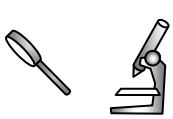
Griffithsia elegans Baldock

45.800.68

Techniques needed and shape



Classification Phylum: Rhodophyta; Order: Ceramiales; Family: Ceramiaceae
Tribe: Griffithsieae

***Descriptive name** elegant red fans

Features

plants ***light*** red, 40-110mm tall, ***flat-branched*** (complanate), side tufts ***alternate*** regularly along main branches (axes)

Occurrences from Elliston, West Coast S Australia to SE Tasmania

Usual Habitat on larger algae often in deep water (to 20m)

Special requirements

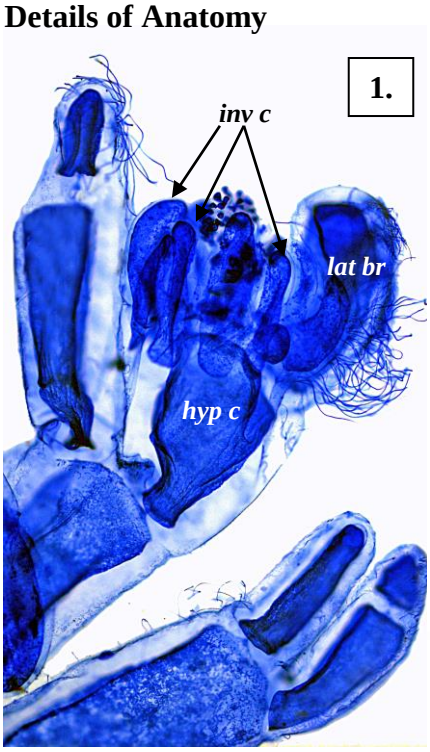
view plants microscopically to find

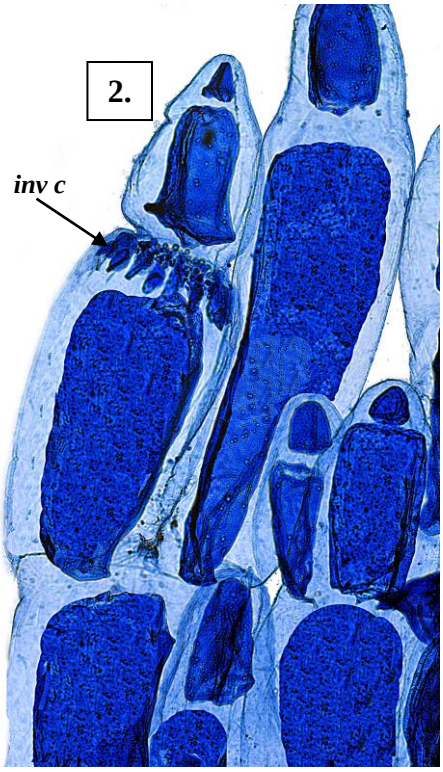
- ***cylindrical*** cells about 3 times longer than broad, in threads; plant axes wrapped in ***rhizoids*** towards the base
- in female plants: basket-like mature female structures (cystocarps) near side tuft tips, incurved cells forming a fence-like ***involucre on one side*** of a branch the vegetative cell below ***swollen*** and pear-shaped
- in male plants: cloud-like masses of spermatangia produced in minute branchlets within the constrictions of pairs of ***swollen*** cells near plant tips each with a fence-like ***ring*** (involucre) of cells from the lower swollen cell, enclosing the spermatangia
- in sporangial plants: tetrasporangia in masses of minute branchlets **(**similar to the situation for spermatangia) between ***swollen*** cells, with a similar fence-like involucre. The thread above sporangial masses often falling off; the remaining structure then looking like a cup

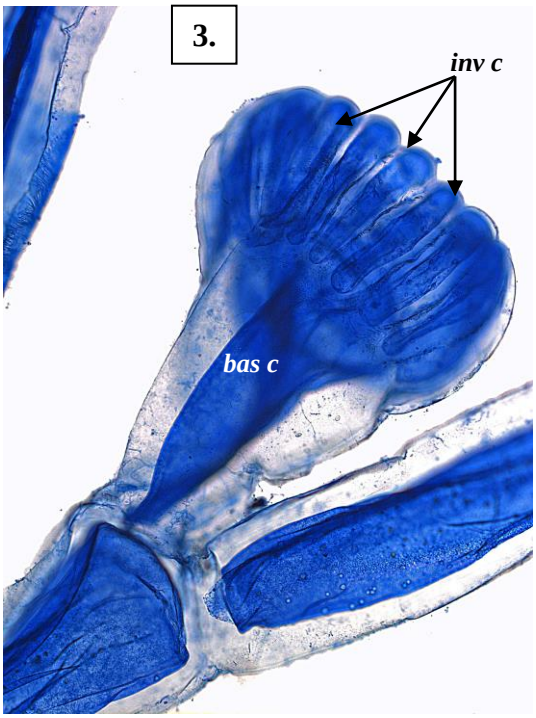
Similar Species *Griffithsia gunniana*, but that species is not flat-branched (complanate) or regularly tufted

Description in the Benthic Flora Part IIIC, pages 330, 335-337

Details of Anatomy







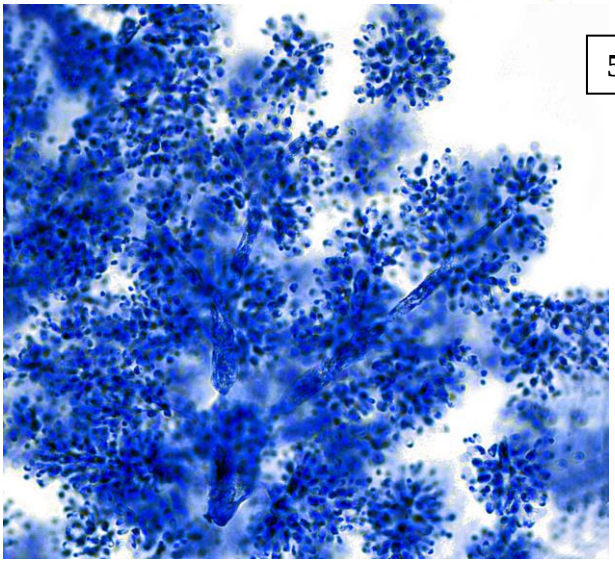
Griffithsia elegans stained blue and viewed microscopically

1. mature female structure (cystocarp) (slide 3134): swollen vegetative cell below the cystocarp (hypogenous cell, ***hyp c***), side branch (***lat br***), involucral cells (***inv c***). "Hairs" on the surface of cells are epiphytic blue-green bacterial threads.
2. sporangial plant: fence-like ring of involucral cells (***inv c***) developing around the tetrasporangial branchlets (obscured) (slide 3133)
3. mature tetrasporangial structure: swollen basal cell (***bas c***), fence-like ring of involucral cells, loss of the filament above resulting in a basket-like structure (tetrasporangial branchlets not visible) (slide 3133)

* Descriptive names are inventions to aid identification, and are not commonly used

"Algae revealed", R N Baldock, State Herbarium S Australia, December 2007; revised August 2014

4.



5.

6.

Griffithsia elegans Baldock
4. from Robe, S Australia, A27827
5, 6. stained blue and viewed microscopically at different magnifications
   5. detail of a minute spermatangial branchlet
   6. mass of minute spermatangial branches partly extruded from the constriction between 2 swollen cells, fence-like ring of involucral cells (***inv c***)

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