

Exallosorus olsenii

(Womersley) Phillips

(formerly *Homoeostrichus olsenii*)

34.390



MACRO
PLANT



Techniques needed

Classification

Phylum: Phaeophyta; Family: Dictyotaceae; Tribe: Zonarieae

*Descriptive name

dusty fan-tips

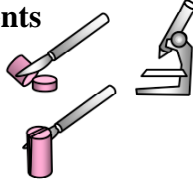
Features

1. plants grey to light **brown** colour, flat-branched (complanate) with basal stalks **felty**, upper parts **fan-shaped**
2. the surface of dried specimens is often **powdery**
3. fan-shaped tips have a **dark** line of dividing cells (meristem) at their upper edges

Variations

young plants are fan-shaped, older ones irregularly branched

Special requirements



1. view the line of dividing, dark-coloured cells at the fan edges
 2. cut a slice **across** a blade to view regular tiers each of **5 equal-sized** cells.
 3. a slice **lengthwise** along a blade shows middle (medulla) cells in tiers, but **elongate** in shape. Outer (cortical) ones are smaller, dark with **2-6** aligned with each of the medulla tiers
 4. view the oblong sporangia, found in patches inside a clear cover (indusium).
- These provide features by which the genus is separated from *Homoeostrichus* and other genera:
- sporangia **divide into 3-4** when mature (although this is obscure in stained specimens) (*Zonaria* has an 8-part sporangium.)
 - they have **single-celled** sporangial stalks (*Homoeostrichus* has a many-celled stalk, *Zonaria* is stalkless)
 - there are **no** hairs or mucilage inside the clear cover (*Homoeostrichus* has brown hairs and lacks a sporangial cover (indusium))

Occurrences

from the SE of S Australia to Pt Jackson, NSW

Usual Habitat

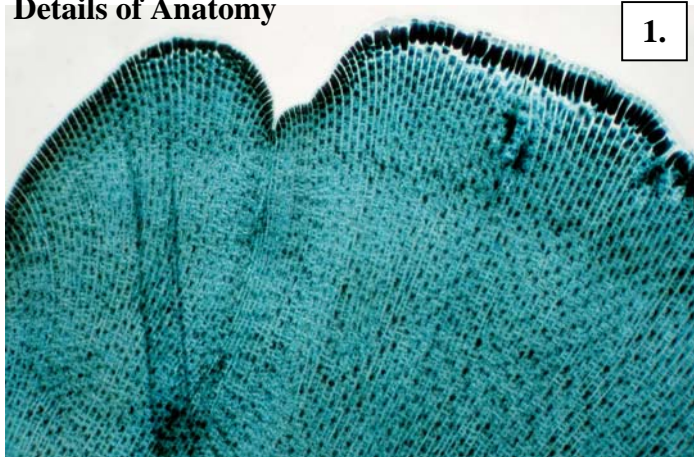
on rock, in shaded rock pools or to 48m

Similar Species

Zonaria crenata has similar sized fan tips, but not the dusty appearance. In section, the blades show **paired** surface cells in line with tiers of medulla cells.

Description in the Benthic Flora Part II, pages 243-246

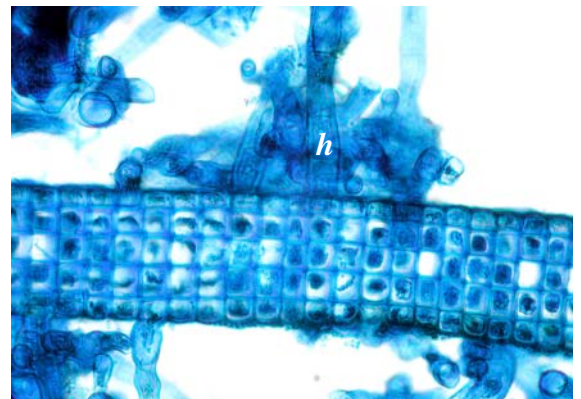
Details of Anatomy



1.

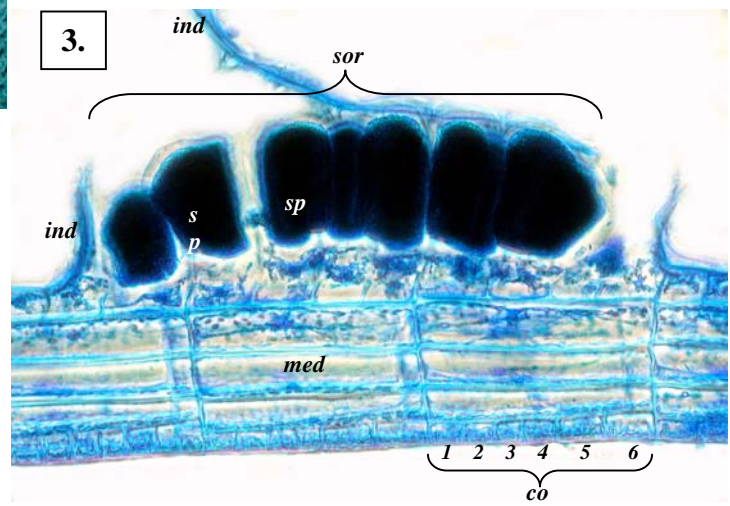


2.



Exallosorus olsenii stained blue and viewed microscopically

1. blade edge with line of actively dividing dark cells (meristem) (slide 9868)
2. **cross** section with tiers of 5 equal-sized cells and hairs (*h*) (slide 9868)
3. **lengthwise** section through a patch (sorus, *sor*) of sporangia (*sp*) with (torn) cover (indusium, *ind*). Middle (medulla, *med*) cells are **elongate**. 4-6 outer (cortical, *co*) cells are grouped (1,2,3...) opposite each medulla tier (slide 9869)



3.

* Descriptive names are inventions to aid identification, and are not commonly used
"Algae Revealed" R N Baldock, S Australian State Herbarium, July 2003



Exallosorus olsenii (Womersley) Phillips (formerly *Homoeostrichus olsenii*), (A55065),
from 15m deep, 1300m off Cape Northumberland, S Australia

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"Algae Revealed" R N Baldock, S Australian State Herbarium, July 2003