Techniques needed and shape

Phylum: Rhodophyta; Order: Gigartinales; Family: Areschougiaceae

*Descriptive name
blubber weed (suggested by Gerry Kraft’s daughters, describing the plant’s texture)

Features
1. plants are red, grey or bleach yellow, fairly soft when fresh and 100-230mm tall
2. a basal holdfast with finger-like often orange extensions occurs
3. branches 10-40mm apart, tubular cylindrical, pinched at the base, tapering to a point

Occurrences
a common species from W Australia to Tasmania

Special requirements
1. view the tips microscopically to locate the several apical cells producing 5-15 internal strands visible when stained blue through the outer layers
2. cut a cross section and view microscopically to find
   • the broad central core (medulla) of fine threads running lengthwise and short connecting cross-threads
   • outer layers (cortex) of inner large cells with many side connections and outer small cells
3. if possible find the products of fertilisation in female plants (cystocarps),
   • cut a cross section of the swollen parts of the branch and view microscopically
   • cystocarps are found in the medulla with an envelope of threads
   • a large fusion cell bearing carposporangia is central in the cystocarp
4. if possible, cut a cross section through a sporangial plant to view the scattered, small, cigar-shaped tetrasporangia in the outer (cortex) layers, divided in rows (zonately)

Usual Habitat
found in a variety of depths and wave energies

Similar Species
superficially like other members of the Areschougiaceae, but with a distinctive base and wider, softer, lighter coloured branches

Description in the Benthic Flora
Part IIIA, pages 340-343

Details of Anatomy

Solieria robusta (C Agardh) Silva stained blue and viewed microscopically:
1. a pointed branch tip focussed through the outer cell layers to show the lines of fine threads in the core (A37805 slide 3804)
2. a cross section of a sporangial plant showing a wide core (medulla, med) of threads and narrow outer layer (cortex, co) of large cells with side connections (arrowed), outermost small cells and scattered, darkly stained tetrasporangia (t sp) (A19139 slide 3803)
3. threads extracted from the medulla, showing the extremely fine threads and shorter cross threads (arrowed) (A37805 slide 3804)
4. cross section of a branch with cystocarp (cyst) in the core (medulla), showing a large fusion cell (f c) and envelope of threads (A37805 slide 3805)
5. two views of the outer (cortex); LHS a cross section with tetrasporangium (t sp); RHS a surface view of cells (A19139 slide 3803)

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

“Algae Revealed” R N Baldock, S Australian State Herbarium, February 2008
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6, 7. two views of herbarium sheets of Solieria robusta (Greville) Kylin, (A69689) from St Francis I., S Australia, 26m deep, specimens flattened by the pressing process

8. a specimen, (A27122), 6-9m deep from between Hopkins and Thistle Is, S Australia, with a prominent root-like base (arrowed)

9. small plants, (A70537) from 11m deep, Whyalla, S Australia