Tylotus obtusatus
(Sonder) J Agardh

45.420

Techniques needed and shape

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

***Descriptive name**

Features

1. plants are dark ***red-brown,*** 50-150mm long, generally ***lying flat*** on rock
2.. branching pattern is ***flat,*** of irregular of forked flat blades 5-12mm broad
3. attachment is by peg-like ***haptera*** on the ***underside*** of flat branches near the plant base

Occurrences more common in S W Australia but extending to Western Port, Victoria

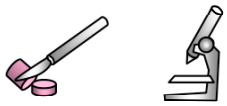
Usual Habitat generally lying flat on rock at depths of 3-14m

Similar Species *Peltasta*, but that genus grows upright on rocks, and has swollen cystocarps on knobs near the tips of branches

Description in the Benthic Flora Part IIIA, pages, 326, 328-330

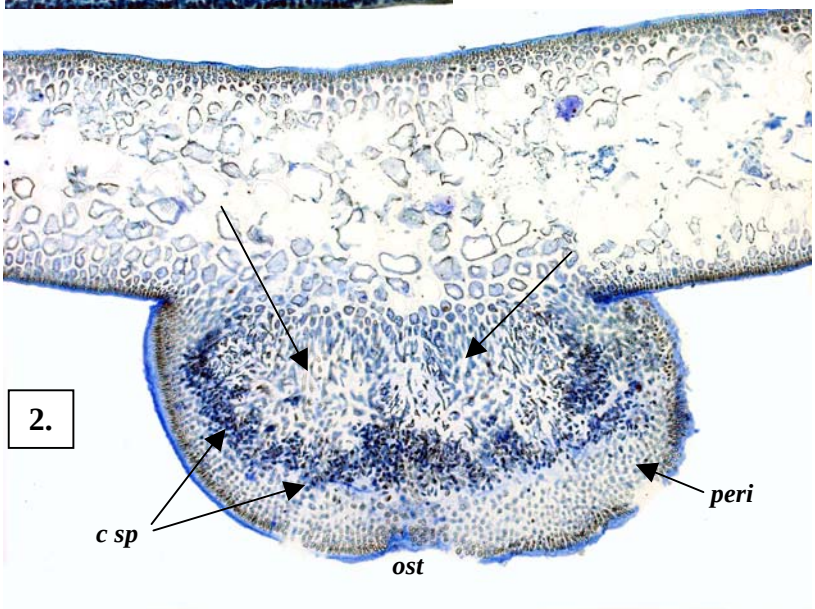
Special Requirements

1. cut a cross section and view microscopically the ***equal-sided cells*** grading from ***inner large*** to ***outer small*** ones (no separation into a core and outer layers as in related genera)
2. find products of fertilisation (cystocarps) forming outgrowths like ***pin-heads*** only on the ***underside*** of blades.
   - cut a cross section to reveal a network of threads radiating ***outwards*** from the fronds, producing bunches of carposporangia resulting in a ***wavy margin*** to the mass of fertile cells (carposporophyte)
   - a *thick* wall of cells (pericarp) with a single opening (ostiole)
   - (in the ***same*** plants, male spermatangia occur in tiny clusters near the surface of ***upper sides*** of fronds, but are hard to find)
   - the thick enveloping tissue (pericarp), with single opening (ostiole)
3. find sporangial plants with pustules (nemathecia) 10-20mm long, near branch tips
   - cut a cross section revealing cigar-shaped tetrasporangia divided across (zonately) towards the surface, mixed with sterile hairs (paraphyses) of chains of oblong cells

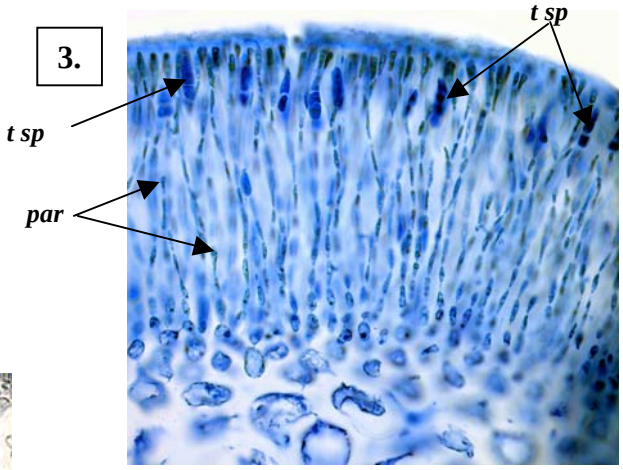


Details of Anatomy

1.



3.



cross sections of *Tylotus obtusatus* stained blue and viewed microscopically

1. portion of a frond showing the even decrease in cell size from core to surface (A42228 slide 3777)
2. a cystocarp on the lower frond surface with network of fertile and vegetative cells (arrowed), thick wall (pericarp, *peri*) opening (ostiole, *ost*) and clusters of carposporangia (*c sp)* forming a wavy margin (A44744 slide 12579)
3. a part ofa sporangial pustule (nemathecium) with tetrasporangia (*t sp*) and dense sterile hairs (paraphyses, *par*) (A44744 slide 12578)

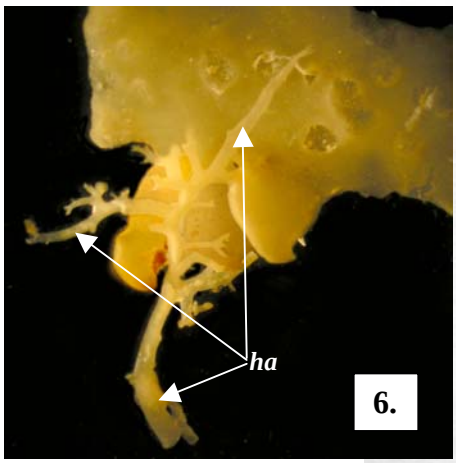
* Descriptive names are inventions to aid identification, and are not commonly used
"Algae Revealed" R N Baldock, S Australian State Herbarium, May 2008

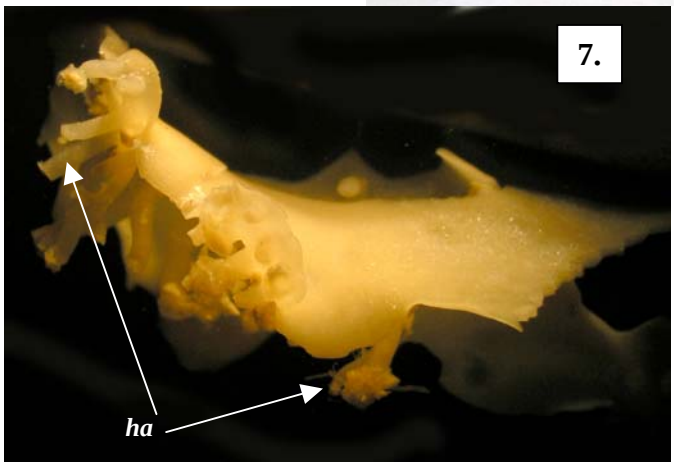
4 -5. Two specimens of *Tylotus obtusatus* (Sonder) J Agardh, A42228, 5-6m deep, from Nora Creina, S Australia

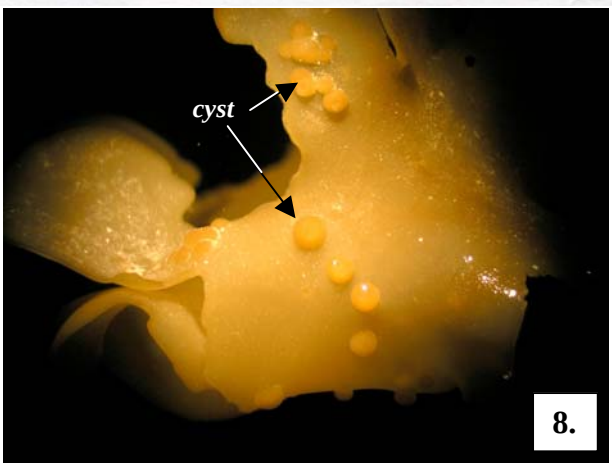
Preserved (bleached) specimens of *Tylotus obtusatus*, (A42228)

6, 7. the attachment structures (haptera, *ha*) on the underside of fronds near the plant base

8. cystocarps (*cyst*) protruding from the underside of fronds







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