Peyssonnelia boudouresquei
Yoneshigue

45.240

Techniques needed and plant shape

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

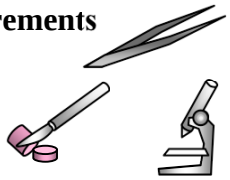
***Descriptive name** red rock- and shell-crust

Features plants dark red, 10-30mm across, on rock and shells, forming thin, encrusting, circular or lobed patches ***hard to remove***, amongst paler, bleached coralline algal crusts and sponges

Occurrences Brazil; N Carolina USA. In Australia, from the Head of the Great Australian Bight to Louth Bay S Australia, but probably more widespread and overlooked

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

Special requirements

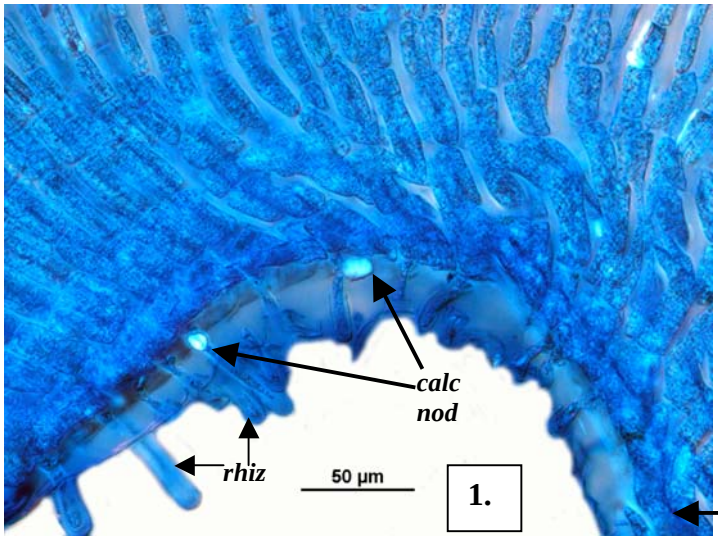


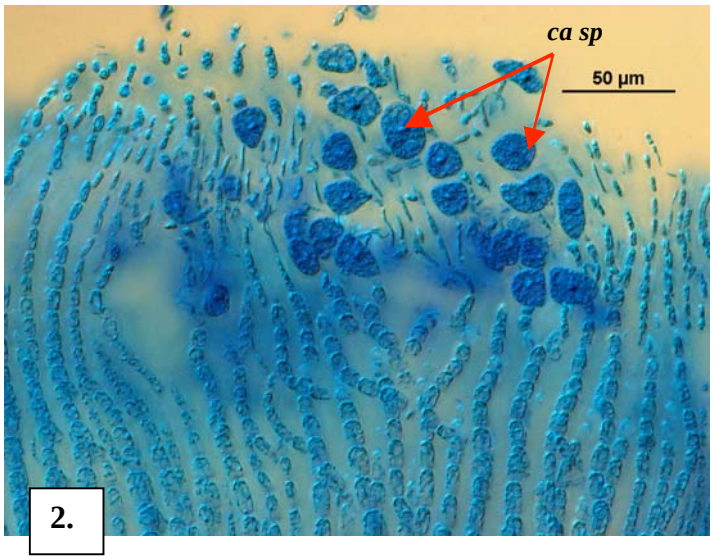
1. scrape off a piece of crust and view underside cells microscopically to find branching, spreading, ***fan-shaped*** pattern of threads (flabelloids) in the basal layer, characteristic of this species
2. a section through an encrusting scale shows a basal layer that forms fan-shaped patterns in surface view ***occasionally*** giving rise below to ***small cells within the blade sheath*** (hypobasal layer) producing single-celled rhizoids and, above, threads of 1-4 ***large***, branching, oblong cells arising at 60-80º, narrowing to fine, unbranched threads of ***11-13 small cells***
3. shallow patches (nemathecia) of female structures with microscopic short chains of carposporangia amongst fine threads occur on the upper surface of plants
4. tetrasporangia amongst fine threads divided in a cross-shaped (cruciate) pattern occur on the upper surface of plants

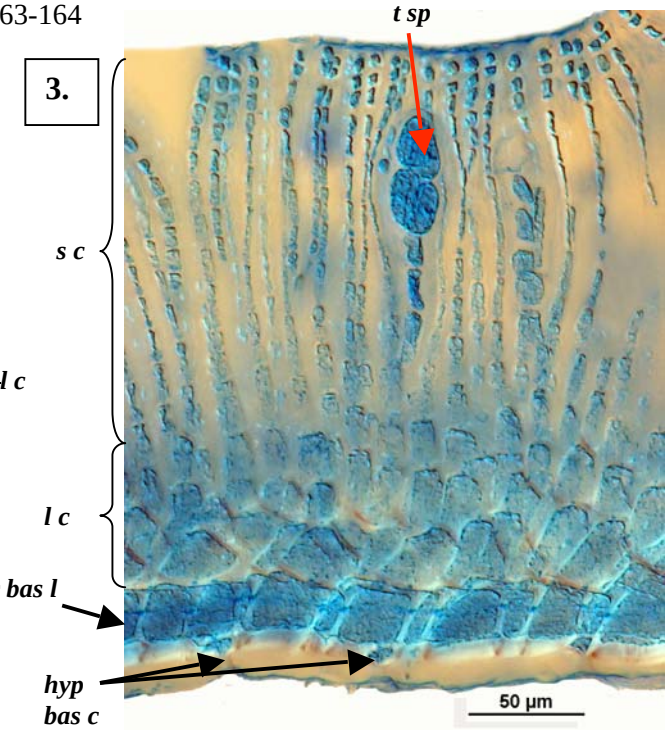
Similar Species *Peyssonnelia splendens*, but the internal thread anatomy is different in this species

Description in the Benthic Flora Part IIIA, pages 152, 163-164

Details of Anatomy





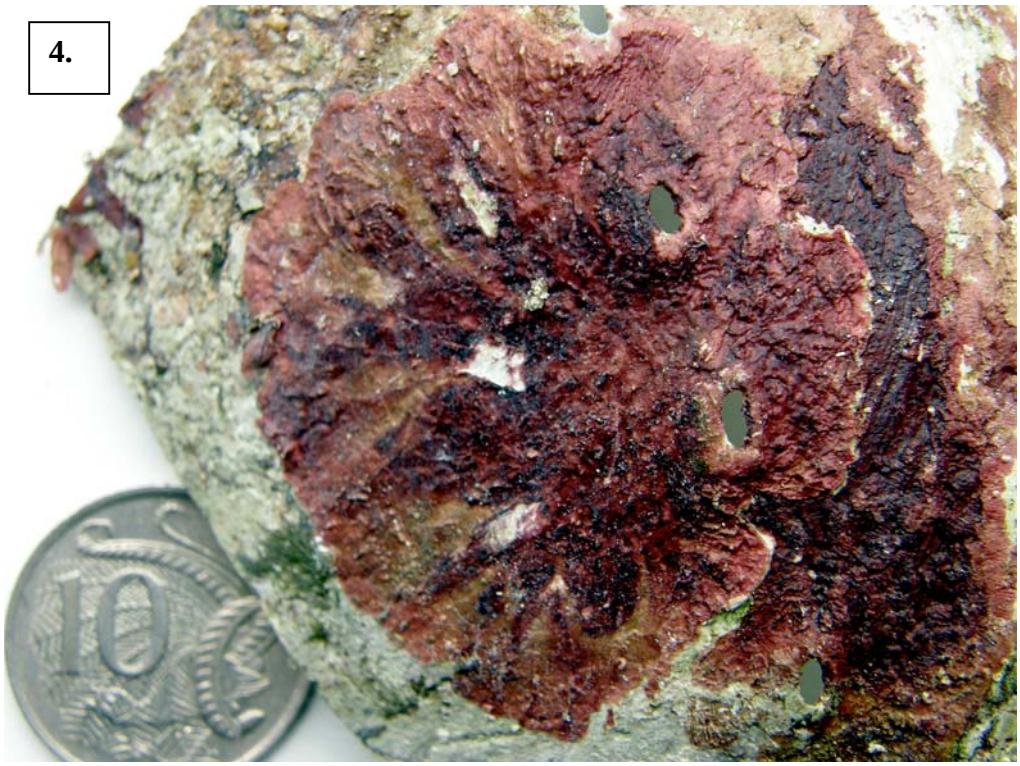


Sections of *Peyssonnelia boudouresquei* stained blue and viewed microscopically to show:

1. basal layer (*bas l*) giving rise to rhizoids *rh*) and above, threads (assurgent filaments) branching in the first 1-4 large cells (*l c*), ending in slender, unbranched threads of 11-13 smaller cells (*s c*) and several calcite nodules (*calc nod*) (A19639 slide 12130)
2. a part of a female patch (nemathecium) with chains of carposporangia (*ca sp*) at the ends of slender threads (A19608 slide 12135)
3. tetrasporangia (*t sp*) amongst slender threads and several inconspicuous basal cells of rhizoids (hypobasal cells, *hyp bas c*) lying within the blade

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

4.



Peyssonnelia boudouresquei Yoneshigue from S Australia:

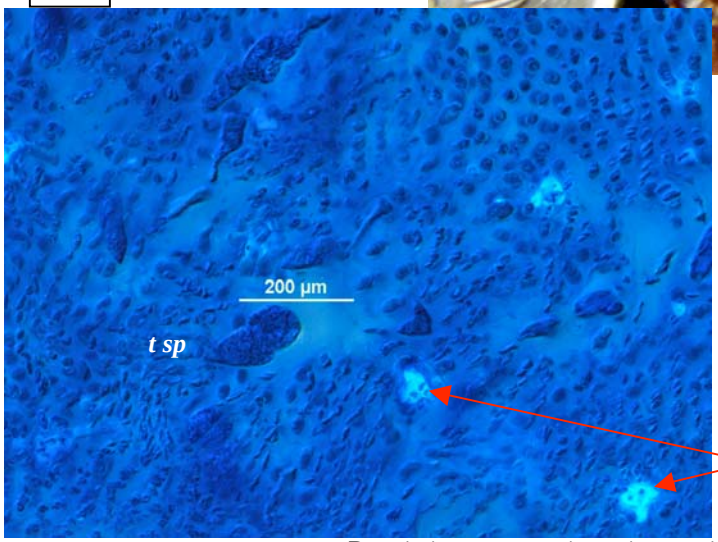
4.(A61653) at 10m deep, on green lip abalone *Haliotis laevigata* shell, Topgallant I.

5. (A19321) in a shaded rock pool, Head of the Great Australian Bight

6. upper surface view of cells, tetrasporangia (*t sp*) and calcite nodules (*calc nod*) stained blue and viewed microscopically (A15075 slide 12123)

5.

6.



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