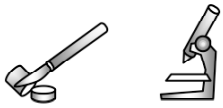
Cryptonemia digitata (J Agardh) Womersley & Lewis

45.280

Techniques needed and shape



MACRO
PLANT

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

***Descriptive name** red paddle blades

Features

1. plants are red, with a pad like attachment disc and consist of forked, flat-branched blades
2. blades are up to 15mm broad, filmy to tough in consistency, with straight sides and rounded tips often with edges fringed with numerous tiny branches

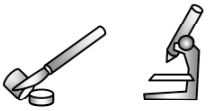
Occurrences Port Elliot, S Australia to Port Phillip Heads, Victoria

Usual Habitat unknown as most specimens are from drift material

Similar Species other flat-branched or foliose members of the Gigartinales for example *Stenogramme interrupta*, requiring anatomical investigation for correct identification

Description in the Benthic Flora Part IIIA, pages 180-182

Special Requirements

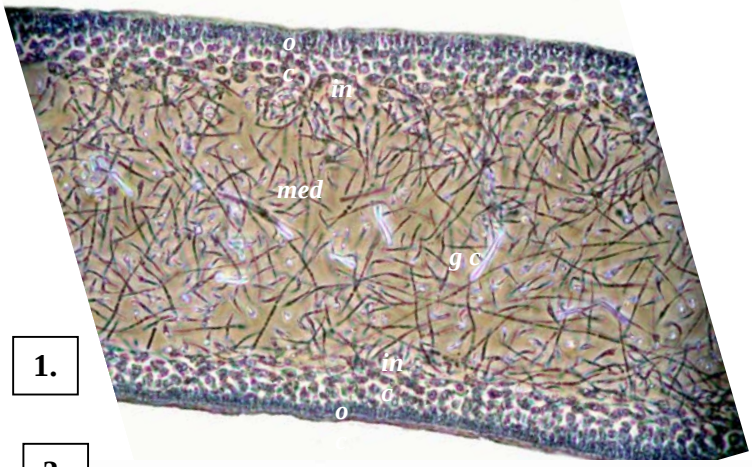


1. focus microscopically on a squash of surface cells to see bright (***refractive***) spidery (***ganglionic***) cells with long slender arms ***swollen*** at the tips in contact with adjacent ganglionic cell arms beneath clusters of tiny surface cells
2. if possible, cut cross sections of blades and view microscopically:-
   - a wide core (medulla) of threads and ***bright, interconnected*** ganglionic cells
   - outermost layers of ***equal-sided*** to slightly elongate, closely packed ***small cells***
   - inner layers (inner cortex) of ***looser***, egg-shaped cells some becoming star-shaped
3. if possible find female plants, cut cross sections and view microscopically the flask-shaped structures (***ampullae***, images unavailable) protruding into the blade core from the cortex, in a ***loose envelope*** (involucre) of threads, with a ***narrow*** opening (ostiole) to the surface

Diagnosis can be difficult

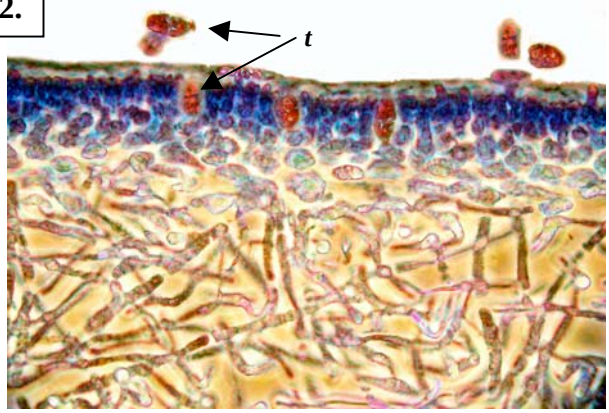
4. if possible find spore plants, cut cross sections and view microscopically the ***sparse***, ***scattered*** tetrasporangia in the outer layers (images unavailable), finally divided in a cross (***cruciate***) pattern

Details of Anatomy



1.

2.



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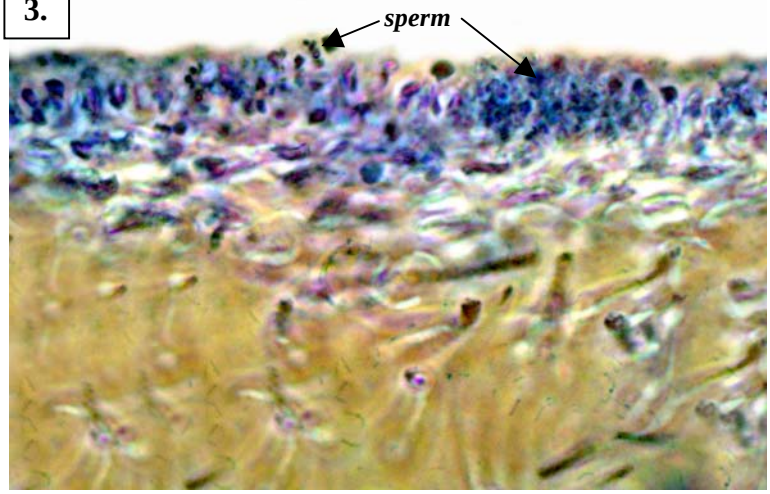

Cross sections of *Cryptonemia digitata* stained blue and viewed with phase microscopy at different magnifications, showing:

1. the wide core (medulla, *med*) of thin threads and bright (refractive) spidery (ganglionic) cells (*g c*), outer layers (cortex) with inner larger cells (*in c*) and outer small, closely packed cells (*o c*) (A24434 slide 108)
2. outer part of the blade of a spore plant with tetrasporangia (*t sp*) in various stages of division, some displaced from the cortex (A21151 slide 144)
3. highly magnified view of patches of cells possibly spermatangia (*sperm*) (A18579 slide 11835)

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

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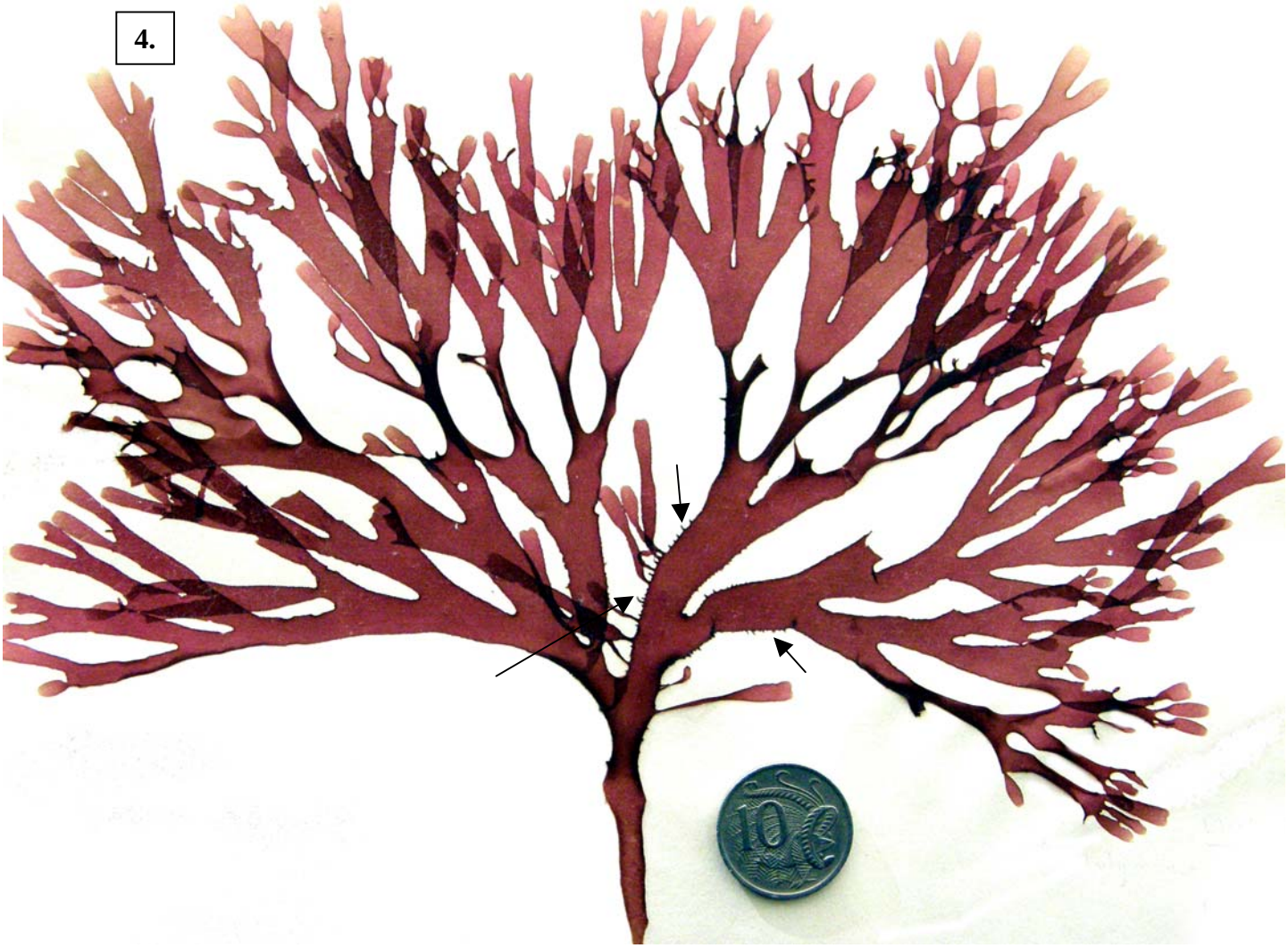
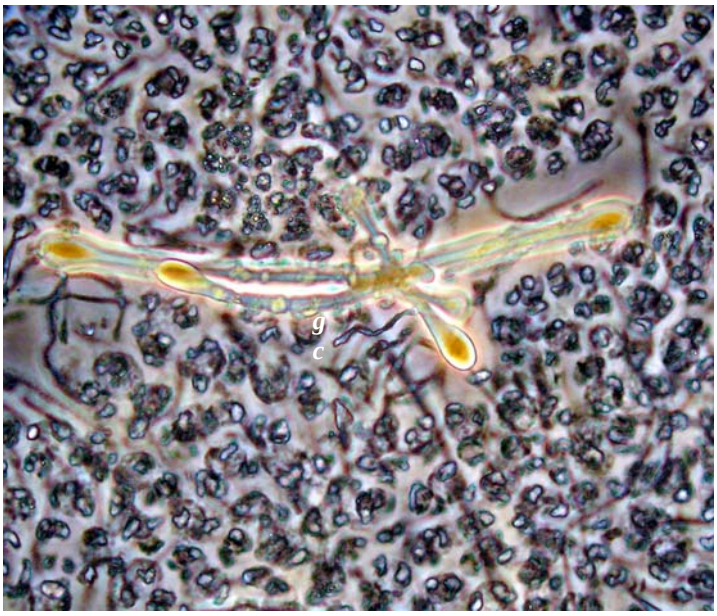
4.



5.



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4. a drift plant (A24434), from Robe S Australia showing small proliferations (arrowed) along the margins of blades
5. a tissue squash viewed from above under phase microscopy to highlight a bright spidery cell (ganglionic cell, *g c*) originally lying beneath the small cells of the cortex (A50832 slide 0283)

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