**Lomentaria australis** (Kützing) Levring

**Techniques needed and plant shape**

**Phylum**: Rhodophyta; **Order**: Rhodymeniales; **Family**: Lomentariaceae

1. plants red, slimy, 50-200mm tall, much-branched radially or with several main axes and radial side tufts
2. branches cylindrical, hollow, older ones slightly flattened, pinched basally, small branches bean-shaped
3. mature female structures (cystocarps) urn-shaped, protruding, about 0.5mm wide, often in the axis (angle) between branches

**Occurrences**
West Coast, S Australia to Victoria and around Tasmania. Possibly New Zealand on rock, harbour facilities or sea grasses, in shallow to deep water (0.5-22m)

**Usual Habitat**
on rock, harbour facilities or sea grasses, in shallow to deep water (0.5-22m)

**Special requirements**
1. focus microscopically on the surface and internally to find
   - outer layers (cortex) of rings (rosettes) of outer small cells about deeper egg-shaped cells and numerous, extremely fine hairs
   - branch cores hollow, surrounded by threads with tiny gland cells
   - branch constrictions solid, of large cells with threads growing into cavities
2. mature female structures (cystocarps) with
   - mass of club-shaped cells (carposporangia) attached to a large fusion cell
   - inner cells of wall (pericarp) star-shaped, widely spaced
   - external opening (ostiole) present
3. sporangia in scattered patches (sori), divided tetrahedrally, growing from small, bunched cells protruding into the branch space

**Similar Species**
Champia spp, but each branch in these have many internal segmented

**Description in the Benthic Flora**
Part IIIB, pages 135-138

**Details of Anatomy**

1. surface view of cell rosettes (A39522 slide 14724)
2. lengthwise section through the solid base (bas) of a branch showing large (parenchymatous) cells (pc), a thread (filament, fil) protruding into the branch cavity, and darkly staining glands (gl) (A43784 slide 14722)
3. lengthwise section showing hairs (h), cortex (co) of outer small and inner large cells connecting with threads (fil) and cluster of small cells bearing tetrasporangia (t sp) protruding into the branch cavity (cav) (A37519 slide 14718)
4. cystocarp (cys) with carposporangia (ca sp), fusion cell (fc) and opening (ostiole, ost) (A37519 slide 14716)

*Descriptive names are inventions to aid identification, and are not commonly used
“Algae Revealed”, R N Baldock, S Australian State Herbarium, June 2011
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5-6. two magnifications of a plant (A16492) from Low Head, Tas.
7, 8. two magnifications of a plant (A27916) from Cape Portland, Tas.
9, 10. specimens stained blue and viewed microscopically
   9. tetrasporangial patches (sori, so), bean-shaped side branches and numerous fine hairs (A37519 slide 14717)
   10. numerous cystocarps (cys) in axils of branches (A37519 slide 14714)