Grateloupia intestinalis
(Harvey) Setchell *ex* Parkinson

45.280

Techniques needed and shape

Classification Phylum: Rhodophyta; Order: Gigartinales; Family: Halymeniaceae

***Descriptive name** red gut weed

Features

1. plants are red to red-brown, 100-500mm tall, ***soft*** and ***slimy*** (mucilaginous)
2. there are several main branches, 3-5mm wide, ***slightly compressed*** with ***short*** side branches

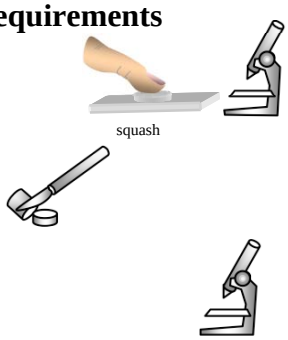
Occurrences throughout New Zealand, and SE Tasmania

Usual Habitat on rock in the lower intertidal

Similar Species superficially similar to members of the Dumontiaceae such as *Gibsmithia* which has narrow mucilaginous axes, but with different anatomy

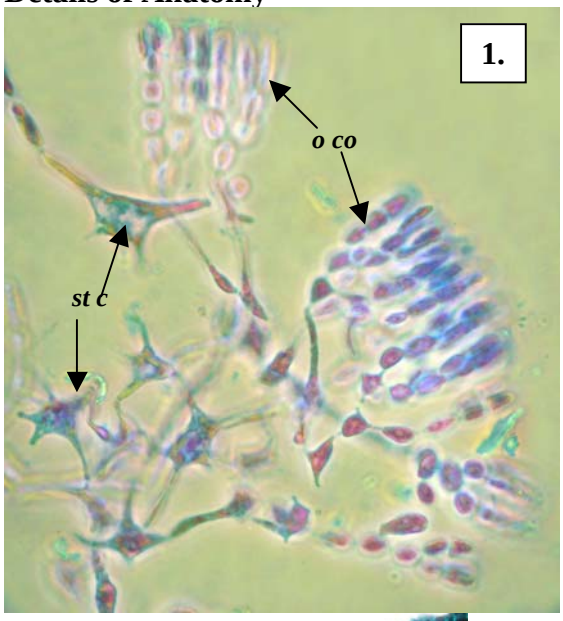
Description in the Benthic Flora Part IIIA, pages 202-204

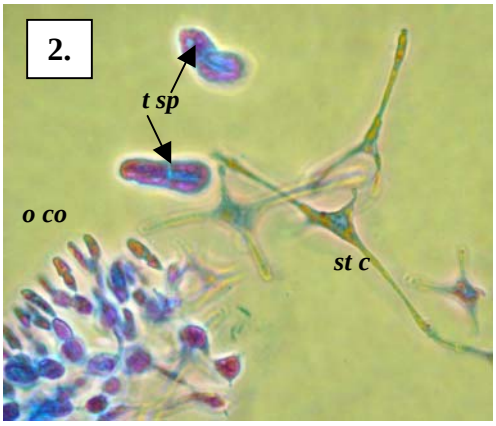
Special Requirements

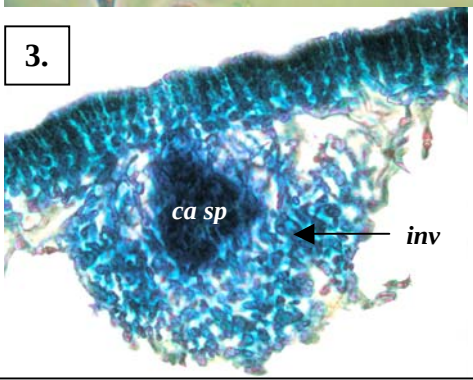


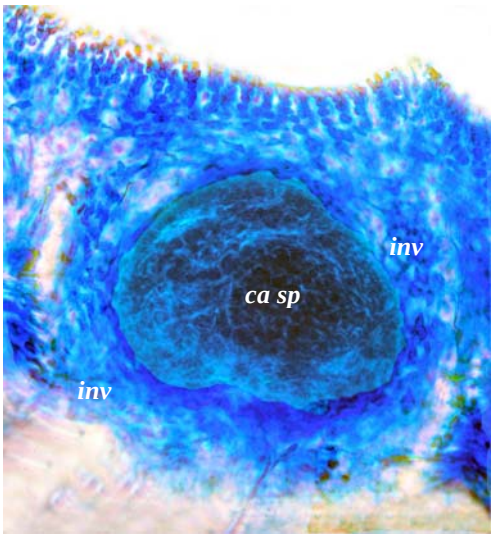
1. view a squash of tissue microscopically to find
   - the hollow core filled with mucilage
   - outer layers (cortex) of inner star-shaped (***stellate***) cells and short, ***forked*** outer chains of ***outwardly facing*** small cells
   - ***absence*** of bright (refractive) spidery (ganglionic) cells
2. if possible, cut a cross section of a female plant to find the products of fertilisation
   - ball-shaped structures protruding into the hollow core (medulla) and enveloped by a ***prominent*** network of threads (involucre) with ***no*** openings (ostioles)
   - with dense masses of carposporangia inside,
3. if possible find scattered tetrasporangia divided in a cross (cruciate) pattern in a squash of tissue amongst the outer, small cortical cells

Details of Anatomy









Grateloupia intestinalis stained blue and viewed microscopically

1,2. two views of a squash of the outer cellular layer (cortex) of a sporangial plant, with inner star-shaped (stellate) cells (*st* c) short chains of smaller outer cells (outer cortex, *o co*) and tetrasporangia (*t* sp) divided in a cross-pattern (cruciate) (A26682 slide 12308)

3, 4. cross sections showing stages in developing female structures (ampullae) protruding into the central cavity without outlets (ostioles), but with masses of fertile cells (carposporophytes, *ca sp*) and prominent envelopes (involucre, *inv*) of threads (A61274 slide 12312)

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

Prepared August 2008

5, 6. Two views of *Grateloupia intestinalis* (Harvey) Setchell *ex* Parkinson (A61524) from the lower intertidal at Kingston, Tasmania imaged at different scales, showing the main axes and irregular, short side branches

7. detail of the branching of a drift specimen, (A61274) from Hobart, Tasmania

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