Peyssonnelia boudouresquei

Techniques needed and plant shape

*Descriptive name

Phylum: Rhodophyta; Order: Gigartinales; Family: Peyssonneliaceae

descriptive name red rock- and shell-crust

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

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

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

Classification

Features

Occurrences

Usual Habitat

Phylog area occurring amongst paler, bleached coralline algal crusts and sponges

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 60-80°, 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

1. 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 60-80°, narrowing to fine, unbranched threads of 11-13 small cells

2. a part of a female patch (nemathecium) with chains of carposporangia (ca sp) at the ends of slender threads (A19639 slide 12130)

3. tetrasporangia (t sp) amongst slender threads and several inconspicuous basal cells of rhizoids (hypobasal cells, hyp bas c) lying within the blade

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

1. basal layer (bas l) giving rise to rhizoids rhiz 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 (nemathecia) 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)