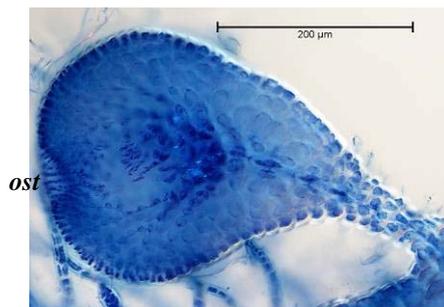
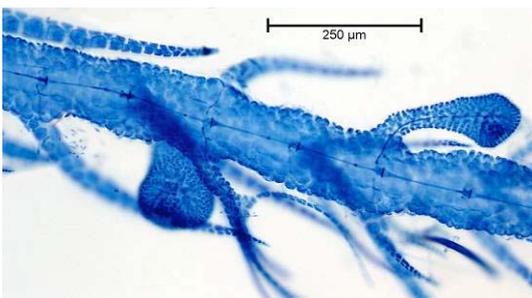
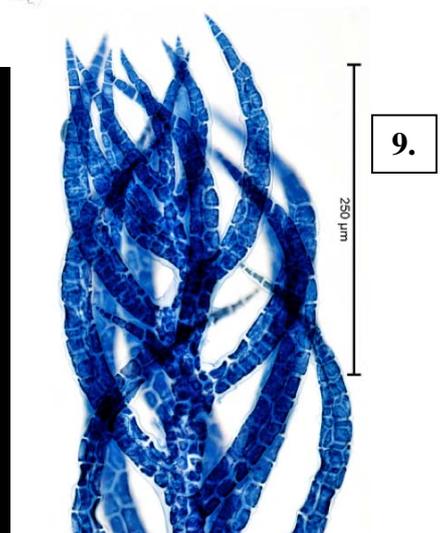
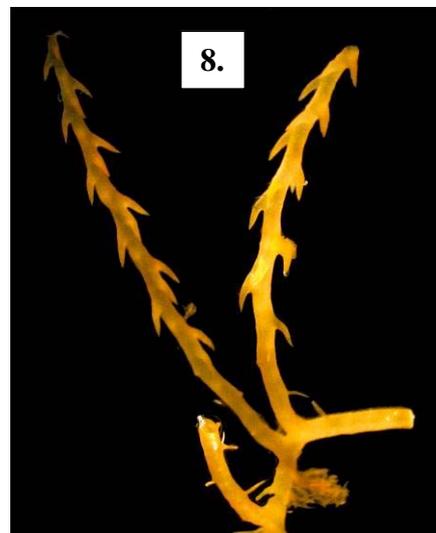
Description in the Benthic Flora

Part IIIB, pages 326-329



- 1-3. **sexual** plants of *Asparagopsis armata* stained blue and viewed microscopically:
1. cross section showing central thread (*c fil*) and cavity (*cav*) (A59878 slide 13571)
 2. lengthwise section with central thread, 2 side branches (pericentral cells, *pc*) visible (A59878 slide 13872)
 3. shortly stalked spermatangial head, (*sp h*) near a tip of a branch tuft (A43326 slide 13578)
- 4 **sporangiate** (*Falkenbergia*) stage with branched threads and tetrasporangia (*t sp*) divided in a cross pattern (A19029 slide 13581)

*Descriptive names are inventions to aid identification, and are not commonly used;
§ name used in Huisman, J et al, *Marine Plants of the Perth Region* (2006)
“Algae Revealed”, R N Baldock, S Australian State Herbarium November 2011



10.

11.

12.

Specimens of *Asparagopsis armata* Harvey

- 5, 6 live, pink, feathery **sexual** plant characteristically attached to larger algae, Fisheries Beach near Cape Jervis, SA compared with a dried, pressed specimen
7. small, tufted, drift **sporangial** plant (*Falkenbergia*) (A28024) on cockles at South Arm, Tasmania
- 8 magnified view of specialist attachment branches with downward-pointing hooks
9. normal, dense, radial branches stained blue showing curved branches tapering upwards to a point and pattern of alternating surface cells (A64183 slide 15179)
- 10-11 two magnifications of mature female structures (cystocarps, *cys*) one showing an opening (ostiole, *ost*) (A59339 slide 11034)
- 12 extruded contents of a ripe cystocarp, showing large fusion cell (*fc*) and radiating threads of the gonimoblast (*gon*) (A59878 slide 13872)

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