

Ganonema farinosum

(Lamouroux) Fan & Wang

(as *Liagora farinosa* in the Benthic Flora)

45.120

Techniques needed and shape



MACRO
PLANT



Classification

Phylum: Rhodophyta; Order: Nemiales; Family: Liagoraceae

*Descriptive name

chalky weed

Features

1. red-brown with slight chalky white covering, 50 – 150mm tall
2. main branches (axes) 1-2mm wide, cylindrical, usually regularly forked but occasionally with sporadic short side branches (a response to grazing?)

Occurrences

tropical and subtropical. In southern Australia temperate waters, near Albany, W Australia to Port Noarlunga, S Australia

Usual Habitat

on rock in shallow water, occasionally on *Cystophora*

Similar Species

Ganonema codii, but forked branches are closer together and softer in that species and cells in outer tufts are barrel-shaped

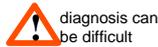
Description in the Benthic Flora

Part IIIA, pages 93, 94 - 96

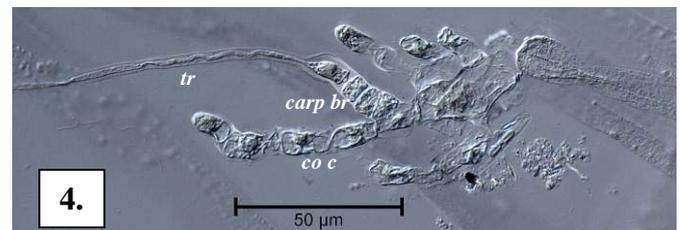
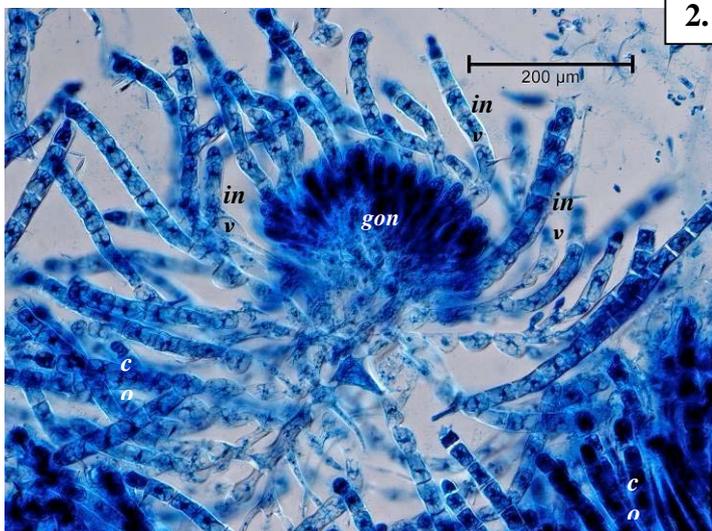
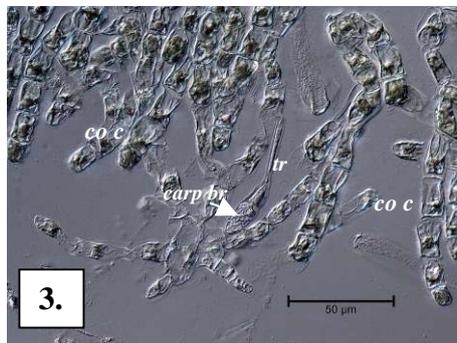
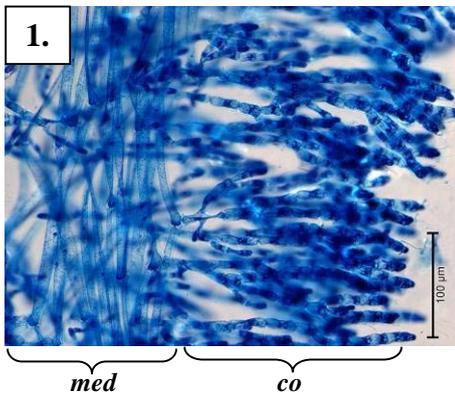
Special Requirements

view a tissue squash microscopically to find:

1. wide core (medulla) of **large elongate** cells running lengthwise, (mixed with rhizoidal threads when mature)
2. outer layers (cortex) of forked tufts of **cylindrical** cells often **unbranched** at the tips, larger basal cells attached to **upper ends** of medulla cells, producing rhizoidal threads
3. in the cortex of female plants, spider-like masses, the products of fertilisation consisting of a dense bunch of fertile cells ending in carposporangia, and, arising below, sterile threads (involucre) largely unbranched, similar in shape to surrounding cortical threads
4. early female stages with **practically straight**, 4-celled chains of cells (carpogonial branches) attached to the lower parts of cortical branches
5. male plants with **heads** of spermatangia **at tips** of cortical branches

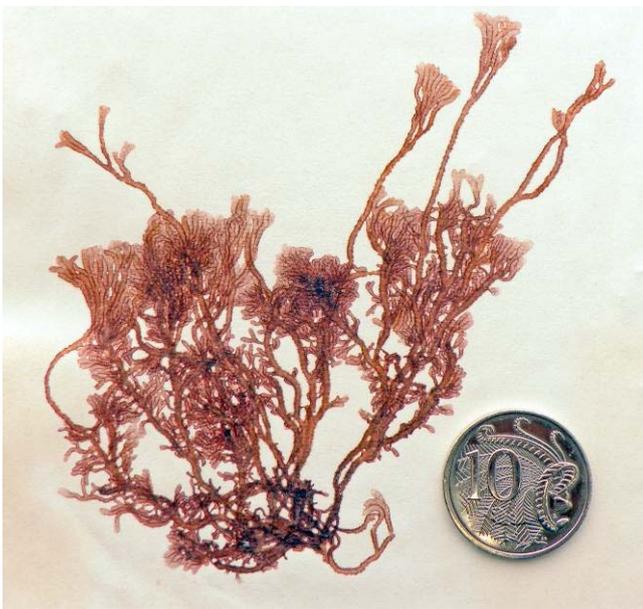


Details of Anatomy

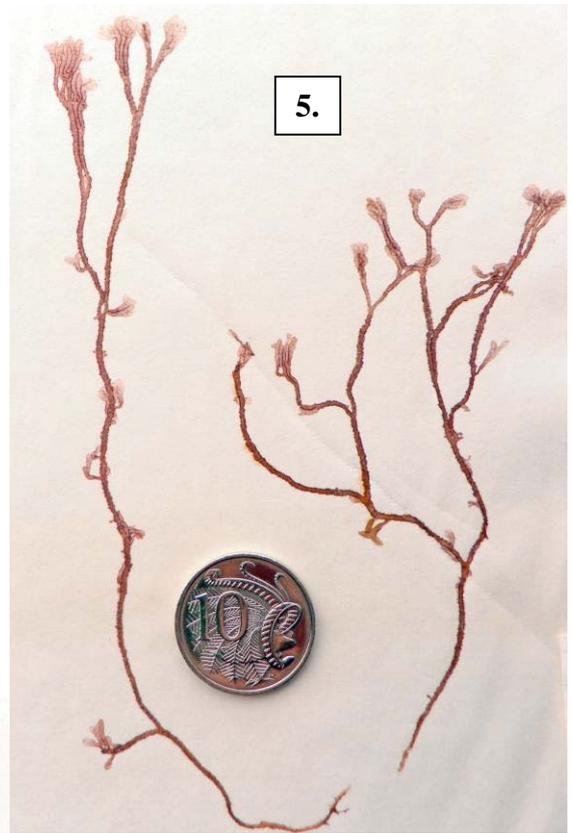


Squashes of *Ganonema farinosum*, viewed microscopically (1, 2. A51995 slide 6585; 3 -5. A43048 slide 4566)

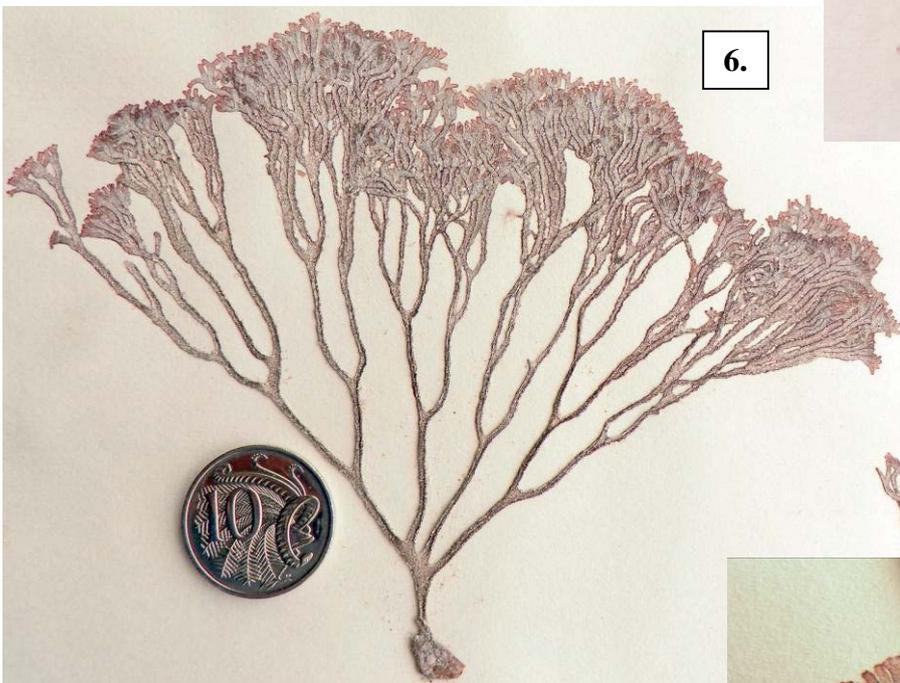
1. edge of a branch showing medulla (*med*) of threads, and cortex (*co*) of branch tufts
2. mature female structure (gonimoblast, *gon*) extracted from the cortex (*co*), surrounded by loose threads (involucre, *inv*) similar to cortical threads
- 3, 4. young female stage of relatively straight chain of 4 cells (carpogonial branch, *carp br*) ending in a thread-like trichogyne (*tr*) and cylindrical cortical cells (*co c*)
5. male spermatangial heads (*sp h*) at tips of cortical tufts



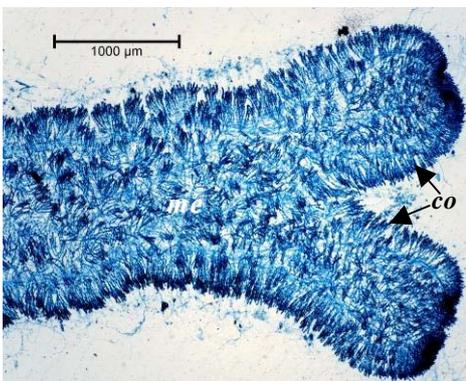
4.



5.



6.



8.

7.

Ganonema farinosum (Lamouroux) Fan & Wang from South Australia
 4, 5. two specimens (A31378) on *Cystophora* spp, Barker Rocks, S of Port Rickaby, Yorke Peninsula, showing marked differences in branching pattern
 6, 7. two magnifications of a plant (A43048) with more regular forked branching, from 6m deep on the landward side of Port Noarlunga reef
 8. longitudinal microscopic view of the tips of branches stained blue (A51995 slide 6585) showing branch tufts in the outer layers (cortex, *co*) partly covering the extensive core (medulla, *med*) of twisted threads