

Polyopes tasmanicus

(Womersley & Lewis) Kawaguchi & Lewis
(as *Grateloupia tasmanica* in the Flora)

45.280

Techniques needed and shape



Classification

Phylum: Rhodophyta; Order: Gigartinales; Family: Halymeniaceae

*Descriptive name

red or brown Bottle-brush alga

Features



plants dark red-brown to yellow-brown, 100-300mm tall, gristly (cartilaginous), main branches (axes) **compressed**, 2-4mm wide, arising from a disc-like base, either bearing thin, tapering side-branches or covered at right angles with short, spindle-shaped branches. Fertile plants have dense, **inflated**, short, spindle-shaped side branches

Occurrences

Eastern Tasmania

Usual Habitat

on rock in the lower intertidal to 1m deep

Similar Species

Grateloupia luxurians (as *Gr. filicina* var. *luxurians* in the Flora) which also has short side branches, although fewer in number and that species is smaller, softer with reproductive differences

Description in the Benthic Flora

Part IIIA, pages 199-202

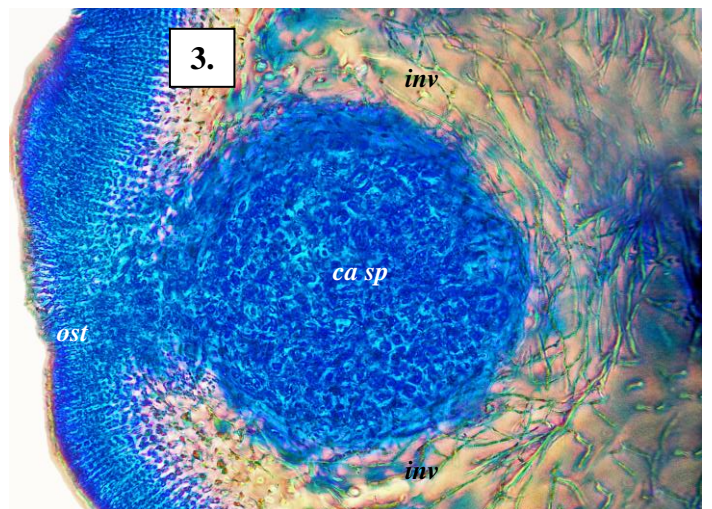
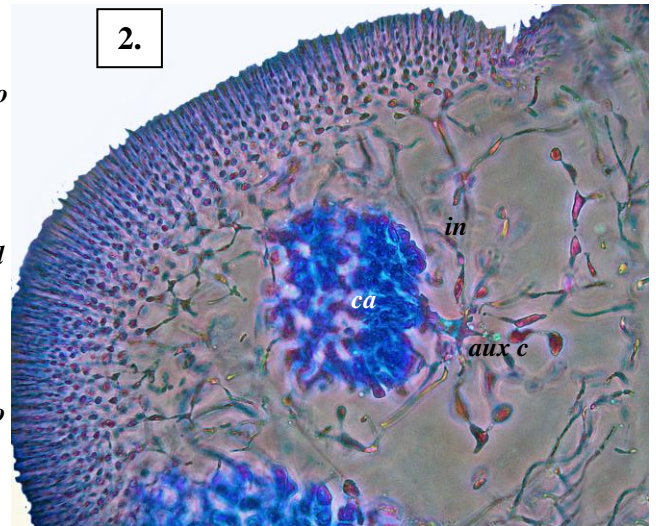
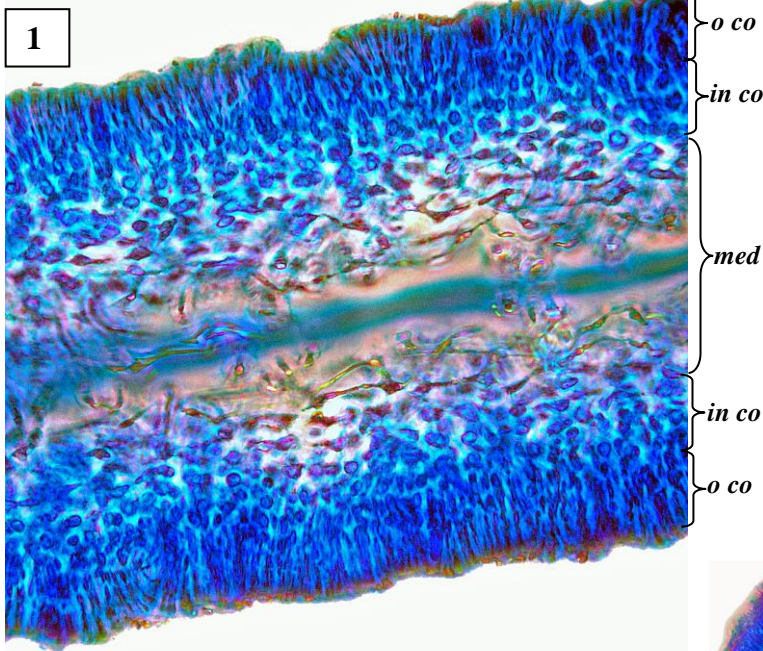
Special Requirements

cut cross sections and view microscopically to find



- outermost layers (outer cortex) of closely packed, **branched** threads of **small** cells at right angles to the surface; inner cortex of **larger** even-sided, loosely packed cells, some becoming star-shaped; core (medulla) of **sparse**, irregularly branched **threads**
- in female plants: **initially**, cell clusters attached to a prominent basal (auxiliary) cell, **later** developing into large ball-shaped structures (ampullae) protruding into the core (medulla) enveloped by a **prominent** network of threads (involucre), **finally** with dense masses of carposporangia inside ampullae, escaping through small openings (ostioles)
- in sporangial plants: scattered tetrasporangia divided in a cross (cruciate) pattern mainly in the cortex of short, spindle-shaped side branches

Details of Anatomy



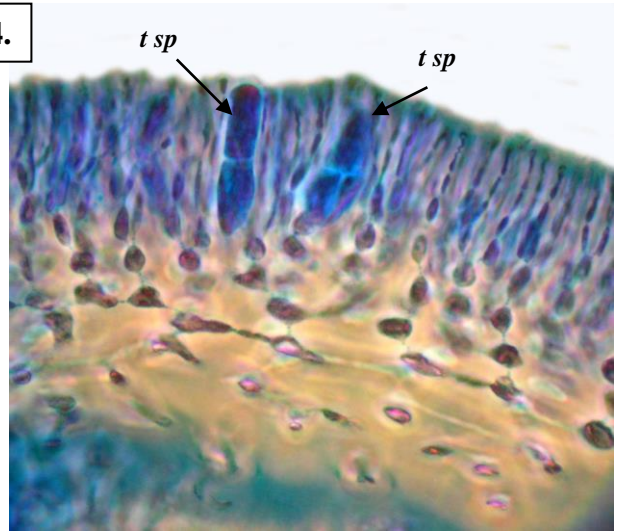
Polyopes tasmanicus: cross sections stained blue and viewed microscopically

1. core (medulla, **med**) of loose threads; loosely packed equal-sided cells (inner cortex, **in co**), smaller cells in branched chains facing outwards (outer cortex, **o co**) (with several elongate tetrasporangia) (slide 11906)
2. young female structures: prominent cell (auxiliary cell, **aux c**), sparse wrapping (involucre, **inv**), mass of fertile cells (carposporophyte, **ca**) (slide 11908)
3. mature female structure: denser wrapping (involucre) of threads, carposporangia, (**ca sp**), opening (ostiole, **ost**) (slide 12753)

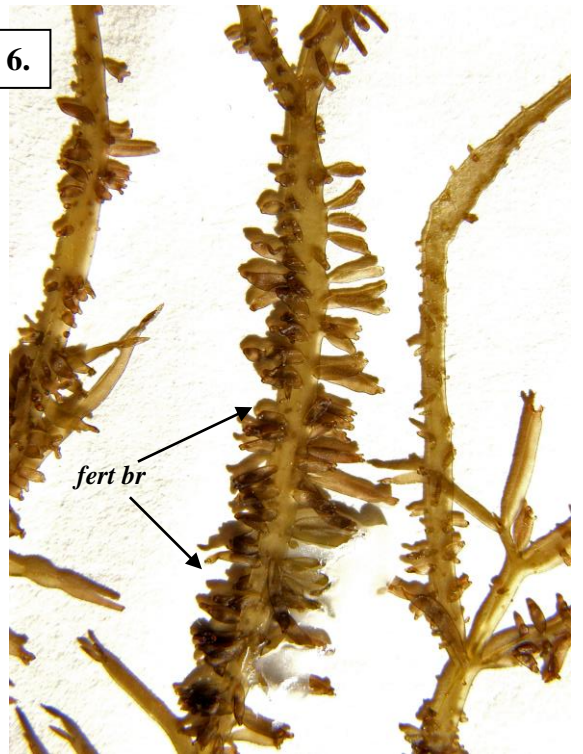
5.



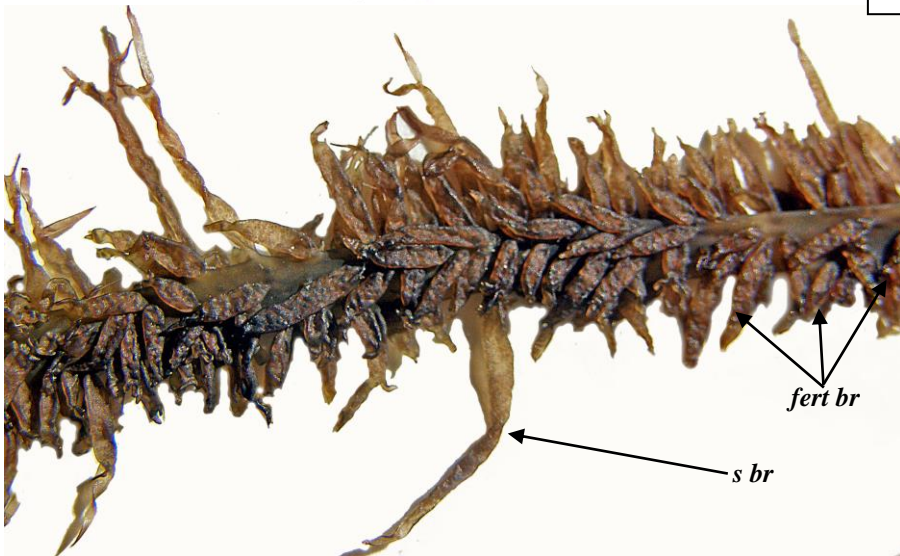
4.



6.



7.



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4. cross section of cortex stained blue and viewed microscopically: two tetrasporangia (*t sp*) dividing into a cross (cruciate) pattern (slide 11906)
5. plants from the lower intertidal at Tarooma, Tasmania (A61523): characteristic branching pattern of sterile specimens
- 6, 7. two magnifications of plants from the lower intertidal at Kingston, Tasmania (A61532): detail of dense, fertile branchlets (*fert br*) and sparser, longer, sterile side branches (*s br*)

* Descriptive names are inventions to aid identification, and are not commonly used
 "Algae revealed", R N Baldock, State Herbarium, S Australia, July 2008; revised August 2014