Acrosymphyton taylorii Abbott

AN INTRODUCED OR ADVENTIVE SPECIES

A SPECIES WITH FEW RECORDS

45.300

Techniques needed and plant shape

squash

MACRO PLANT

tubular 

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

Descriptive name *red slime strands

Features plants 40-210 mm tall, of ***soft***, red, ***slimy***, cylindrical strands branched from near the base of the plant

Special requirements

1. view the tips of the strands microscopically.
   - a ***single thread*** of cells (axial filament) runs through strands
   - ***each*** filament cell produce a ring of ***4*** side branches ending in chains of small cells that make up a ***loose*** outer layer (cortex)
   - ***extremely fine*** threads (rhizoids) may be produced from the inner (medullary) cells

squash

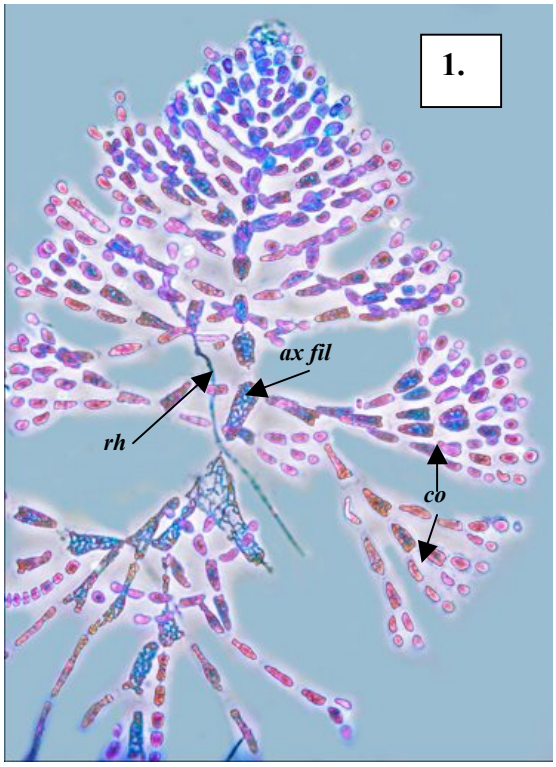
2. squash a piece on a microscope slide to separate the lateral branches to find ***bead-like chains*** of cells — the auxiliary cell branch, characteristic of the group to which this species belongs — that precede female reproduction, and, after fertilisation, ***compact*** clusters of disc-shaped cells (carposporangia), in the middle (medulla) layer (see below)

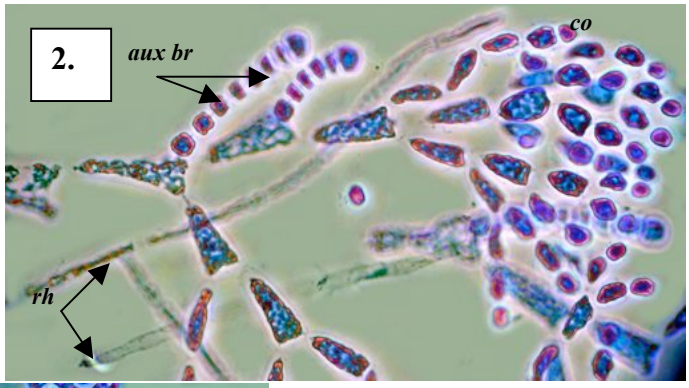
Occurrences a tropical species from Hawaii. In Australia, from Rottnest I., W. Australia, Coffs Harbor, Q., and Lord Howe I. The single collection from southern Australia at Isles of St Francis at 32-38m deep suggests that it may be adventive

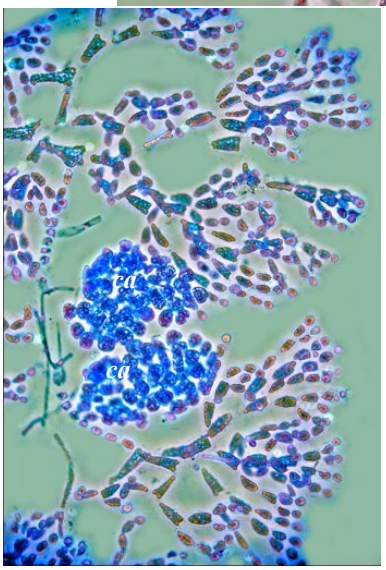
Similar Species other members of the Dumontiaceae, especially *Dudresnya* and *Dasyphloea* with rings of branches on each cell of the central axial filament

Description in the Benthic Flora Part IIIA, pages 219-222; Part IIID, Appendix, Page 499

Details of Anatomy





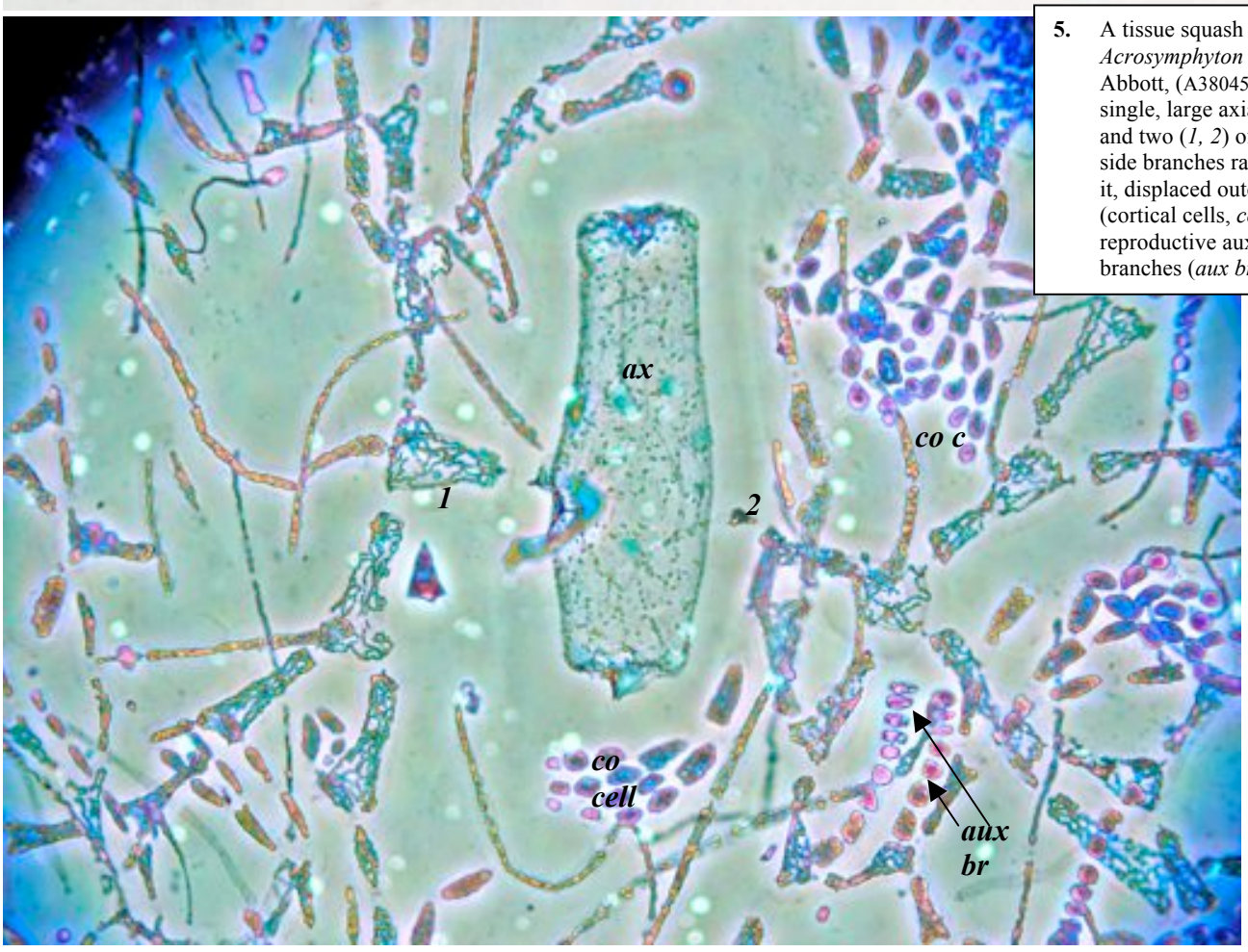


3.

Different magnifications of *Acrosymphyton taylorii* stained blue:
1. tip of a strand showing central axial filament (*ax fil*), rings of 4 cells from each axial cell forming branches with chains of end cells (cortex, *co*) and a single rhizoid (*rh*)
2. cortical cells with bead-like chains of cells that precede sexual reproduction (auxiliary cell branch, *aux br*), and 2 detached rhizoids (*rh*)
3. lower magnification showing compact clusters of carposporangia (*ca*) in the middle (medulla) region of a strand

* Descriptive names are inventions to aid identification, and are not commonly used
"Algae Revealed" R N Baldock, State Herbarium, S Australia, September 2005

4. *Acrosymphyton taylorii* Abbott, (A38045), from Egg I., Isles of St Francis, S. Australia, 32-38m deep



5. A tissue squash of *Acrosymphyton taylorii* Abbott, (A38045, slide 3485): single, large axial cell (*ax*) and two (*1, 2*) of the four side branches radiating from it, displaced outer cells (cortical cells, *co c*) and reproductive auxiliary branches (*aux br*)

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