

# *Peyssonnelia novae-hollandiae*

Kützing

45.240

## Techniques needed and shape



MACRO PLANT



## Classification

Phylum: Rhodophyta; Order: Gigartinales; Family: Peyssonneliaceae  
§ a red sea fan

## \*Descriptive name

## Features

1. plants dark red to red-grey, 50-150mm long or broad, leathery, attached at the base to rock
2. plants oval-shaped when young, divided into irregular straps with fan-shaped tips when older
3. blades with concentric growth rings

## Occurrences

from Geraldton W Australia to Coffs harbour NSW and around Tasmania

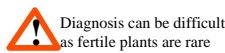
## Usual Habitat

on rock; essentially a deep water species (to 48m) and in shaded pools

## Special requirements



1. cut a cross section along a radius of a blade and view microscopically to find a **single cell layer** on the lower surface producing:-
  - upright multicellular threads at an **angle of about 35°** becoming vertical near their tips
  - some to many **sideways-growing** threads
  - basal cells of rhizoids pointing downwards **at right angles** and pass **through** the blade sheath – that is, do not form a separate (hypobasal) layer inside the blade sheath
2. if possible cut a section through patches (nemathecia) on upper blade surfaces of fertile plants.
  - in sporangial plants, tetrasporangia, divided in a cross (cruciate) pattern are intermingled with hairs, a feature separating *Peyssonnelia* from *Sonderopelta*
  - in female plants, nemathecia sheaths have a patterned surface and carposporangia are **in pairs** amongst fine hairs

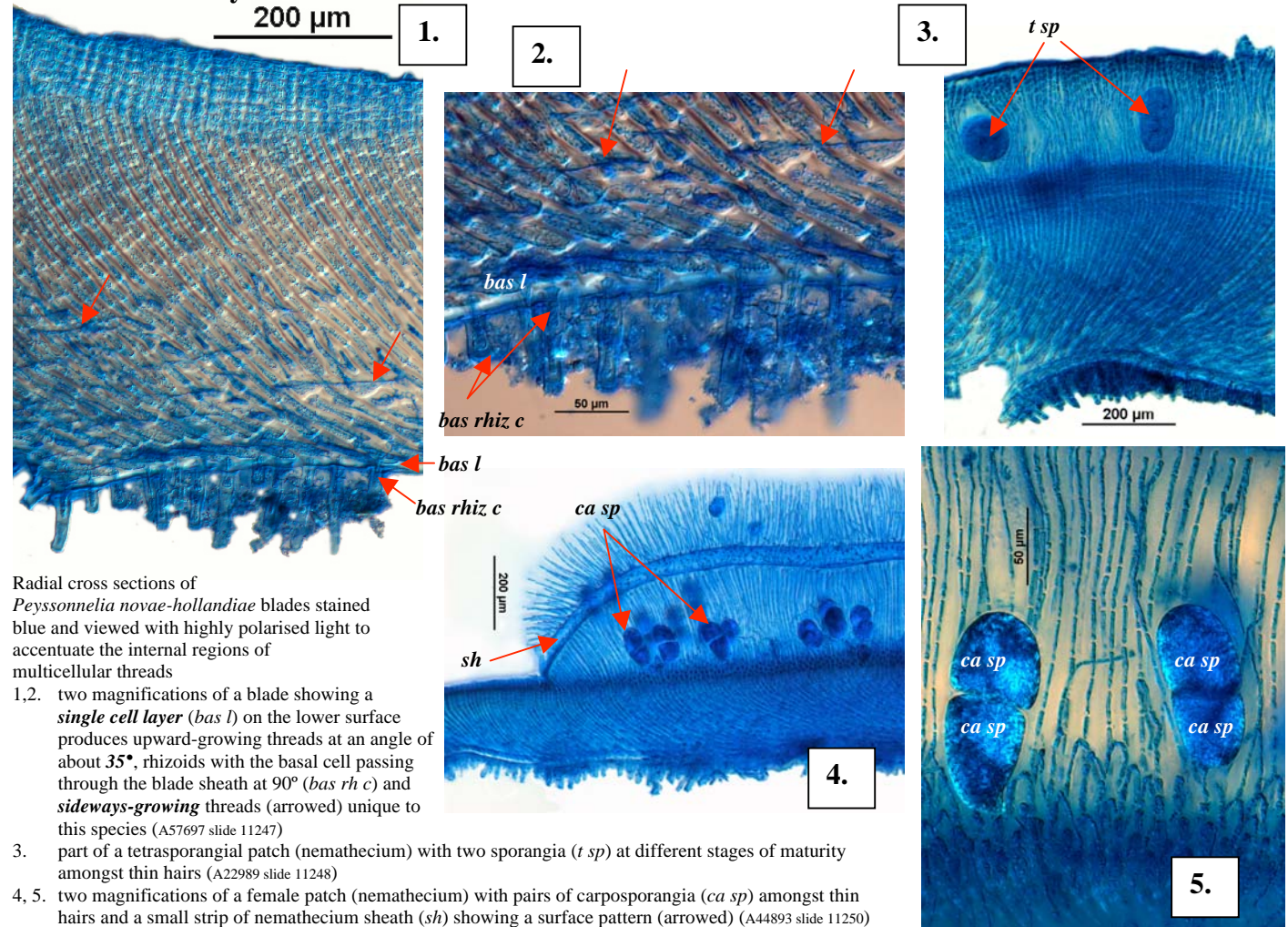


## Similar Species

*Peyssonnelia capensis*, but that species is grey-red, and a layer (hypobasal) consisting of the bent basal cells of rhizoids lies within the blade sheath in that species.

## Description in the Benthic Flora Part IIIA, pages 152, 156-158

## Details of Anatomy



Radial cross sections of *Peyssonnelia novae-hollandiae* blades stained blue and viewed with highly polarised light to accentuate the internal regions of multicellular threads

- 1,2. two magnifications of a blade showing a **single cell layer** (*bas l*) on the lower surface produces upward-growing threads at an angle of about 35°, rhizoids with the basal cell passing through the blade sheath at 90° (*bas rhiz c*) and **sideways-growing** threads (arrowed) unique to this species (A57697 slide 11247)
3. part of a tetrasporangial patch (nemathecium) with two sporangia (*t sp*) at different stages of maturity amongst thin hairs (A22989 slide 11248)
- 4, 5. two magnifications of a female patch (nemathecium) with pairs of carposporangia (*ca sp*) amongst thin hairs and a small strip of nemathecium sheath (*sh*) showing a surface pattern (arrowed) (A44893 slide 11250)

Descriptive names are inventions to aid identification, and are not commonly used.

§ name used in Edgar, G. *Australian Marine Life*, 2nd Ed. (2008)

“Algae Revealed” R N Baldock, S Australian State Herbarium January 2010

6.

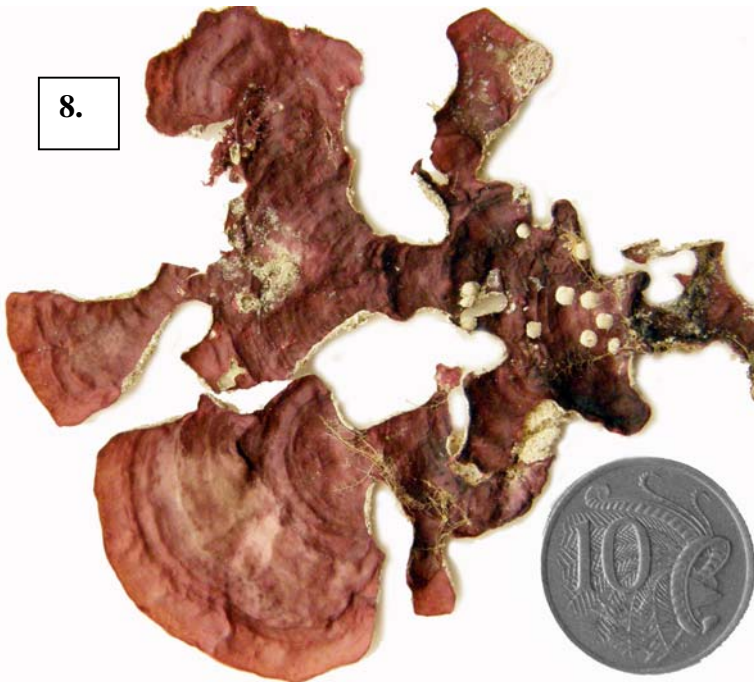


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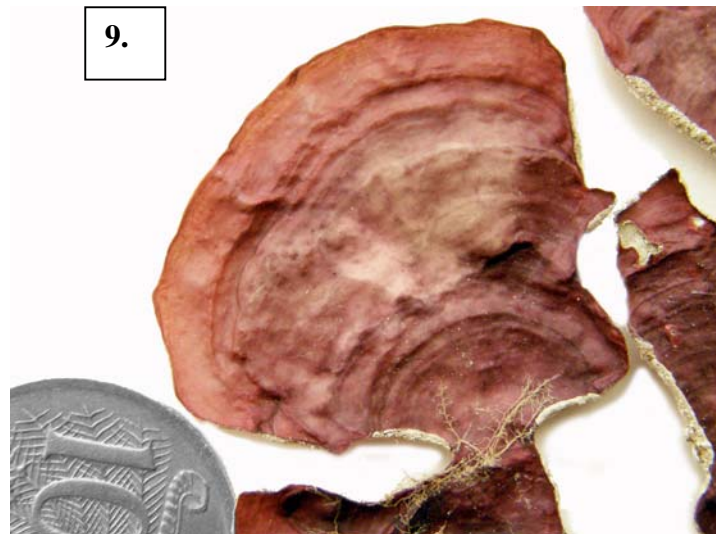


6, 7. two magnifications of *Peyssonnelia novae-hollandiae* Kützing, (A46116) 2-3m deep, inside Baudin Rocks, Guichen Bay S Australia  
 8, 9. two magnifications of a specimen (A59724) 4m deep, Godfrey I., Guichen Bay S Australia

8.



9.



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