**Bonnemaisonia spinescens**

**Womersley**

(covering spore stage unknown)

**Techniques needed and plant shape**

**Classification**

*Descriptive name*

**Features**

**Occurrences**

**Usual Habitat**

**Special requirements**

**Similar Species**

**Description in the Benthic Flora**

Phylum: Rhodophyta; Order: Bonnemaiosinales; Family: Bonnemaiosinaceae

1. red, delicate, 30-80mm tall, much branched and spreading

2. main branches tubular, flat-branched, side branches in opposite pairs, one member short often ending in a fertile structure or later elongating, the other long, some hooked, branches with almost microscopic, short spines, usually on one side

Gulf regions, S Australia

a deep water species (collected to 41m deep)

1. focus through the surface of plants microscopically to find: -
   - a single, tiny tip cell forming a thin central thread, initially with characteristic alternating curved branches then with pairs of long and short side branches
   - 4-6 rectangular large outer (cortical) cells forming tiers about each central thread; each cortical cell edged with few, tiny, rounded cells with hairs attached
   - a cavity about the central thread containing a few loose threads
   - threads of the epiphyte *Audouinella* sp often form a surface cob-web pattern
2. find oval-shaped heads of spermatangia on short stalks on the separate plants to female structures (plants dioecious)
3. find oval-shaped, mature female structures (cystocarps) on long stalks, each with a single opening, central fusion cell and large carposporangia internally

*Bonnemaisonia australis* but that species has no spines and rounded inner cortical cells

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Microscope views of *Bonnemaisonia spinescens* stained blue, focussing through the surface:

1. junction of a branch: central thread (*c*fil), ring of 3 flanking (peripheral) cells (*per c*) large inner cortical cells (*co c*), outermost (A28166 slide 3491)
2. cystocarp: opening (ostiule, *ost*), fusion cell (*f c*), threads in the central cavity of a branch (*fil*) (A33440 slide 2801)
3. male (spermatangial) heads (*sp h*) opposite long side branches (A38223 slide 3501)
4. tiers of large, rectangular cortical cells (1, 2, 3) with fringing, small outer cortical cells (*s c*) (A38223 slide 3501)
5. threads of the *Audouinella* epiphyte (*ep fil*) on the tip of a hooked branch: surface hairs (*h*) (A28166 slide 3491)

*Descriptive names are inventions to aid identification, and are not commonly used; “Algae Revealed”, R N Baldock, S Australian State Herbarium November 2011
Specimens of *Bonnemaisonia spinescens* Womersley

6, 7. two magnifications of a plant (A54607). 10-12m deep off Cape Jervis, S Australia

8, 9. microscope views of specimens stained blue (A33440 slide 2801):

- 8. plant tip
- 9. hooked branch showing tiers of cortical cells and developing and mature spines

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