



MACRO
PLANT



Techniques needed and shape

Classification

Phylum: Rhodophyta; Order: Nemaliales; Family: Liagoraceae

*Descriptive name

stubby worm weed

Features

1. brown-purple, 20 – 70mm tall, branches cylindrical, 1-3mm wide, branching forked
2. stubby side or extra branches may occur near the base
3. prominent *disc- or cushion-shaped* holdfast

Occurrences

Kangaroo I. S Australia to Victoria, SE Tasmania and southern NSW, only *in summer* on rock in the lower intertidal at reef edges or in pools

Usual Habitat

Similar Species

Helminthora lindaueri, but that lacks a prominent base and has different internal structures

Description in the Benthic Flora

Part IIIA, pages 85 - 87

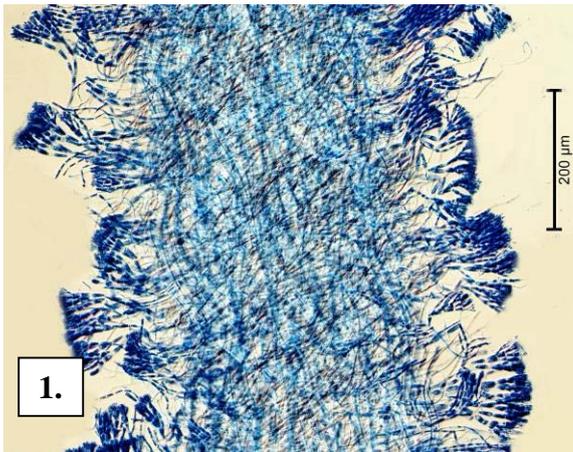
Special Requirements

view a tissue squash microscopically to find:-

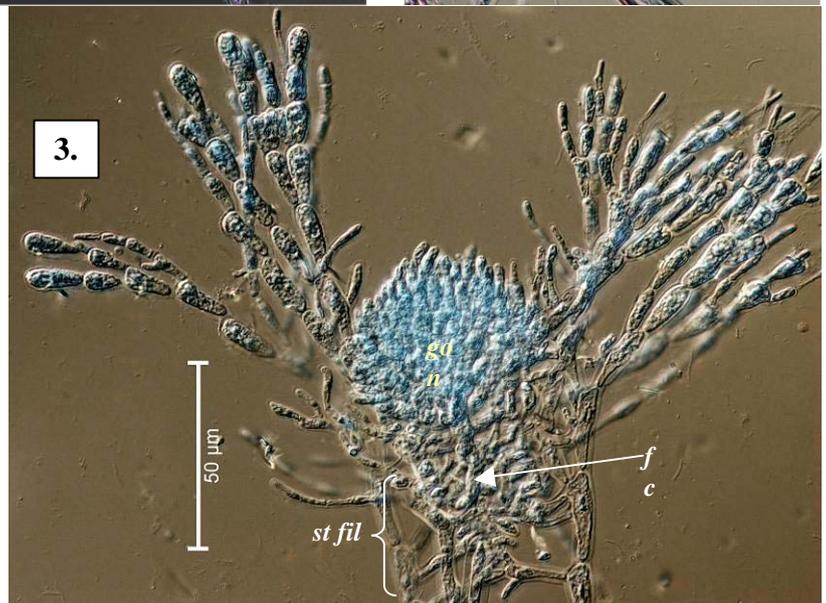
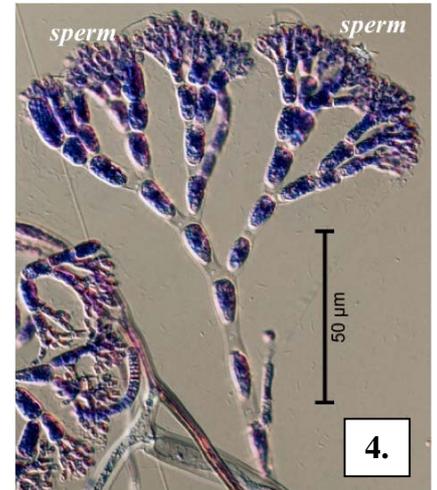
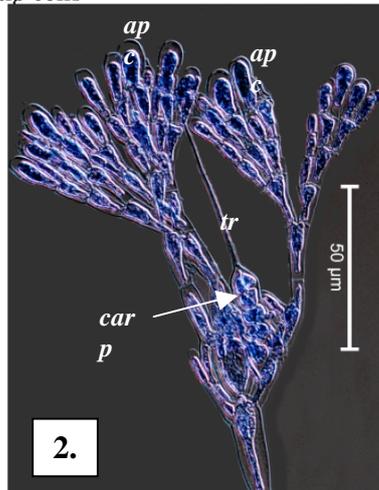
1. core (medulla) of a mix of colourless slender and thick threads running lengthwise
2. outer layers (cortex) of fan-shaped tufts of thin, forked (dichotomous) threads of elongate or egg-shaped cells, tip cells slightly *swollen*, or *club-shaped*
3. in the cortex of female plants, *bouquet-like* masses, the products of fertilisation, of a bunch of fertile cells (gonimoblast) ending in carposporangia, a *tangled bunch* of sterile threads at the *base*
4. early female stages with *curved*, 3-4-celled chains of cells (carpogonial branches) attached near a fork of lower cortical branches, tip cell *conical* () ending in a hair-like trichogyne
5. in the cortex of male plants, open, *hand-shaped* branches with dust-like spermatangial *fringes* on tip cells



Details of Anatomy



c med c
o o



Tissue squashes of *Helminthocladia dotyi* stained blue and viewed microscopically

1. side view: broad core (medulla, *med*) of a mix of thin and broad threads; outer layers (cortex, *co*) of fan-shaped tufts (A29025 slide 0456)
2. single cortical tuft: swollen tip cells (*ap c*) and early female structure (carpogonial branch with conical tip cell, carpogonium, *carp* ending in a hair-like trichogyne, *tr*) (A24036 slide 0216)
3. female structure after fertilisation: fertile cells (gonimoblast, *gon*), fusion cell (*fc*) and basal mass of sterile threads (*st fil*) (A29267 slide 0498)
4. hand shaped male structure with fringing spermatangia (*sperm*) (A29025 slide 0456)



5.



6.



7.

8.



10.

ap
c

tr

c br

50 µm

med
fil

Magnifications of plants of *Helminthocladia doryi* Womersley

- 5, 6. from the mid intertidal at Cape Lannes, Robe, S Australia (A41151) with a solid base and some peg-like side branches
- 7, 8. from the lower intertidal, Bicheno, Tasmania with basal outgrowths and pad-like holdfast (A56453)
- 9, 10. cortical tufts viewed microscopically
 - 9. fan-shaped cortical tufts (A29267 slide 0498)
 - 10. swollen tip cells (*ap c*), curved carpogonial branch (*c br*) at the side of a lower fork ending in a conical carpogonium and trichogyne (*tr*) and some displaced medulla threads (*med fil*) (A24036 slide 0216)