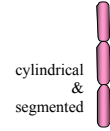




different sexual & asexual stages exist



Techniques needed and plant shape

Classification

Phylum: Rhodophyta; Order: Nemaliales; Family: Galaxauraceae, Huisman (Algae of Australia: Nemaliales, 2006) placed *Galaxaura* species, several of which have compressed branches, into the genus *Dichotomaria*.

Descriptive name

Life cycles



Features

Special requirements



§cylindrical galaxaura

the outer layers (cortex) of **sexual plants** (gametophytes) are slightly different to those of the **asexual spore phase** (sporophyte)

plants *limey*, 50-140 mm tall, red to chalky grey-red; branches *cylindrical*, but flattening when drying, 3-5 mm wide,

in elongate or egg-shaped sections or *segments* rounded at both ends, branching *forked* remove lime using dilute acid, then view surfaces and cross sections to find:

in sexual plants (images not available below):

- a wide core (medulla) of sparse, branched threads
- inner cortex below the surface of **2-layers** of large, *colourless*, rounded cells that may merge together at their sides
- outermost layer of a **single** layer of smaller, *coloured* cells, their top surface cut across and flat when viewed in cross section

in asexual (spore) plants (illustrated below):

- a wide core (medulla) of sparse, branched threads (as in the sexual plant)
- inner cortex below the surface of a **single-layer** of large, *colourless*, rounded cells that may merge together at their sides
- outermost layer of **pairs** of coloured cells, sharing a common stalk, their top surface cut across and flat when seen in cross sectional view, similar to sexual plants

Occurrences

tropics in general. In Australia, from as far south as Albany WA, around northern Australia to Lake Macquarie NSW

Usual Habitat

a relatively deep species (to 20 m)

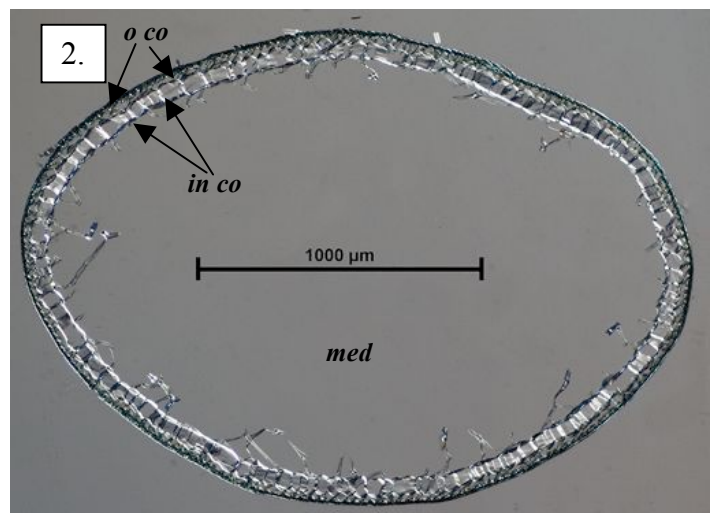
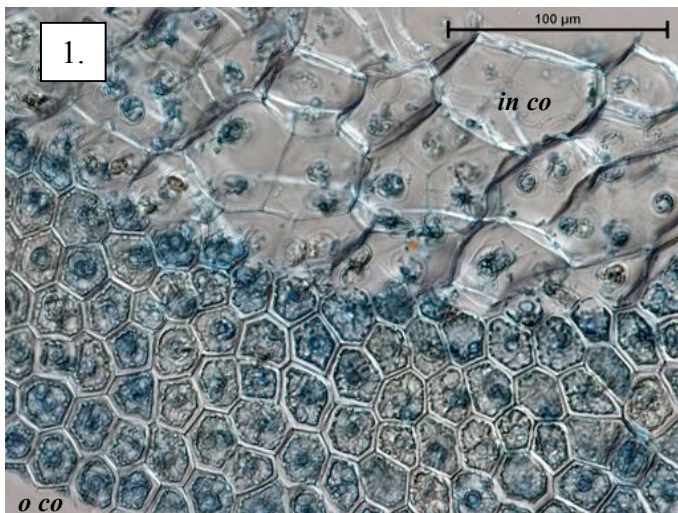
Similar Species

Amphiroa anceps is jointed and chalky, but anatomically and reproductively very different

Description in the Benthic Flora

Part IIIA, pages 109, 112, 113

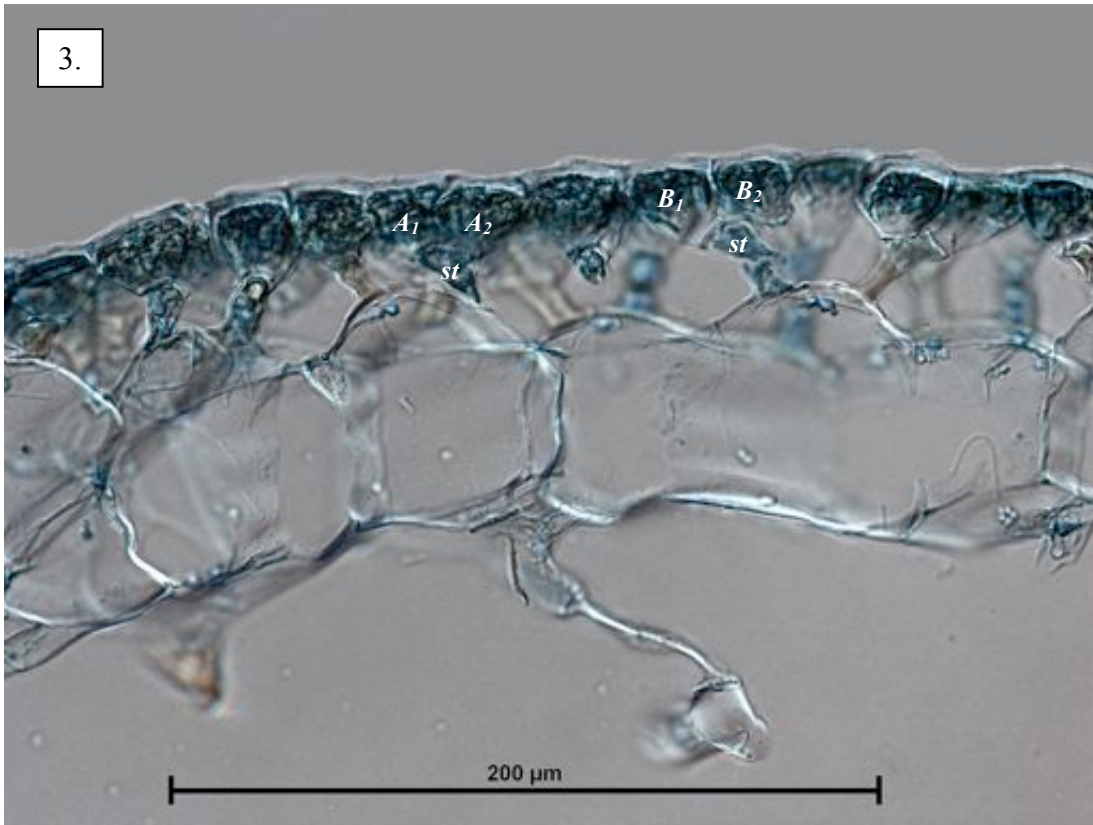
Details of Anatomy



1, 2. **spore plant** of *Dichotomaria* (*Galaxaura*) *obtusata* A56644 slide 9151:

- **surface view** of a tissue squash showing tightly-packed, 5-6-sided, coloured surface cells (outer cortex, *o co*) and larger, rounded colourless cells beneath (inner cortex, *in co*)
- **cross section** showing a core (medulla, *med*) of sparse, branched threads (*med fil*) mostly lost in the preparation of the slide; 2-layered outer part (cortex) consisting of a single layer of larger, inner, colourless cells (*in co*) and outer layer (*o co*) of smaller, coloured cells

3.



3. Asexual plant of *Dichotomaria obtusata* A56644 slide 9151, cross section of outer layers (cortex):

- single inner layer (*in co*) of large, colourless cells merging along their sides
- outer layer (*o co*) of pairs of coloured cells, cut flat on their upper surfaces, *in pairs* (A_1 , A_2 , etc), each pair sharing a common stalk cell (*st*)



Dichotomaria obtusata (J Ellis & Solander) Lamouroux A33338 from Rottnest I., WA. Cylindrical segments have collapsed and flattened in this pressed specimen.

§Name used by Edgar, G (2008) in Australian Marine Life (2nd ed.). "Algae Revealed" R N Baldock, State Herbarium SA, June 2013