

***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**



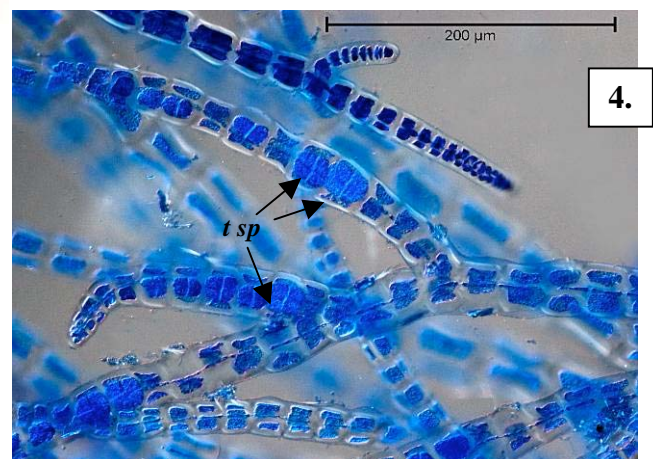
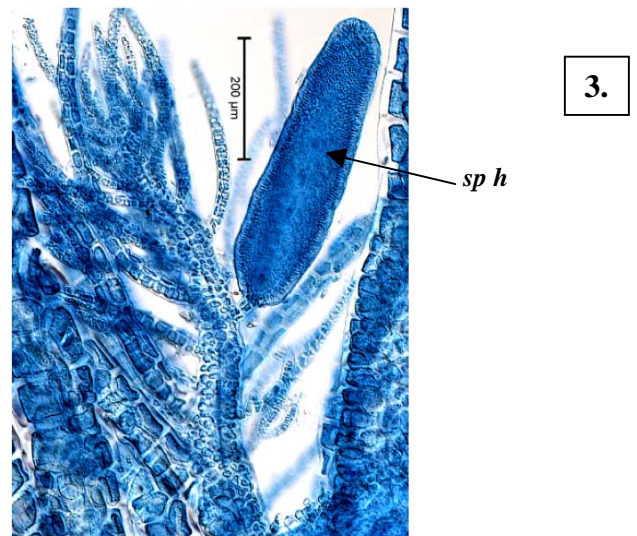
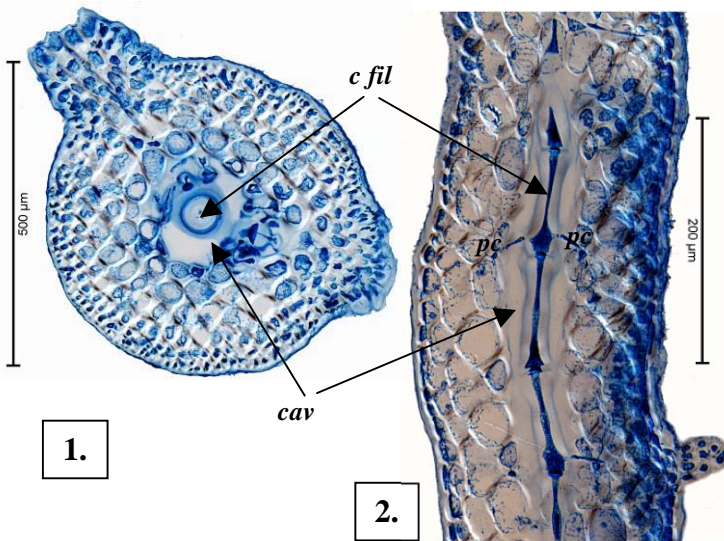
1. view sporangiate (small, tufted) plants microscopically to find prominent apical cells, branched threads; cells each with 3 flanking (pericentral) cells, some producing gland cells inwardly; large tetrasporangia divided in a cross shape (cruciate) pattern
2. view mature branches of the large, feathery 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**

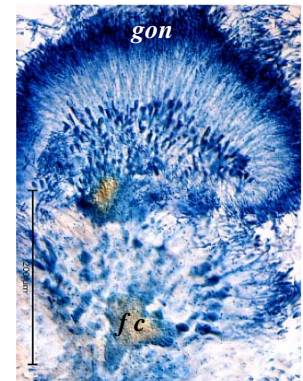
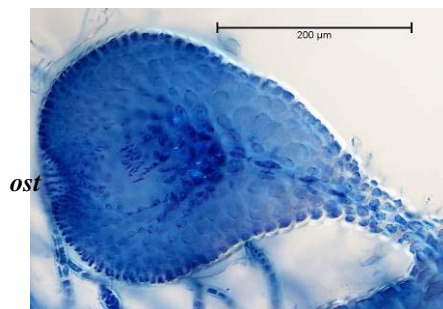
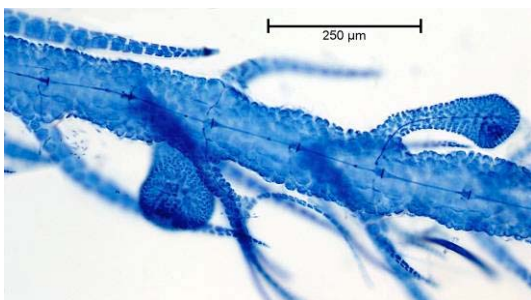
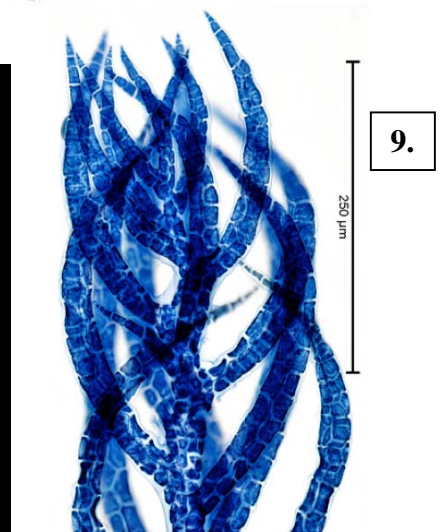
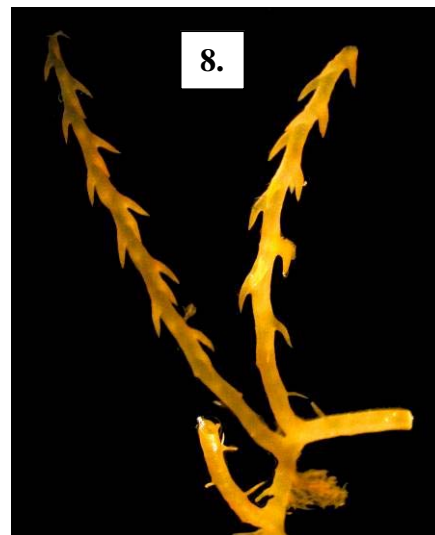
Part IIIB, pages 326-329



- 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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