

Filamentous Red Algae Part XI, shaggy algae

Family: Dasyaceae 3rd Edition

This key is *restricted* to algae in the Family: Dasyaceae from southern Australia

Features of the Family

- a basic **filamentous construction**. (Fig. A) although this may be visible only near plant tips, or by cutting a cross section of an axis to find a central filament microscopically
- at plant tips **bands of cells** (pericentral cells, Fig. D) equal in length to each filament cell may be produced. The banded appearance is later often obliterated by additional cells (cortical cells) running lengthwise
- branching occurs by “**overtopping**” (Fig. A).
A cell below a filament tip divides, and, growing past the original tip cell, continues the growth of the filament. The previous tip cell becomes a forked, filamentous, short side branch called a **pseudo-lateral**. Cells at the fork **share a common cell wall** (Fig. H).
- in some species, unbranched coloured filaments and further pseudo-laterals form along established axes (they are **adventitious**, Fig E)
- there are **flask-shaped** mature female structures (**cystocarps**, Fig. G)
- tetrasporangia occur in special cigar-shaped branches (**stichidia**, Fig. F)

Check in the “algal look-alikes” panel at the end of this key to exclude other filamentous algae with cortication and bands of pericentral cells. This key refers only to the **filamentous** members of the Dasyaceae. Others forming a network or meshwork of filaments are described in the key: “Red-mesh Algae.”

The key below follows that in Womersley 1998 and requires that plant tips and reproductive structures be viewed microscopically. Recent name changes from *Algaebase* are included.

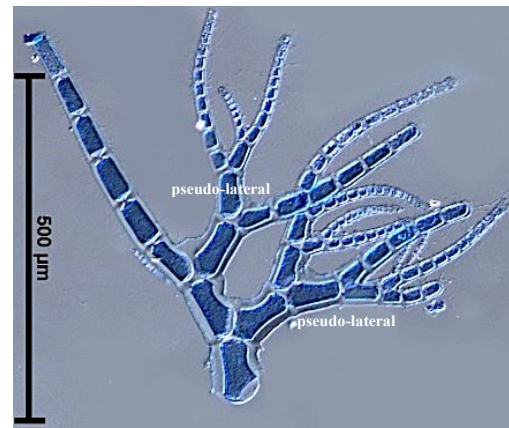


Fig. A
characteristic
over-topping
appearance of
tips

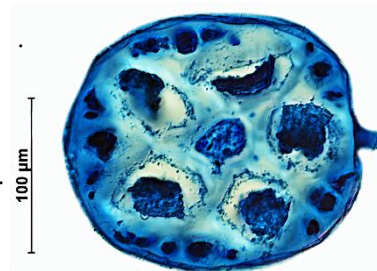


Fig. B: cross section of a
representative of the genus *Dasya*

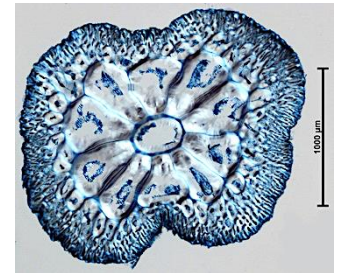


Fig. C: cross section of a
representative of the genus
Heterosiphonia



Fig. D: bands of pericentral cells (bracketed), pseudo-lateral (*ps l*)

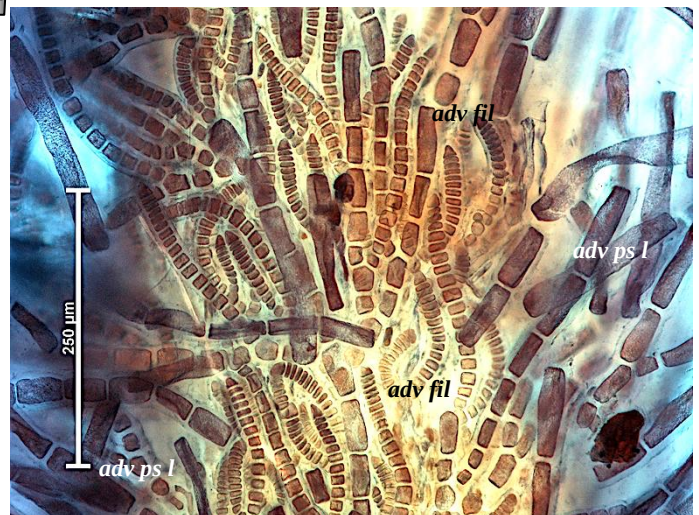


Fig. E: dense, unbranched adventitious filaments (*adv fil*) and
adventitious, branched pseudo-laterals (*adv ps l*) arising from an
established axis

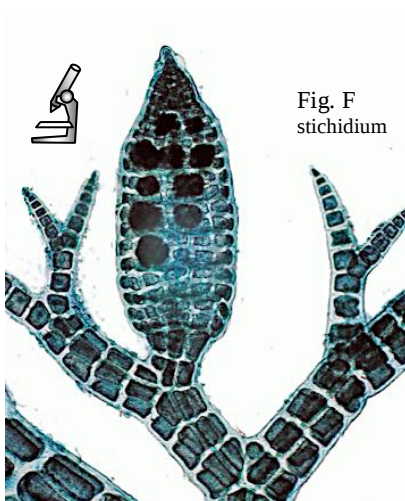


Fig. F
stichidium

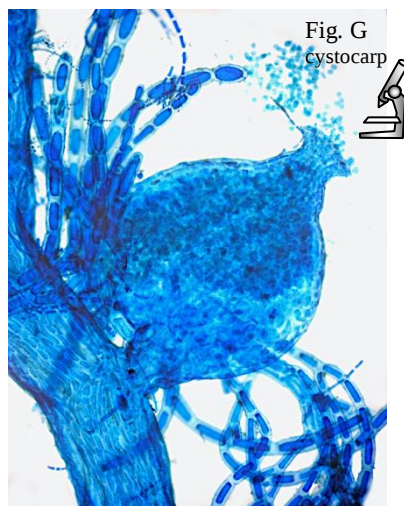


Fig. G
cystocarp

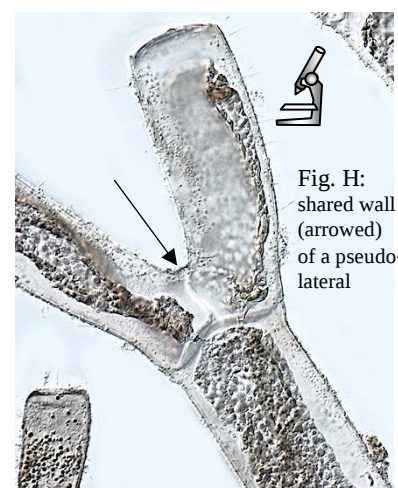


Fig. H:
shared wall
(arrowed)
of a pseudo-
lateral

KEY

- 1a. plant flat-branched; forked side filaments (pseudo-laterals) alternate every 2 or more axial cells apart; > 6 pericentral cells in cross section *Heterosiphonia* (21 spp) 22.
- 1b. plant usually radially branched; forked side filaments (pseudo-laterals) occur 1-2 axial cells apart; < 6 pericentral cells in cross section *Dasya* (9 spp) 2
- 2a. plants appear shaggy; unbranched hairs plentiful between naked, forked pseudo-laterals (see Fig. 2) 3.
- 2b. hairs rare or absent 8.
- 3a. naked, forked side filaments and hairs soft, arising from axes at acute angles, branched only basally, ending in a floppy thread (see Fig. 4) 4.
- 3b. naked forked side filaments and hairs stiff, spreading, ending in a sharply pointed or conical cell 7.
- 4a. forked side branches and hairs narrowing gradually towards the tips (see Fig. 4) 5.
- 4b. basal 1-2 cells of naked side branches and hairs noticeably larger than following cells (see Fig. 9). 6.
- 5a. cross section of a mature axis shows a definite central filament surrounded by usually 5 pericentral cells; tetrasporangia with small outer rectangular cap cells. Figs 1-5 *Dasya villosa*
- 5b. central filament and pericentral cells in cross section of mature axis obscured by rhizoids; tetrasporangia with irregular shaped cap cells Figs 6-10 (next page) *Dasya extensa*

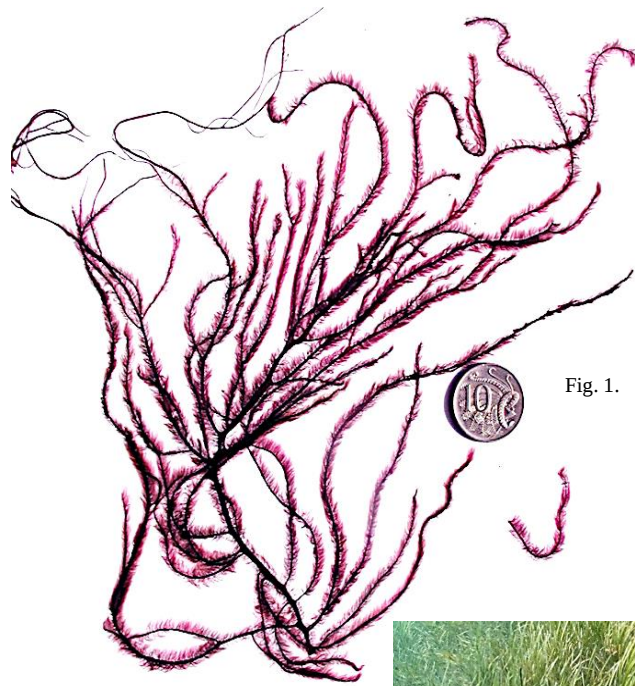


Fig. 1.



Fig. 2.



Fig. 3

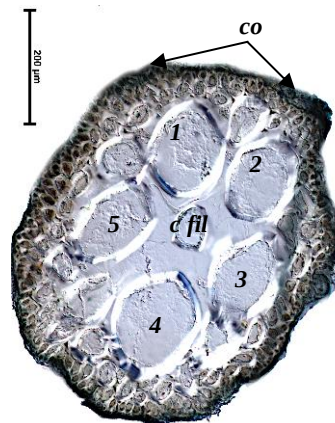


Fig. 4.

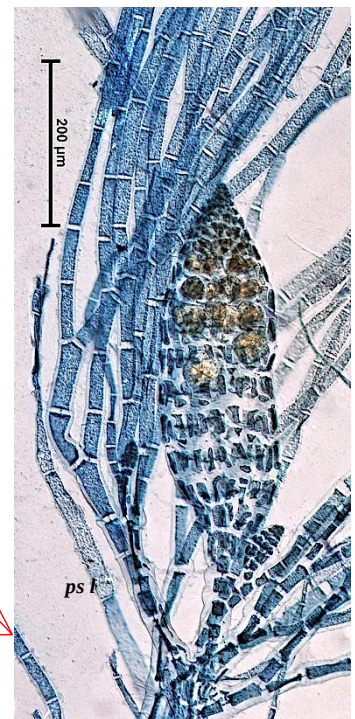
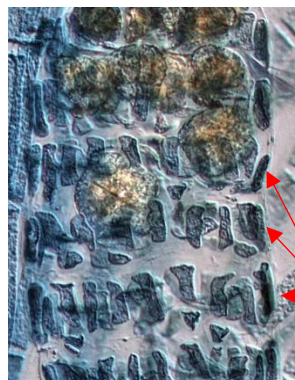


Fig. 5. and insert

Dasya villosa

- Fig. 1. pressed plant
 2. plant growing amongst seagrass, upper Spencer Gulf S Australia
 3. backlit to highlight the dense, hair-like, naked side branches and hairs
 4. cross-section: well-defined central filament (*c fil*), 5 pericentral cells (1-5); compact cellular wrappings (cortication, *co*) and insert
 5. tetrasporangial structure (stichidium) with rectangular cap cells (insert, **arrowed**); filamentous branches (pseudo-laterals, *ps l*) narrowing gradually from basal cells

Dasya extensa

- Fig. 6. pressed plant
 7. plant denuded of filamentous branches
 8. cross section: the initial central filament and its 5 pericentral cells have become obscured by development of corticating cells
 9. surface view of secondarily-developed (adventitious) unbranched hairs arising between branched short laterals (pseudo-laterals)
 10. backlit to accentuate dense hairs and stalked cystocarps
 11 a,b. tetrasporangial structures (stichidia, *stich*) with irregular cap cells above tetrasporangia

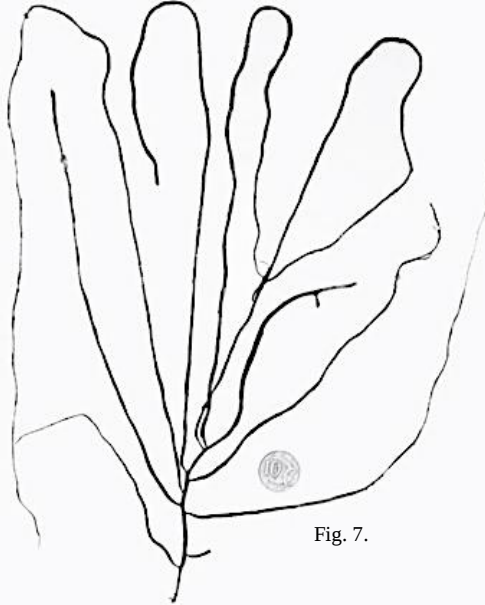


Fig. 7.

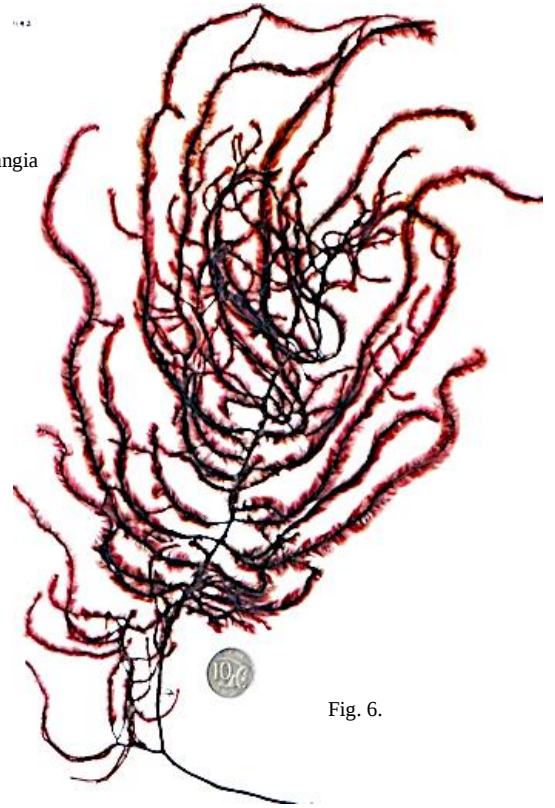


Fig. 6.

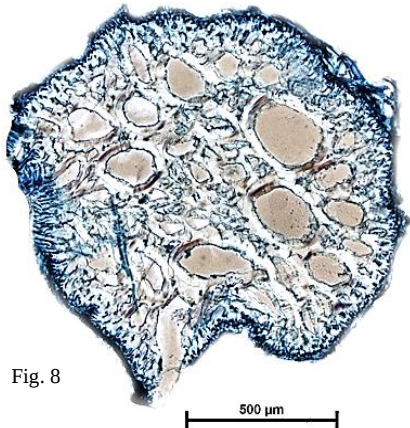


Fig. 8



Fig. 9.



Fig. 10.

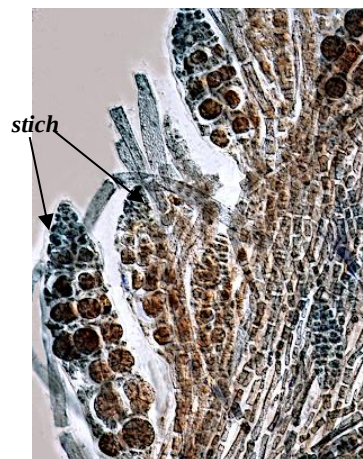


Fig. 11 a,b.

- 6a. basal cells of naked filaments 45-65µm across, pairs or strings of small cells may occur in filaments; male structures (spermatangial masses) are said to be *egg-shaped*; tetrasporangia in rings of 5.

Figs 12-15. *Dasya kraftii*

- 6b. basal cells of naked filaments 50-80 µm across, rarely pairs of small cells occur in filaments; short branches bearing male spermatangia *elongate*; tetrasporangia in rings of 6-7.

Figs 16-19. *Dasya baldockii*

Dasya kraftii,

Fig. 12. .pressed plants

13. surface view of small basal cells (*bas c*) of forked, filamentous branches (pseudo-laterals)
14. egg-shaped spermatangial mass
15. tetrasporangial structure (stichidium). Spores in rings of 5 (3 in focus at any one time)

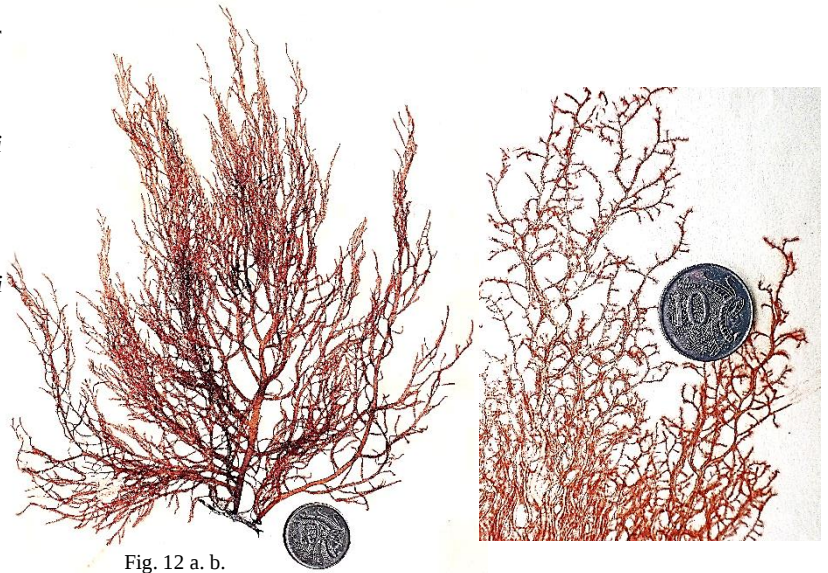


Fig. 12 a. b.

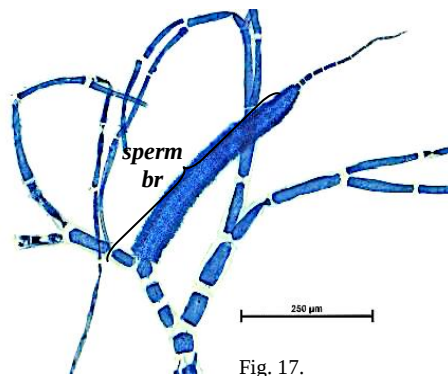
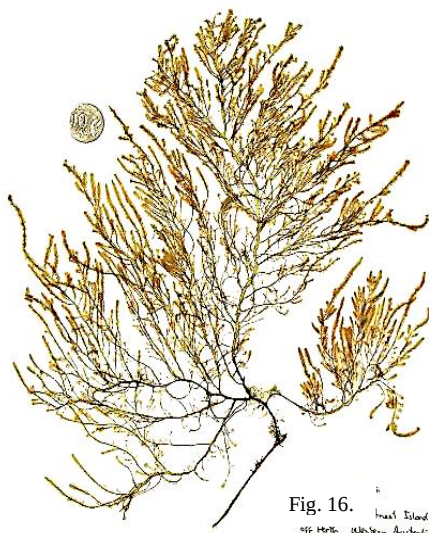
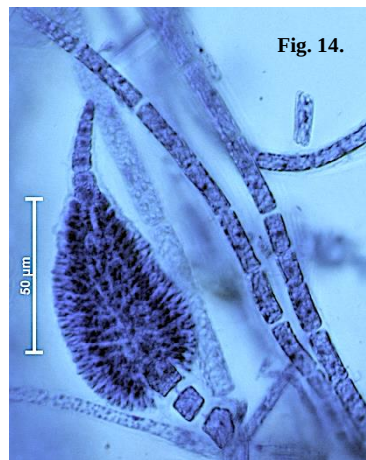
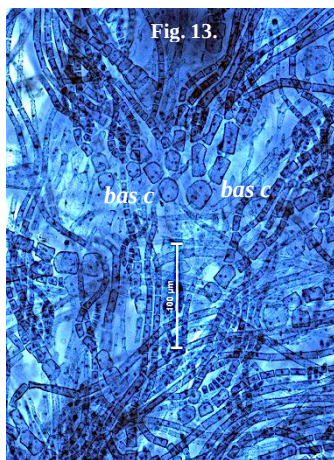


Fig. 17.

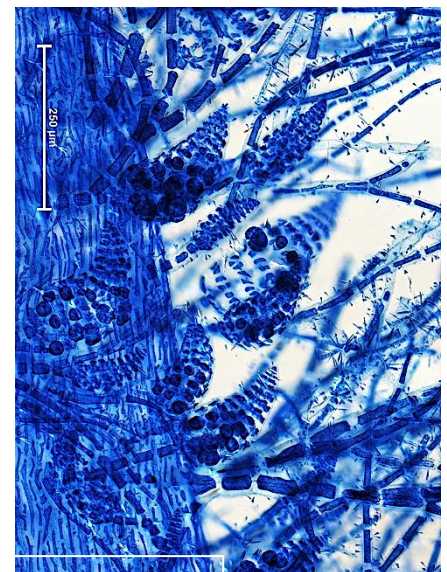


Fig. 18.

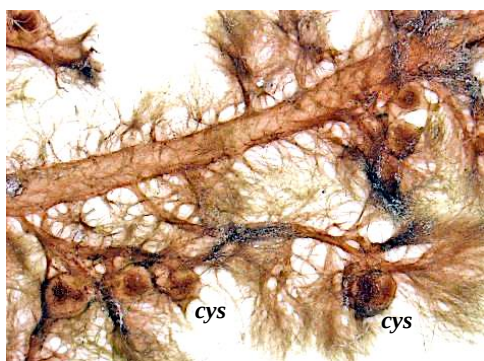


Fig. 19.

Dasya baldockii

- Fig. 16. whole plant
17. elongate spermatangial mass (*sperm br*) bearing unbranched terminal filament
18. sporangial structures (stichidia) amongst pseudo-laterals
19. plant with flask-shaped mature female structures (cystocarps, *cys*)

- 7a. main axes with short side branches in one flat surface, pseudo-laterals radially arranged, spreading, curved, basal cells 20-35 μm wide, ending in a point. Figs 20-23. *Dasya haffiae*
- 7b. plant with sparse, irregular branching, filaments forked, basal cells 50-60 μm wide, tips conical. Figs. 24-26. *Dasya wilsonis*
- 8a. naked filaments coarse, 100-250 μm wide, if branched then only basally, rigid, tapering to a point, cells 1-3x longer than broad 9.
- 8b. naked filaments thinner, 20-100 μm wide, basally branched 1-3 times, rigid or floppy, cells 2-8x longer than broad 10.

Dasya haffiae

- Fig. 20. pressed specimen
21. flat-branched, corticated side branches with dense, radially branched pseudo-laterals
22. surface view corticated axis: stiff, forked, spreading, naked filamentous branches (pseudo-laterals) and curved, unbranched hair-like branches arising radially
23. detached pseudolaterals, ending in a point; stalked sporangial structure



Fig. 20.



Fig. 22.

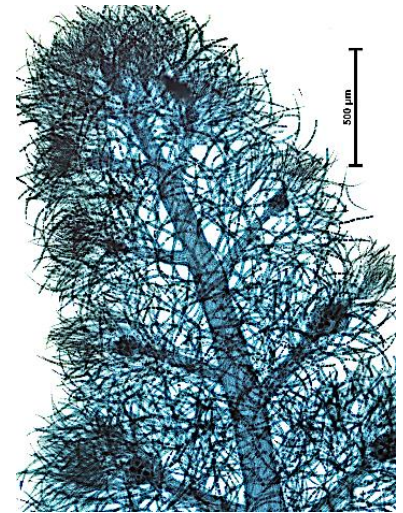


Fig. 21.



Fig. 23.



Fig. 24.

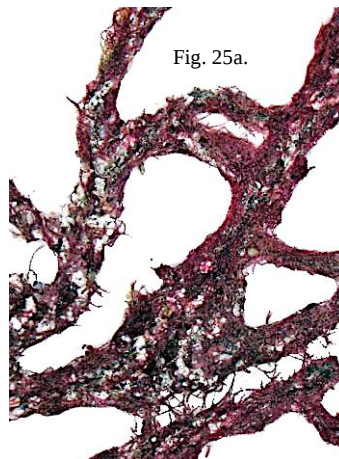


Fig. 25a.



Fig. 25b.

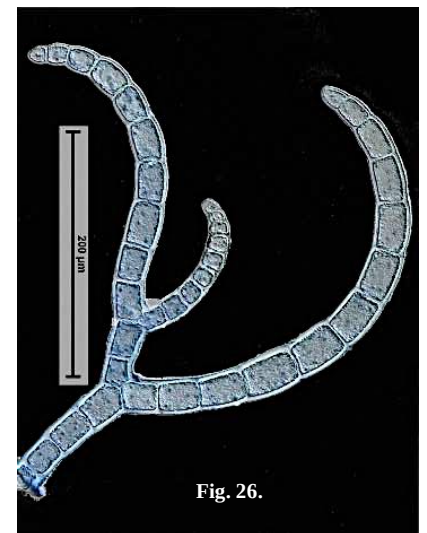


Fig. 26.

Dasya wilsonis

- Fig. 24. pressed plants, sparse, irregular branching
- 25 a, b. dried specimens, detail of axes densely covered with naked filaments
26. naked, curved, forked pseudo-lateral with a blunt end

- 9a. axes slender, bands of pericentral cells visible for some distance from the axis tips; pseudo-lateral filaments occur along branches; tetrasporangial branches (stichidia) at tips of naked filaments.

Figs 27-30 *Dasya ceramioides*

- 9b. W. Australian distribution only? Axes robust, pericentral bands not visible except at very tips; pseudo-laterals in clusters at ends of short side branches, absent from axes; tetrasporangial branches at tips of **corticated** filaments. Figs 31-33.

..... *Dasya scopulifera*

- 10a. axes well-corticated, obscuring pericentral cell bands except near tips of young side branches 11.

- 10b. axes lightly corticated, pericentral cell bands visible for some distance from the axis tips 13.

- 11a. naked branched filaments spreading, $> 45^\circ$ to the axes, rigid, branching every 1-2 cells; axis cross sections show definite pericentral cells 12.

- 11b. naked branched filaments $< 45^\circ$ to the axes, floppy, branching basally, often narrowing to long, fine cells; axis cross sections show indistinct or distinct pericentral cells 18.

Dasya ceramioides

Fig. 27. pressed specimen

28. detail of fluffy tips

29. acute tips to pseudo-laterals, female cystocarps (cys) nestling within the tufts

30. cluster of sporangial branches (stichidia, *stich*) at ends of filaments

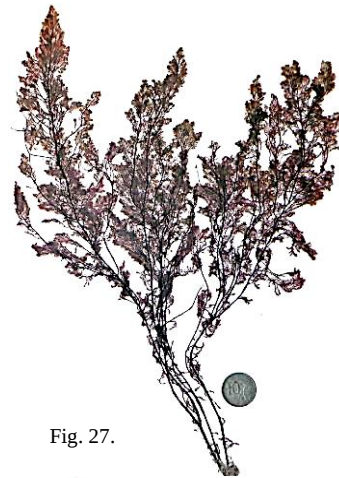


Fig. 27.

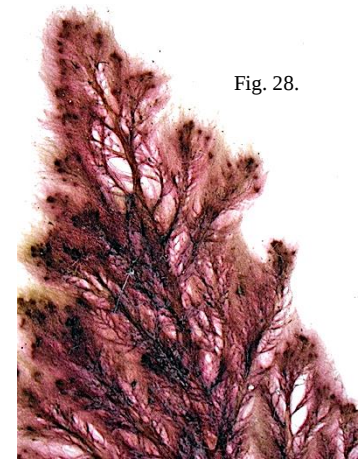


Fig. 28.

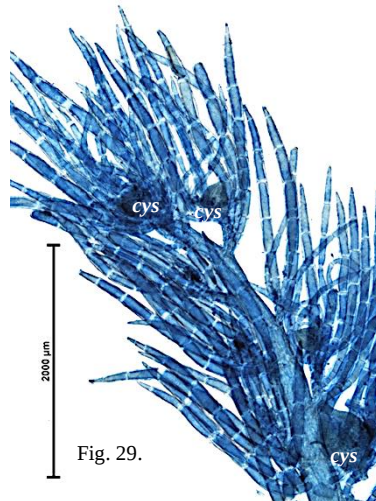


Fig. 29.

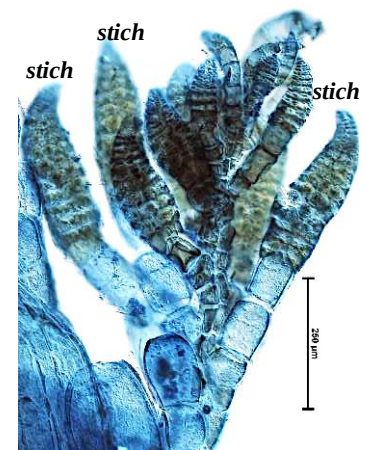


Fig. 30.



Fig. 31.

Dasya scopulifera

Fig. 31. pressed plants

32. detail of fluffy tips

33.a, b. sporangial structures (stichidia) at ends of corticated branches (arrowed), banding (1,2,3) on axes obscure

Fig. 32.

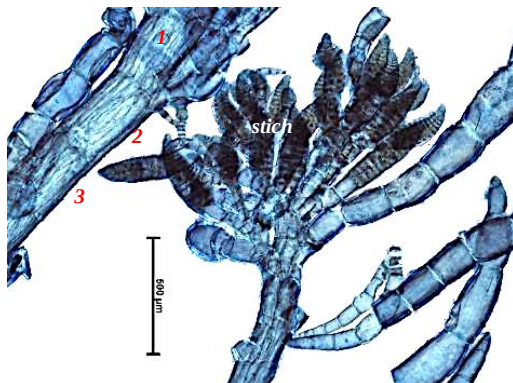
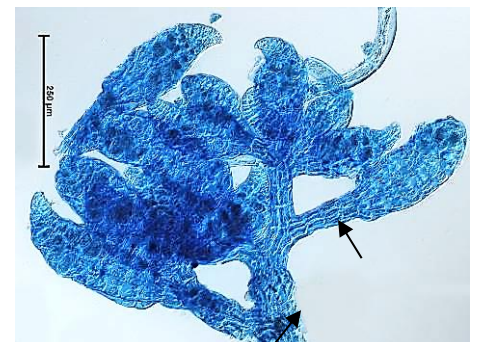


Fig. 33 a, b.



12a. side branches regularly arranged in 2 opposite rows along axes. Rigid, naked, forked filaments with blunt tips occur in tufts at branch ends, cells 3-5x longer than wide. Figs 34-37.

..... *Dasya cliftonii*

12b. side branches irregularly spaced, radial. Rigid, naked forked filaments densely shroud axes and side branches, cells about 2x as long as wide, tip cell sharply pointed. Figs 38-41.

..... *Dasya divergens*

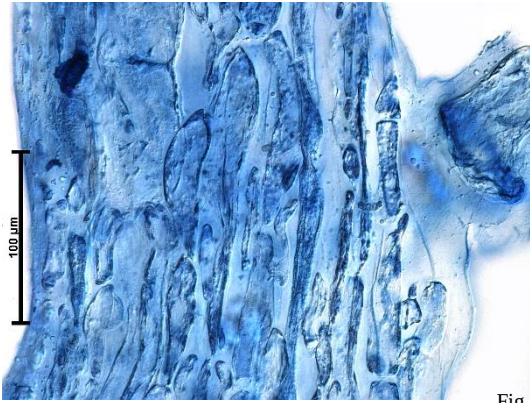


Fig 36.



Fig 34.



Fig 35.

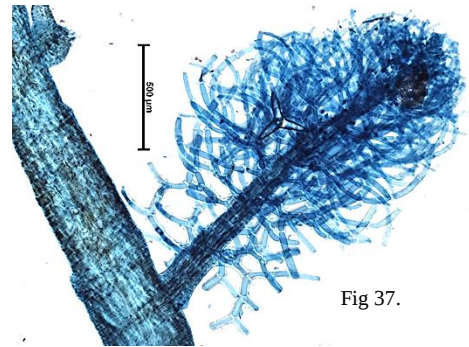


Fig 37.

Dasya cliftonii

- Fig. 34. pressed specimen
35. detail of side branches in 2 rows
36. axis heavily corticated, obscuring bands of pericentral cells
37. divergent side branch with tufts of rigid, spreading, naked branched filaments at tip



Fig 38.

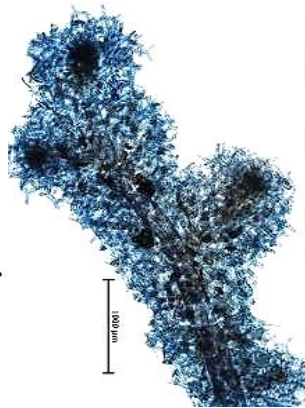


Fig 39.

Dasya divergens

- Fig. 38. pressed specimen
39. detail of axes and branches densely shrouded in radially arranged, diverging pseudo-laterals
40. diverging pseudo-laterals near plant tip
41. detached pseudo-laterals with pointed tips, cross section (arrowed), showing 5 pericentrals; and a stalked tetrasporangial structure (stichidium)

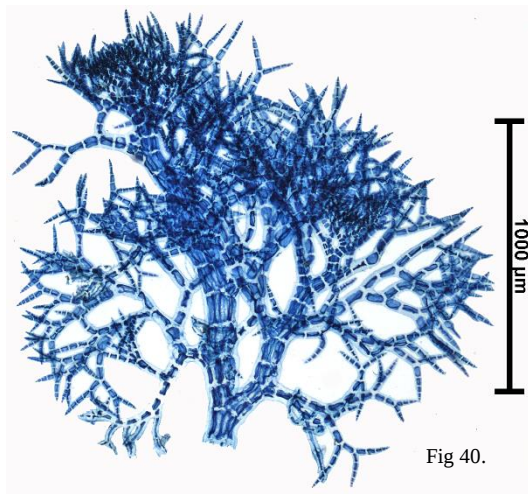


Fig 40.

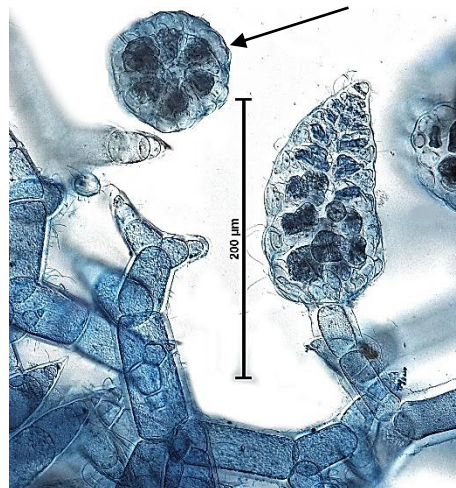
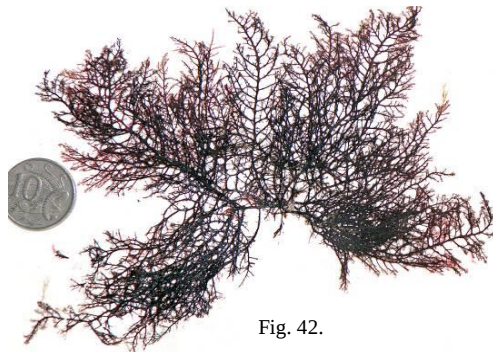


Fig 41.

- 13a. width of naked branched filaments cells at forks
 $<45\mu\text{m}$ 14.
- 13b. width of naked branched filaments cells at forks
 $>55\mu\text{m}$ 16.
- 14a. plants dark brown, numerous side branches narrowing rapidly at tips; pseudo-laterals thin, $12\text{--}20\mu\text{m}$ wide, cells 2-4x longer than wide, basal cell may be corticated. Figs 42, 43.
 *Dasya comata*
- 14b. plants dark red, with numerous forked long branches narrowing gradually; naked branched filaments (pseudo-laterals) thicker, $20\text{--}40\mu\text{m}$ wide, cells 3-8x longer than wide.
 15.
- 15a. forked long branches arise from near the plant base, *fringed* at least at their ends with naked filamentous tufts; end cells 3-4x long as wide. Figs 43-45.
 *Dasya crinita*
- 15b. long branches with numerous side branches, naked filamentous *tufts at tips*, end cells 6-8x long as wide. Figs 46a,b-48.
 *Dasya hapalathrix*



Dasya comata

Fig. 42. pressed specimen

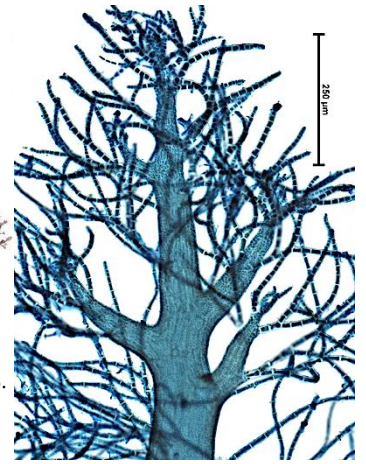


Fig. 43.

43. axes and side branches rapidly narrowing towards tips, naked pseudo-laterals thin



Dasya crinita

Fig. 43. beaked female structures (cystocarps) at tips of short side branches

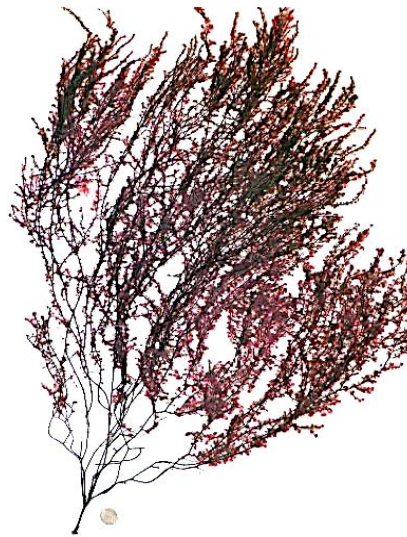


Fig. 44. pressed specimen

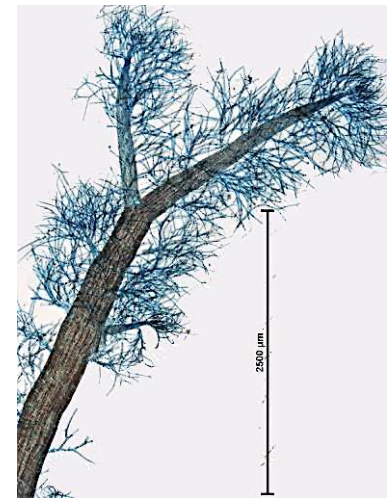


Fig. 45: branches narrowing gradually, fringed with naked filamentous tufts



Fig 46a.



Fig 46b.

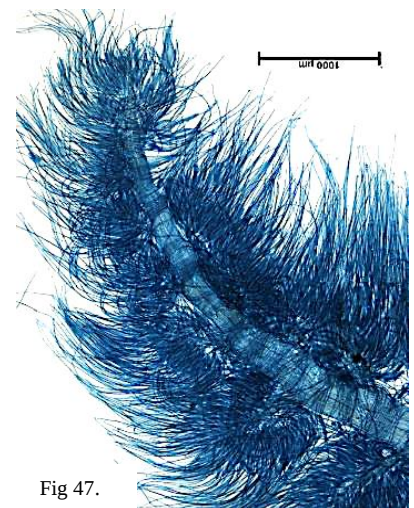


Fig 47.



Fig 48.

Dasya hapalathrix

Fig. 46a, b: examples of branching patterns
 47. dense naked filamentous branches at tips of main and short side branches
 48. filament tip cells relatively elongate

16a. plant robust; main branches conspicuous, side branches well-developed; naked branch filaments *widening* just above the base, ending in a blunt tip; tetrasporangia in rings of 6. Figs 49, 50

..... *Dasya clavigera*

16b. plant slender or slightly robust, usually with long side branches; naked filaments tapering to a fine hair, tetrasporangia in rings of 4 or 5.

..... 17.

17a. plant slender, with many branches; basal cells of mature naked branched filaments 35-65µm wide; tetrasporangial branches (stichidia) with rings of 4 sporangia. Figs 51-53. *Dasya quadrispora* (as *Dasysiphonia quadrispora* in *Algaebase*)

17b. plant robust; main branches with radial side branches producing vague conical outlines except when denuded; basal cells of mature naked branched filaments 95-130 µm wide; tetrasporangial branches (stichidia) with rings of 5 sporangia. Figs 54-57.

..... *Dasya naccarioides* (as *Dasysiphonia naccarioides* in *Algaebase*)



Fig. 49.

Dasya clavigera

Fig. 49: main branches conspicuous, side branches well-developed

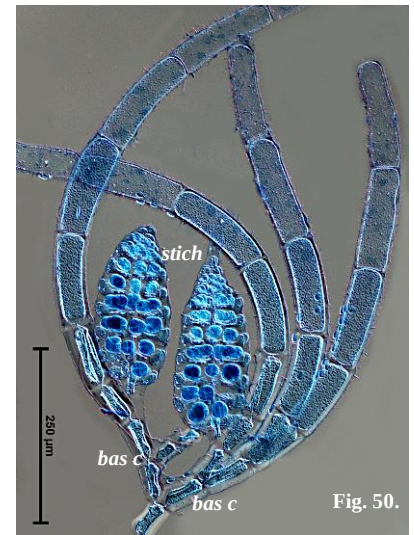
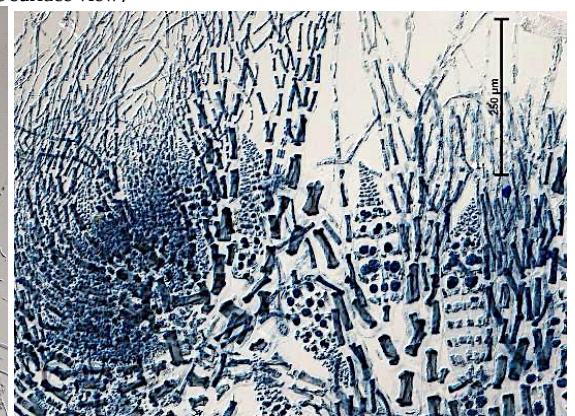


Fig. 50.

50: detached naked filaments: basal cells (*bas c*) narrower than upper ones tetrasporangial branches (stichidia, *stich*) with rings of 6 sporangia, (3-4 visible in a single surface view)



Dasya quadrispora

Fig. 51: pressed specimen

52: naked pseudo-laterals with narrow basal cells

ending in fine hairs; stichidium (*stich*) with

sporangia in rings of 4

53: stalked stichidia (*stich*)



Fig. 54

Dasya naccarioides:

Fig. 54: pressed specimen, main branches and side branches vaguely conical in outline

55: appearance of a denuded plant

56: radially branched side branches

57: detached mature naked branched filaments with wide basal cells; stalked stichidia (*stich*) with rings of 5 sporangia



Fig. 55:



Fig. 56.

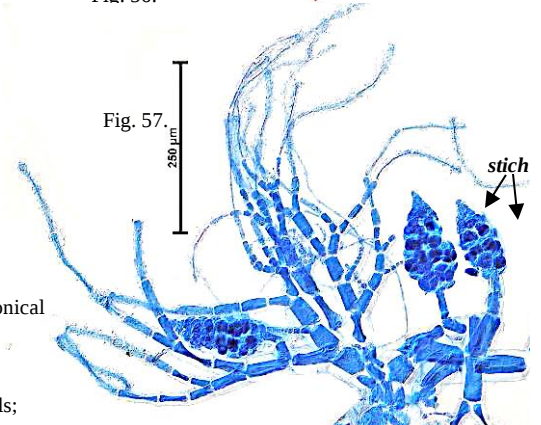


Fig. 57.

- 18a. naked branched filaments mostly on every band (segment) of the axes; tetrasporangia in rings of 5 19.
- 18b. naked branched filaments on every second band (segment) of axes 20.
- 19a. naked branched filaments 45-65 μm near the base, tapering to a blunt end, most cells 3-4x longer than wide; tetrasporangial branches (stichidia) sometimes with branched filaments at their tips; mature female structures (cystocarps) thick-walled, containing disc-shaped spores in chains Figs 57-61 *Dasya atactica*
- 19b. pseudo-laterals 20-30 μm near the base, tapering to slender, floppy ends, most cells 4-10x longer than wide; mature female structures (cystocarps) thin-walled, containing tear- or club-shaped spores. Figs 62-65 *Dasya crescens*

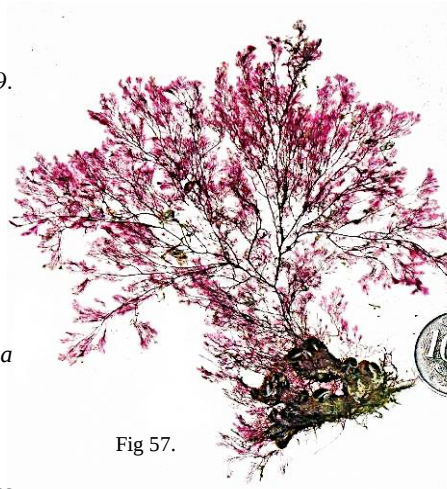


Fig. 57.

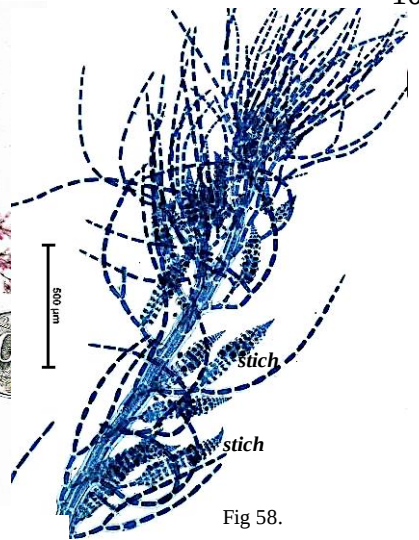


Fig. 58.



Fig. 59.

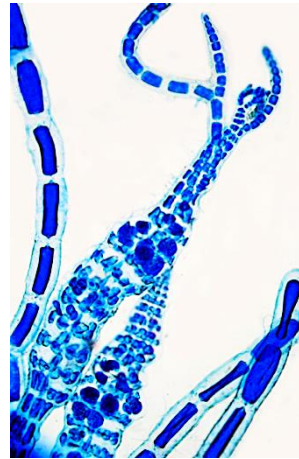


Fig. 60.

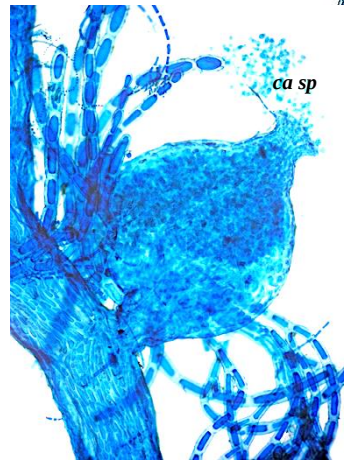


Fig. 61

Dasya atactica

Fig. 58: pressed specimen

59: pseudo-laterals on every segment of axes; stichidia (stich)

60: tetrasporangial branch (stichidium); sporangia in rings of 5

61: branched filaments at the tip of a stichidium

62: thick-walled cystocarp, with disc-shaped spores (ca sp) escaping



Fig. 62

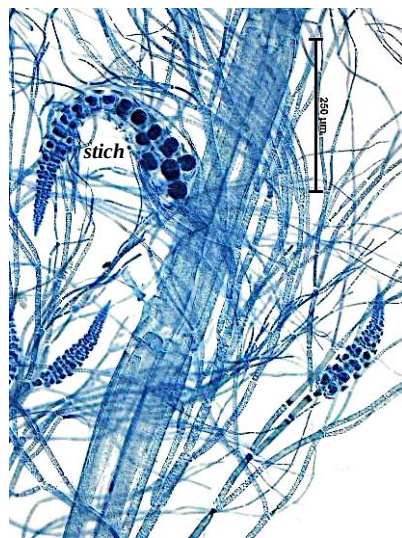


Fig. 63

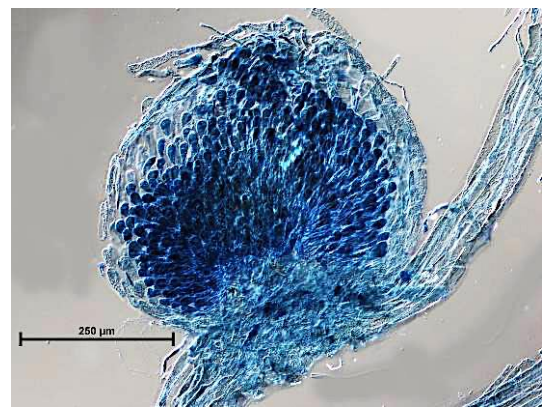


Fig. 64.

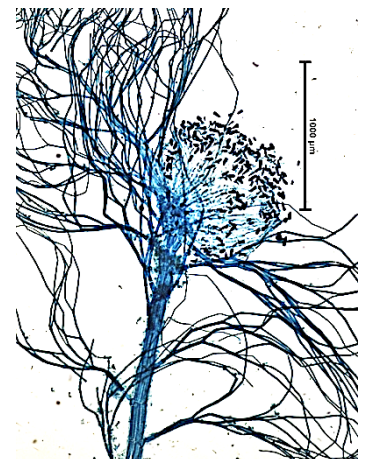


Fig. 65.

Dasya crescens

Fig. 62: pressed specimen

63: elongate cells of axis, tetrasporangial structures (stichidia) thin, floppy pseudo-laterals

64: thin-walled cystocarp with club-shaped carposporangia within

64: thin-walled cystocarp has been squashed, releasing carposporangia

20a. bands of pericentral cells exposed except at the very base of the plant; lower cells of naked branched filaments 20-40 μm wide; tetrasporangia in rings of 6; mature female structures (cystocarps) containing tear- or club-shaped spores. Figs 65-68.

..... *Dasya tenuis*
 20b. bands of pericentral cells covered by additional corticating cells from the middle to lower plant parts; tetrasporangia in rings of 4; mature female structures (cystocarps) containing chains of disc-shaped spores.
 21.

21a. lower cells of naked pseudo-laterals narrow, 25-35 μm wide. Figs 69-72.

..... *Dasya capillaris*
 21b. lower cells of naked pseudo-laterals wider, 35-90 μm wide. Figs 73- (next page)
 *Dasya hookeri*



Dasya tenuis

Fig. 65: backlit specimen, emphasising narrow cells, pseudo-laterals arising from every second band of naked axial cells; and a tetrasporangial structure (stichidium) with sporangia in rings of 6 (4 in view in any one focus)
 66: pressed specimens
 67: thin-walled cystocarp
 68: tear-shaped carposporangia extruded from a cystocarp



Fig 66.

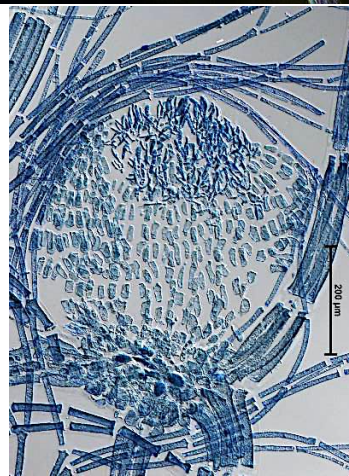


Fig 67.



Fig 68.



Fig 69.



Fig 70.



Fig 72.

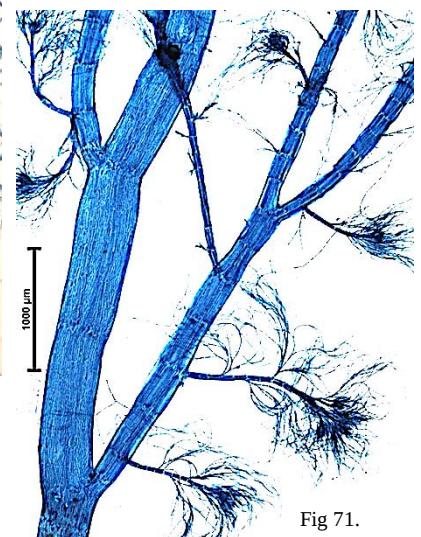


Fig 71.

Dasya capillaris

Fig. 69: pressed specimens
 70: upper plant parts, pericentral cell bands clear
 71: mid plant parts, bands on axis partly obscured by rhizoid cortication; pseudo-laterals from every second band
 72: lower plant part, detail of numerous rhizoids corticating the axis and a lateral branch

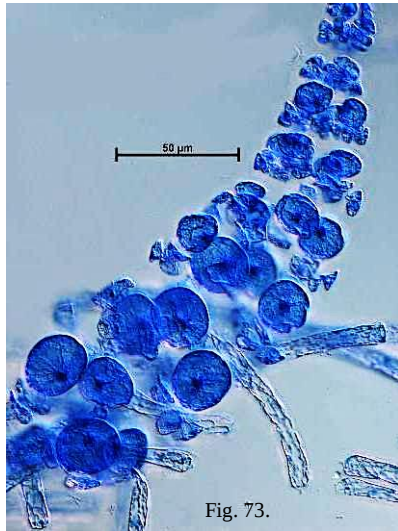


Fig. 73.

Dasya capillaris (continued)

Fig 73: tetrasporangial branch (stichidium): young (undivided) sporangia in rings of 4

74: tissue squash of a mature female structure (cystocarp) with extruded, young carposporangia (*ca sp*),
Insert: enlarged view of carposporangia in chains

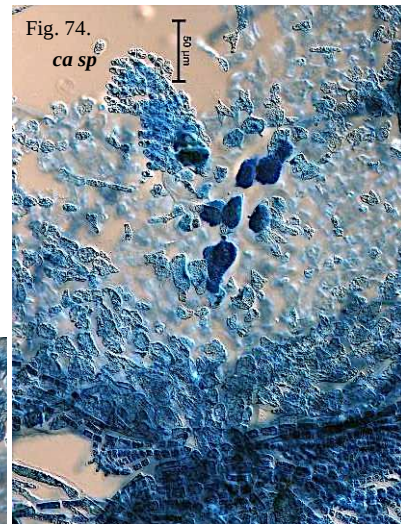
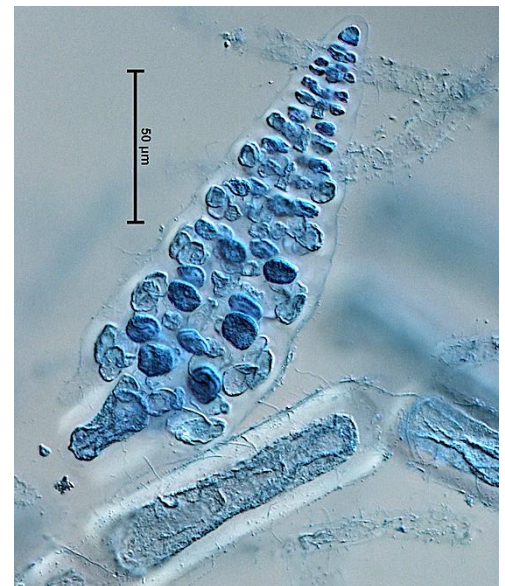
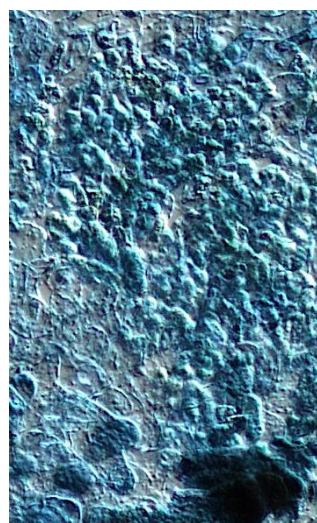
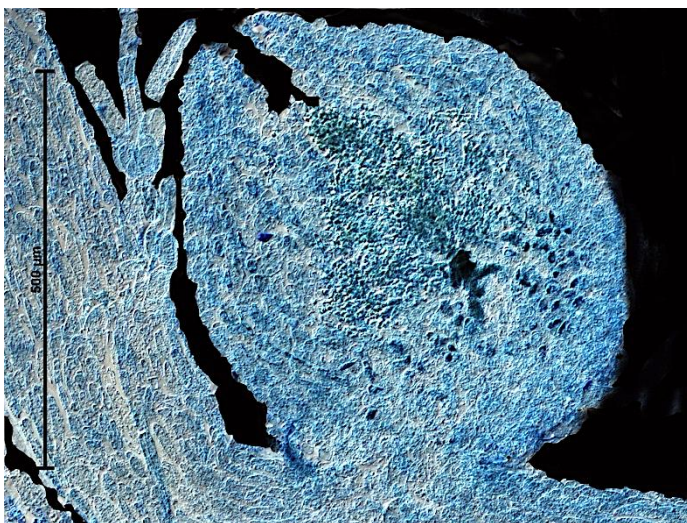
Fig. 74.
ca sp*Dasya hookeri*

Fig. 75: pressed plants

76: axes heavily coated (corticated) that masks the underlying cell bands; beaked, stalked cystocarps

77: sporangial structure (stichidium), sporangia in rings of 4

78 stalkless (sessile) cystocarp
Insert: sample of disc-shaped carposporangia in chains



The genus: *Heterosiphonia*

(from step 1a of the Key:

flat-branched, > 6 pericentral cells per band, except for *Heterosiphonia callithamnium* which has 4

- 22a. plant not corticated, bands of pericentral cells visible throughout the plant 23.
- 22b. plant corticated with cells additional to and masking the bands of pericentral cells, at least at the base of the plant 26.
- 23a. pseudo-laterals arising every 4-7 axial cells apart, clearly banded with distinct pericentral cells. Figs 79, 80. *Heterosiphonia microcladioides*
- 23b. pseudo-laterals are a single cell wide (monosiphonous) except at the very base, arising every 2(-3) axial cells apart 24.
- 24a. each central filament cell ringed with 4 cells (pericentral cells) of equal length. Figs 70-72 *Heterosiphonia callithamnium*
- 24b. each central filament cell ringed with 7-11 pericentral cells 25.



Heterosiphonia microcladioides

Fig. 79: pressed specimen
80: axis (*ax*) and pseudo-laterals (*ps lat*) uncorticated, pericentral bands prominent

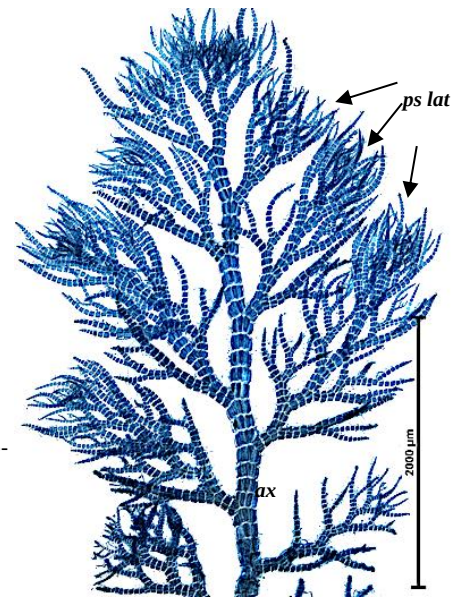
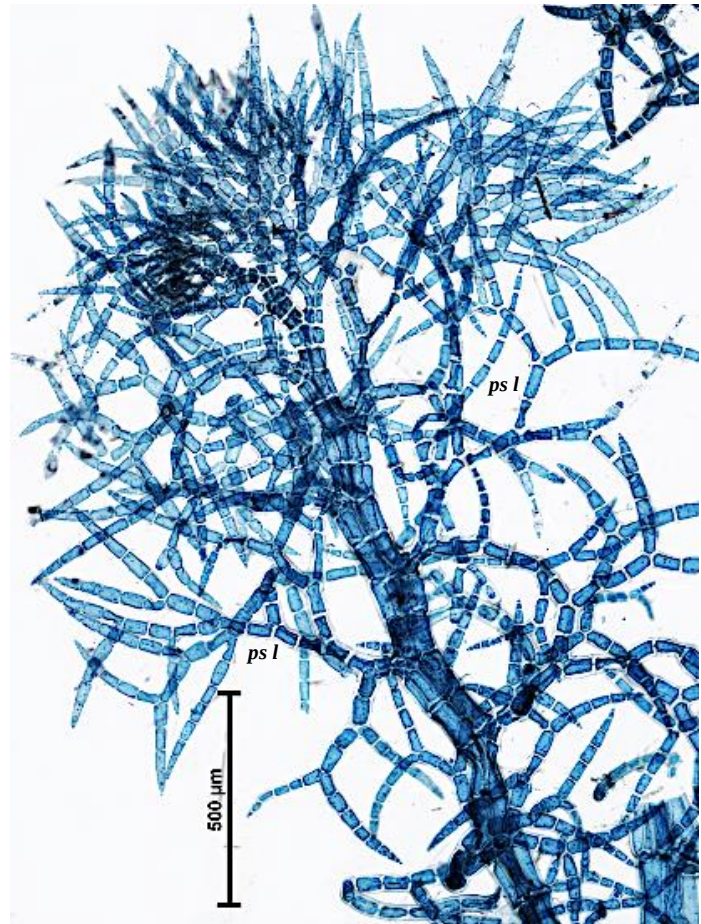


Fig. 81.

Fig. 82



Heterosiphonia callithamnium

- Fig. 81: pressed specimens of stems of a seagrass
82. axis (*ax*) with bands of 4 pericentral cells;
pseudo-laterals, (*ps lat*) 1 cell wide except at their bases, tips pointed
83. branched filaments (pseudo-laterals, *ps lat*) 2 axial cells apart;
tetrasporangial branches (stichidia, *stich*)

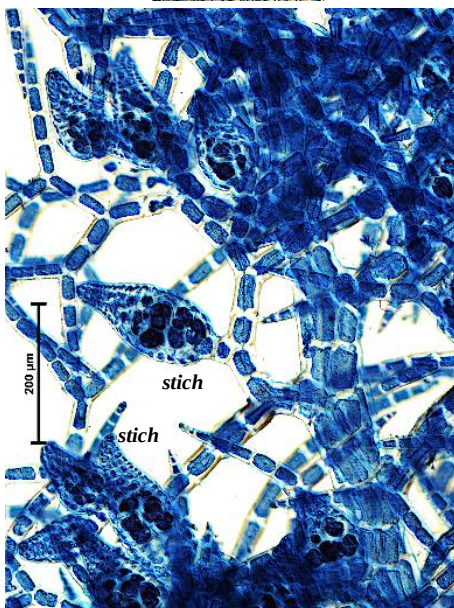


Fig. 83.

25a. plants small, to 30 mm tall; main branches 150-250 μm wide; pericentral cells 7-8 encircling each axis cell. Figs 83, 84.

..... *Heterosiphonia australis*

25b. plants larger, to 120 mm tall, usually growing on other plants; main branches 300-870 μm wide; encircling (pericentral) cells 8-11 per axis cell. Figs 85-87.

..... *Heterosiphonia wrangelioides*



Fig. 85.

Heterosiphonia wrangelioides

Fig. 85: pressed specimen

86: axis, (ax) and dense branched pseudo-laterals (ps lat)

87: cross section of axis: central filament (c fil) encircled by 11 pericentral cells (1-11)

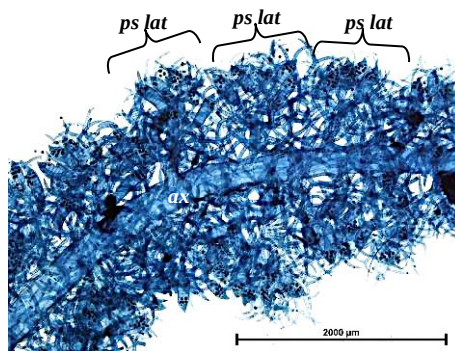


Fig. 86.



Fig. 87.

26a. pseudo-laterals 2-3 axial bands apart; axis bases coated with additional small, elongate cells running lengthwise and obscuring bands of pericentral cells

..... 27.

26b. pseudo-laterals 3-7 bands apart on axes; axis bases without corticating cells

..... 28.

27a. branching feather-like (pinnate); branch bases densely coated with additional small cells running lengthwise and obscuring the bands of pericentral cells.

Figs 88- 91 *Heterosiphonia muelleri*

27b. branching somewhat feather-like (pinnate); branches with bands of pericentral cells visible for most of their length, obscured with additional small, e cells only at the very bases. Plant base slightly swollen. Figs 92-96 (next page)

..... *Heterosiphonia crassipes*



Fig. 88.

Heterosiphonia muelleri

Fig. 88: pressed specimen

89: sporangial branches

90: detail of pinnate branching

91: additional short cells coating the axis bases and obscuring the underlying pericentral cells (arrowed)

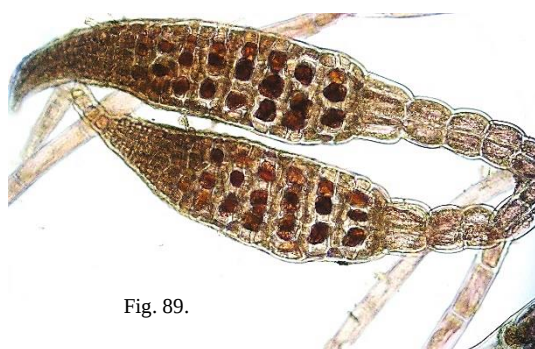


Fig. 89.



Fig. 90.

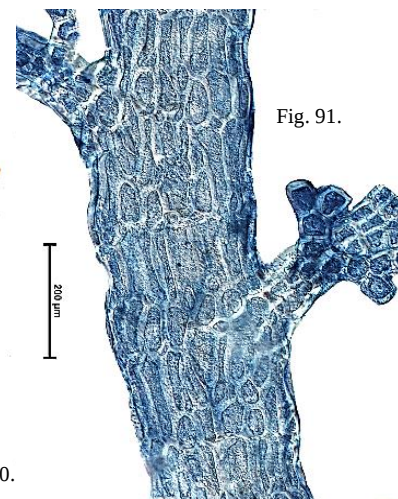
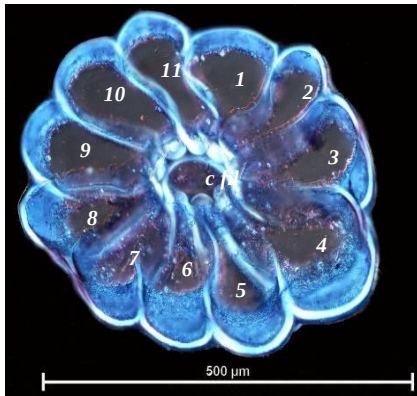
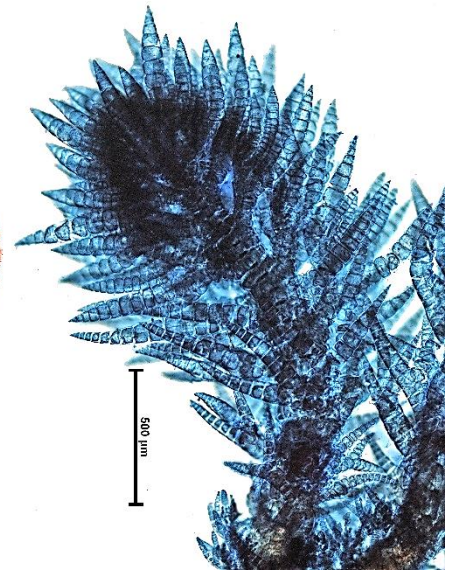
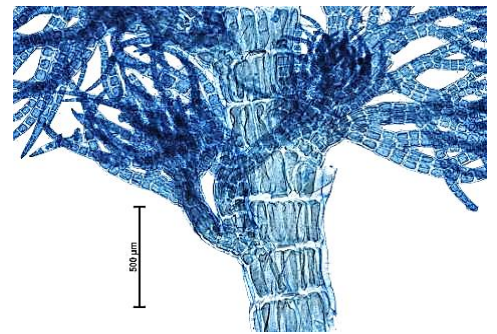


Fig. 91.



Heterosiphonia crassipes

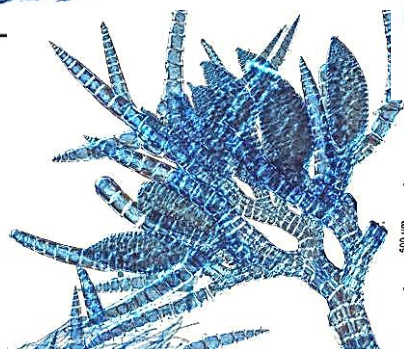
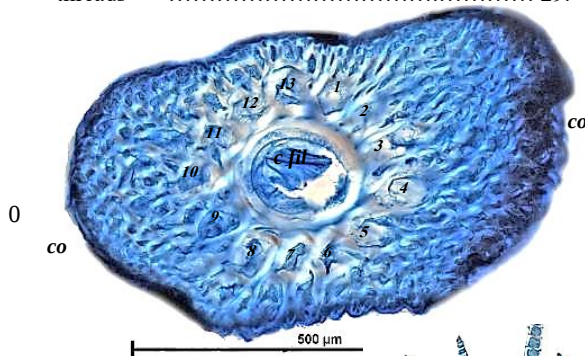
- Fig. 92: several axes arising from a swollen base
 93: pressed specimen with dense pseudo-laterals
 94: detail of pseudo-laterals
 95 cross section, central filament (*c fil*); 11 pericentral cells (1-11)
 96: axis and side branches with prominent bands of 11 pericentral cells (*no* cortication); filamentous side branches (pseudo-laterals, *ps lat*) arising 2 axial bands apart



28a. tips of pseudo-laterals are pointed, >85 µm wide, spreading; 13 pericentral cells in each axial band; filaments protrude at right angles to thickened axis bases Figs 97-99.

..... *Heterosiphonia curdieana*

28b. tips of branched filaments taper to fine filaments, <85 µm wide; 8-12 pericentral cells in each axial band, although these may be rapidly obscured by corticating threads 29.



Heterosiphonia curdieana

- Fig. 97: delicate filaments(arrowed) at right angles to the axis bases
 98: cross section axis base, central filament (*c fil*); pericentral cells (1-13); cortication (*co*)
 99: pseudo-laterals ending in a point, sporangial structures (stichidia, *stich*) clustered near tips

29a. prominent bands of pericentral cells in the side, branched filaments, bands on main branches (axes) *obscured* by additional corticating cells; cross sections of old axes show 8-10 *distinct* pericentral cells. Figs 100-103

..... *Heterosiphonia gunniana*

29b. pericentral cell bands of both pseudo-laterals and axes *obscured* by additional corticating cells; pericentral cells in cross sections of old axes *indistinct*. Figs 104- 108.

..... *Heterosiphonia lawrenciana*



Fig. 100.



Fig. 101.

Heterosiphonia gunniana:

- Fig. 100: diffuse form
101: tufted form
102: pseudo-laterals, (*ps lat*) ending in fine threads, bands of pericentral cells *distinct* (arrowed) but bands on axes, (*ax*) obscured by additional corticating cells. Sporangial structures (*stichidia*, *stich*) present
103: cross section of axis : central filament (*c fil*); distinct pericentral cells (1-10); cortication of filaments (*co fil*)

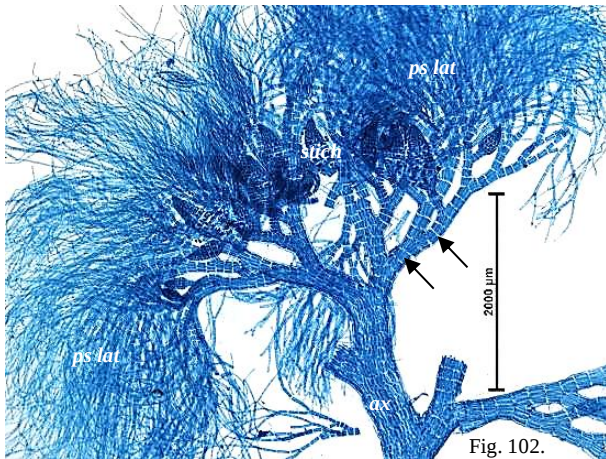


Fig. 102.

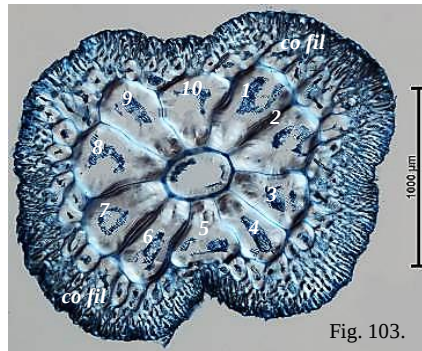


Fig. 103.



Fig. 104.

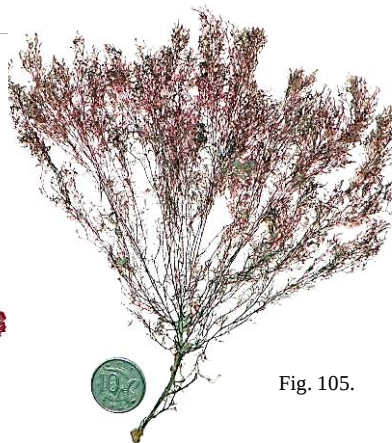


Fig. 105.

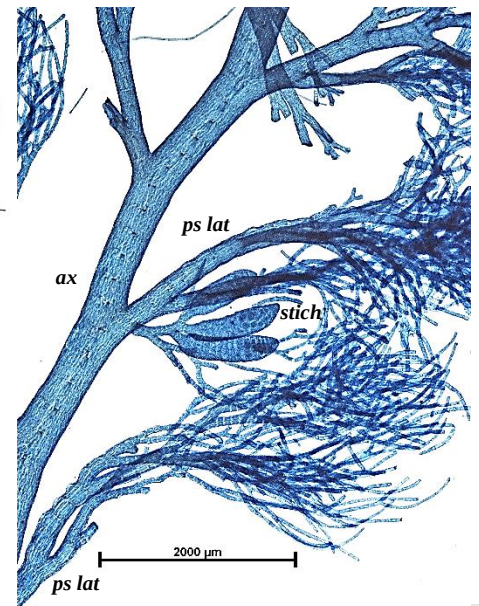


Fig. 106.

Heterosiphonia lawrenciana

Fig. 104: tufted form

105: diffuse form

106: pseudo-laterals, (*ps lat*), end in threads. Both axes (*ax*) and pseudo-laterals are corticated so that pericentral cell bands are obscured. Stichidia (*stich*) are present.

107: cross section of young axis, 9 pericentral cells surround a central filament

108: cross section of a mature axis, central filament (*c fil*) distinct but the presence of pericentral cells has been obliterated by development of masses of corticating filaments (*co fil*)

Fig. 107.

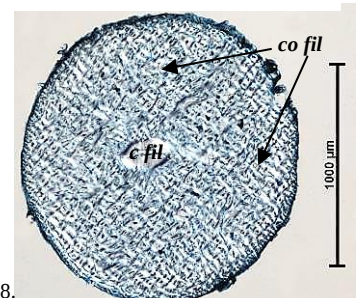
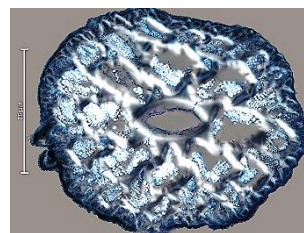


Fig. 108.

LOOK-ALIKE ALGAE: Filamentous algae superficially resembling the Dasyaceae

1. Filamentous Rhodomelaceae

Some members of this Family (example A, *Polysiphonia* and example B, *Doxodasya*) resemble the Dasyaceae as they have:-

- distinct bands of cells (pericentral cells) exactly matching the length of axial cells
- flask-shaped mature female structures (cystocarps)
- sporangia in special cigar-shaped branches (stichidia)

In contrast, the Rhodomelaceae when actively growing

- have terminal, delicate, naked, branched filaments called **trichoblasts**, which, in one genus, *Polysiphonia*, are colourless.
- growth is in a direct line and not by overtopping as occurs in the Dasyaceae.



EXAMPLE A:

Polysiphonia
filaments with bands of pericentral cells; one sporangium per band in special branches (stichidia), growing tips with trichoblasts

2. Filamentous *Spyridia*

Some *Spyridia* species (example C) have

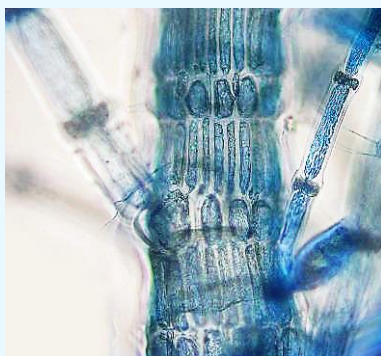
- banded axes and tufts of filaments resembling *Dasya*.

In contrast, *Spyridia*

- produce distinctive narrow rings of cells about the filaments.
- tetrasporangia are single and not formed in stichidia
- cortication of axes initially consists of uniform bands of small cells alternating with long ones.

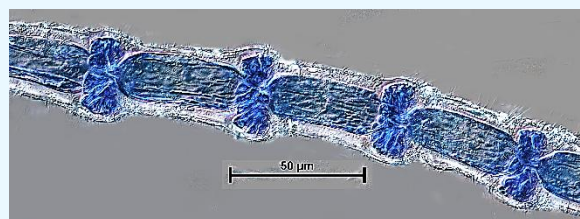
EXAMPLE B:

Doxodasya
corticated filaments, branched trichoblasts and hairs resembling pseudo-laterals of *Dasya*, flask-shaped cystocarps



EXAMPLE C

Spyridia: axis with alternating bands of long and small cells; filaments with rings of narrow rings of small cells



LOOK-ALIKE ALGAE (continued)

3. Some members of the Callithamnidae

(a Tribe of the Family: Ceramiaceae)

example *Hirsutithallia*,

- has short side branches of naked cells from each axial cell

in contrast

- sporangia occur individually in branches, not in stichidia.
- the thickening of the axis is produced by a sheath of loose filaments and not the compact corticating cells as occurs in the Dasyaceae.



EXAMPLE D

Hirsutithallia

tetrasporangia not in stichidia,
rhizoids coating the large axial cells

REFERENCES

- *Algaebase* Listing the world's algae <https://www.algaebase.org/> accessed February 2025
- Cassidy, M.M., Schneider, C.W. & Saunders, G.W. (2022). The *Dasya baillouviana* and *D. cryptica* complexes (Delesseriaceae, Rhodophyta) in Bermuda with three additional new species from the archipelago. *Journal of Phycology* 58(6): 731–745
- Womersley, H.B.S. (1998) The marine benthic flora of southern Australia. Rhodophyta. Part IIIC, Ceramiales – Ceramiaceae, Dasyaceae. State Herbarium of South Australia

SPECIES ILLUSTRATED IN THE KEY

species	author/s	page /s	current name in <i>Algaebase</i>	authors
<i>Dasya atactica</i>	J. Agardh	10		
<i>Dasya baldockii</i>	Parsons & Womersley	4		
<i>Dasya capillaris</i>	Hooker f. & Harvey	11, 12		
<i>Dasya ceramioides</i>	Harvey	6		
<i>Dasya clavigera</i>	(Womersley) Parsons	9	<i>Dasysiphonia clavigera</i>	(Womersley) M.M. Cassidy, C.W, Schneider & G. W. Saunders
<i>Dasya cliftonii</i>	Harvey	7		
<i>Dasya comata</i>	Parsons & Womersley	8		
<i>Dasya crescens</i>	Parsons & Womersley	10		
<i>Dasya divergens</i>	Parsons & Womersley	7		
<i>Dasya extensa</i>	Sonder ex Kützing	2		
<i>Dasya haffiae</i>	Harvey	5		
<i>Dasya hapalathrix</i>	Harvey	8		
<i>Dasya hookeri</i>	Parsons & Womersley	11, 12		
<i>Dasya kraftii</i>	Parsons & Womersley	3		
<i>Dasya naccarioides</i>	Harvey	9	<i>Dasysiphonia naccarioides</i>	(Harvey) M.M. Cassidy, C.W, Schneider & G. W. Saunders
<i>Dasya quadrispora</i>	Parsons & Womersley	9		
<i>Dasya scopulifera</i>	Harvey	6		
<i>Dasya tenuis</i>	Parsons & Womersley	11		
<i>Dasya villosa</i>	Harvey	1		
<i>Dasya wilsonis</i>	J. Agardh	5		
<i>Heterosiphonia australis</i>	(J. Agardh) DeToni	14		
<i>Heterosiphonia callithamnium</i>	(Sonder) Falkenberg	13		
<i>Heterosiphonia crassipes</i>	(Harvey) Falkenberg	14, 15		
<i>Heterosiphonia curdieana</i>	(Harvey) Reinbold	15		
<i>Heterosiphonia gunniana</i>	(Harvey) Reinbold	16		
<i>Heterosiphonia lawrenciana</i>	(Harvey) Parsons	16		
<i>Heterosiphonia microcladioides</i>	(J. Agardh) Falkenberg	13		
<i>Heterosiphonia muelleri</i>	(Sonder) DeToni	14		
<i>Heterosiphonia wrangelioides</i>	(Harvey) Reinbold	14		