

Dicranema revolutum
(C Agardh) J Agardh

45.420

Techniques needed and shape



MICRO PLANT



Classification

Phylum: Rhodophyta; Order: Gigartinales; Family: Dicranemataceae

***Descriptive name**

wire-weed tufts; [§]red tumble weed

Features

plants form **wiry**, red-brown tufts, 20-50mm long, fading to yellow-brown, on wire weed (*Amphibolis*) stems, with **open forked, stiff**, cylindrical, branches about 0.5mm wide, sometimes curling, but only at the very tips

Occurrences Usual Habitat

Shark Bay, W Australia to Victoria and Bass Strait
grows only on *Amphibolis* stems (an obligate epiphyte)

Similar Species

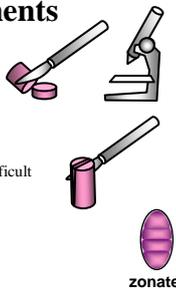
Dicranema cincinnalis - often the two species grow together. *D. revolutum* is larger, with straighter branches, except at the very tips, and female cystocarps have openings



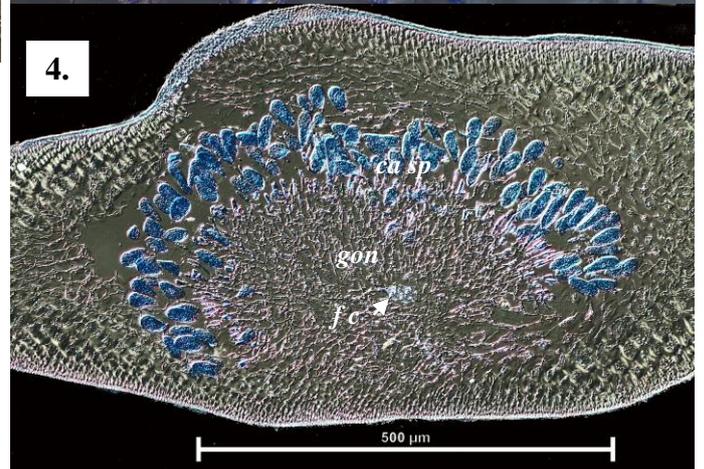
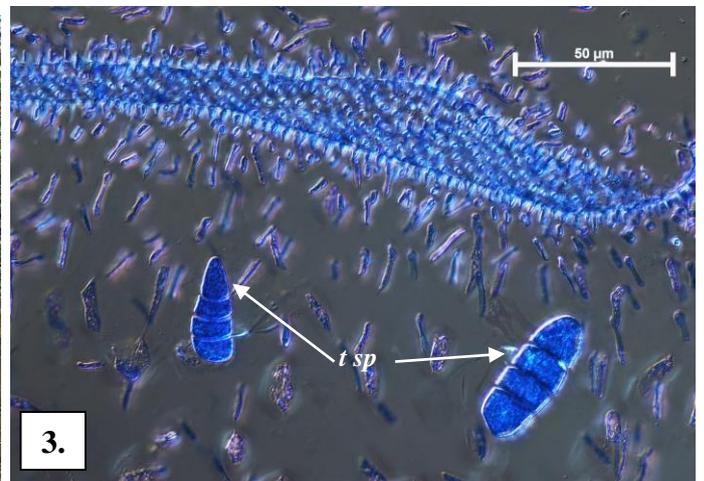
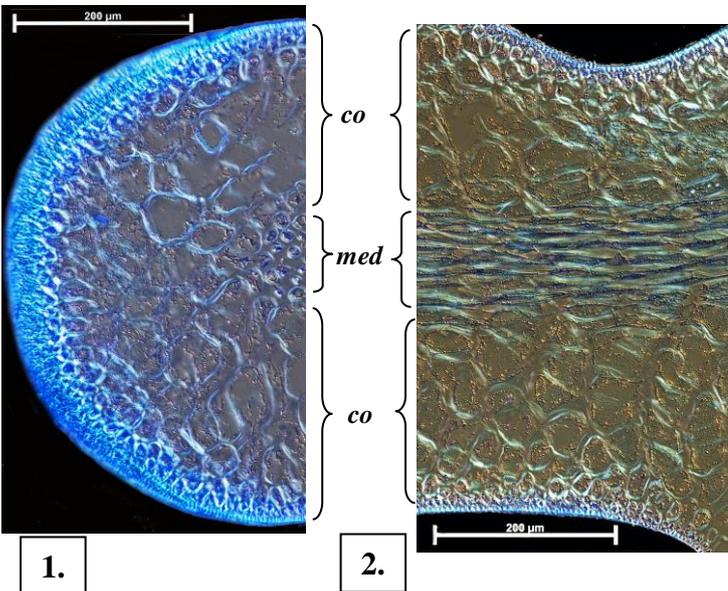
Description in the Benthic Flora Part IIIA, pages, 319, 322-325
Special Requirements view microscopically to find

1. in cross section: a small core (medulla, **med**) of fine threads and wide outer layer (cortex, **co**) of inner large and outer very small cells
2. in female plants: mature female structures (cystocarps) forming swellings near the ends of branches, containing **distinct** openings (ostioles). In longitudinal section: **inwardly pointing** fertile threads (gonimoblast), **single** carposporangia at their tips, **small** fusion cell. Male spermatangia occur in minute packets in the outer layers of the **same plants**.
3. in sporangial plants: tetrasporangia, divided across (zonately) scattered near branch tips

⚠ Diagnosis can be difficult



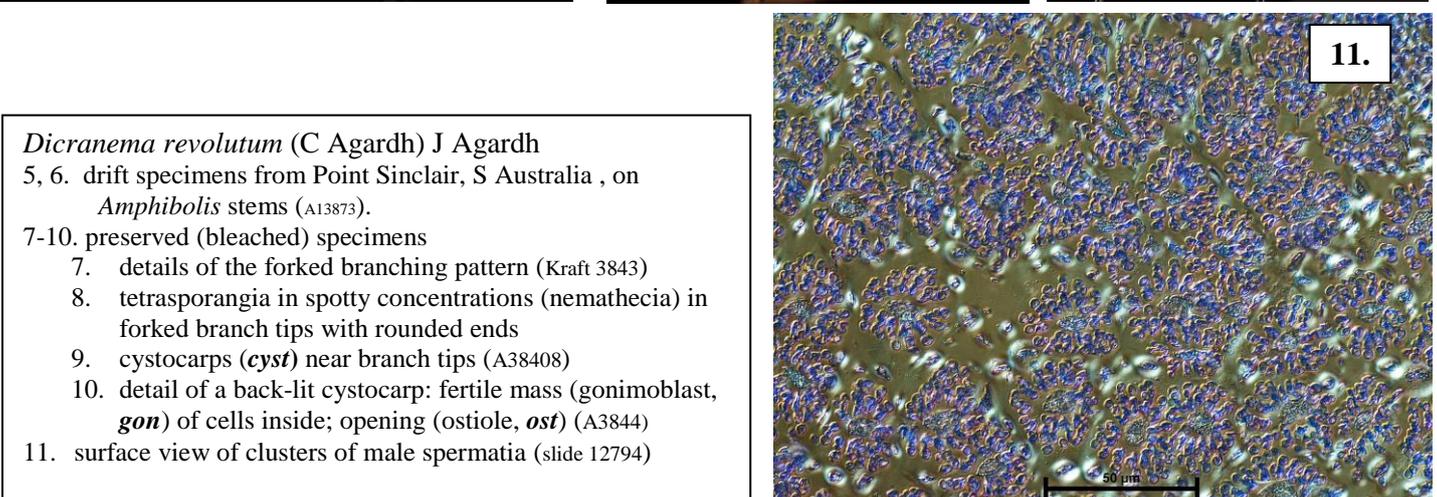
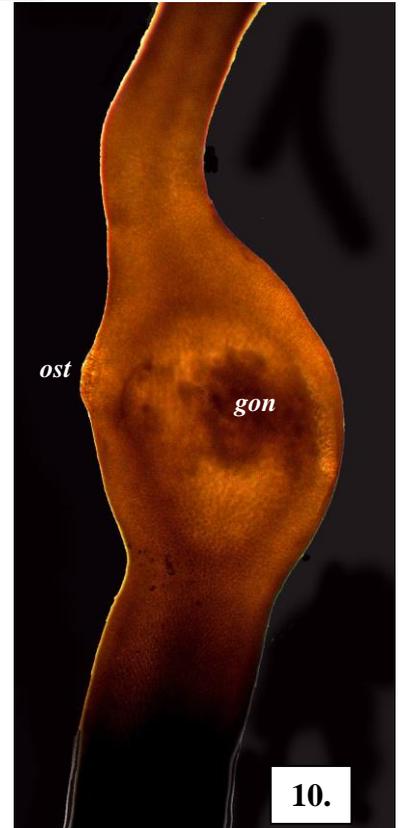
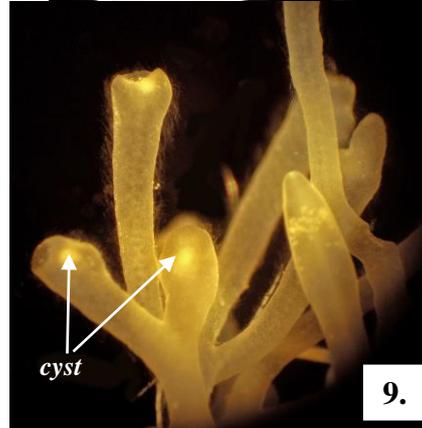
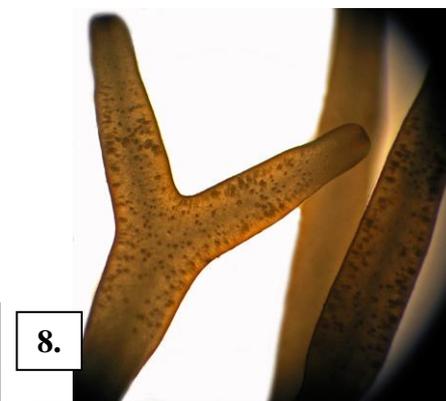
Details of Anatomy



Sections of *Dicranema cincinnalis* stained blue and viewed microscopically

1. cross section: small core (medulla, **med**) of fine threads, wide outer layer (cortex, **co**) of inner large and outer small cells (slide 12794)
2. longitudinal section
3. outer cortex of a sporangial plant: tetrasporangia (**t sp**) divided across (zonately) (slide 12794)
4. lengthwise section of a cystocarp: obscure, **minute** fusion cell (**fc**), inwardly-pointing, net-like fertile threads (gonimoblast, **gon**) ending in carposporangia (**ca sp**) (slide 3757)

* Descriptive names are inventions to aid identification; [§]name used in Huisman, J *et al*, *Marine Plants of the Perth Region* (2006) "Algae Revealed" R N Baldock, State Herbarium S Australia, May 2008; corrected May 2014



Dicranema revolutum (C Agardh) J Agardh

5, 6. drift specimens from Point Sinclair, S Australia, on *Amphibolis* stems (A13873).

7-10. preserved (bleached) specimens

- 7. details of the forked branching pattern (Kraft 3843)
- 8. tetrasporangia in spotty concentrations (nemathecia) in forked branch tips with rounded ends
- 9. cystocarps (*cyst*) near branch tips (A38408)
- 10. detail of a back-lit cystocarp: fertile mass (gonimoblast, *gon*) of cells inside; opening (ostiole, *ost*) (A3844)
- 11. surface view of clusters of male spermatia (slide 12794)