Cryptonemia kallymenioides
(Harvey) Kraft in Scott

Techniques needed and shape

Classification
*Descriptive name
Features

Phylum: Rhodophyta; Order: Gigartinales; Family: Halymeniaceae
false kallymenia weed

1. plants are tough, light red-brown 50-150mm tall, with a thick basal stalk producing 1-5 blades
   with jagged edges (probably seasonally) that are collected as drift specimens
2. blades are up to 260mm long, 300mm broad, branched and lobed, with minute teeth on the margins
3. stalks are up to 150mm tall, 10mm broad, flattened in upper parts

Occurrences
Usual Habitat
Similar Species

mainly W Australian. One S Australian record at Cannan Reef, 22-30m deep
stalks grow vertically or horizontally on reef undercuts, 6-30m deep
detached blades might be mistaken for a Kallymenia species

Description in the Benthic Flora
Part IIIA, pages 183-185, 187

Special Requirements

1. focus microscopically on the surface and edge of a blade to see
   • conspicuous mottling
   • edges minutely toothed
   • bright (refractive) spidery (ganglionic) cells beneath clusters of tiny surface cells
2. if possible, cut cross sections of blades and view microscopically:-
   • a large, loose core (medulla) of thin, branched threads and bright ganglionic cells
   • thin outermost layers of outwardly facing, closely packed, small cells
   • inner layers (inner cortex) of looser, egg-shaped cells, becoming star-shaped
3. if possible find female plants, cut cross sections and view microscopically the flask-shaped structures (ampullae) protruding into the blade core from the cortex, in a loose envelope (involute) of threads, with a narrow opening (ostiole) to the surface
4. if possible find spore plants, cut cross sections and view microscopically the scattered tetrasporangia in the outer layers, finally divided in a cross (cruciate) pattern

Details of Anatomy

Cross sections of Cryptonemia kallymenioides stained blue and viewed microscopically showing:
1. the core of branched threads (medulla, med), a large, bright (ganglionic cell, g c) and thin outer layers (cortex, co) of small cells. (A18513 slide 11883)
2. a developing female structure (auxiliary cell ampulla, amp) with persistent auxiliary cell (aux) and enveloping threads (involucre, inv) (A18513 slide 11883)
3. a mature female structure using phase microscopy to better show the opening (ostiole, ost) envelope of threads (involucre, inv) and masses of spores (gonimolobes, gon) (A18513 slide 11883)
4. tetrasporangia (t sp; colour enhanced and one displaced to the medulla) in various stages of division in the outer layers (cortex) (A59774 slide 11800)

* Descriptive names are inventions to aid identification, and are not commonly used
Prepared July 2008
Views of Cryptonemia kallymenioides (Harvey) Kraft in Scott, A51043, Green I., (Rottnest I.) W Australia, 5m deep, showing
5, 6. the perennial thick stalk (arrowed) and mottled blades with jagged edges
7. a stained surface view (slide 11789) of a blade under the microscope showing the toothed margin (arrowed) and spidery ganglionic cells (g c) beneath tiny cortex cells

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