Techniques needed and plant shape

Classification
Phylum: Rhodophyta; Order: Bangiales; Family: Bangiaceae

*Descriptive name
mussel fuzz

Features
Plants consist of fine red-brown threads attached to black mussel shells by microscopic rhizoids.

Special requirements
View the threads microscopically to find:
1. threads are unbranched with single lines of box-shaped cells near the plant base, becoming flat, disc-shaped in the thread middle and 2-6 cells wide in upper parts.
2. cells of threads have a common and thick sheath.
3. female plants have fertile cells (carpogonia) some of which show beaked protrusions (prototrichogynes) for capturing spermatia.
4. the products of fertilisation (carposporangia) occur in packets of 4-16 and are about 10μm across.
5. male plants have spermatia about 2μm across in elongate packets of 16-32.

Usual Habitat
only known from a single collection at Warrnambool, Victoria, on shells in sand in the lower intertidal.

Similar Species
Bangia atropurpurea subsp. atropurpurea, but that is found higher in the intertidal on rock, has oblong and not disc-shaped cells. (Spermatia are also in square, not elongate packets.)

Description in the Benthic Flora Part IIIA, pages 35, 36

Details of Anatomy

1. Bangia atropurpurea subsp. brevisegmenta (A57022) stained blue and viewed microscopically
   1. comparison of disc-shaped vegetative cells (veg c) and elongate male spermatangial packets (sperm pkts) (slide 10582)
   2. female structures – carpogonia (cpg) some with stubby prototrichogynes (pr tr) that capture spermatia (slide 10581)
   3. products of fertilisation - carposporangia (ca sp) in bunches of 4’s (slide 10583)

* Descriptive names are inventions to aid identification, and are not commonly used
Algae Revealed” R N Baldock, S Australian State Herbarium January 2010
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Algae Revealed” R N Baldo, S Australian State Herbarium January 2010

**Bangia atropurpurea** subsp. **brevisegmenta** Womersley (A57022) on **Xenostrobus pulex** from Warrnambool, Victoria.

4. preserved (bleached) specimens on a half-shell
5–7. specimens stained blue, and viewed microscopically:
5. dissected threads, showing single rows of box-shaped cells near their bases, disc-shaped cells above (slide 9671)
6. threadlike extensions of cells (arrowed) towards the plant base acting as rhizoids attaching the plant to the mussel shell (slide 10582)
7. detail of cell dimensions and star-shaped plastids (pl) with bright centres (pyrenoids, pyr) (slide 9671)