Mychodea acanthymenia Kraft

45.600

Techniques needed and shape

MACRO PLANT

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

***Descriptive name** prickly fronds

Features

1. plants ***dark*** red-brown, 30-50mm tall, main branches (axes) ***flat***, ***gristly***
2. stubby, ***prickly*** branches grow from frond edges and faces

Occurrences Kangaroo I., S Australia to Victoria, Tasmania and Jervis Bay, NSW

Usual Habitat on rock in shallow water on rough water coasts

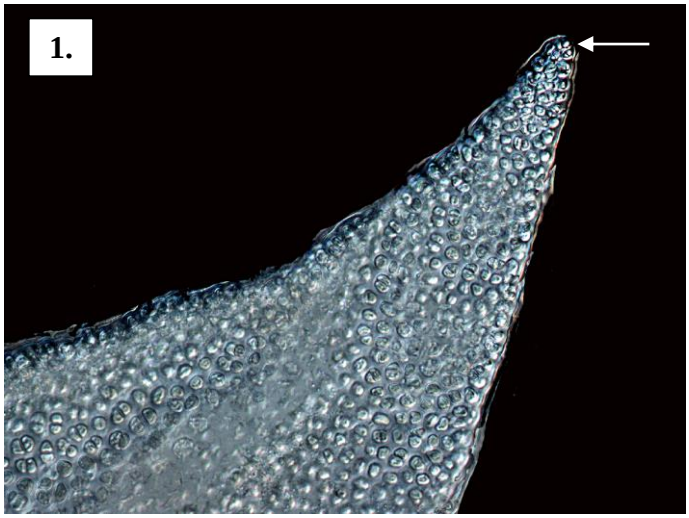
Similar Species unique because of its gristly, prickly characteristics

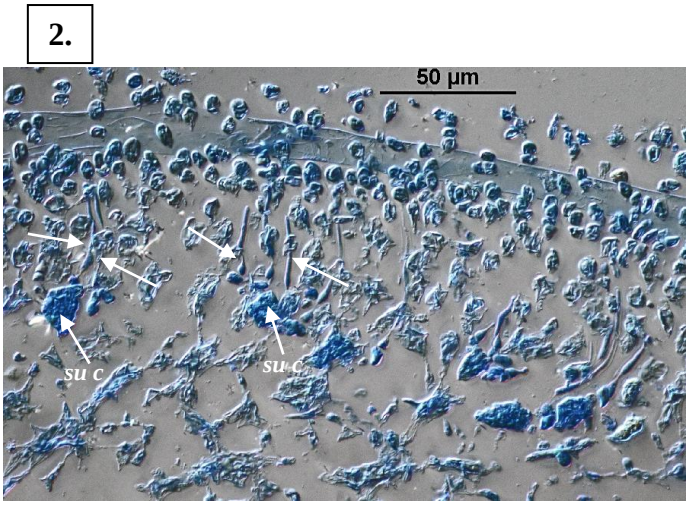
Description in the Benthic Flora Part IIIA, pages 461, 464-465

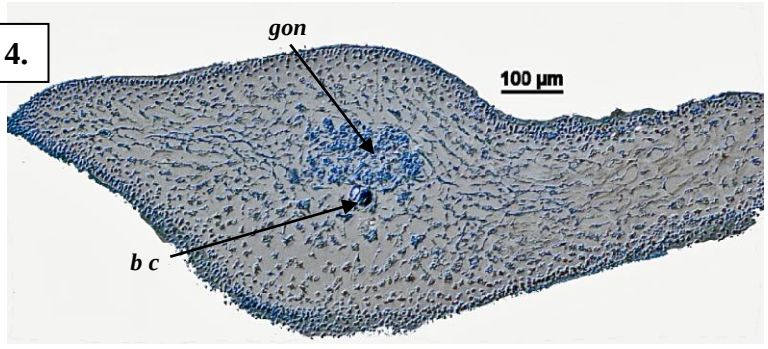
Special Requirements

1. view ***very young*** fronds microscopically to see ***single*** cells at the tips of branches
2. cut a cross section of a branch and view microscopically to find:
   - innermost threads in the core (medulla) (not easily seen except in lengthwise sections) and prominent ***large rounded cells*** in the outer core
   - outermost (cortex) layers of very ***small*** cells, ***not*** in rings or rosettes
3. find female plants with ball-shaped, protruding swellings (cystocarps), at the base of the prickly branches. Cut a cross section if possible to view:
   - single large basal cells and terminal chains of spores
   - poorly developed cellular wall (pericarp) and ***no*** opening to the cystocarp
4. if possible, find sporangial plants with ***large***, cigar-shaped tetrasporangia scattered near the surface, divided across into four sporangia (***zonate***) (not imaged below)

Details of Anatomy





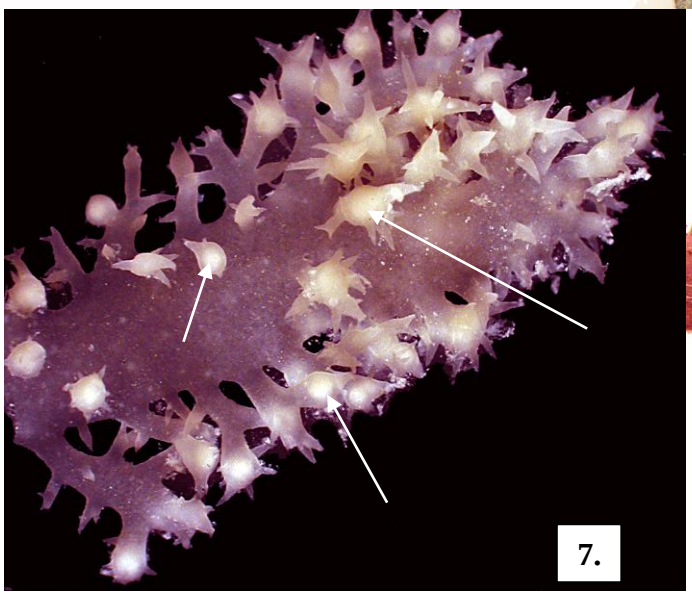


Mychodea acanthymenia stained blue and viewed with interference microscopy
1. branch tip with single apical cell (arrowed) and small surface (cortex) cells (A44728)
2. section cortex with early female stages (procarps): ***pairs*** of 3-celled carpogonial branches (*arrowed*) attached to the same cell (supporting cell, ***su c***) (slide 3746)
3. portion of a cross section with large cells of the outer core (medulla, ***med***) and small outer cells (cortex, (***co***) (innermost core threads not visible) (A44728)
4. lengthwise section of a developing female structure (cystocarp) with large basal cell (***b c***) producing chains of cells (gonimoblast, ***gon***) (A44728 slide 3747)

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

"Algae revealed", R N Baldock, State herbarium S Australia, November 2008; edited April 2014

5.



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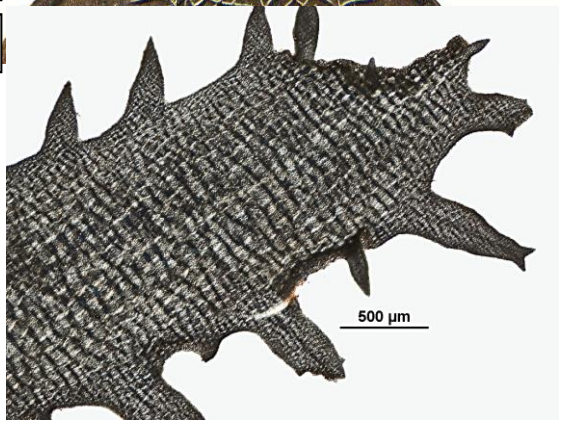

Specimens of *Mychodea acanthymenia* Kraft, from S Australia

5. from Margaret Brock Reef, Cape Jaffa, 4-5m deep in under hangs of caves (A 42924)
6. from shallow water in the outer reef, Robe (A 31654)
7, 8. preserved (bleached) female specimens (A44728) from Pennington Bay, Kangaroo I.
   7. swellings (cystocarps, arrowed) towards the base of the thorny branches (image colourised)
   8. view of marginal thorny branches and surface cell pattern (using interference microscopy)

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