**Techniques needed and plant shape**

**Classification**

*Descriptive name*

**Features**

- Phylum: Rhodophyta; Order: Bonnemaisoniales; Family: Bonnemaisonaceae
- Delicate red forkweed
- **Descriptive name**
- Name used by Edgar, G (2008) in Australian Marine Life (2nd ed.).

**Features**

1. Red, fading to yellow, **flat-branched**, 100-300mm tall
2. Main branches (axes) slightly compressed, to 1mm wide, becoming denuded near the base, side branches **cylindrical**, alternating regularly along the edges of axes, about 1mm long and 200μm wide, generally **unbranched**
3. Reproductive structures found only near **axis tips**

**Occurrences**

- New Zealand. In Australia, from W Australia to Victoria and Tasmania

**Usual Habitat**

- On rock, occasionally on seagrasses, in shallow to deep water (38m)

**Special requirements**

- Focus through the surface of plants microscopically to find:
  - A single, tiny tip cell forming an obscure central thread, initially with characteristic **alternating curved side branches**
  - Minute spermatangial branches in surface blobs near branch tips
  - Swollen products of fertilisation (cystocarps) near tips on axis surfaces, between side branches producing a horned appearance

**Similar Species**

- Finely branched like *Delisea hypneoides* but in that species ultimate side branches are branched and a flat-branched pattern is obvious only near tips of axes

**Description in the Benthic Flora**

Part III B, pages 338-340

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Microscope views of *Delisea elegans* stained blue:

1. Flat-branched tips; vague internal central thread (c fil). Alternating side branches are cylindrical, but appear compressed in a microscope preparation (A27476 slide 13622)
2. Swollen product of fertilisation (cystocarp) on the surface of an axis: fusion cell (f c), fertile cells (gonimoblast, gon) ending in carposporangia (c sp) (A30350 slide 13618)
3. Branch tip with masses (sori, sor) of spermatangia (A27476 slide 13623)
4. Lengthwise section through a spermatangial sorus: central thread (c fil); paired side threads (lat fil), large inner cells (i co), small outer cells (o co) and small, elongate spermatangia (sperm)
Delisea elegans Lamouroux at different magnifications
5, 6. from West L, S Australia, 16-20m deep (A33244)
7, 8. from Marion Bay, east coast Tasmania, 3-5m deep (A35593)
9. faded female drift specimen from Waratah Bay, N Walkerville Victoria (A48532), with swollen cystocarps near tips of main branches
10. top lit preserved (bleached) specimen highlighting swollen cystocarps on the flat surface between side branches (A30350)

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

§name used by Edgar, G (2008) in Australian Marine Life (2nd ed.).

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