Techniques needed and shape

**Classification**

Phylum: Rhodophyta; Order: Nemaliales; Family: Liagoraceae

*Descriptive name*

Stubby worm weed

**Features**

1. Brown-purple, 20 – 70mm tall, branches cylindrical, 1-3mm wide, branching forked
2. Stubby side or extra branches may occur near the base
3. Prominent **disc- or cushion-shaped** holdfast

**Occurrences**

Kangaroo I. S Australia to Victoria, SE Tasmania and southern NSW, only **in summer**

**Usual Habitat**

On rock in the lower intertidal at reef edges or in pools

**Similar Species**

*Helminthora lindaueri*; but that lacks a prominent base and has different internal structures

**Description in the Benthic Flora**

Part IIIA, pages 85 - 87

**Special Requirements**

View a tissue squash microscopically to find:

1. Core (medulla) of a mix of colourless slender and thick threads running lengthwise
2. Outer layers (cortex) of fan-shaped tufts of thin, forked (dichotomous) threads of elongate or egg-shaped cells, tip cells slightly **swollen**, or **club-shaped**
3. In the cortex of female plants, **bouquet-like** masses, the products of fertilisation, of a bunch of fertile cells (gonimoblast) ending in carposporangia, a **tangled bunch** of sterile threads at the **base**
4. Early female stages with **curved, 3-4-celled chains of cells** (carpogonial branches) attached near a fork of lower cortical branches, tip cell **conical** ending in a hair-like trichogyne
5. In the cortex of male plants, open, **hand-shaped** branches with dust-like spermatangial **fringes** on tip cells

**Details of Anatomy**

**1.** Side view: broad core (medulla, *med*) of a mix of thin and broad threads; outer layers (cortex, *co*) of fan-shaped tufts (A29025 slide 0456)

**2.** Single cortical tuft: swollen tip cells (*ap c*) and early female structure (carpogonial branch with conical tip cell, carpopodium, *carp* ending in a hair-like trichogyne, *tr*) (A24036 slide 0216)

**3.** Female structure after fertilisation: fertile cells (gonimoblast, *gon*), fusion cell (*f c*) and basal mass of sterile threads (*st fil*) (A29267 slide 0498)

**4.** Hand shaped male structure with fringing spermatangia (*sperm*) (A29025 slide 0456)

Tissue squashes of *Helminthocladia dotyi* stained blue and viewed microscopically

* Diagnosis can be difficult
Magnifications of plants of *Helminthocladia dotyi* Womersley

5, 6. from the mid intertidal at Cape Lannes, Robe, S Australia (A41151) with a solid base and some peg-like side branches

7, 8. from the lower intertidal, Bicheno, Tasmania with basal outgrowths and pad-like holdfast (A56453)

9, 10. cortical tufts viewed microscopically

9. fan-shaped cortical tufts (A29267 slide 0498)

10. swollen tip cells (ap c), curved carpogonial branch (c br) at the side of a lower fork ending in a conical carpogonium and trichogyne (tr) and some displaced medulla threads (med fil) (A24036 slide 0216)

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

“Algae Revealed” R N Baldock, S Australian State Herbarium, February 2012