Peyssonnelia splendens Womersley

45.240

Techniques needed and plant shape

MICRO PLANT

Classification Phylum: Rhodophyta; Order: Gigartinales; Family: Peyssonneliaceae

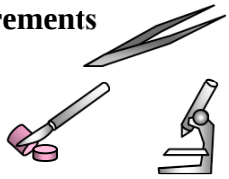
***Descriptive name** red-brown rock- and shell-scale

Features plants yellow-red to red-brown, 10-60mm across on rock and shells, ***hard to remove***, forming thin, circular or elongate patches, some with tiny radial streaks

Occurrences West Coast, S Australia to Victoria

Usual Habitat on rock; and large mollusc shells in shallow water or shaded intertidal pools

Special requirements

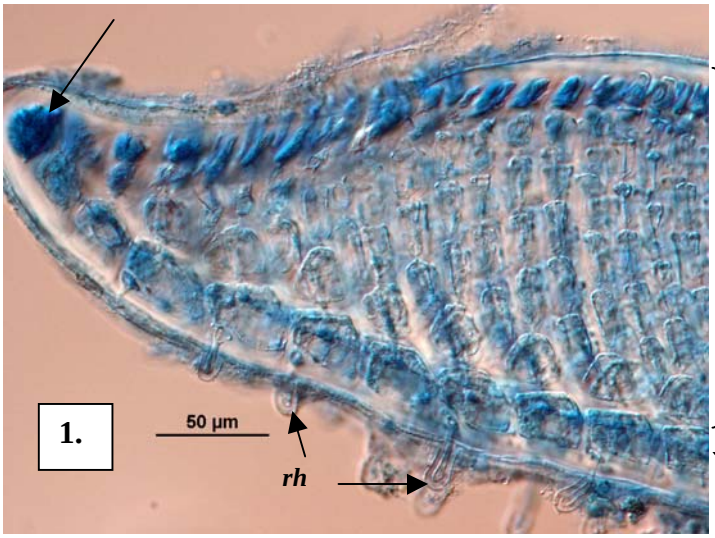


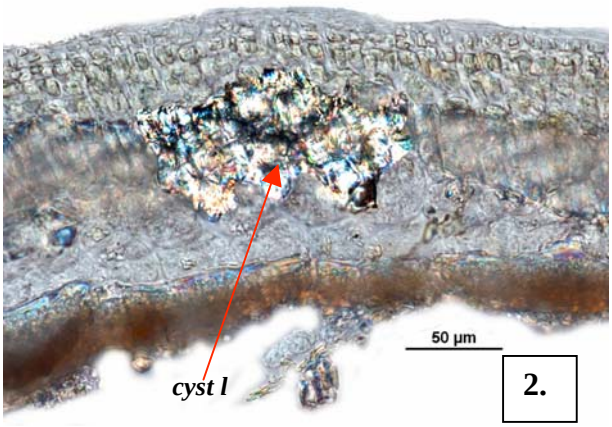
1. prise off a piece of blade and view microscopically to find scattered but ***prominent clusters*** of bright crystal accumulations (***cystoliths***)
2. cut a section through a patch (nemathecium) of sporangia on upper blade surfaces to find a bottom (basal) layer of cells producing
   - threads, ***firmly*** held together, arising > ***50°***, lower cells ***equal*** in size to basal layer cells
   - short, ***single-celled*** rhizoids penetrating the blade sheath
   - tetrasporangia mixed with fine hairs and divided in a cross-shaped (cruciate)pattern
   - ***large clumps*** of bright crystal accumulations (cystoliths)

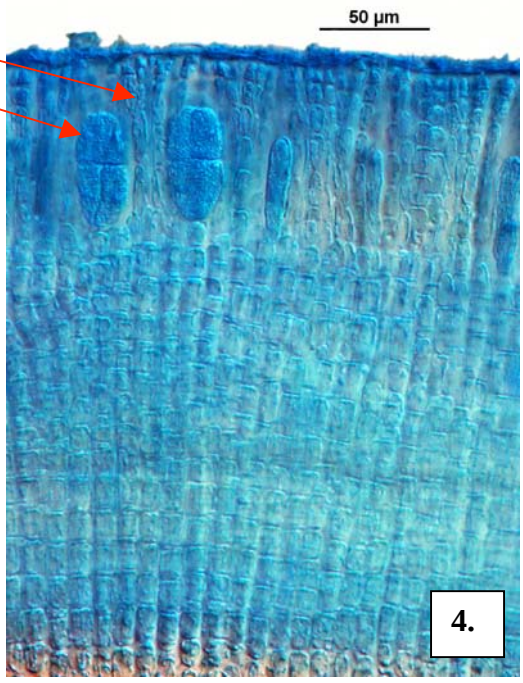
Similar Species *Peyssonnelia boudouresquei*, but that species is easier to remove from rocks and internal thread anatomy is different

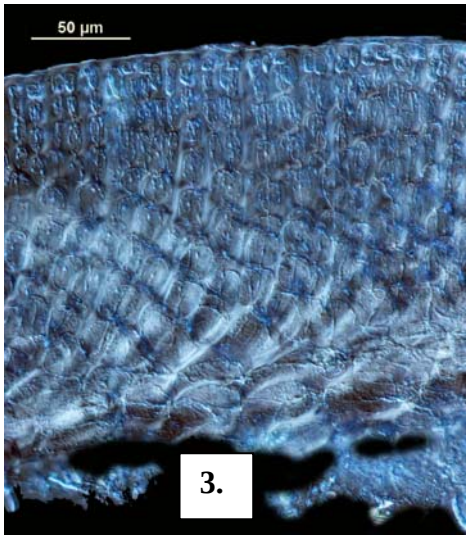
Description in the Benthic Flora Part IIIA, pages 160-161, 163

Details of Anatomy





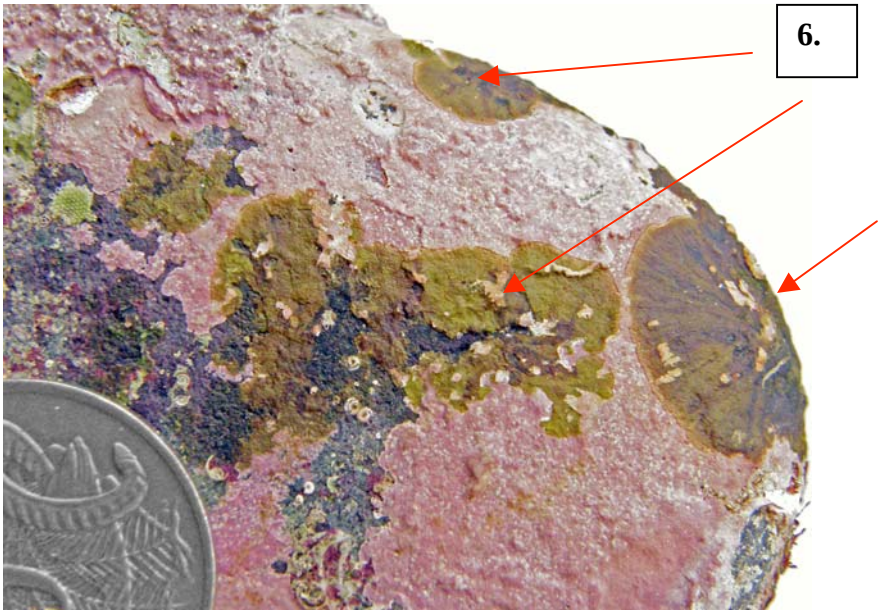


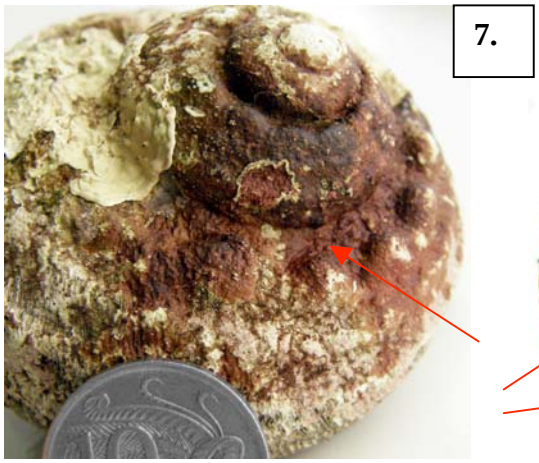


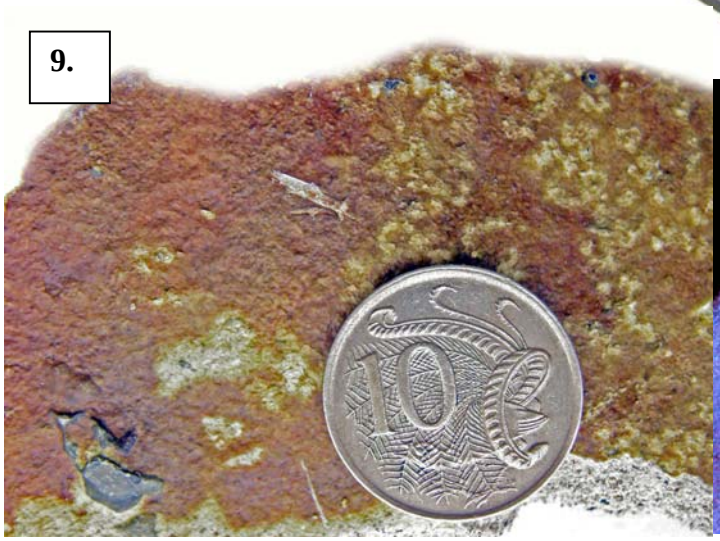
sections of *Peyssonnelia splendens* stained blue and microscopically to show:

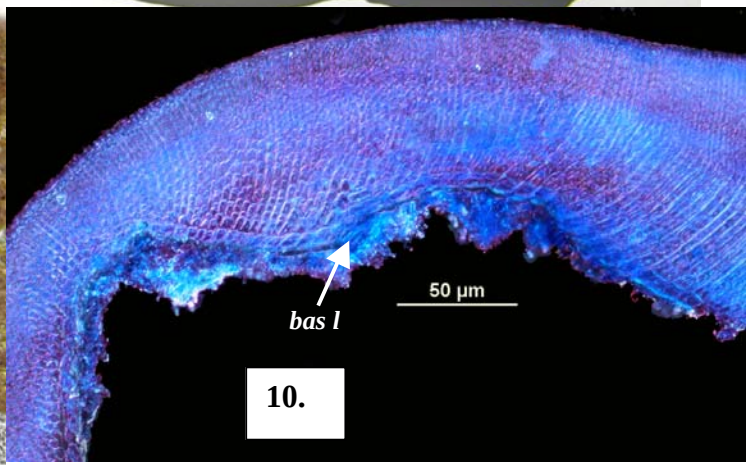
1. blade margin with actively dividing cell (arrowed), basal cell layer (*bas l*), upwardly-growing threads (assurgent filaments, *ass fil*) and single-celled rhizoids (*rh*) (A57528 slide 10443)
2. a cluster of crystal bearing cells (cystoliths, *cyst l*) (A60021 slide 11435)
3. a blade viewed with highly polarised light to accentuate the internal regions (A57377 slide 11456)
4. part of a sporangial patch (nemathecium) with tetrasporangia (*t sp*) and hairs (*ha*) (A57377 slide 10232)

ca









5, 6.	two magnifications of *Peyssonnelia splendens* Womersley, (A57528) 2m deep Abalone Cove, West I., S Australia
7, 8.	two magnifications of plants (A61687) on *Turbo torquatus* shell 10m deep Wedge I., S Australia
9.	plants (A57377) on limestone reef in shallow water with strong wave wash at Wanna, S Australia
10.	cross section stained blue and viewed with highly polarized light microscopy showing the prominent basal cell layer (*bas l*) (A57377 slide 11455)

Descriptive names are inventions to aid identification, and are not commonly used.
"Algae Revealed" R N Baldock, S Australian State Herbarium January 2010