**Techniques needed and shape**

**Phylum**: Rhodophyta; **Family**: Gigartinaceae

**stumpy gristle-weed**

plants red-brown, fading to yellow, **gristly** with clumped, upright, cylindrical or slightly compressed, rigid main branches (axes) 20-60mm high; short side branches arising radially or in 2 rows in dense clusters towards the tips

**Occurrences**

Recherche Archipelago, W Australia to Portland Victoria

**Usual Habitat**

on rough coasts near low tide level, on rock and shells

**Similar Species**

*Gigartina recurva* but that species branches in tufts on one side or in 2 rows near tips

**Description in the Benthic Flora**

Part IIIA, pages 301-303

**Special Requirements**

*cut cross sections and view microscopically to find*

1. a **wide** core of loose threads connected by short cross threads; branched **chains** of small cells facing outwards forming the outer (cortex) layers; a thick, non-cellular sheath (often broken into segments in stained preparations)

2. swollen female structures (cystocarps) **imbedded** below spiny tips of side branches: shallow **dimples** on the outer side; spore clusters, **encircled** by threads (involucre)

3. in sporangial plants: patches (sori) of tetrarosphorans **scattered** in outer layers dividing into cross-shaped (cruciate) patterns when mature

**Details of Anatomy**

Cross sections of *Gigartina densa* stained blue and viewed microscopically

1. mature female structure (cystocarp, *cys*) in a branch: branch core (**med**) of threads, outer layer (cortex, *co*) of chains of small cells, sheath (*sh*); clusters of carposporangia, *ca sp*), cystocarp sheath of threads (involucre, *inv*), dimple (**arrowed**) through which spores escape when the cortex fragments (slide 12401)

2. sporangia, lying in the outer layer (cortex) of a branch, with some showing cross-shaped (cruciate and decussate) division (slide 12441)

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

“Algae revealed”, R N Baldock, State Herbarium S Australia, February 2009; revised May 2014
**Gigartina densa** Edyvane & Womersley

3. plant from Gunjah Beach near Coffin Bay, S Australia in shallow water on a rock platform (A60803)

4. detail of a short side branch bearing a bulbous cystocarp with a prominent dimple through which carpospores escape (A13699)

5. dense mass of preserved (bleached) plants, from 0-6m deep, Althorpe I., S Australia (A70433) (backlit to emphasise branching pattern and gristly texture)

6. plants extracted from the mass shown in Fig. 5 (A70433): radial side branches

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