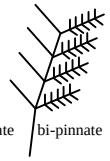
Grateloupia subpectinata Holmes (as *Grateloupia filicina* var. *luxurians* in the Flora)

45.280

Techniques needed and shape

squash

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

***Descriptive name** slimy combs

Features

1. plants are red-brown to yellow-brown, 100-250mm tall, ***soft*** and ***slimy*** (mucilaginous), becoming gristly when older
2. plants are mainly ***flat-branched*** several times over (pinnate to tripinnate and vaguely comb-like) with main branches ***compressed, short*** side branches almost cylindrical

Occurrences throughout southern Europe, Mediterranean Africa, Caribbean and Indo-Pacific. In Australia in SE W Australia to Queensland and around Tasmania.

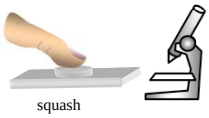
Usual Habitat confined to harbours and sheltered coasts in shallow water or intertidal (introduced?)

Similar Species similar consistency to *Grateloupia tasmanica*, but with much finer, pinnate branching

Description in the Benthic Flora Part IIIA, pages 198-201

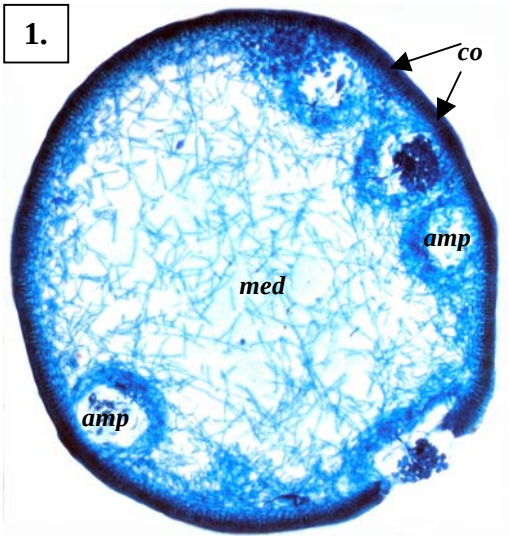
Special Requirements

1. cut a cross section and view microscopically to find:
   - the ***broad*** core(medulla) of ***sparse***, irregularly entwined threads
   - narrow 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 ***small*** openings (ostioles)
   - with dense masses of carposporangia inside,
3. if possible find scattered ***elongate*** tetrasporangia divided in a cross (cruciate) pattern in a squash of tissue amongst the cortical cells

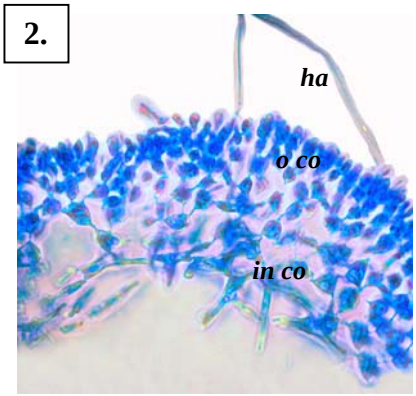

squash

Details of Anatomy

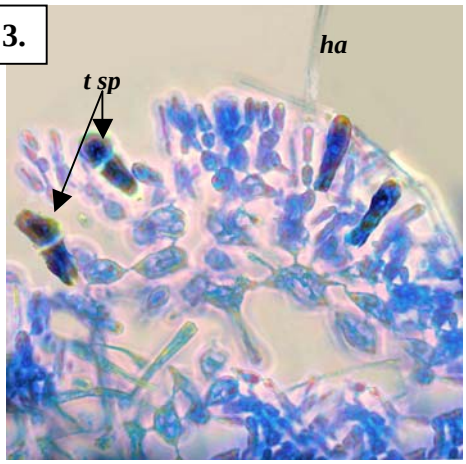
1.



2.

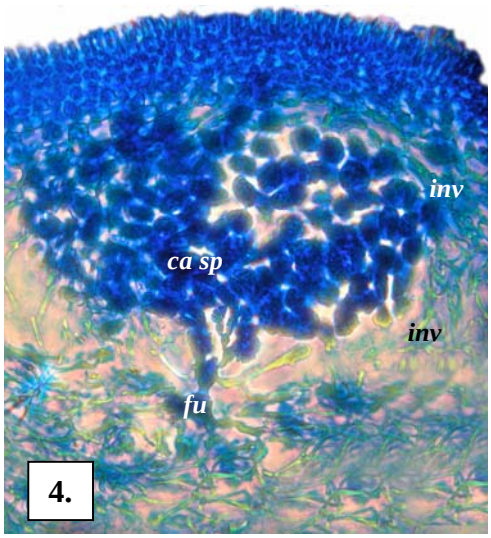


3.



Cross sections of *Grateloupia subpectinata* stained blue and viewed microscopically showing

1. the wide core (medulla, *med*) of scattered, sparse threads, and outer layer (cortex, *co*) of small cells, with flask-shaped cavities (ampullae, *amp*) of female structures, some with carposporangia masses inside (A51378 slide 11803)
2. magnified view of the cortex, with inner star-shaped cells (*in co*), outer small cells (*o co*) in short branched threads, facing outwards and a fine hair (*ha*) (A51378 slide 11802)
3. part of the cortex of a sporangial plant with elongate tetrasporangia (*t sp*) in various stages of dividing into a cross (cruciate) pattern (A51378 slide 11802)
4. a female structure with basal fusion cell (*fu*), carposporangial mass (*ca sp*) and envelope (involucre, *inv*) of threads (opening – ostioles- not in view) (A51378 slide 11803)



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

Prepared August 2008

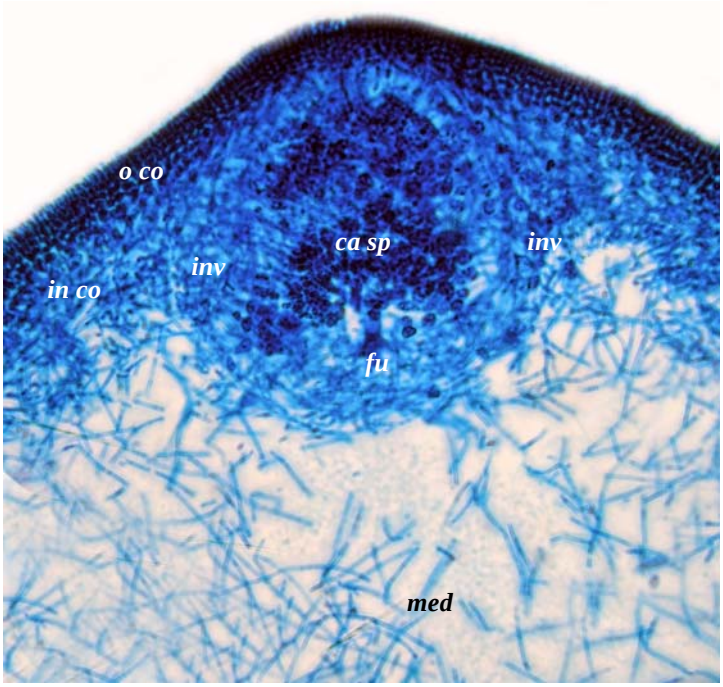
5.

5, 6. Two views at different scales of *Grateloupia subpectinata* Holmes, (A22090) 3-6m deep on the Outer Harbour breakwater, S Australia, showing the comb-like branching pattern

7. a cross section stained blue and viewed microscopically to show a female structure lying in a space (ampulla) in the inner cortex (*in co*), with basal fusion cell (*fu*), dense envelope (involucre, *inv*) and mass of carposporangia (*ca sp*) inside (A51378 slide 11803)

6.

7.



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