

Helminthocladia densa
(Harvey) Schmitz & Hauptfleisch



MACRO
PLANT



45.120

Techniques needed and shape

Classification

Phylum: Rhodophyta; Order: Nemiales; Family: Liagoraceae

***Descriptive name**

bushy helminthocladia

Features

red-brown to brown-purple, 100 – 250mm tall, bushy, of several cylindrical, forked main branches (axes) 2-4mm wide, densely covered with short, forked side branches
Possibly New Zealand. Kangaroo I. S Australia to Victoria and N Tasmania
on rock in the shallow water or in pools

Occurrences

Usual Habitat

Similar Species

rough water forms of *Helminthocladia australis*, but that has narrower axes

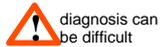
Description in the Benthic Flora

Part IIIA, pages 84, 88 - 89

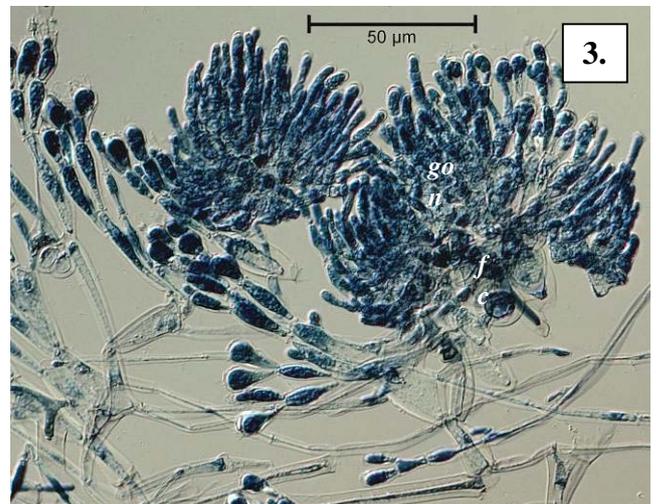
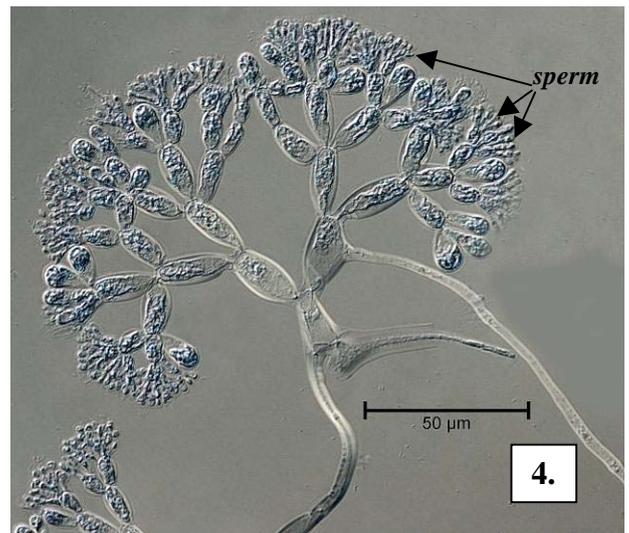
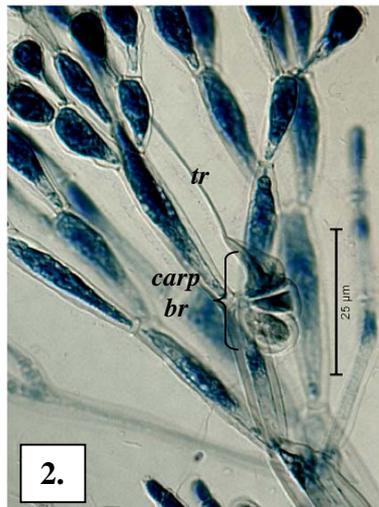
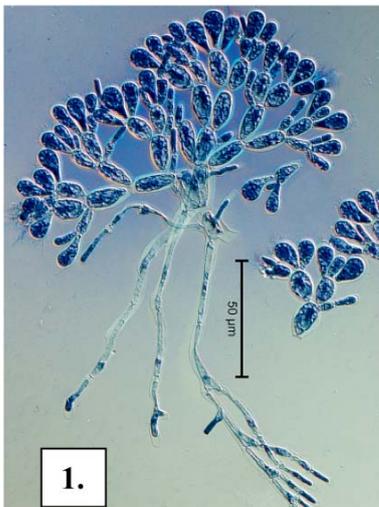
Special Requirements

view a tissue squash microscopically to find:-

1. core (medulla) of colourless, slender threads running lengthwise, irregularly arranged
2. outer layers (cortex) of fan-shaped tufts pointing outwards, of thin, regularly forked (dichotomous) threads of elongate to egg-shaped cells, tip cells **not** significantly swollen
3. in the cortex of female plants, **bouquet-like** masses, the products of fertilisation, of a bunch of fertile cells (gonimoblast) ending in carposporangia, sterile basal threads found in other species are largely **absent**
4. early female stages with **curved**, 2-3-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

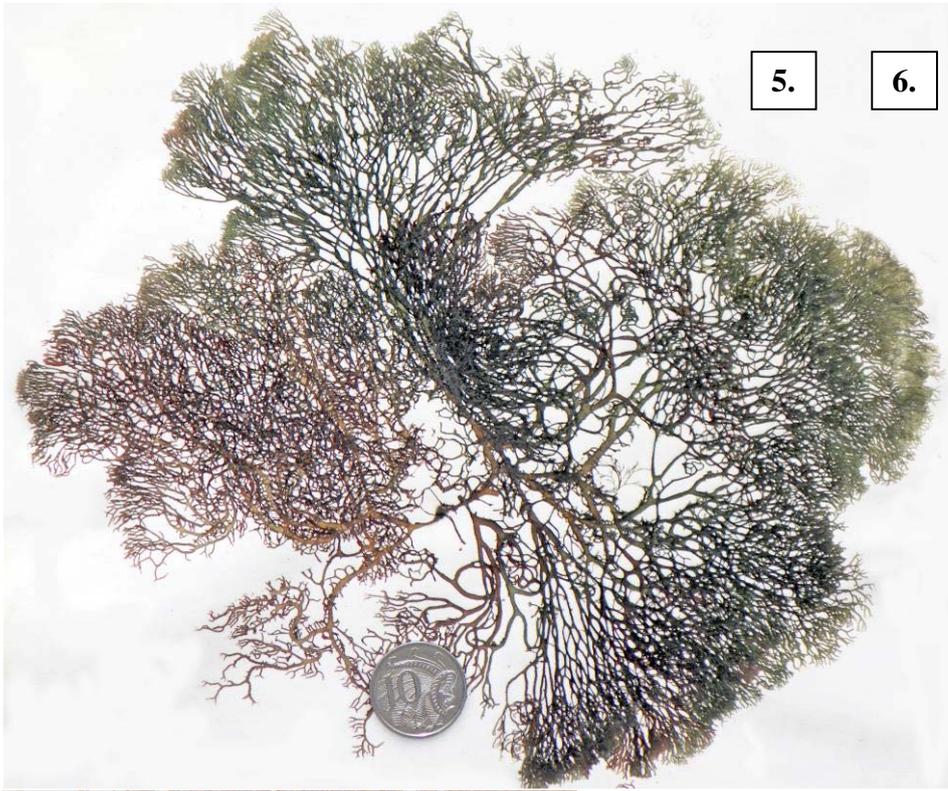


Details of Anatomy



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

1. a tuft extracted from the outer layers (cortex): regular forked branching, club-shaped tip cells about the same size as the ones immediately below; basal threads (A20011 slide 0206)
2. early female stage: 3-celled, curved carpogonial branch (*carp br*), tip cell (carpogonium) conical, ending in a trichogyne (*tr*) in a cortical tuft (A20402 slide 0205)
3. products of fertilisation (carposporophytes): fertile cells (gonimoblast, *gon*), old carpogonial branch cells fusing at base (*fc*) without producing an involucre of threads extracted from the cortex (A20402 slide 0205)
4. open, hand-shape male branches with a fringe of spermatangia (*sperm*) on tip cells (A27294 slide 0176)



5.

6.



8.

7.



10.

9.



Helminthocladia densa (Harvey) Schmitz & Hauptfleisch from S Australia, at different scales
 5, 6. drift plant, Robe (A31547) showing dense short side branches with divergent forked branching
 7, 8. from intertidal pools close to shore, Nora Creina (A20011)
 9, 10. in the lower intertidal and shallow water at Aldinga, with dense forked branching (A29704)