Techniques needed and plant shape

Phylum: Rhodophyta; Order: Gigartinales; Family: Kallymeniaceae

Features

Special requirements

Diagnosis can be difficult

Techniques needed and plant shape

Classification

Phylum: Rhodophyta; Order: Gigartinales; Family: Kallymeniaceae

*Descriptive name

red thorny blades; §a red lettuce

Features

Plants rose red, 30-70mm tall, of a broad, firm, lobed blade arising from a short stalk, edges and often the surface of the covered with short, two-pronged spines

make squashes of tissue of different plants and view under the microscope to find

- thread like cells at very thin ends of numerous star-shaped (stellate) cells in the core (medulla), small, round cells in several layers in the outermost parts (cortex)
- numerous, amoeba-like female structures (carpogonial branch systems, cbs) with dense contents in the cortex with a single thread (carpogonium and trichogyne)
- scattered tetrasporangia divided in a cross (cruciate) pattern

Occurrences

Islands off the West Coast, S Australia, poorly-collected

Usual Habitat

apparently a deep water species (55m) on islands of rough water coasts

Similar Species

Kallymenia rubra also with single carpogonia per carpogonial branch systems but that species has toothed blade edges, small bumps on blade surfaces and fence-like layers of larger cells in outer (cortex) layers

Description in the Benthic Flora

Part IIIA, pages 237-239

Details of Anatomy

1. 2-pronged spine emerging from a blade surface and a window cut into part of the core (A33660, slide 2872)
2. core (medulla), star-shaped (stellate) cells (st c) with fine arms amongst fine threads and small cells of one outer layer (cortex, co) (A33660, slide 2872)
3. spider-like stellate cells (st c) of the medulla and 2 young female structures (carpogonial branch systems, cbs), one showing a single carpogonial branch (c br) characteristic of the species (A38079 slide 3487)
4. tetrasporangia (t sp) in various stages of dividing into a cross-shaped (cruciate) pattern (A38079 slide 3488)

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

a name used by Edgar, G (2008) in Australian Marine Life (2nd ed.) for Kallymenia tasmanica species

“Algae Revealed” R N Baldock, S Australian State Herbarium, November 2005, rewritten March 2009
Descriptive names are inventions to aid identification, and are not commonly used.

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Different magnifications of West Coast, South Australian specimens of *Kallymenia spinosa* Womersley & Norris

5, 6. from a vertical rock face, 33m deep, Pearson I., ([A33660]) showing the short stalk (arrowed), and 2-pronged spines of the blade edge and face

7, 8. from 55m deep, St Francis Island ([A38079]), with only the blade edge showing pronged spines

9. microscope view of a specimen stained blue ([A33660 slide 2871]) with surface spines, and spider-like stellate cells of the core showing through the cortex (arrowed)