

Quick guide to common desmid genera

For a comprehensive account of the desmid species of New Zealand, refer to: *Flora of New Zealand. Desmids. Vols I, II, & III.* Manaaki Whenua Press, Christchurch

Part A

Desmids belong to the Streptophyta / Charophyta group of green algae in the class Zygnematophyceae, which also includes the filamentous algae *Spirogyra*, *Mougeotia* and *Zygnema*. Most desmids are single-celled; a few grow as unbranched filaments. In most genera the cells are divided into two semicells, one the mirror image of the other.

Cells solitary

YES

Cell wall in one piece

NO

Cell wall in two or more pieces (not always easy to see)



NO

Cells in filaments

CONTINUED (Part C)

September 2019

YES

Chloroplast spiral

NO

(but cells still have two similar halves)

Chloroplasts with notched edges

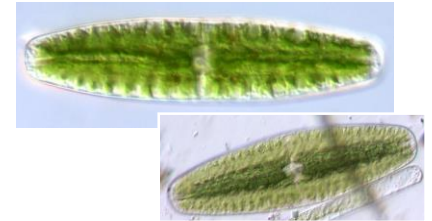
NO

Chloroplasts star-like

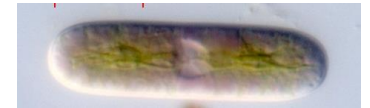
Spirotaenia



Netrium



Cylindrocystis

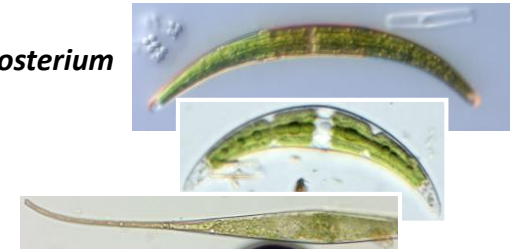


YES

Cells curved and usually tapering

YES

Closterium

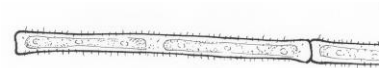


NO

Ends of semi-cells expanded; long chloroplasts

Gonatozygon

Cells often joined end to end to form fragile filaments

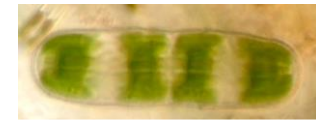


NO

Cells ends rounded, not expanded

Penium

(*Penium* has thick cell walls with striae, 1 or 2 chloroplasts per semicell, slight central constriction may be present)



CONTINUED (Part B)

Quick guide to common desmid genera Part B

continued from Part A

Cell walls constricted or notched at the centre

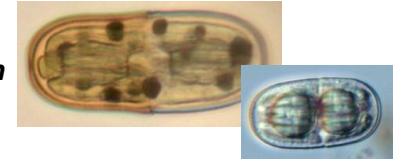
YES

Cells short (length less than 3 x width)

YES

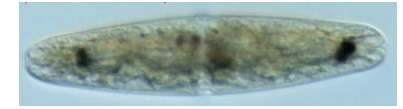
Very slight constriction

Actinotaenium



YES

Tetmemorus



NO

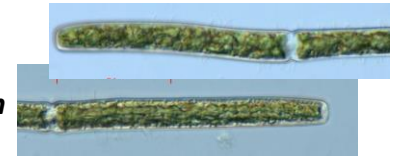
Cells elongated

YES

Apex with a deep notch



Pleurotaenium



NO

Apex rounded or square

NO

Cells not elongated; some other shape (circular, irregular)

YES

Micrasterias

Micrasterias can be very large, up to 300 µm in diameter



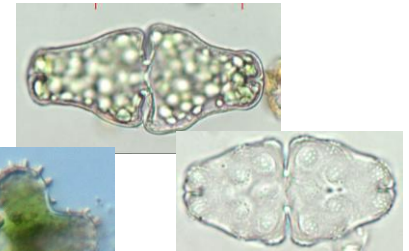
Cells with deeply notched margins, flattened in cross-section.

NO

Cell margins not deeply notched, cross-section not at all flat

YES

Euastrum



Apex of semicells notched or depressed; projections on cell surface

Not notched or depressed at apex (except for the broad area between spines or projections)

NB *E. sphyroides* is one of just two species in NZ that lack an apical notch

CONTINUED (Part C)

Note: species in several desmid genera (e.g., *Penium*, *Closterium*, *Actinotaenium*) typically have brown or yellow-coloured cell walls, on all or part of the cell, sometimes ribbed or otherwise sculptured. The colour and patterning is not characteristic of any genus.

Quick guide to common desmid genera Part C

