BEAD-, SAUSAGE- and SAC-SHAPED RED ALGAE

This is one of twenty searches available that use habitat, niche, shape and anatomy to find a name for a species of Red alga.
For example, "broad bladed Red algae", "red mesh algae" and "strap-like and narrow-leaved Red algae".

Searches within complex Families and genera of Red algae are also available.
For example, *"Polysiphonia", "Laurencia* and *Chondrophycus"*

If you require an alternative to "beaded …. Red algae" refer to the master page "search strategy to locate major benthic algal groups of southern Australia".

In the search below, unmarked common names in brackets come from Edgar, G. J. (2008) *Australian Marine Life. Second edition*. Sydney. New Holland, while names marked § are descriptive names of the author.

Magnification is occasionally needed to view diagnostic features.
The coin used as a scale is 24 mm or almost 1inch in diameter
Pages are colour coded for rapid referral to a group.

start search here

"beads" consist of naked giant cells - **go to page 2**

"beads" are multicellular

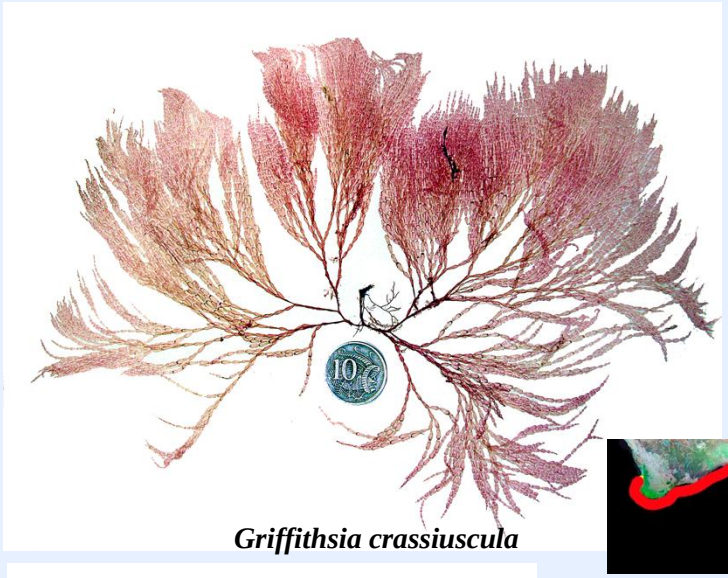
a central microscopic thread runs through each segment - **go to page 3**

segments are hollow or filled with jelly **go to page 6-9**

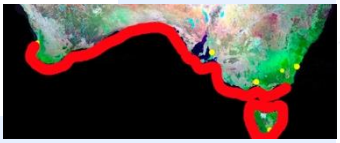
the central thread is single **go to pages 3-4**

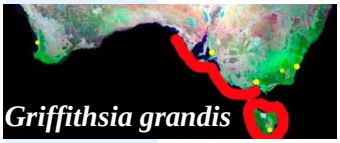
fine threads radiate from the central thread **go to page 5**

SEGMENTS ("BEADS") CONSIST OF *SINGLE*, VERY LARGE CELLS – *GRIFFITHSIA* (Family: Ceramiaceae)

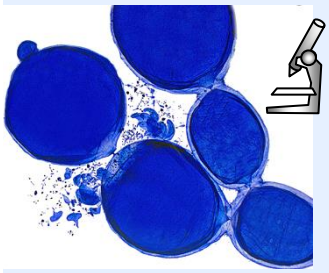


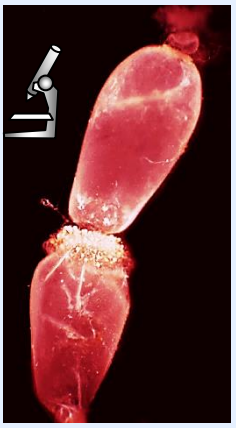
Griffithsia crassiuscula

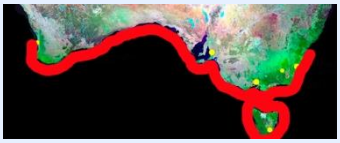




Griffithsia grandis







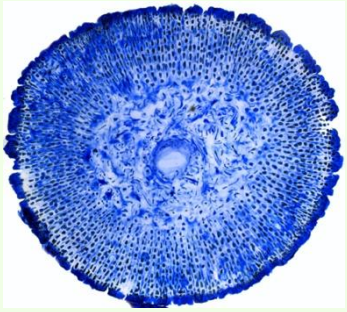
Griffithsia monilis
(Red seabubbles)

Griffithsia ovalis

SEGMENTS ("BEADS") CONSIST OF *MANY* CELLS OF VARYING SIZES

a central thread runs through segments, more obvious in cross sections of mature branches
***ERYTHROCLONIUM and RHABDONIA* (Family: Areschougiaceae)**

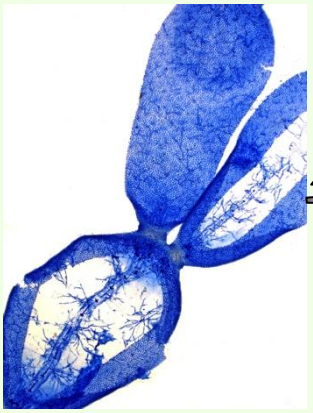
segments 4-10 mm long



Cross section near the plant base: central thread prominent

Erythroclonium sonderi
(Sonder's bubbleweed, §sausage strings)

segments 2-5 mm long



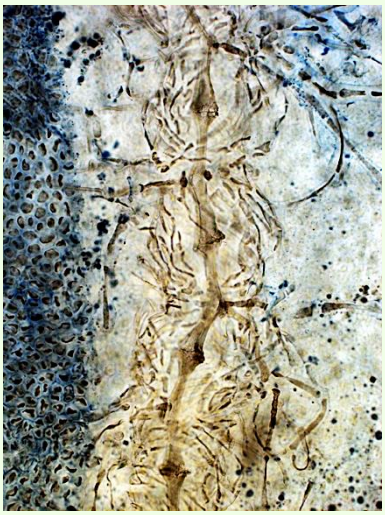
A window cut in a segment shows a central large thread wrapped in rhizoids

Cross section near the plant base: central thread prominent

Erythroclonium muelleri
(§ringed beadweed)

segments about 2 mm long, in clusters about the wiry axes

Erythroclonium sedoides
(§mini-bubbles)

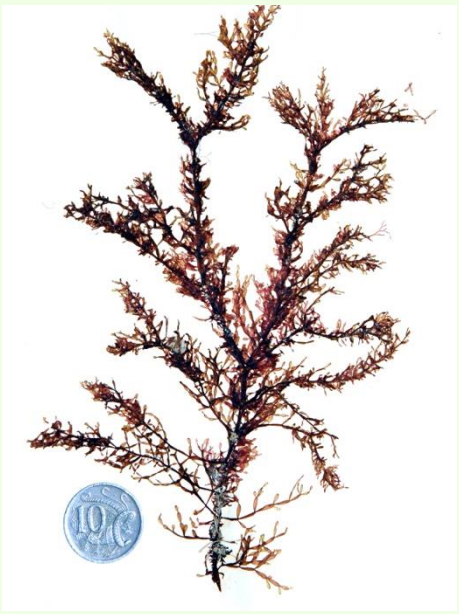


Axis slit lengthwise to expose the central filament and radiating side filaments

An additional species of *Erythroclonium* exists (*E. angustatum*) but segments are so thin (to 0.8 mm wide) and long (10 mm) they are not considered as "beaded"

continued next page →

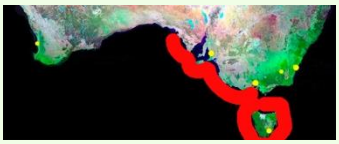
A CENTRAL THREAD RUNS THROUGH SEGMENTS, MORE OBVIOUS IN CROSS SECTIONS OF MATURE BRANCHES (continued)

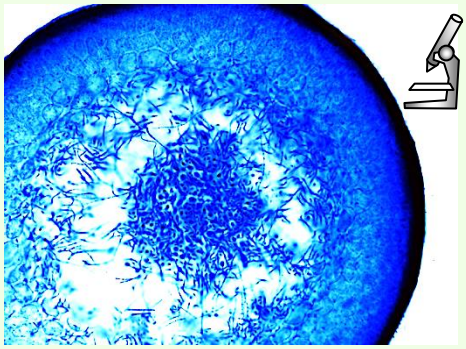


Rhabdonia verticillata
(§beadweed)

Plants can be confused with *Erythroclonium muelleri*

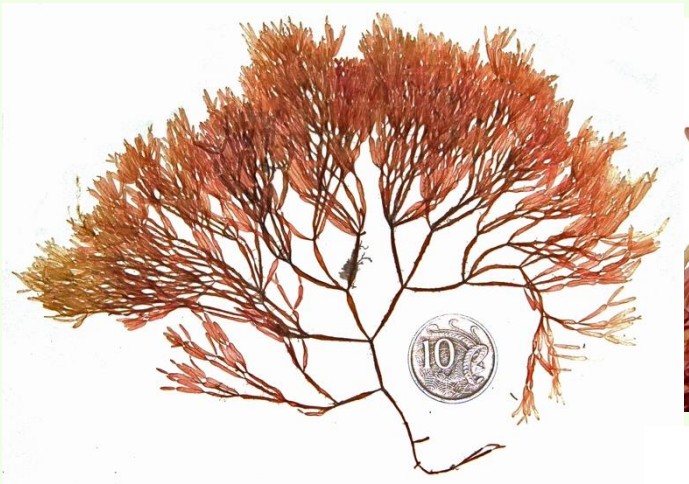
"beads" in rings



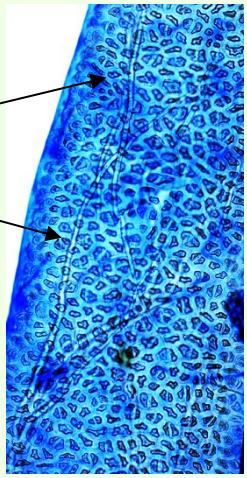


cross section of an axis near the plant base: numerous but obscure central threads present (compared to a ***single obvious*** thread in *Erythroclonium*)

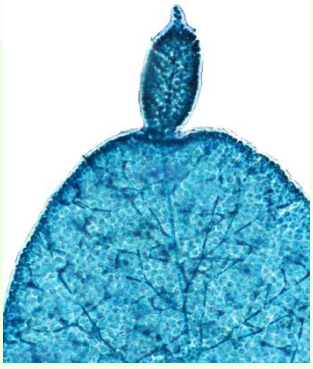
older axes may develop a dense fringe of short beaded laterals



Rhabdonia clavigera
(mini sausages)



surface view: microscopic bright threads (arrowed) may be visible



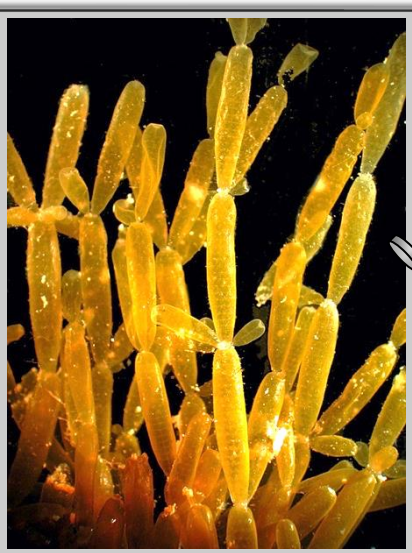
a single central thread is visible only ***near plant tips***

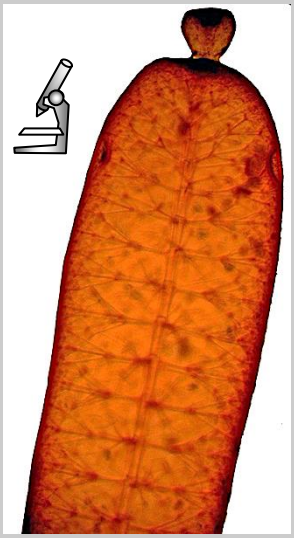
An additional species of *Rhabdonia* exists (*R. coccinea*) but it is not "beaded" (segmented). It does have, however, microscopic bright threads seen in surface view, similar to *R. clavigera*

threads radiate from each cell of the central thread, like the spokes of a wheel - *Coeloclonium*
(Family: Rhodomelaceae)

Coeloclonium tasmanicum

Plants 100-30 0 mm tall, usually on rock





Central thread with radiating spoke-like threads seen in side view near a branch tip

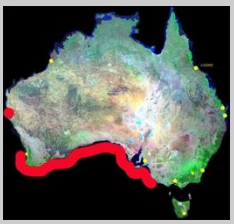
Three additional species of *Rhabdonia* exist (shown below). Although these have inflated segments similar to *C. tasmanica*, the segments are bunched or forked and not in in chains

Coeloclonium verticillatum

cylindrical inflated segments in rings about branches

Coeloclonium debile

plants tiny, about 30 mm tall with few branches, growing on seagrasses



Coeloclonium umbellula

plants tiny, about 30 mm tall, growing on seagrasses, branches arising from the same point

SEGMENTS ARE COMPLETELY HOLLOW (OR FILLED WITH JELLY) –, *BOTRYOCLADIA, COELARTHRUM, GLOIOSACCION, WEBERVANBOSSEA*

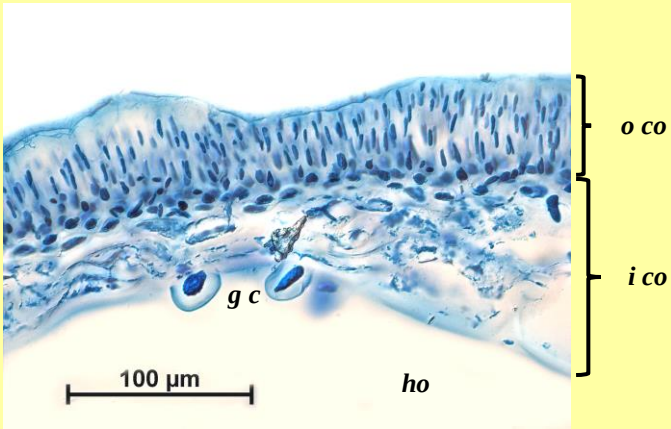
(Family: Rhodymeniaceae)

***Gloiosaccion brownii* (Poseidon's fingers)**
now as *Chrysymenia brownii* in *Algaebase*
Plant body consists of bunches of hollow, sausage-shaped segments

Gloiosaccion brownii
Two plants amongst other algae in shallow water, Kangaroo Island, SA
Photo: Fiona McQueen

Gloiosaccion brownii
Single segment cast up at West Beach, Adelaide SA

Gloiosaccion brownii
Appearance of segments when they collapse after the plant has been collected



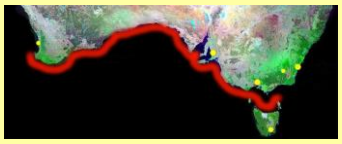
Gloiosaccion brownii, cross section of the segment wall:- surface cells (outer cortex, ***o co***), larger inner cells (inner cortex, ***i co***) with prominent gland cells (***g c***) protruding into the hollow segment centre (***ho***),

***Botryocladia sonderi* (red grapeweed)**
Main branches (axes) of mature plants are narrow, wiry

clustered, inflated laterals of an immature plant underwater, immerging from bleached coralline algal turf (a common habitat) Image: D. Muirhead

pressed mature plant, wiry axes, laterals have collapsed

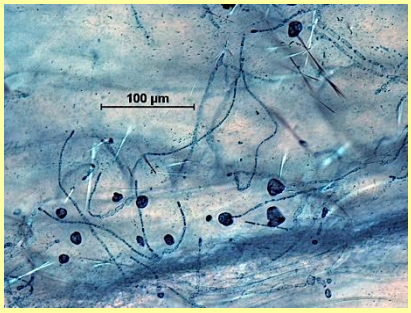
images of hollow, clustered laterals,at different magnifications, some open at the tips

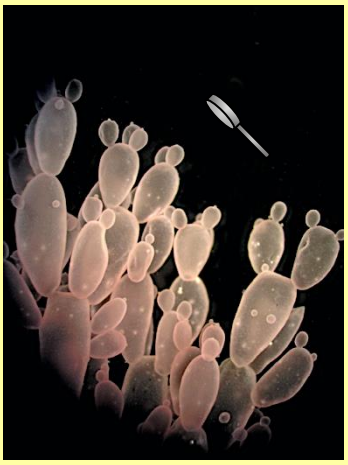


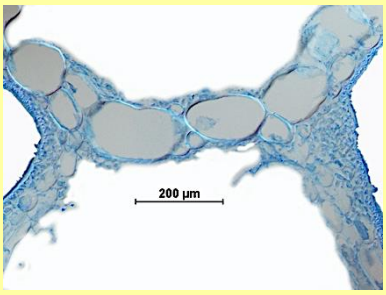
Webervanbossea kaliformis (§sausageweed)
-single, central main branch (axis) of inflated segments

single central main branch (axis) with obvious swollen segments

surface view, internal threads and densely stained secretory cells showing through the outer layer





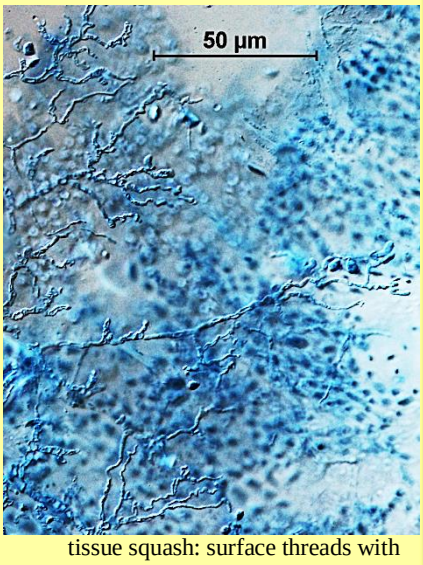


lengthwise section between "beads":
a single layer of cells forming in the constriction

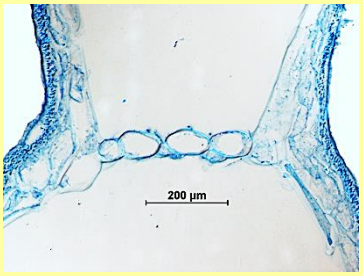
Three additional species of *Webervanbossea* exist but these do not have "beads" in chains

Coelarthrum 2 spp -
-no single main branch (axis)

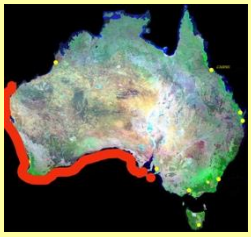
branching irregular, constrictions between "beads"***very short***



tissue squash: surface threads with bright secretory cells



lengthwise section between adjacent "beads":
a single layer of cells in the constriction



also found in the Canary Is, Mauritius, and Indonesia

Coelarthrum cliftonii
(§branched sausageweed)

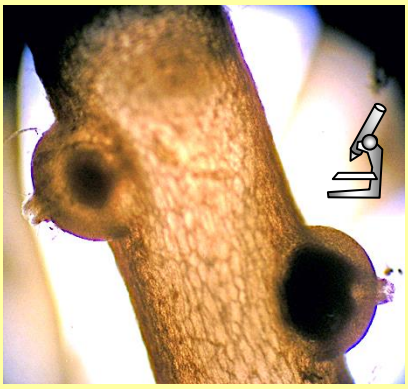
continued next page →

SEGMENTS ARE COMPLETELY HOLLOW (OR FILLED WITH JELLY) (continued)

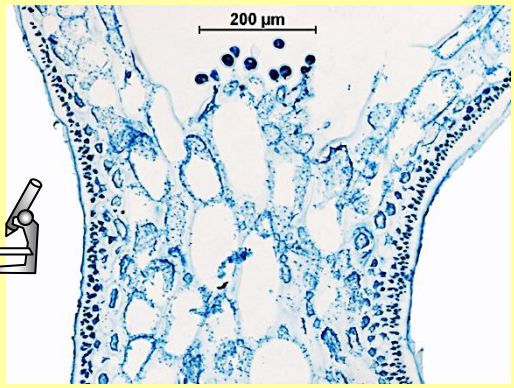
Coelarthrum opuntia
(cactus grapeweed, §branched sausageweed)

plant growing on an oyster shell

branches reach an even height



constrictions about 1 mm long; female reproductive structures protrude, and have a beak



constrictions seen in lengthwise section are about 1 mm long and multicellular (compared to a single layer of cells in *Coelarthrum cliftonii*)

also found in the N Indian Ocean

individual Fact Sheets are also available for these species in the "Algae Revealed" Website

SUMMARY
LIST OF SPECIES/GENERA ILLUSTRATED ABOVE