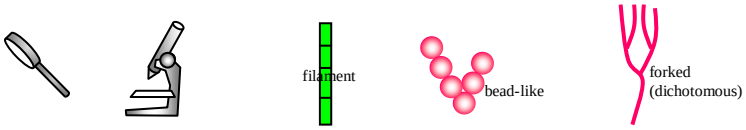
Griffithsia monilis Harvey including var. *cinctis* Baldock

45.800.68

Techniques needed and shape



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

***Descriptive name** red bead alga

Features plants dark red, 15-80mm tall, branches very bead-like, forked several times, cells visible to the unaided eye, up to ***4mm long*** and ***ball-*** or ***capsule-shaped***

Occurrences Rottnest I. W Australia to Tasmania

Usual Habitat variety ***monilis*****:** in the lower intertidal to 5m deep, on rock or epiphytic
var. ***cincta***: invariably on other algae in shallow water

Special requirements view plants microscopically to find

- ball-, capsule- or pear-shaped vegetative cells with a short basal neck; extremely fine, tree-like hairs produced synchronously near apical cells and reproductive organs
- in female plants: mature female structures (cystocarps) forming bumps on one side in the constriction between cells, each with 4-6 (var. ***monilis***) or 9-13 (var. ***cincta***) ***involucral branches*** radiating like spokes from a minute disc-shaped cell and consisting of a small, inconspicuous basal cell and large, ***swollen***, often ***lobed*** or apically ***notched*** terminal cell
- in male plants: cloud-like masses of spermatangia produced in minute branchlets in constrictions of cells near plant tips. The peripheral branchlets in var. ***cincta*** also have large sterile cells forming a composite wrapping **(**involucre**)** like a paling fence around the masses of spermatangia
- in sporangial plants: tetrasporangia in masses of minute branchlets in ***constrictions*** between cells near plant tips; peripheral branchlets also produce ***large sterile*** cells forming a composite wrapping (involucre) like a paling fence

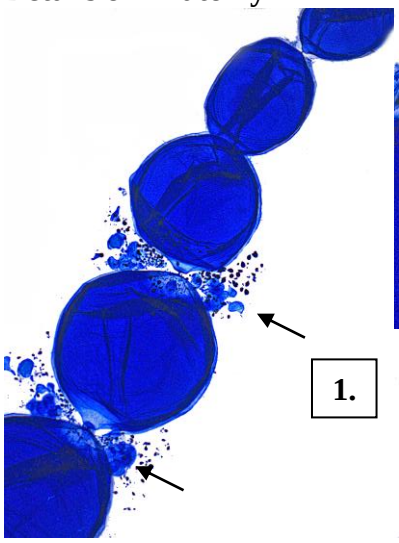
Diagnosis can be difficult

Similar Species wave action and depth affect the shape of *Griffithsia monilis* and tetrasporangial plants are needed to separate this species from *G. ovalis* and *G. grandis*

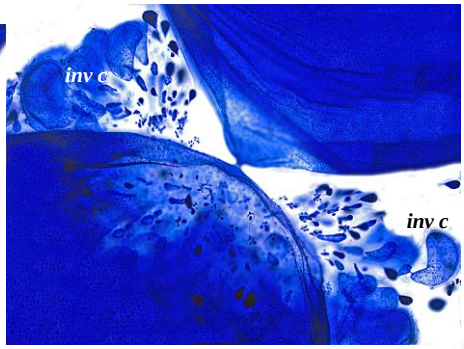
Diagnosis can be difficult

Description in the Benthic Flora Part IIIC, pages 330, 331, 333-334

Details of Anatomy



1.



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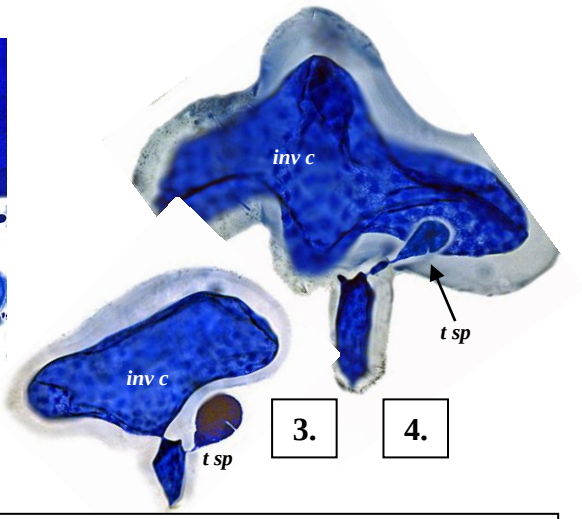
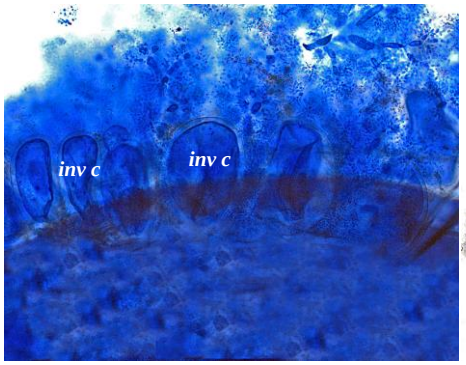
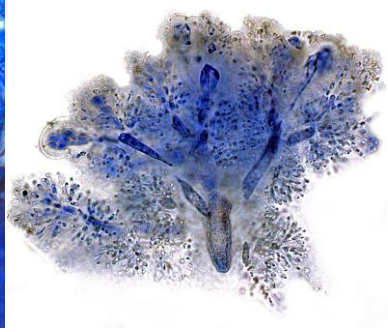


3. **4.**

5. **6.**





5.

Griffithsia monilis stained blue and viewed microscopically

1, 2. two magnifications of tetrasporangial masses (***arrowed***) bearing involucral cells (***inv c***) (slightly displaced) (slide 3104)

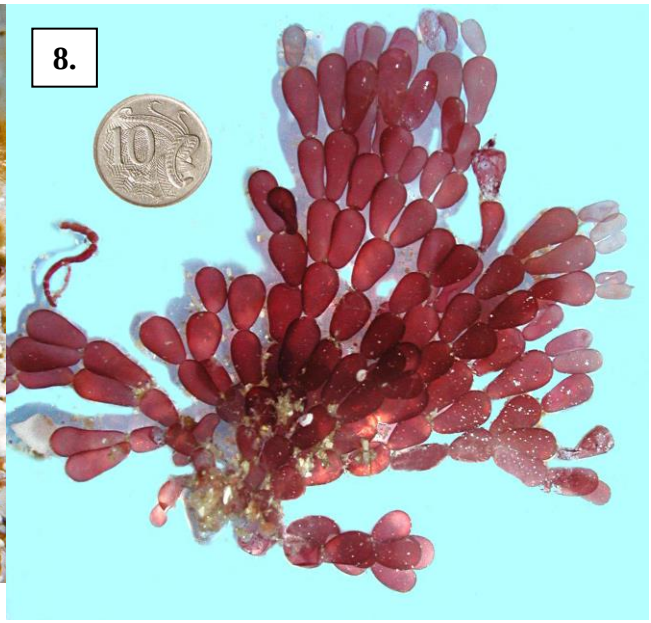
3, 4. sporangial branchlets from the periphery of a cluster: tetrasporangia (***t sp***), sterile involucral cells (***inv c***) (slide 3111)

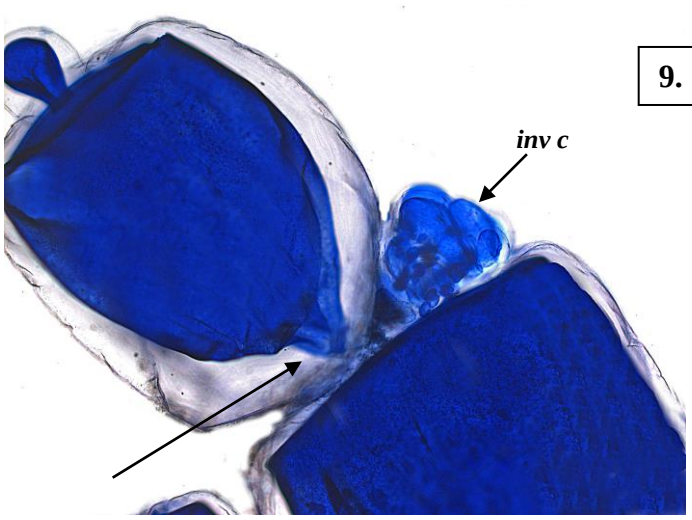
5. spermatangial cluster of var. ***cincta***: outer branchlets bearing sterile involucral cells (***inv c***) not found in the var. ***monilis*** (slide 3110)

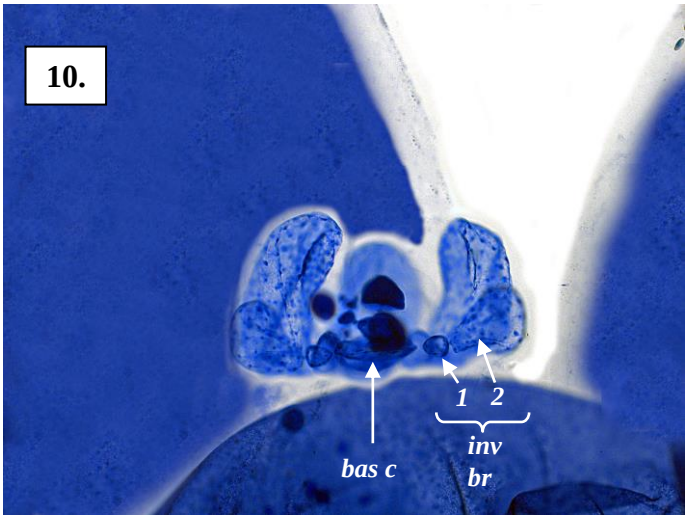
6. detail of a minute spermatangial branchlet from the inner part of a cluster, large involucral cells absent (slide 3110)

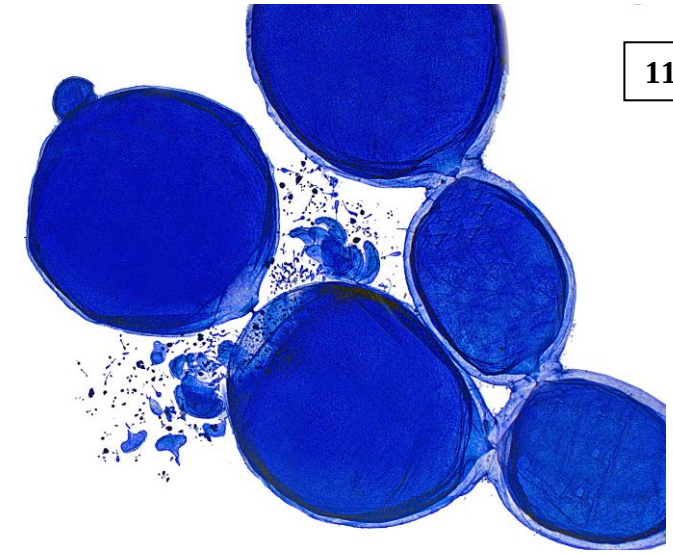
* Descriptive names are inventions to aid identification, and are not commonly used

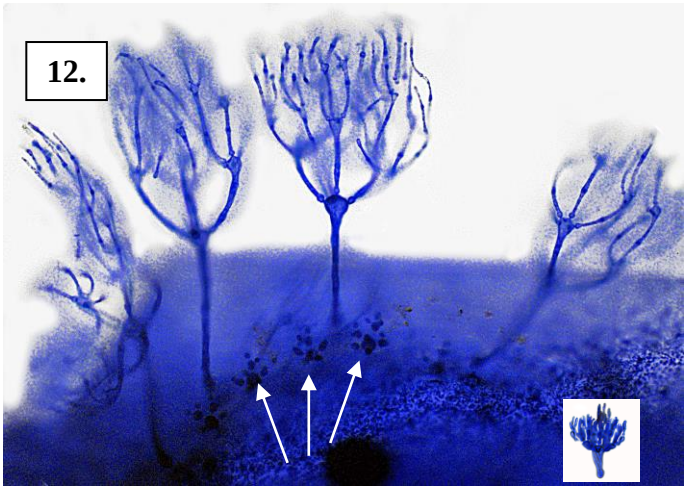
"Algae revealed", R N Baldock, State Herbarium S Australia, December 2007; revised August 2014











Griffithsia monilis Harvey

7. underwater photo from Stokes Bay, S Australia (D Muirhead). 8. from Robe S Australia
9. young cystocarp: covering of involucral cells (***inv c***) (slide 3110); the vegetative cell above shows the characteristic short basal neck (***arrowed***)
10. detail of a young cystocarp: basal cell (***bas c***) producing 2-celled involucral branches (***inv br***), each consisting of a minute basal cell (***1***) and swollen terminal cell (***2***) (slide 3108)
11. tetrasporangiate ring (extruded from the constriction between vegetative cells) (slide 3102): prominent peripheral involucral cells
12. minute hair-like branchlets produced synchronously at plant tips or associated with reproductive structures, viewed under high power: new crop of branches forming (***arrowed***). Insert: young branchlet to same scale (slide 3107)

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