Halymenia floresia ssp. *floresia* (Clemente y Rubio) C Agardh, and ssp. *harveyana* (J Agardh) Womersley & J Lewis

45.280

Techniques needed and shape

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

***Descriptive name** fringed slime blades; §floral red alga

Features

1. plants are rose red to dark red, ***slimy*** (mucilaginous), ***flat-branched***, 100-400mm tall, of several flat, main blades (axes) about 20mm wide, ***fringed*** with short, pointed, narrow fringing blades about 5mm wide
2. subsp *harveyana*, originally described as more profusely branched cannot be truly separated except on sporangial features. Sexual plants are unknown.

Diagnosis can be difficult

Occurrences subsp. *floresia* is widespread in the tropics. In Australia it occurs from Perth northwards, except for a single record at Esperance, W Australia.
Subsp. *harveyana* recorded from Isles of St. Francis, S Australia to Victoria.

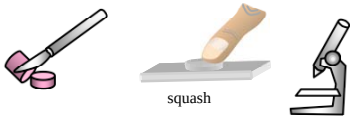
Usual Habitat on rock, generally in shallow water

Similar Species superficially like *Gelinaria ulvoidea*, but thinner, more branched with a looser core

Description in the Benthic Flora Part IIIA, pages 189-192

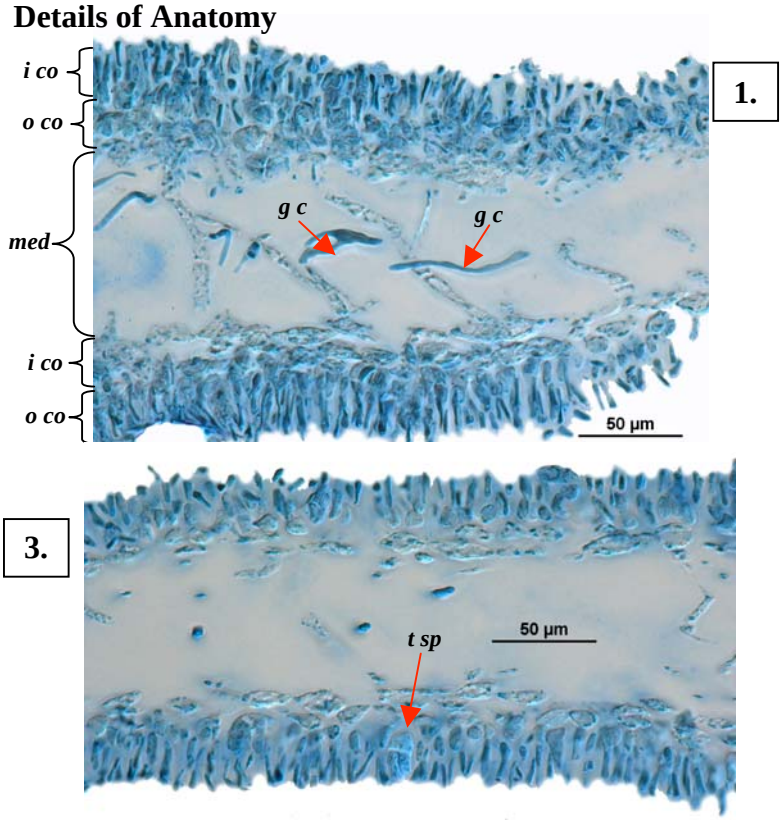
Special Requirements

1. focus through the surface cells to find spidery ***ganglionic cells*** in the core
2. cut a cross section or make a tissue squash of a blade and view microscopically to find:
   - the core (medulla) of ***loosely packed*** threads mostly running across the blade and occasional bright, amoeba-like (ganglionic) cells
   - outer (cortex) layers of inner, larger ***egg-shaped*** cells and smaller, elongate cells facing outwards
3. in subsp. *floresia*, if possible, cut a cross section of female plants to find masses of spores (carposporophytes) embedded in the blades, each enveloped by threads (involucre)
4. in order to determine the correct subspecies, cut cross sections of sporangial plants and view microscopically to find
   a. sporangia divided into two (***bisporangia***) in subsp. *harveyana*
   b. sporangia divided into a cross shaped (cruciate) pattern in subsp. *floresia*



Diagnosis can be difficult

Details of Anatomy



Cross sections of *Halymenia floresia* stained blue and viewed by interference microscopy to contrast cell details:

1. subsp. *floresia* (A61641 slide 12860) showing core (medulla, *med*) of loosely packed threads, parts of several ganglionic cells (*g c*) outer layers (cortex) of inner larger (inner cortex, *i.co*) and outer (outer cortex, *o co*) narrow cells facing outwards
2. subsp. *floresia* (A61638 slide 12857) showing 3 post-fertilisation structures (carposporophyte, *carp*) wrapped in threads (involucre, *inv*)
3. subsp. *floresia* (A61638 slide 12857) with a cruciate tetrasporangium (*t sp*).
4. subsp.*harveyana* (A20072 slide 12868) with 2 bispores (*bi sp*)

Descriptive names are inventions to aid identification, and are not commonly used; §name used by Edgar, G (2008) in Australian Marine Life (2nd ed.).

Prepared October 2009

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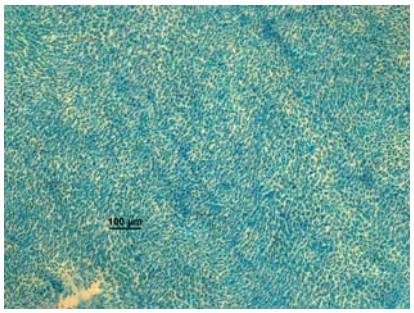

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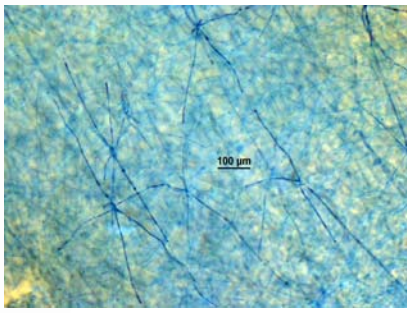

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Two sub-species *Halymenia floresia*

5. subsp. *floresia* (A61642) 6m deep from Ocean reef marina, Perth W Australia
6, 7. two magnifications of a drift plant of subsp. *harveyana* (A46963) Encounter Bay S Australia showing the broad, flat axis and numerous delicate smaller side blades arising from the axis edge
8, 9. surface views of subsp. *harveyana* (A60292 slide 11653) stained blue and viewed microscopically:
   8. focussing on the small cortical cells
   9. focussing on the core (medulla) showing the spidery ganglionic cells

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