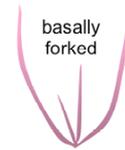


Nemalion helminthoides
(Velley) Batters

45.120



MACRO
PLANT



Techniques needed and shape

Classification

Phylum: Rhodophyta; Order: Nemiales; Family: Liagoraceae

*Descriptive name

string weed

Features

1. brown-purple, 50 – 200+ mm tall, stringy
2. main branches (axes) 1-2mm wide, cylindrical, slimy, ***forked at the base*** or irregularly branched several times

Occurrences

worldwide in temperate waters ***in summer***. In southern Australia temperate waters, West Coast S Australia around Victoria and Tasmania to just N of Sydney, NSW on rocky headlands in the mid-intertidal, hanging in stringy strands at low tide

Usual Habitat

Similar Species

spaghetti-like brown algae - *Scytosiphon lomentaria* (tubular string weed), *Cladosiphon filum* (brown spaghetti weed) and *Myriogloea sciurus*

Description in the Benthic Flora

Part IIIA, pages 78 - 81

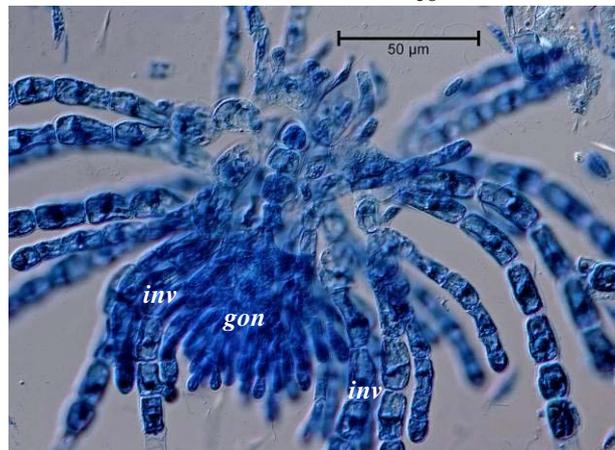
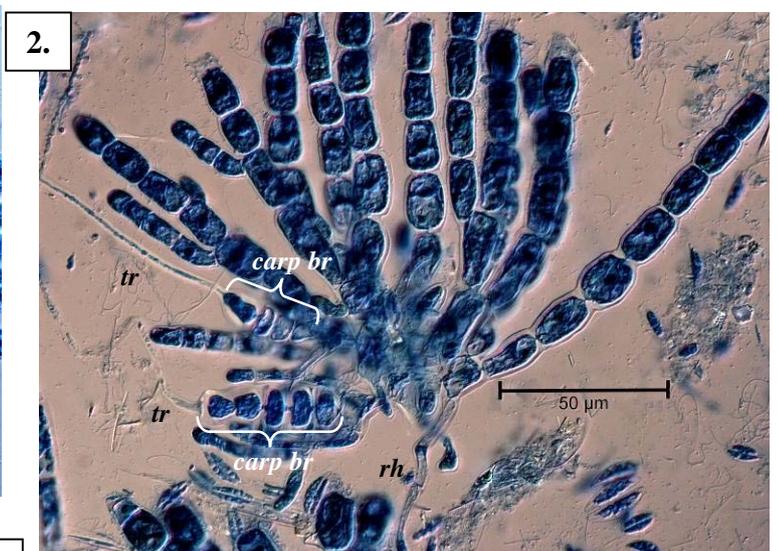
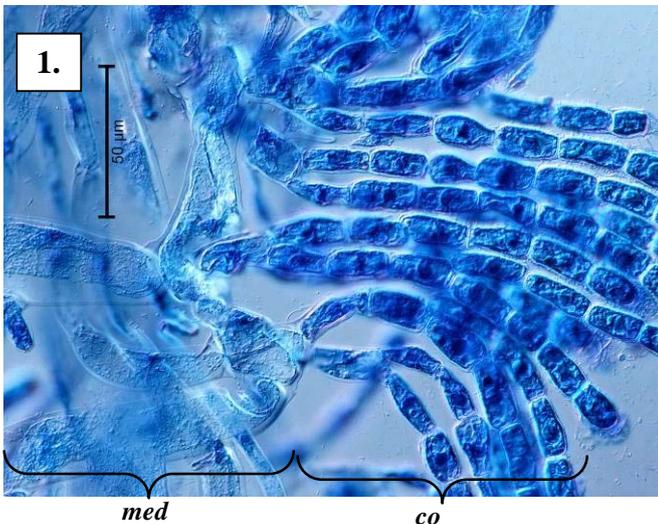
Special Requirements

view a tissue squash microscopically to find:-

1. core (medulla) of ***interwoven threads*** of large, colourless, elongate cells running lengthwise, (mixed with rhizoidal threads when mature)
2. outer layers (cortex) of threads of coloured, ***cylindrical cells forked basally***.
Extremely fine threads of invading blue-green algae (cyanophytes) may also be present.
3. in the cortex of female plants, ***basket-shaped masses***, the products of fertilisation consisting of a dense bunch of fertile cells ending in carposporangia, and, arising below, sterile threads (involucre) forked basally, similar in shape to surrounding cortical threads
4. early female stages with ***straight***, 4-celled chains of cells (carpogonial branches) attached to the lower parts of cortical branches, tip cell ***dumbbell shaped*** () ending in a hair-like trichogyne



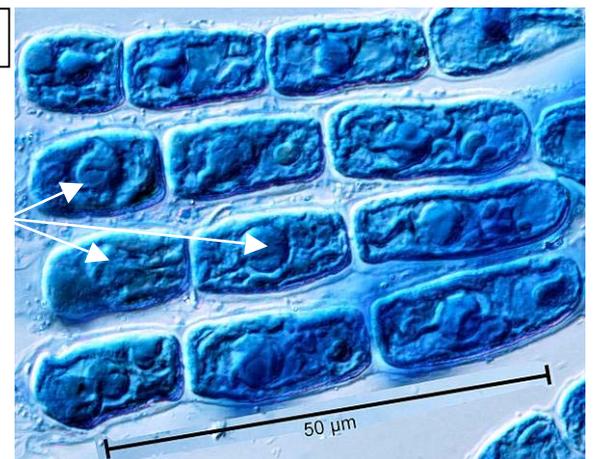
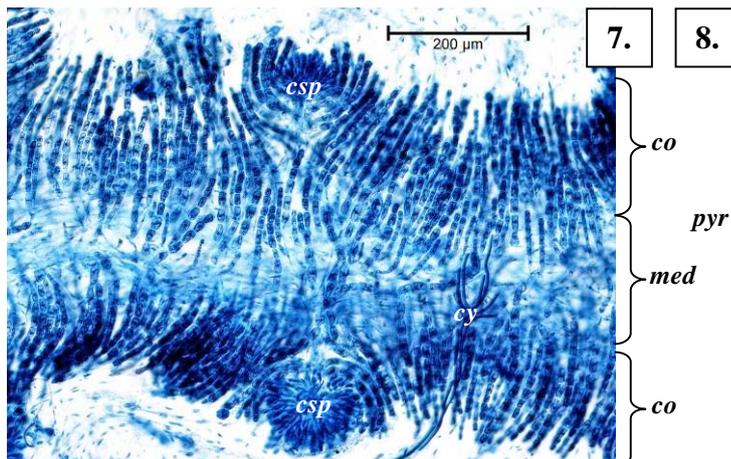
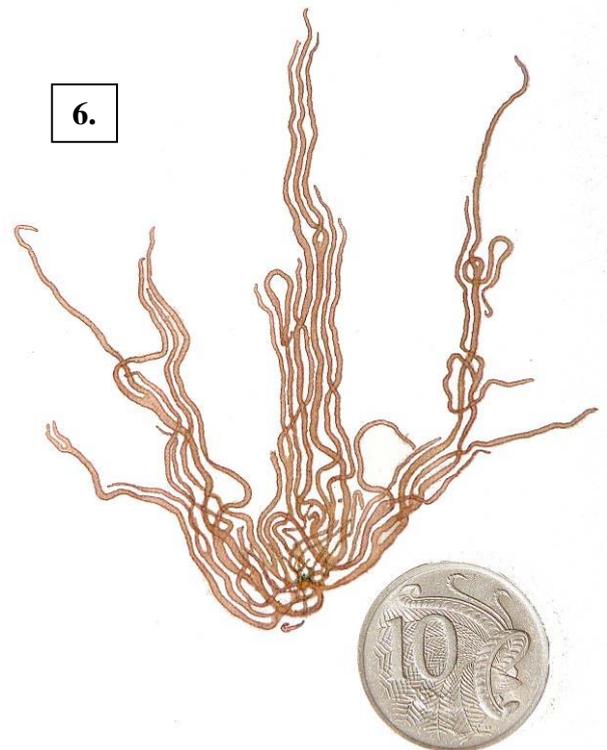
Details of Anatomy



3.

Tissue squashes of *Nemalion helminthoides* (A67049) stained blue and viewed microscopically

1. edge of a branch: core (medulla, *med*) of large cells, outer layer (cortex, *co*) of chains of pigmented cells, forked basally (slide 16473)
2. early female stage: 4-celled carpogonial branches (*carp br*), tip cells ***dumbbell shaped***, ending in a trichogyne (*tr*), in a cortical tuft producing basal rhizoids (*rh*) (slide 16474)
3. mature female structure (gonimoblast, *gon*) surrounded by threads (involucre *inv*) arising basally, similar to surrounding cortical cells (slide 16474)



Nemalion helminthoides (Velley) Batters from South Australia

- 4, 5. whole plant and detail of the basal branching in a specimen from the mid intertidal, Port Hughes, Yorke Peninsula (A59219)
- 6. smaller plant (A31978) growing on granite in the upper intertidal of a headland, at Port Elliott
- 7, 8. specimens (A67049) stained blue and viewed microscopically:
- 7. interwoven threads in the core (medulla, *med*), coloured threads of the cortex (*co*), bunches of threads around mature female structures (carposporophytes, *csp*) and foreign, infiltrating threads of a cyanophyte (*cy*) (slide 16474)
- 8. highly magnified cortical cells showing large central body (pyrenoid, *pyr*) associated with the plastid (slide 1673)