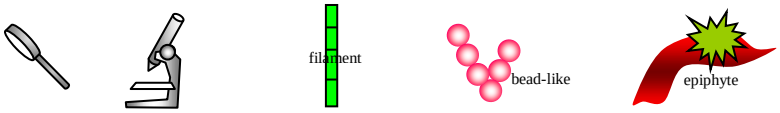
Griffithsia ovalis Harvey

45.800.68

Techniques needed and shape



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

***Descriptive name** epiphytic red bead-alga

Features plants ***light*** red, 30-60mm tall, with several spreading, forked branches of bead-like chains of swollen club-shaped cells, up to 6mm long in the middle parts of the plant

Occurrences Houtman Abroholos W Australia to Penneshaw, Kangaroo I., S Australia

Usual Habitat on seagrass and algae, 5-6m deep; uncommon

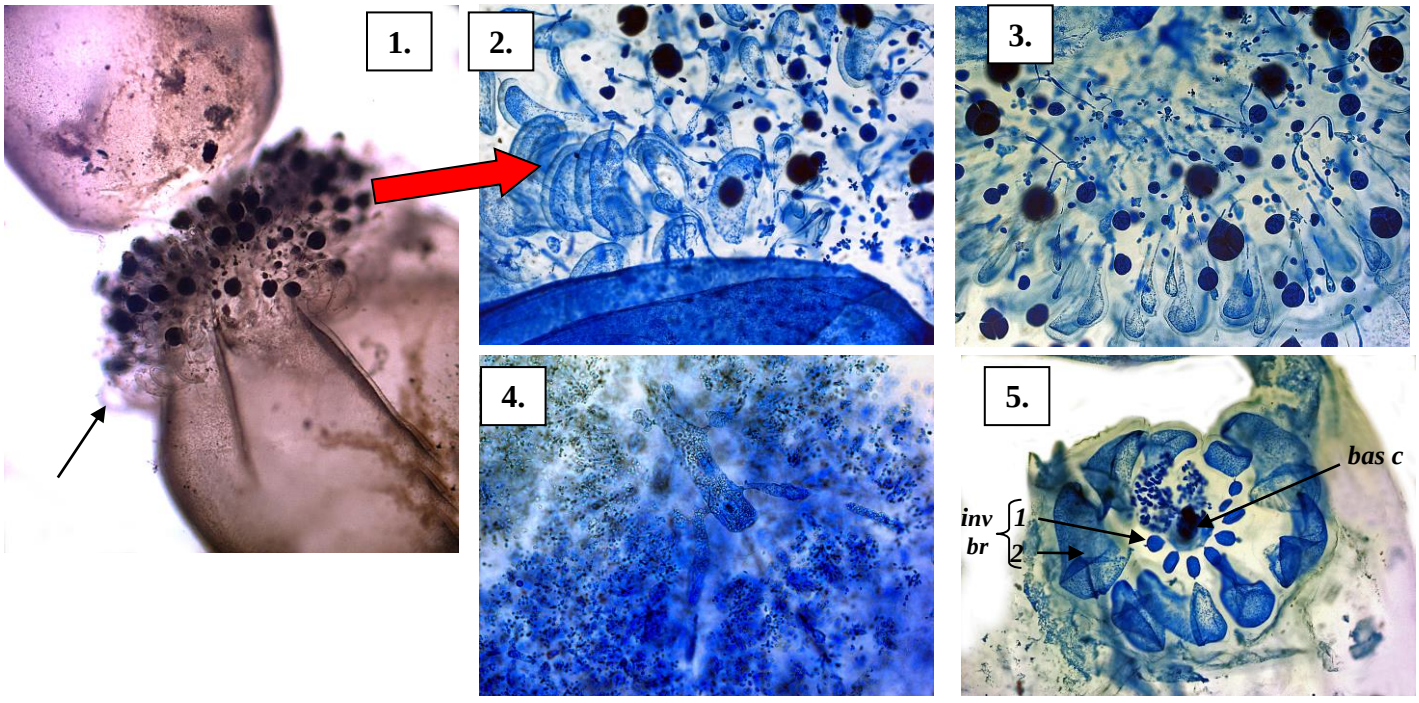
Special requirements view plants microscopically to find

- in female plants, mature female structures (cystocarps): bump-like on one side of constrictions betweens cells near the plant tips, with ***8-12***, two-celled ***involucral branches*** radiating like fingers of a hand from a small, disc-shaped cell, each branch consisting of minute basal cell and swollen, curved terminal cell
- in male plants: cloud-like masses of spermatangia in the constrictions of cells near plant tips, sterile (involucral) cells ***absent***
- in sporangial plants: ***large*** tetrasporangia, in masses of minute branchlets in the constrictions between cells near plant tips, the ***inner*** branchlets producing ***rod- or hair-like*** sterile cells, and ***peripheral*** branchlets producing ***swollen,*** incurved sterile cells forming a composite palisade (***involucre***) around the masses of tetrasporangia

Similar Species *Griffithsia grandis* has similar sized cells, but *G. ovalis* appears to be characteristically epiphytic in shallow bays, has large tetrasporangia and unique rod-shaped sterile cells on tetrasporangial branchlets

Description in the Benthic Flora Part IIIC, pages 325, 327, 332

Details of Anatomy

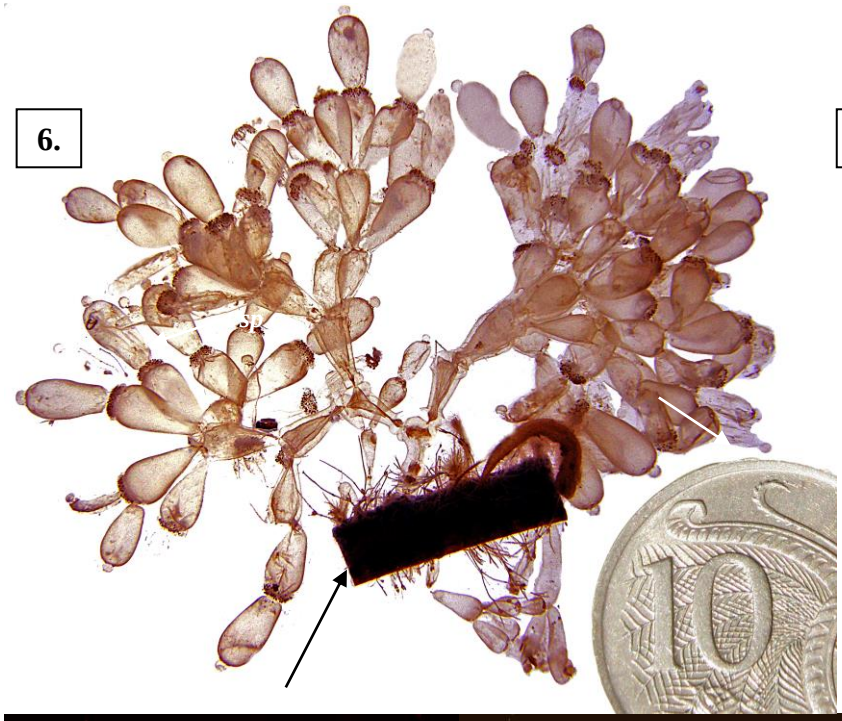


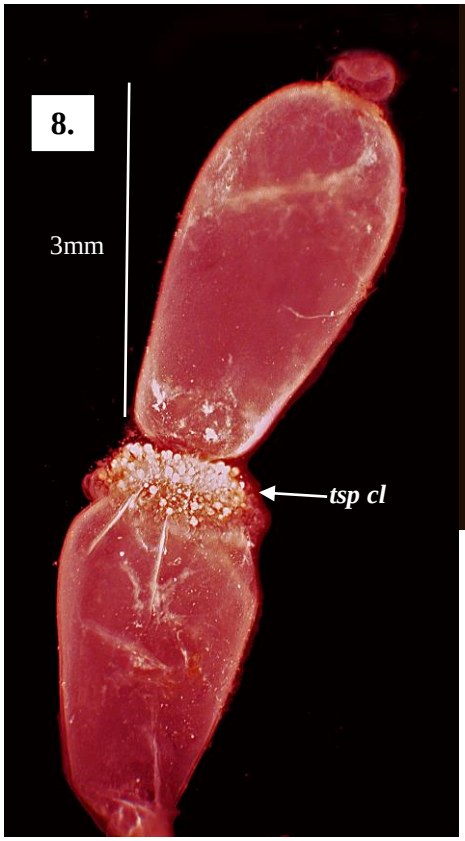
Griffithsia ovalis stained blue and viewed microscopically

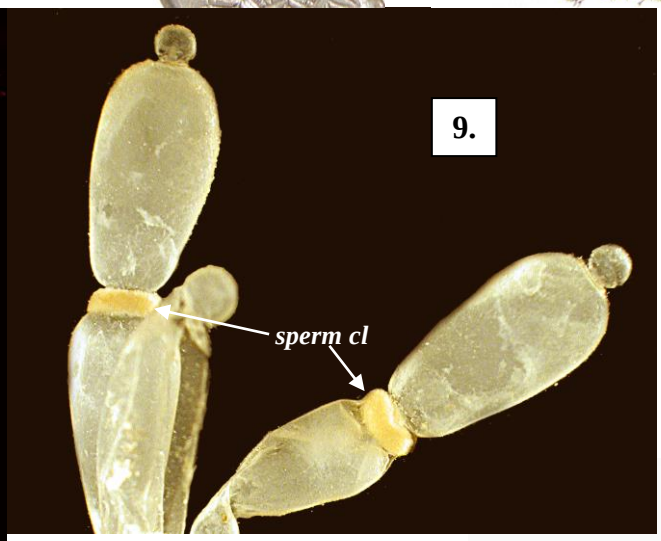
1. vegetative cells pulled apart slightly: tetrasporangial cluster, some swollen involucral cells (***arrowed***) on the periphery (slide 16566)
2. minute tetrasporangial branchlets near the *outside* of a cluster, bearing tetrasporangia and swollen sterile cells forming a palisade or composite involucre to the whole cluster (slide 16656)
3. minute tetrasporangial branchlets near the *inside* of a cluster bearing tetrasporangia and rod- and hair-like sterile cells (slide 16656)
4. minute spermatangial branchlets from clusters in the constriction between vegetative cells; cells elongate, but sterile cells ***absent*** (slide 16657)
5. cystocarp extracted from its position on one side of a constriction between vegetative cells and viewed from above: involucral branches (***inv br***) each of an inner small cell (***1***) and terminal swollen cell (***2***) on one side of a disc-shaped basal cell (***bas c***) (slide 16654)

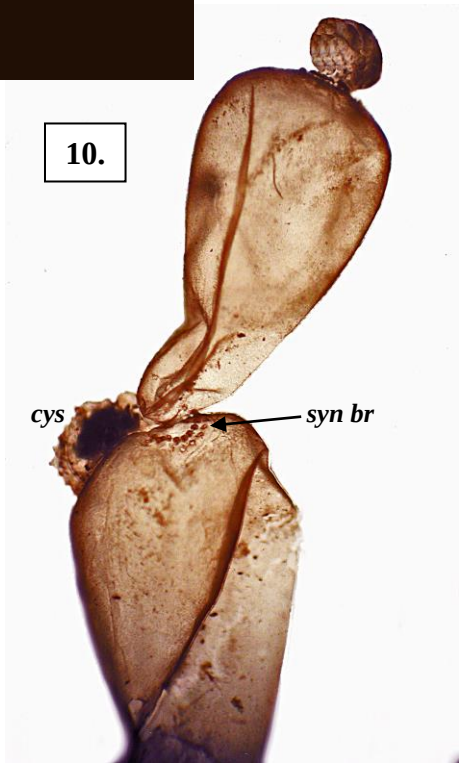
* Descriptive names are inventions to aid identification, and are not commonly used

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









Griffithsia ovalis Harvey on *Posidonia* (***arrowed***), from 5m deep, Tiparra Reef, S Australia (A37310)

6. preserved (bleached) specimen
7. specimen, natural colour (slide 16657)
8-10. preserved (bleached) specimens, slightly crumpled
   8. ring of tetrasporangial masses (tetrasporangial cluster, ***tsp cl***)
   9. ring of spermatangial masses (spermatangial cluster, ***sperm cl***)
   10. cystocarp (***cys***); ring of scars of hairs that arose synchronously (***syn br***) but have been shed

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