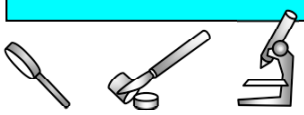
Gymnogongrus crenulatus (Turner) J. Agardh

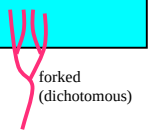
AN INTRODUCED OR ADVENTIVE SPECIES

45.340

Techniques needed and shape



MACRO PLANT



Classification Phylum: Rhodophyta; Order: Gigartinales; Family: Phyllophoraceae

***Descriptive name** red gristle-forks

Features

1. plants dark red-brown, 30-80mm tall, gristly (***cartilaginous***) in texture
2. branches occur in one flat surface (***complanate***) are ***flat***, forked (***dichotomous***), 2-4mm across
3. small proliferations – narrow leaflets – may grow from lower branches
4. ***pustules*** (***crinkled*** outgrowths from the branches containing spores) may be present on lower branches

Occurrences the Mediterranean, E. Europe, Britain and E. N America. In Australia, from Topgallant I., S. Australia to Pt Phillip Bay, Vic. And Pt Jackson, NSW. Female plants are unknown in Australia

Usual Habitat on intertidal rock or generally in shallow water

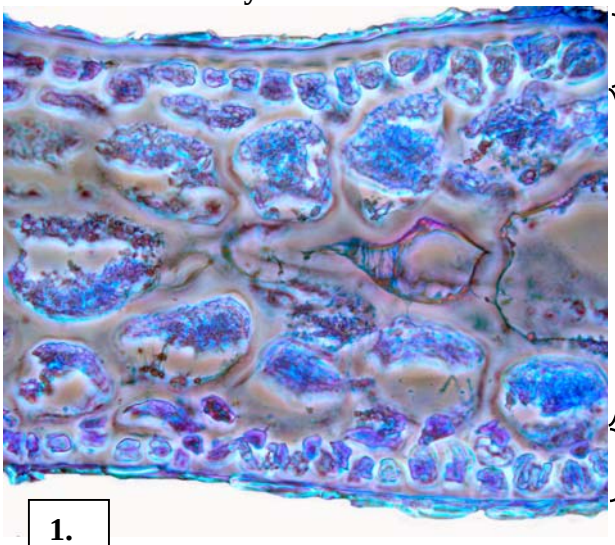
Special requirements Cut a slice across a branch, if possible through a pustule containing spores and note:

1. a core layer (medulla) of 3-6 ***large*** cells connected to each of their neighbours (that is, with secondary pit connections)
2. outer layers (cortex) of up to 10 ***small*** cells in strings, facing outwards
3. clustered ***chains*** of long oval-shaped sporangia bursting through the surface of ***pustules.*** The sporangial chains end in ***fine tips*** of 1-2 sterile cells. Sporangia are divided into a ***cross shape*** (cruciate) when mature

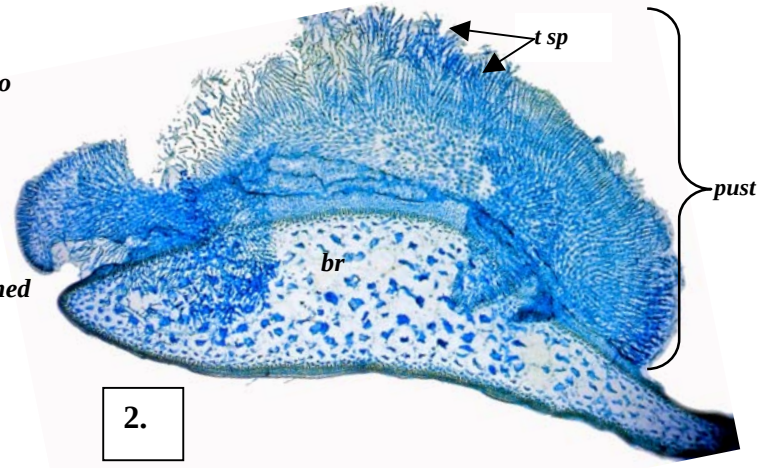
Similar Species superficially similar to *Ahnfeltiopsis* but the tetrasporangial pustules are unique in *Gymnogongrus*

Description in the Benthic Flora Part IIIA, pages 268-270; Part IIID, Appendix, Page 500

Details of Anatomy



1.



2.

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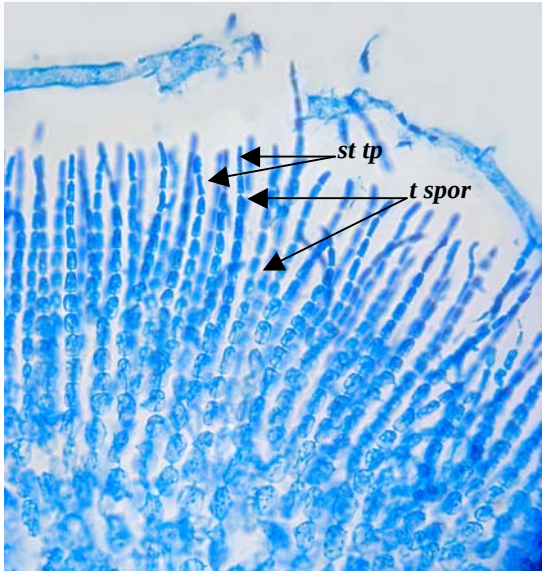


Cross sections of *Gymnogongrus crenulatus* at different magnifications stained with aniline blue:

1. a young branch showing the large core cells (medulla, ***med***), that have several connections to neighbors and small outer cells (cortex, ***co***) that become outward-facing chains up to 10 cells long (A61721 slide 12975)
2. section through a sporangial pustule (***pust***) and flattened branch (***br***) with many chains of tetrasporangia, (***t spor***) (A63371 slide 14197)
3. higher magnification of chains of tetrasporangia, (***t spor***) with the sterile tips (***st tp***) (A61543 slide 12774)

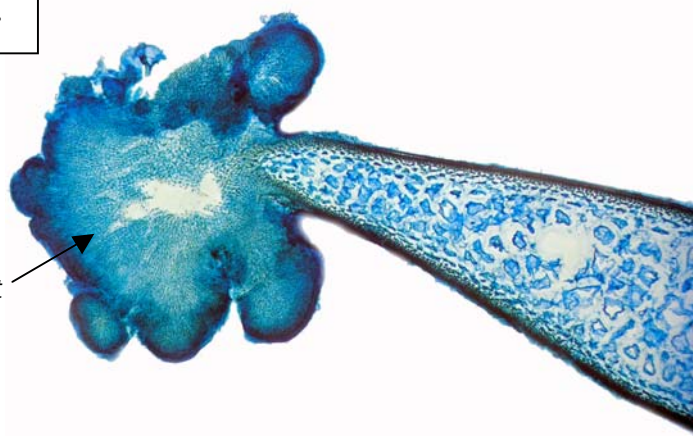
* Descriptive names are inventions to aid identification, and are not commonly used

Prepared September 2005, updated September 2009

4.

5.

6.



4, 5. Two specimens of *Gymnogongrus crenulatus* **(**Turner) J. Agardh**,** (A66849) from the intertidal, Port Noarlunga, S Australia

6. Cross section of (A63371 slide 14197) through a warty sporangial pustule (*pust*) (nemathecium) stained blue and viewed microscopically

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