



MACRO PLANT



Techniques needed and plant shape

Classification

Phylum: Rhodophyta; Order: Gigartinales; Family: Dumontiaceae

Descriptive name

*fuzzy red slime strands

Features

plants 50-160 mm tall, light-red to dark red-brown, *slimy*, main branches (axes) 2-3 mm wide; irregular shorter side branches numerous, cylindrical, tapering to the tips, 0.5-3.0 mm wide, branched 1-4 times, cylindrical but flat when pressed and often appearing minutely ringed and fuzzy on the surface

Special requirements



1. view a tissue squash microscopically to find:

- a **single**, conspicuous central thread (axial filament) of large, rectangular-shaped cells wrapped in extremely fine threads (rhizoids)
- radially-arranged, branched side threads, ending in outward-facing, unbranched chains each of 12-16 coloured cells, **loosely** held together, some ending in extremely fine, **long hairs** with a swollen tip

2. in female plants

- in young stages, distinctive chains of 4-6 (-10) small, **dense** cells (carpogonial branches) and adjacent chains (auxiliary chains) of (6) 11-20 cells involved in nucleus transfer and the spore stage following fertilisation
- in mature stages, dense balls of spores, naked (wrappings or involucre **absent**) embedded in the outer branch layer (cortex), and not forming surface bumps

3. in spore plants, large tetrasporangia scattered in the cortex, divided across (zonately)

Occurrences

Albany, WA to Victoria and N Tasmania

Usual Habitat

on stems of the sea grass *Amphibolis*, and the brown alga *Caulocystis*, possibly also on rock, to 5-33 m deep

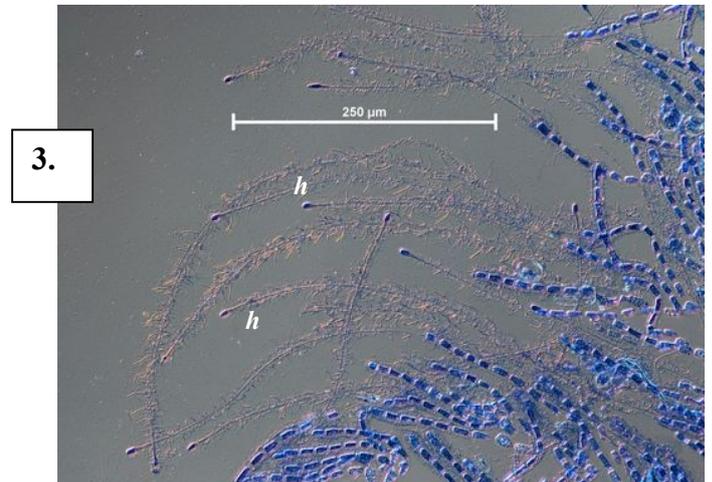
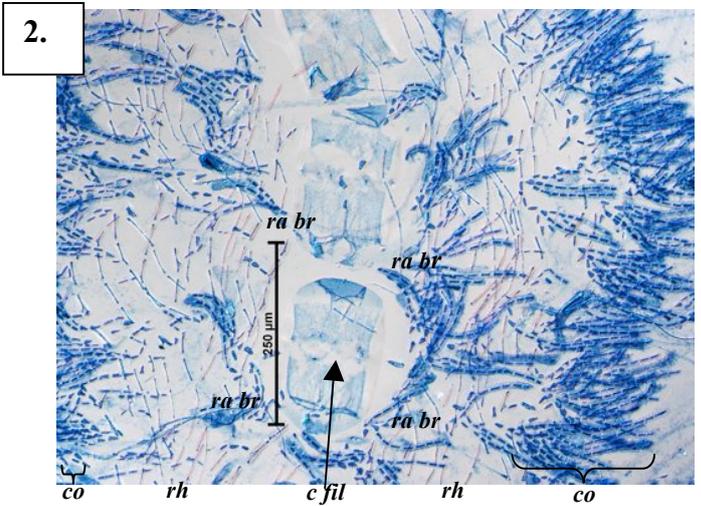
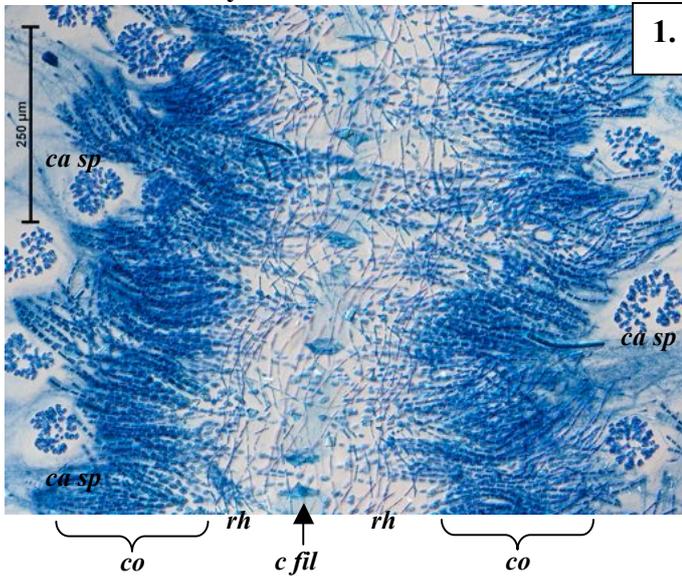
Similar Species

Dasyphloea insignis but the cortex of that species has compact cells, icicle-shaped hairs and mature female stages (carposporophytes) form bumps on branches

Description in the Benthic Flora

Part IIIA, pages 222, 225, 226

Details of Anatomy

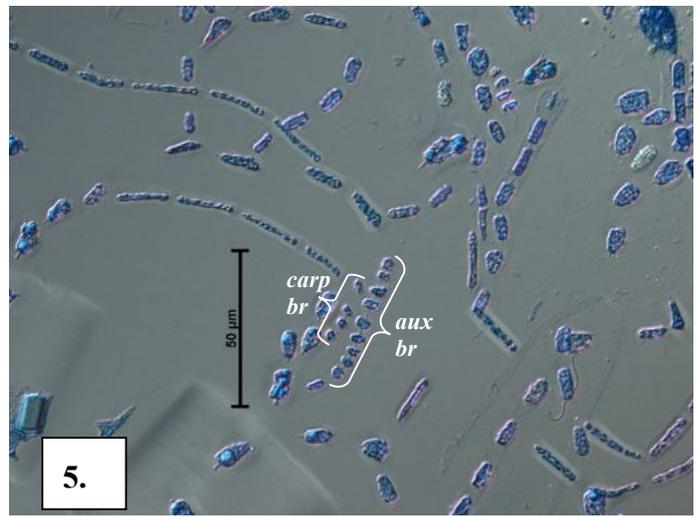
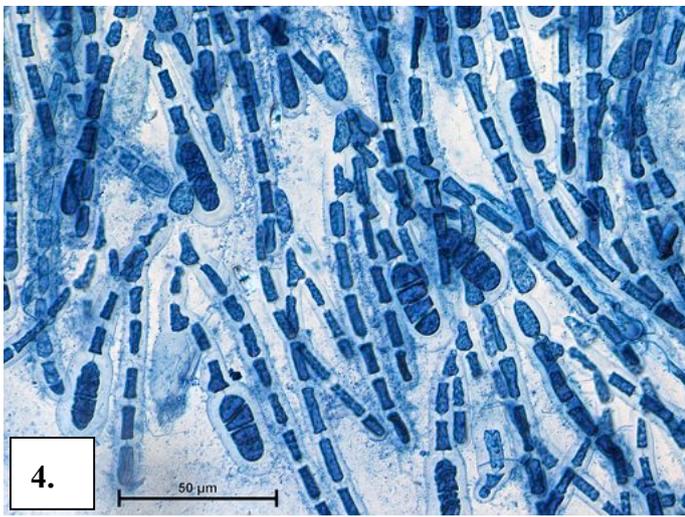


Dudresnaya australis 64625, tissue squashes

1, 2. two magnifications of a branch in side view, slide 15553, central thread of large cells (*c fil*) wrapped in fine threads (rhizoids, *rh*) and bearing radiating branches (*rad br*) ending in branched chains of small, coloured cells forming a loose outer layer (cortex, *co*), ball shaped masses of mature female structures (carposporophytes, *ca sp*)

3. detail of cortex cells ending in extremely narrow hairs (*h*) with bulb-like tips. (This specimen also has a hair-like bacterial coating giving hairs a fuzzy appearance)

* Descriptive names are inventions to aid identification, and are not commonly used "Algae Revealed" R N Baldock, State Herbarium S Australia, July 2013



4, 5. *Dasyphloea insignis* A64625:

4. spore plant, slide 15553, outer threads (cortex) some ending in oblong-shaped tetrasporangia divided across (zonate)
5. female plant, slide 15552, tissue squash with distinctive chains of small, developing, fertile cells, characteristic of the Family, (a 4-10 celled carpogonial branch, *carp br* and adjacent auxiliary cell filament, *aux fil* of 10-20 cells)



6, 7. two magnifications of *Dudresnaya australis* J Agardh ex Setchell A64625 from Ironstone Pt Kangaroo I., S Australia, showing the hairy surface, and vague ringed appearance of branches