**Gloiocladia halymenioides**
(Harvey) R E Norris

Techniques needed and plant shape

**Classification**
- **Phylum:** Rhodophyta; **Order:** Rhodymeniales; **Family:** Rhodymeniaceae

**Descriptive name**
- slimy reds

**Features**
- 1. plants red to red-brown, 50-200 mm tall, soft, slimy, flat-branched
- 2. main branches **flat**, 3-10mm wide, **forked** or alternate, branched along edges (**pinnate**), also with simple branchlets, **tapering evenly** towards tips
- 3. mature female structures (cystocarps), mainly marginal, with a rim of **2-6 horns**

**Occurrences**
- Freemantle, W Australia to Victoria and around Tasmania

**Usual Habitat**
- 2-20m deep on sheltered coasts, but in strong current flow

**Special requirements**
- 1. cut cross sections of blades and examine microscopically to find
  - narrow outer (cortical) layers of **loose**, branched **chains** of small cells facing outwards
  - inner layer (medulla) of **1-2 rows** of large cells of **irregular size**, thin threads between cells **absent**
- 2. cut sections of pustulate mature female structures (cystocarps) bearing 2-6 small horns protruding from blade edges to find loosely arranged chains of small cells forming a wall (pericarp), single external opening (ostiole), mass of carposporangia wrapped in a **network of threads** and a small group of basal nutritive cells basally
- 3. sporangia in smaller branches, divided decussately (also? in a cross pattern - cruciate?)

**Similar Species**
- Gloiocladia australis but that is usually on seagrasses, main branches broader, branching less regularly pinnate and branches do not taper regularly towards tips

**Description in the Benthic Flora**
- Part IIIB, pages 101-103

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Cross sections of *Gloiocladia halymenioides* stained blue and viewed microscopically

1. blade, showing narrow outer layers (**co**) of small, branching cells and core (**med**) of large, colourless, irregular cells (A6954 slide 14111)
2. mature female structure (cystocarp, **co**) with horns (**ho**), basal nutritive layer (**nutr c**), mass of carposporangia (**ca sp**), cellular wall (pericarp, **peri**) (single opening not shown) (A42369 slide 14102)
3. edge of a blade with tetrasporangia (**t sp**) (A43722 slide 14105)
4. part of a blade in detail with tetrasporangia mixed with elongate cortical cells (A435863 slide 14126)

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

"Algae Revealed", R N Balduck, S Australian State Herbarium December 2010
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Gloiocladia halymenioides (Harvey) R E Norris from S Australia

5, 6. two specimens from Port Stanvac (A42487) showing the flat, forked main branches and pinnate smaller branches
7. darker and poorly branched specimen from Muston, American River, 4-5m deep (A48960)
8. mature female structures (cystocarps) with spine-like horns from 3-6m deep, Vivonne Bay Kangaroo I. (A43722)
9. detail of tapering branches and spinous cystocarps of a specimen from Muston, Kangaroo I. (A48960)