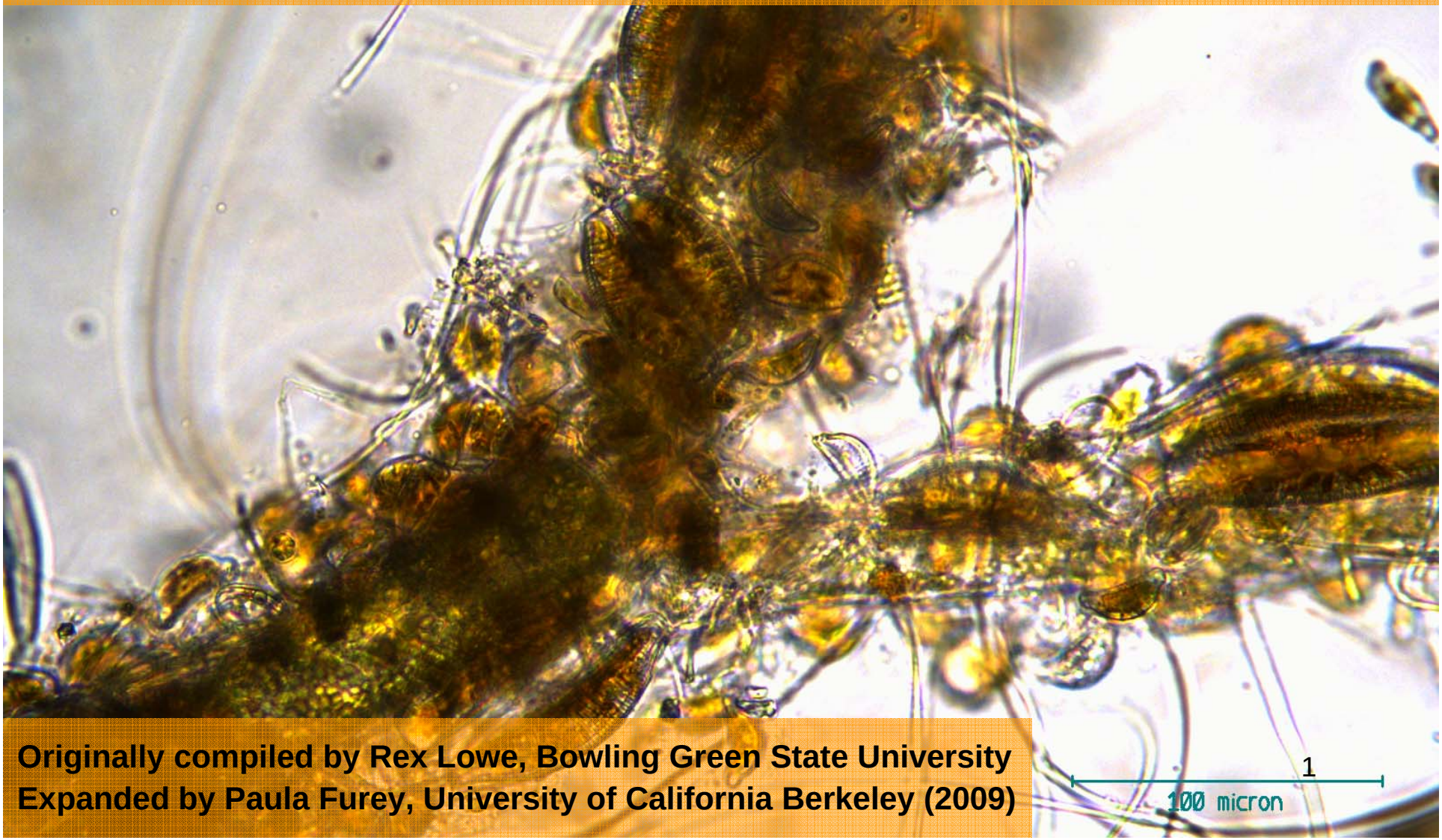
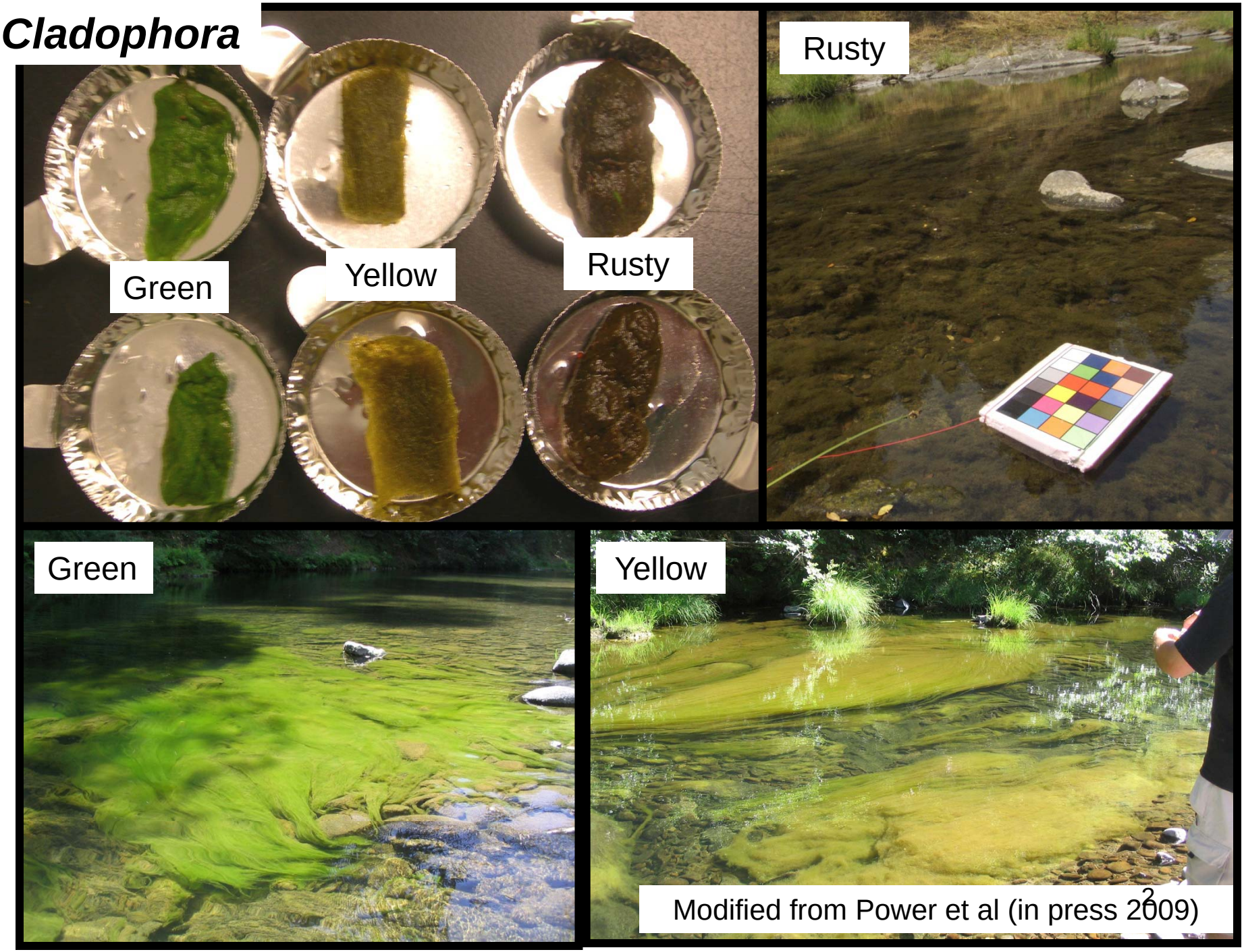
A picture guide to algae in the Eel River watershed



Originally compiled by Rex Lowe, Bowling Green State University
Expanded by Paula Furey, University of California Berkeley (2009)

Cladophora



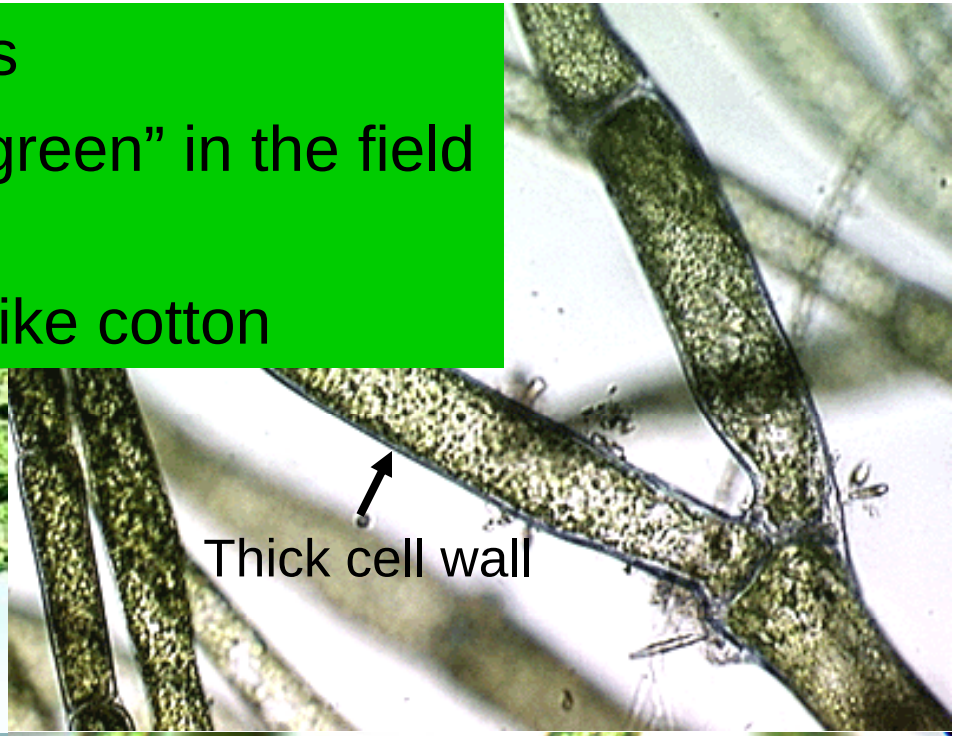
Modified from Power et al (in press 2009)

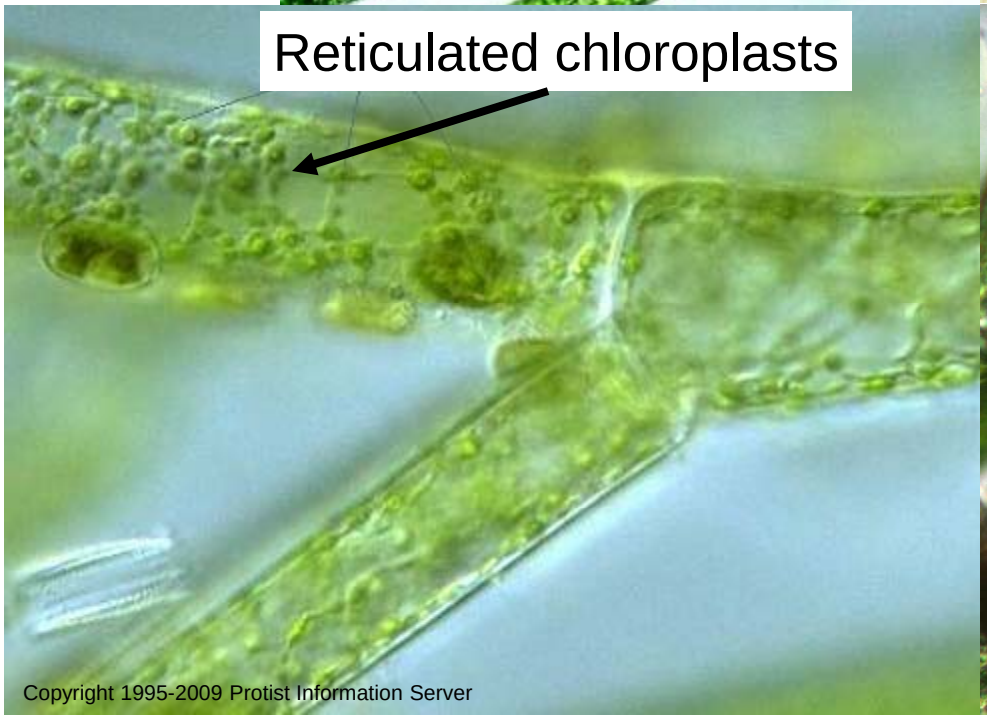
Cladophora showing chloroplasts

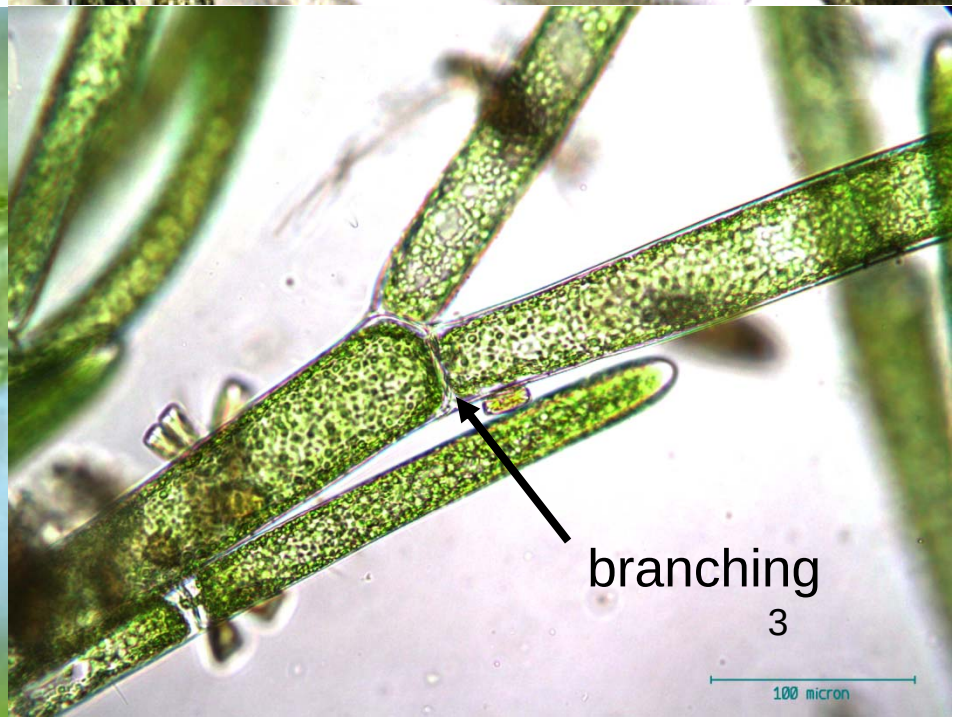
Cladophora with few epiphytes: “green” in the field

Cladophora feels rough, and
when you squeeze it, it looks like cotton

Slightly irregularly shaped cells

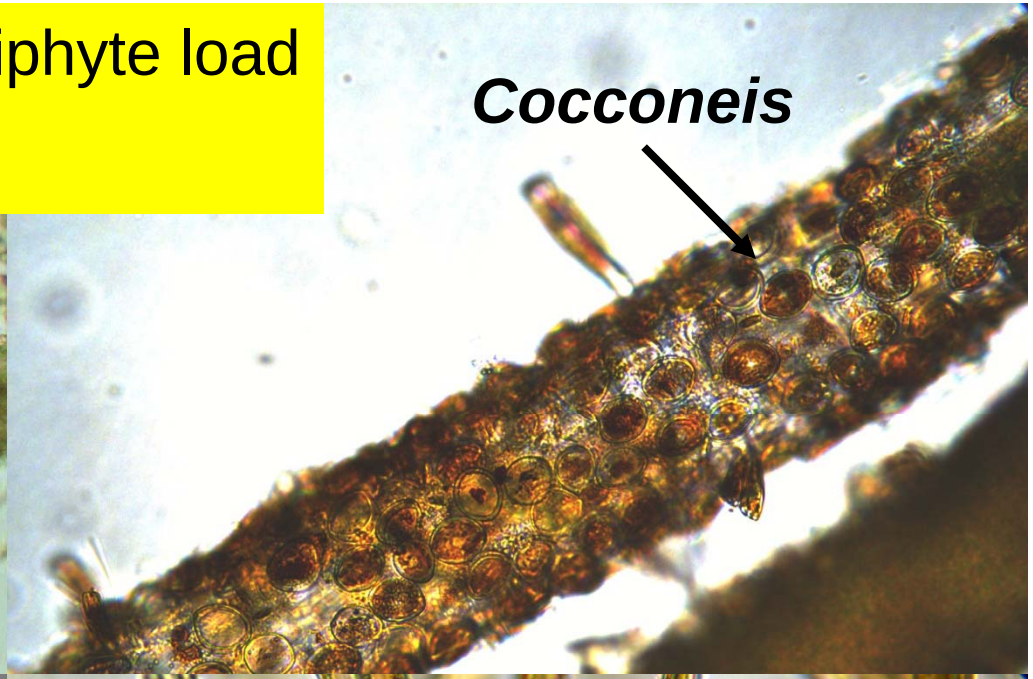


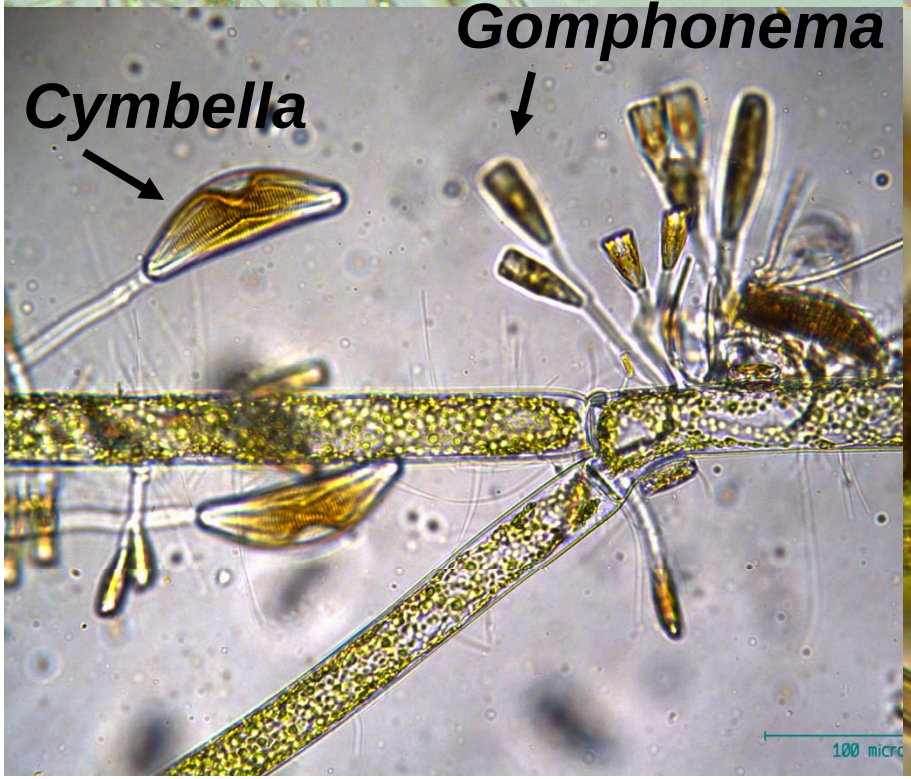


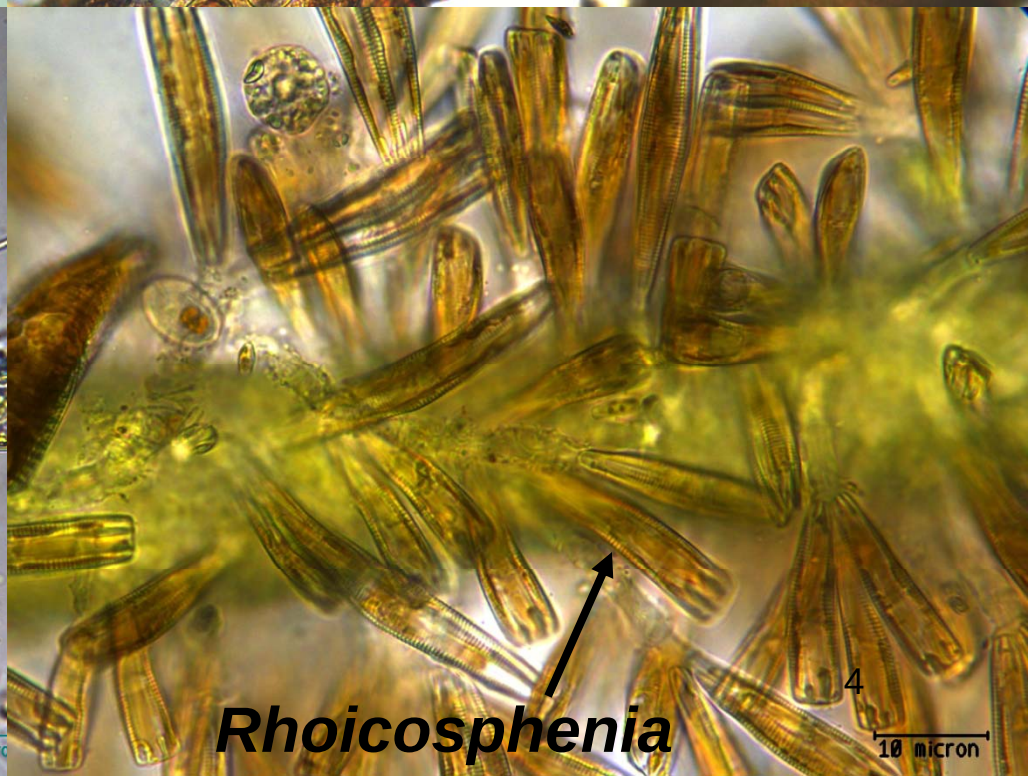


Cladophora with moderate epiphyte load

Often “Yellow” in the field

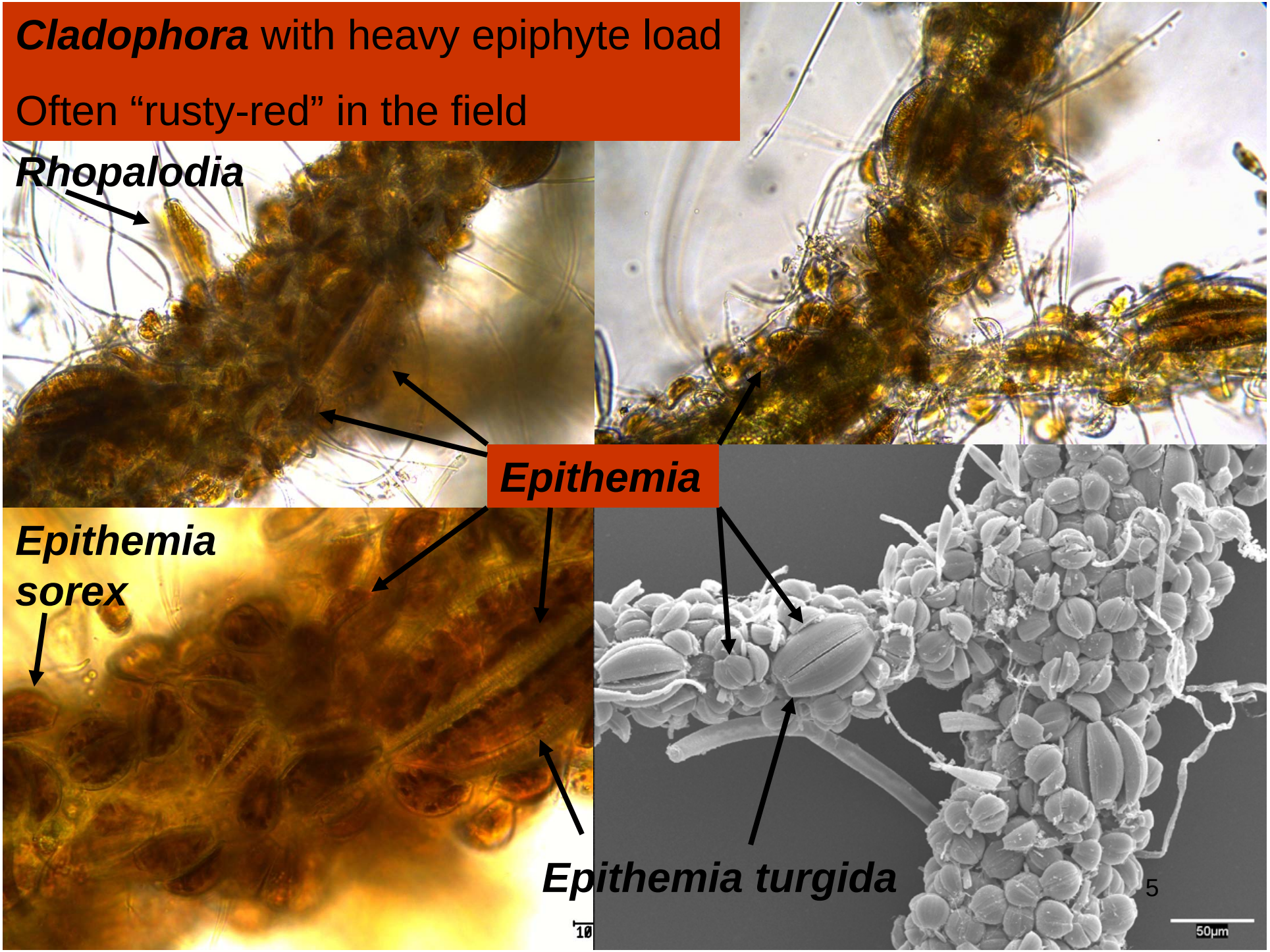


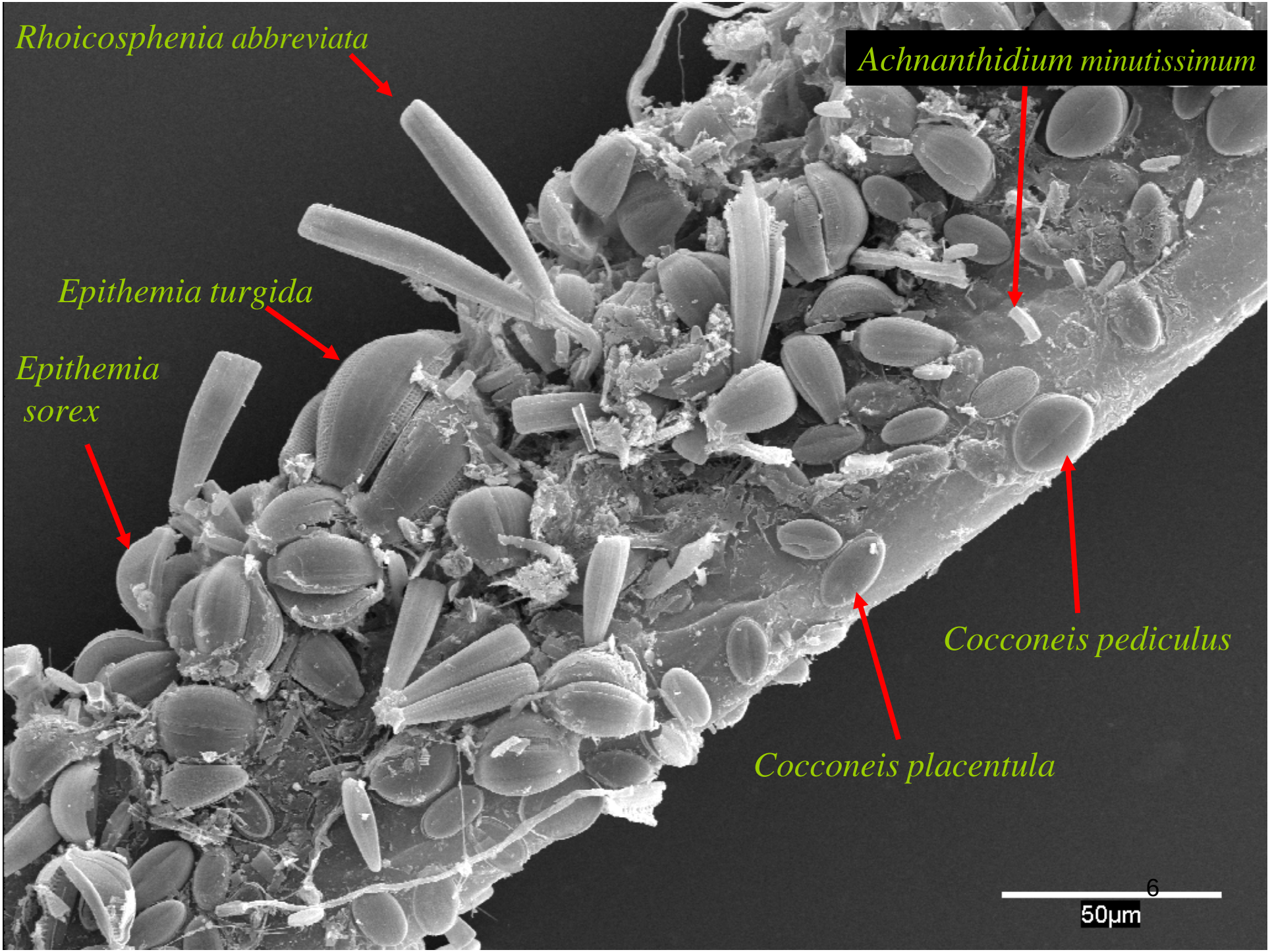




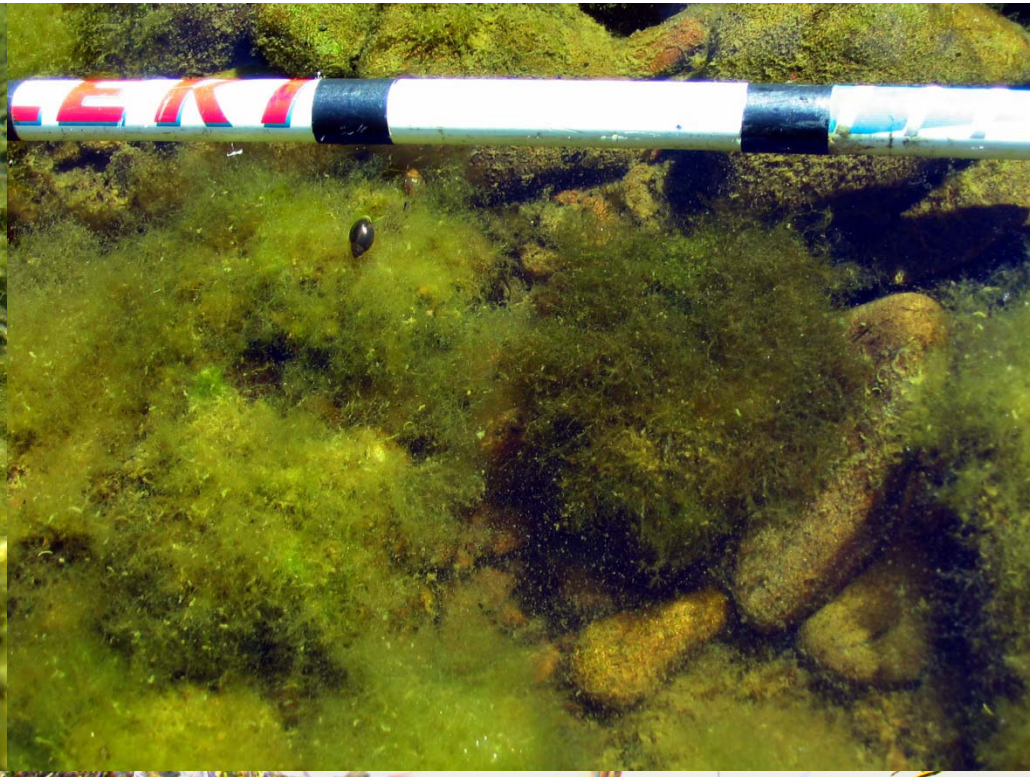
Cladophora with heavy epiphyte load

Often “rusty-red” in the field

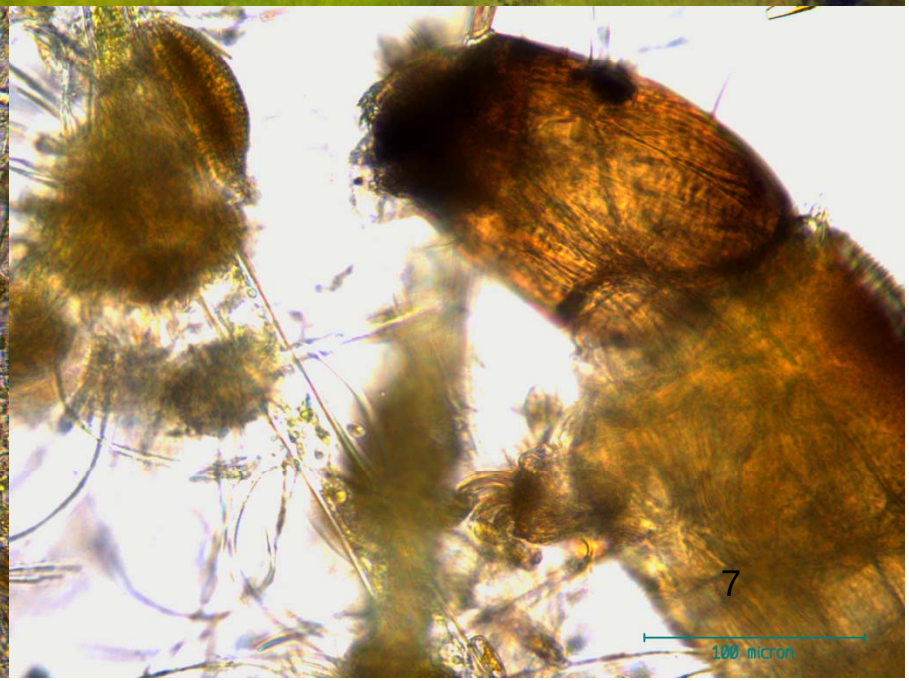


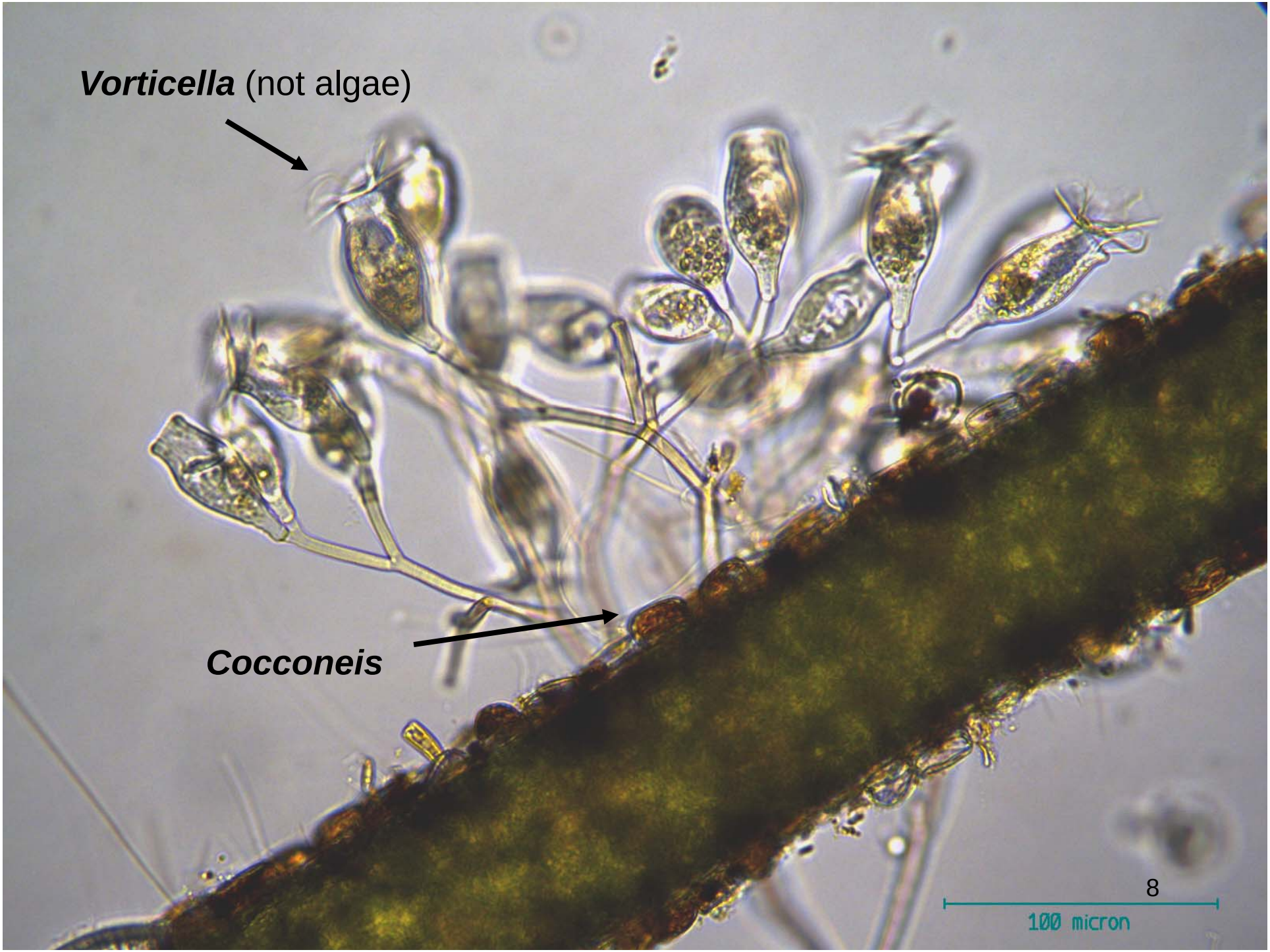

Rhoicosphenia abbreviata
Achnanthidium minutissimum
Epithemia turgida
Epithemia sorex
Cocconeis pediculus
Cocconeis placentula
6
50µm

Cladophora tufts woven by midges

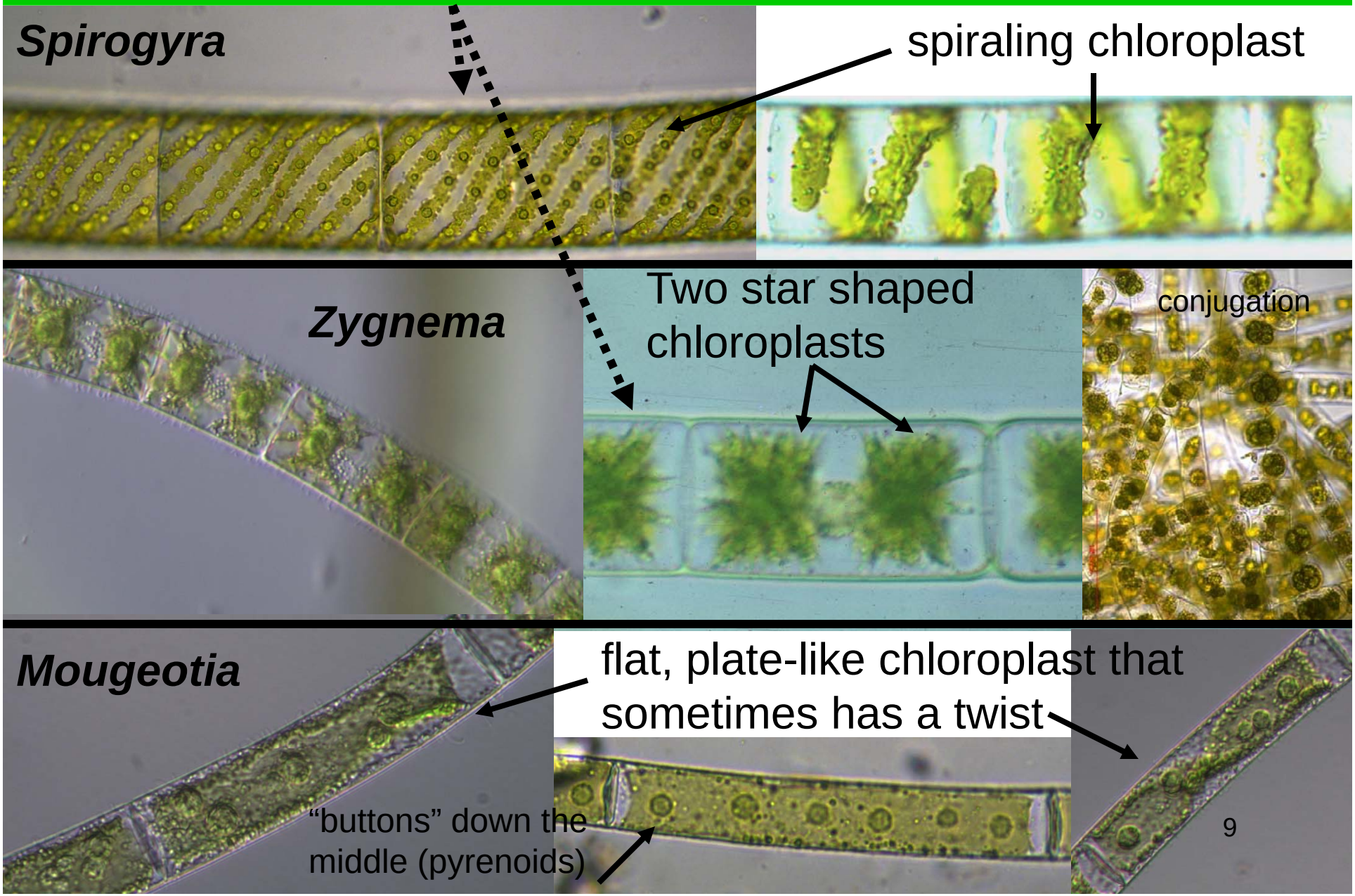


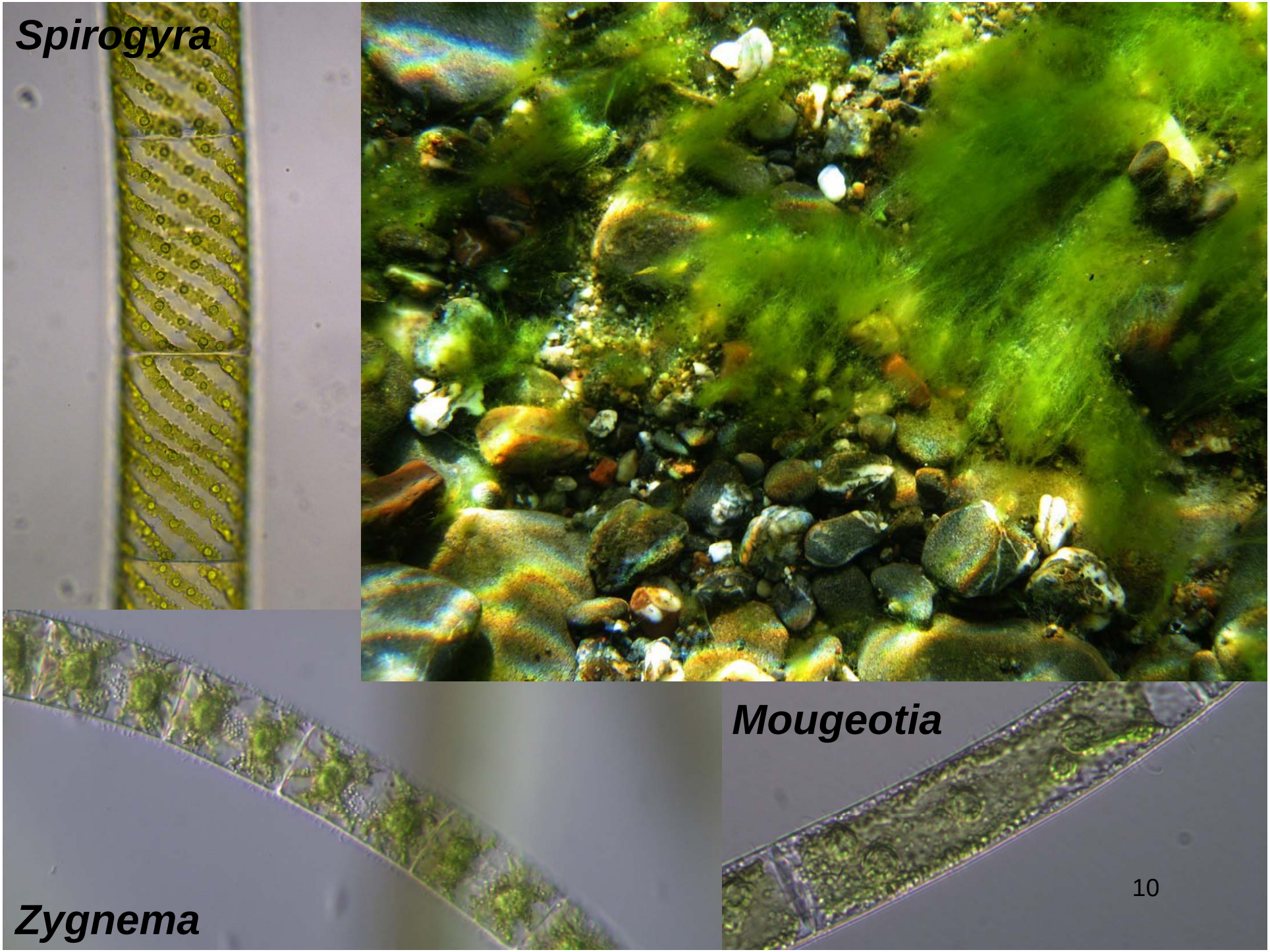
Midge gut contents



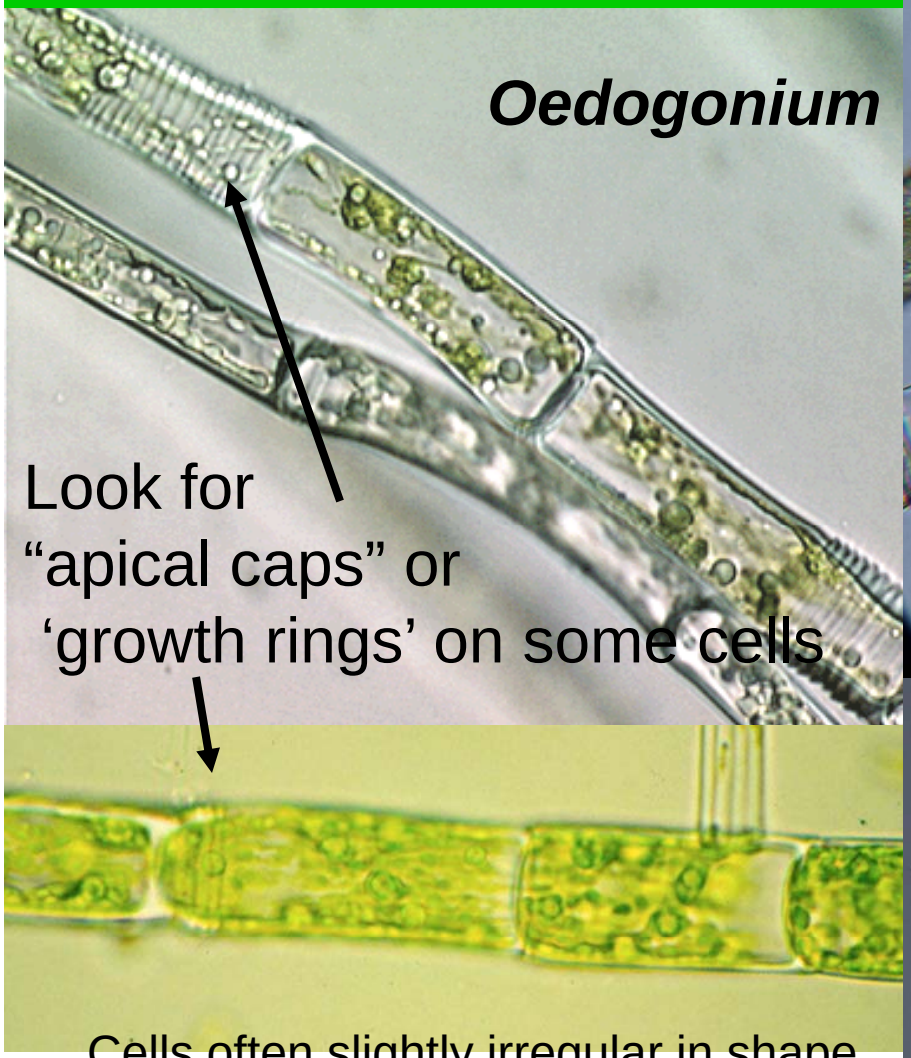

Vorticella (not algae)
Cocconeis
8
100 micron

Filamentous, green algal spp (Chlorophyta):
These genera have mucilaginous sheaths: “slimy” to touch

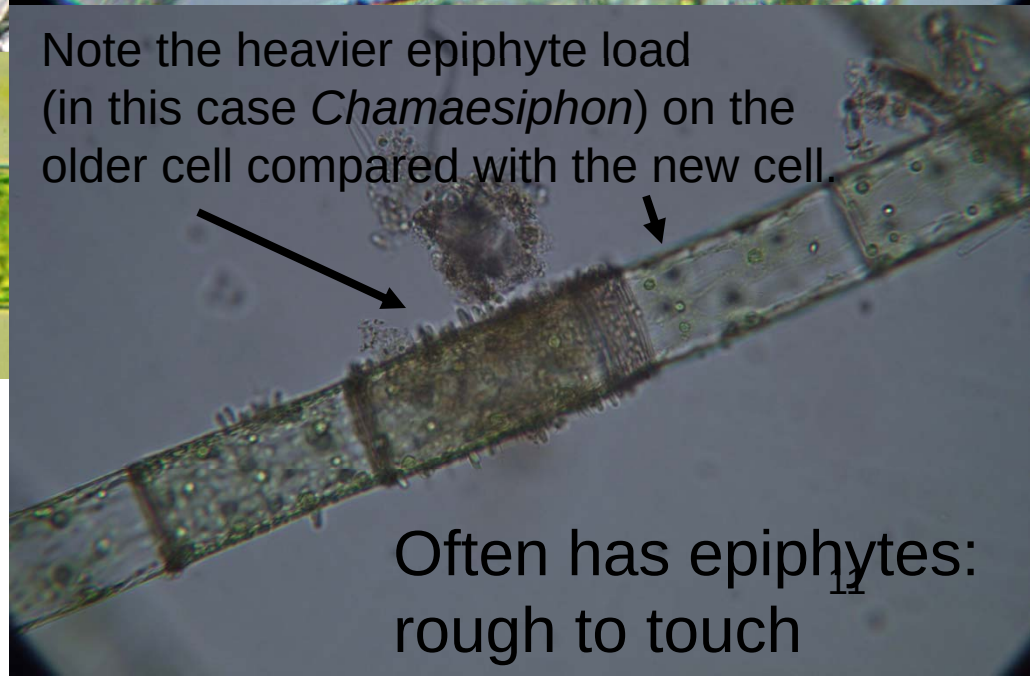



Spirogyra
Mougeotia
Zygnema

More filamentous greens

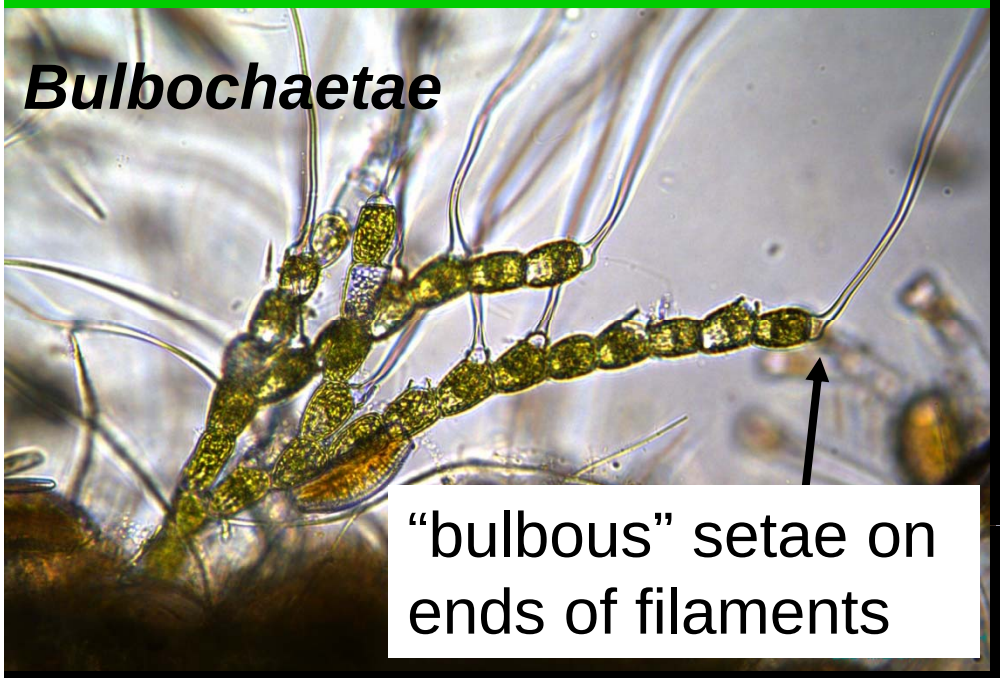


Cells often slightly irregular in shape



Other filamentous greens

Bulbochaetae



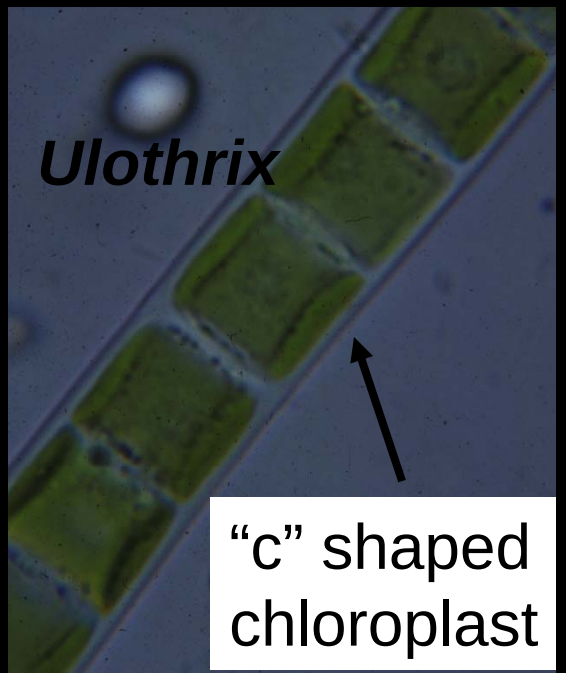
"bulbous" setae on ends of filaments

Stigeoclonium

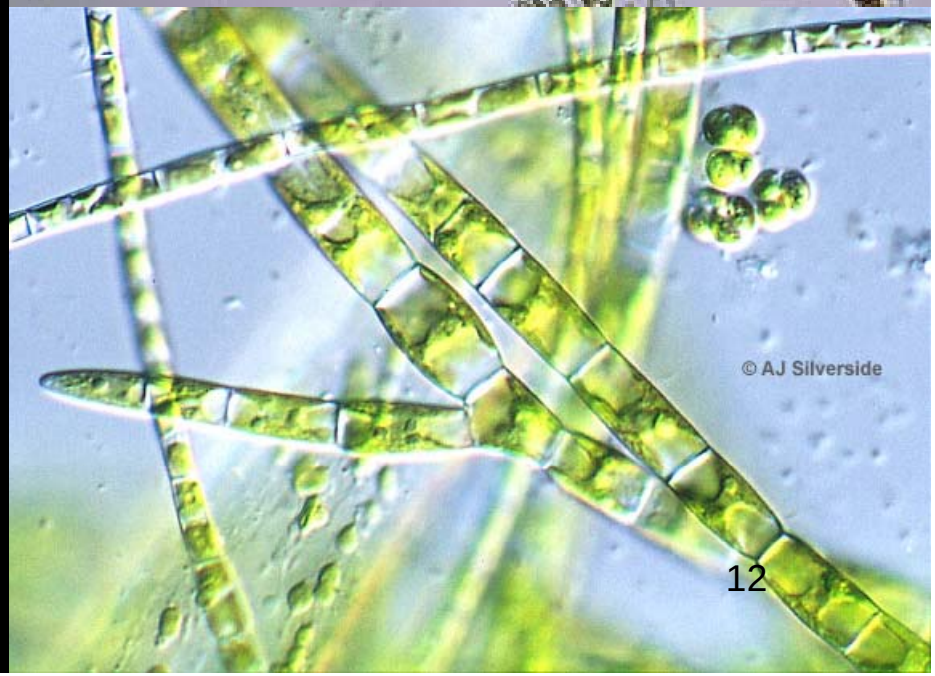
http://vis-pc.plantbio.ohiou.edu/algae/image/pages/Stigeoclonium.html

Gonatozygon

Ulothrix

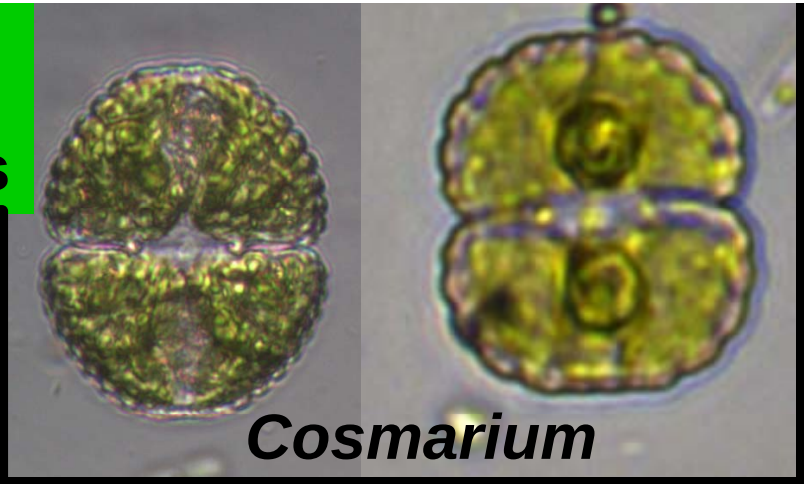


"c" shaped chloroplast

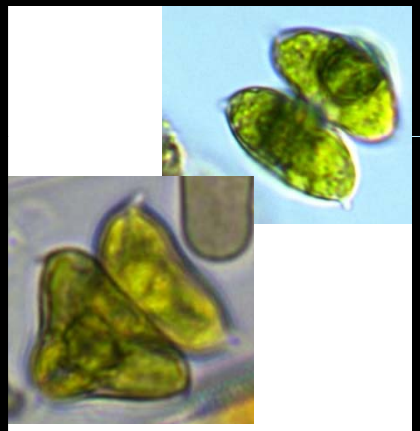


Non-filamentous greens - Desmids

Pleurotaenium



Cosmarium



Staurastrum

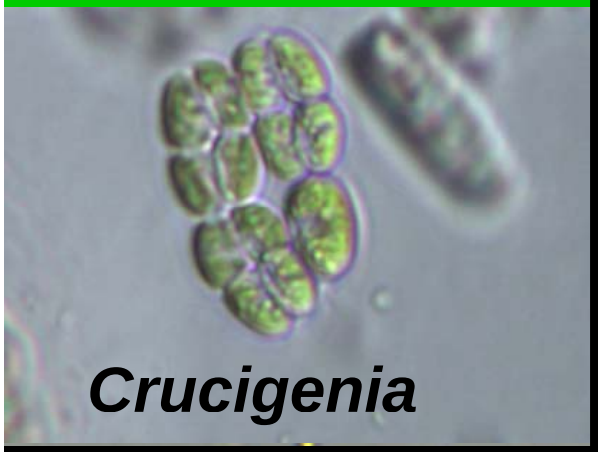
Spirotaenia

Closterium

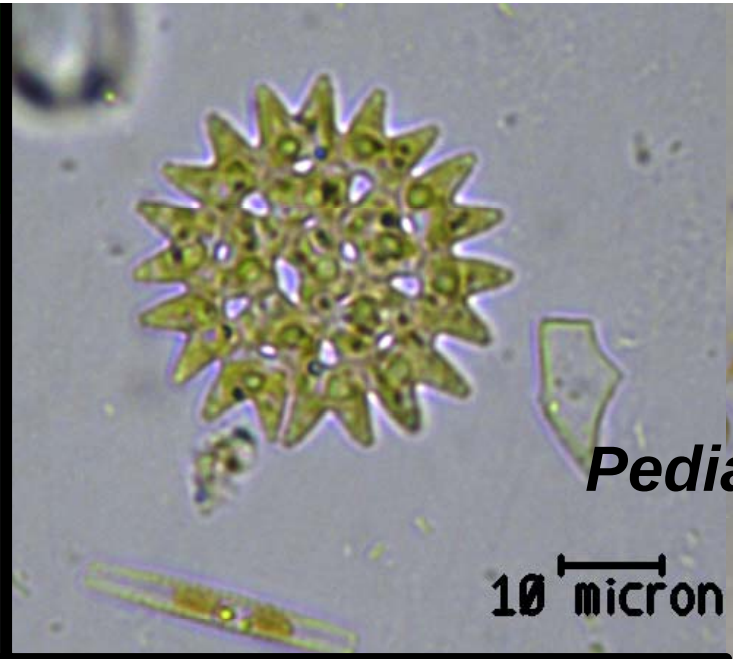
Micrasterias

Desmidium

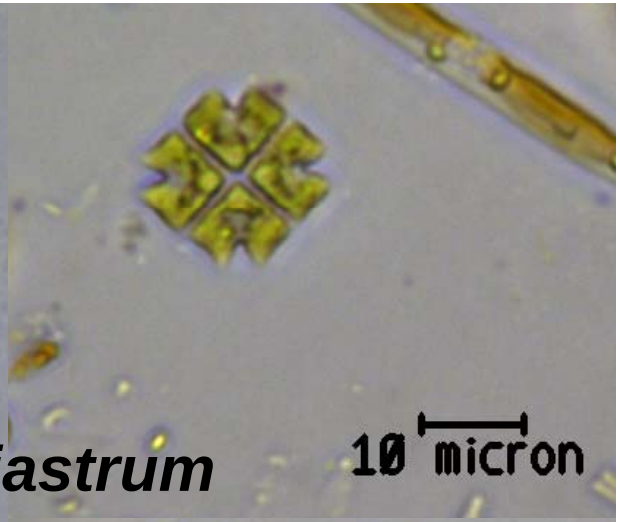
Non-filamentous greens

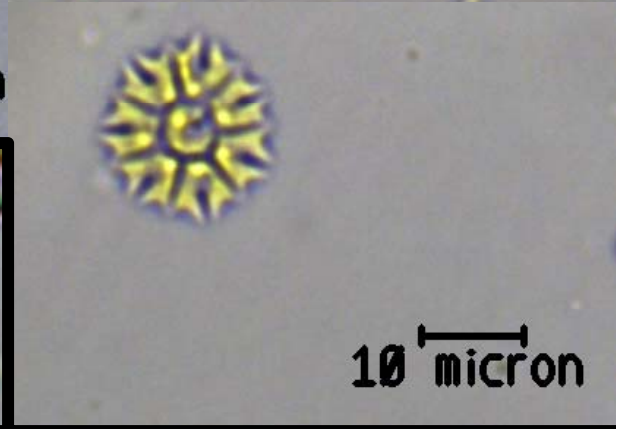


Crucigenia



Pediastrum





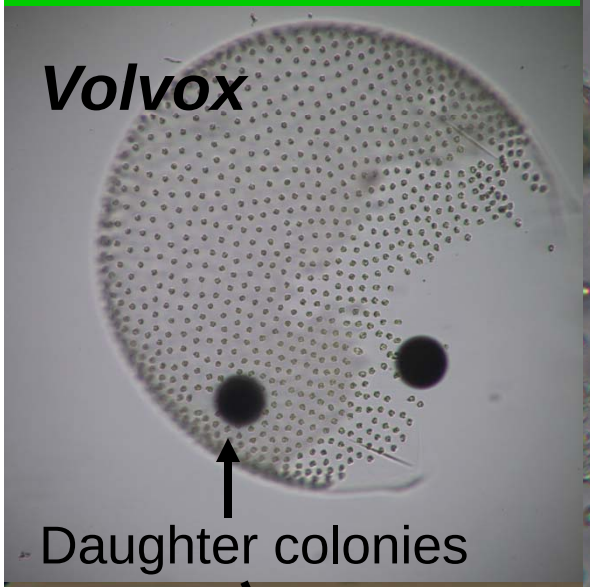
Scenedesmus (*Desmodesmus* if it has spines)

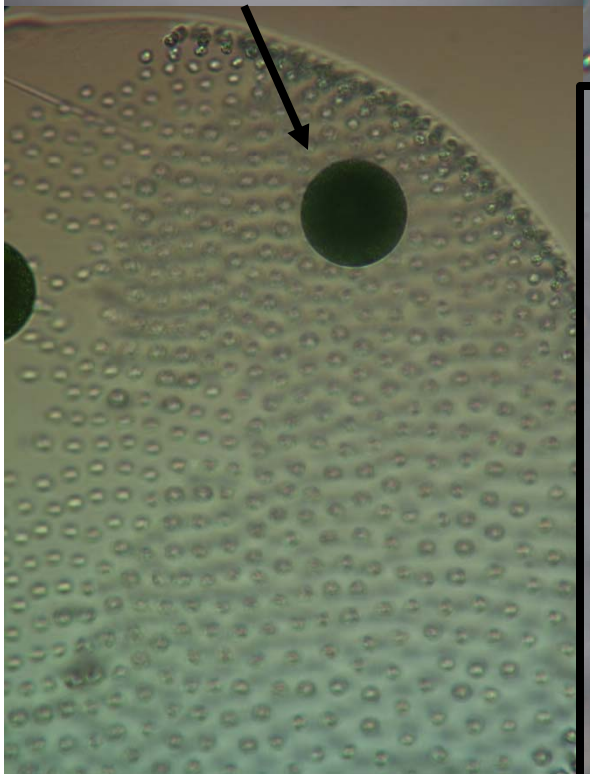
Tetraedron

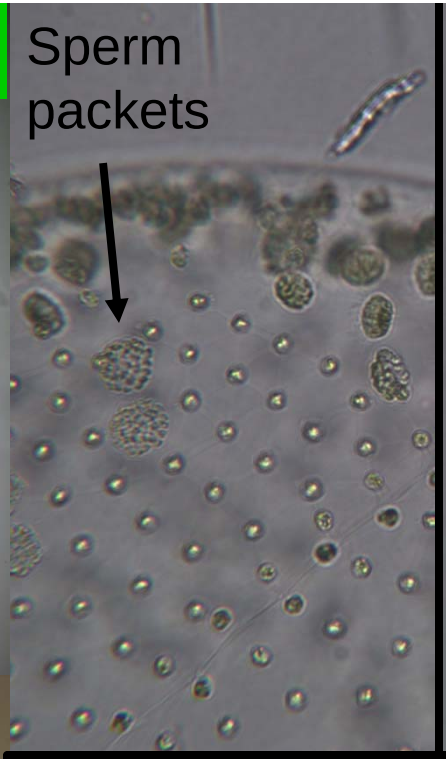
Oocystis

Characium

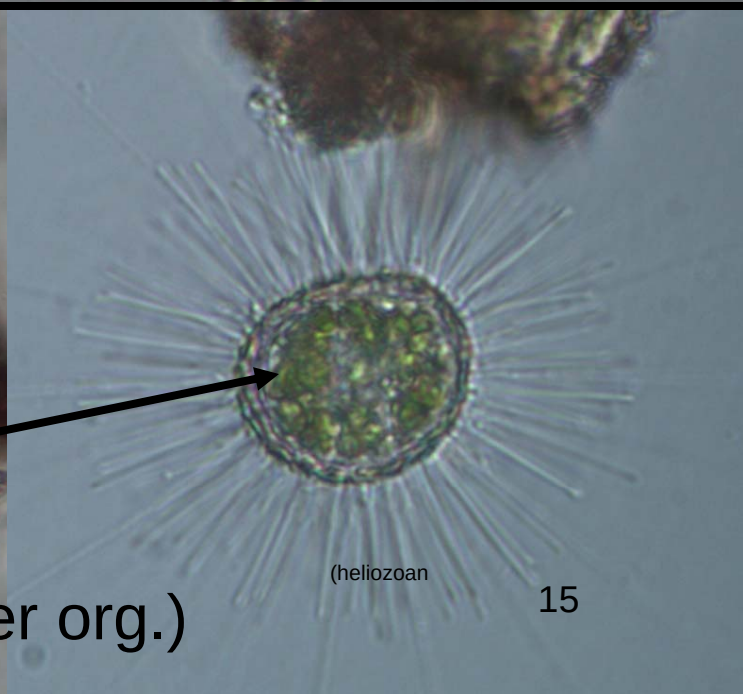
Other greens





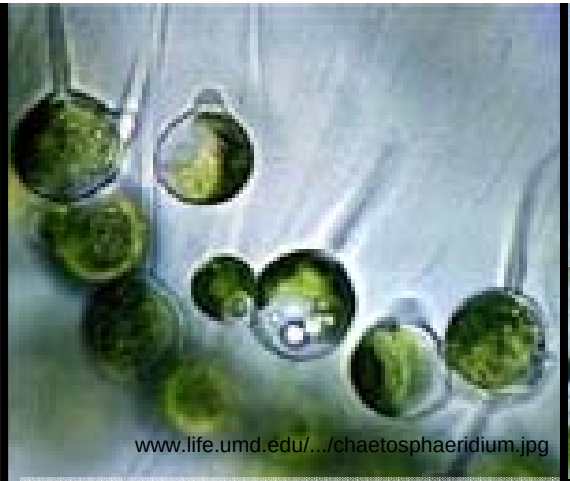


Zoochlorella
(found inside another org.)



Other green algae

Pandorina

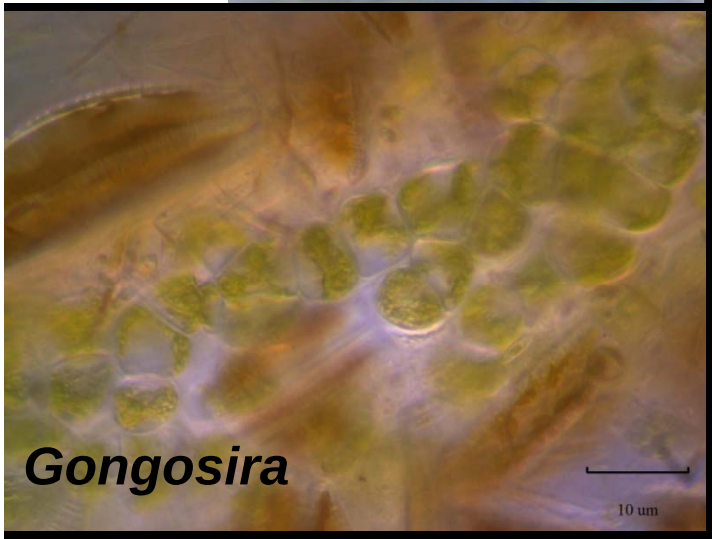


www.life.umd.edu/.../chaetosphaeridium.jpg

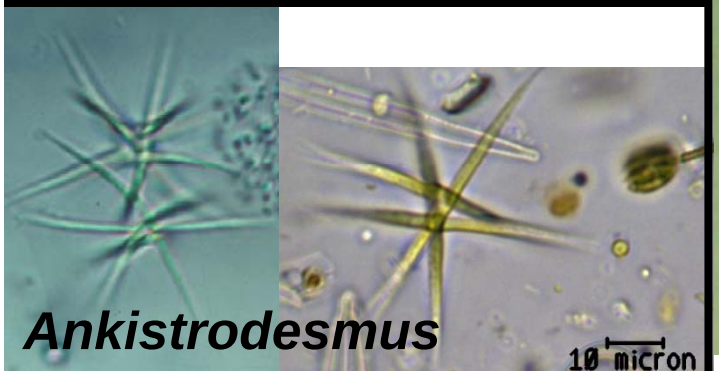
Chaetosphaeridium

Gloeocystis

Aphanochaete



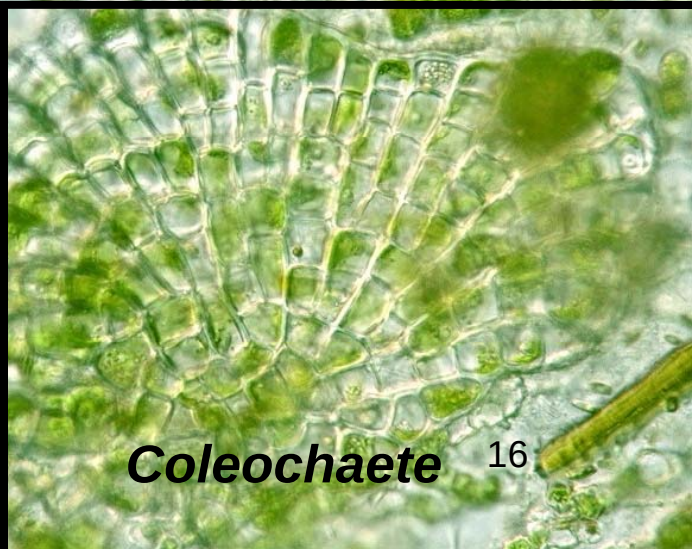
Gongosira



Ankistrodesmus

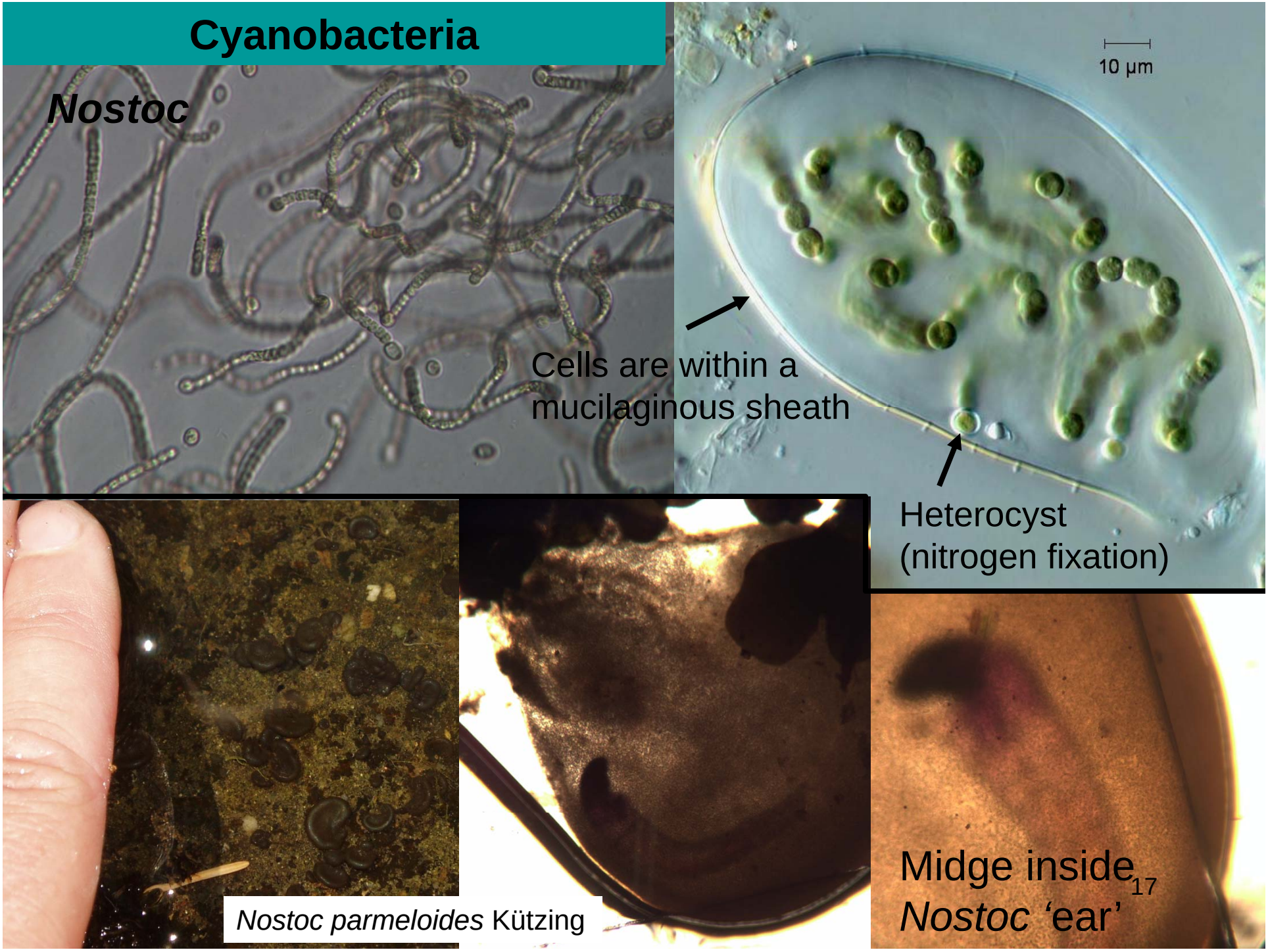
www.biol.tsukuba.ac.jp/.../g/chl/dunaliella.jpg

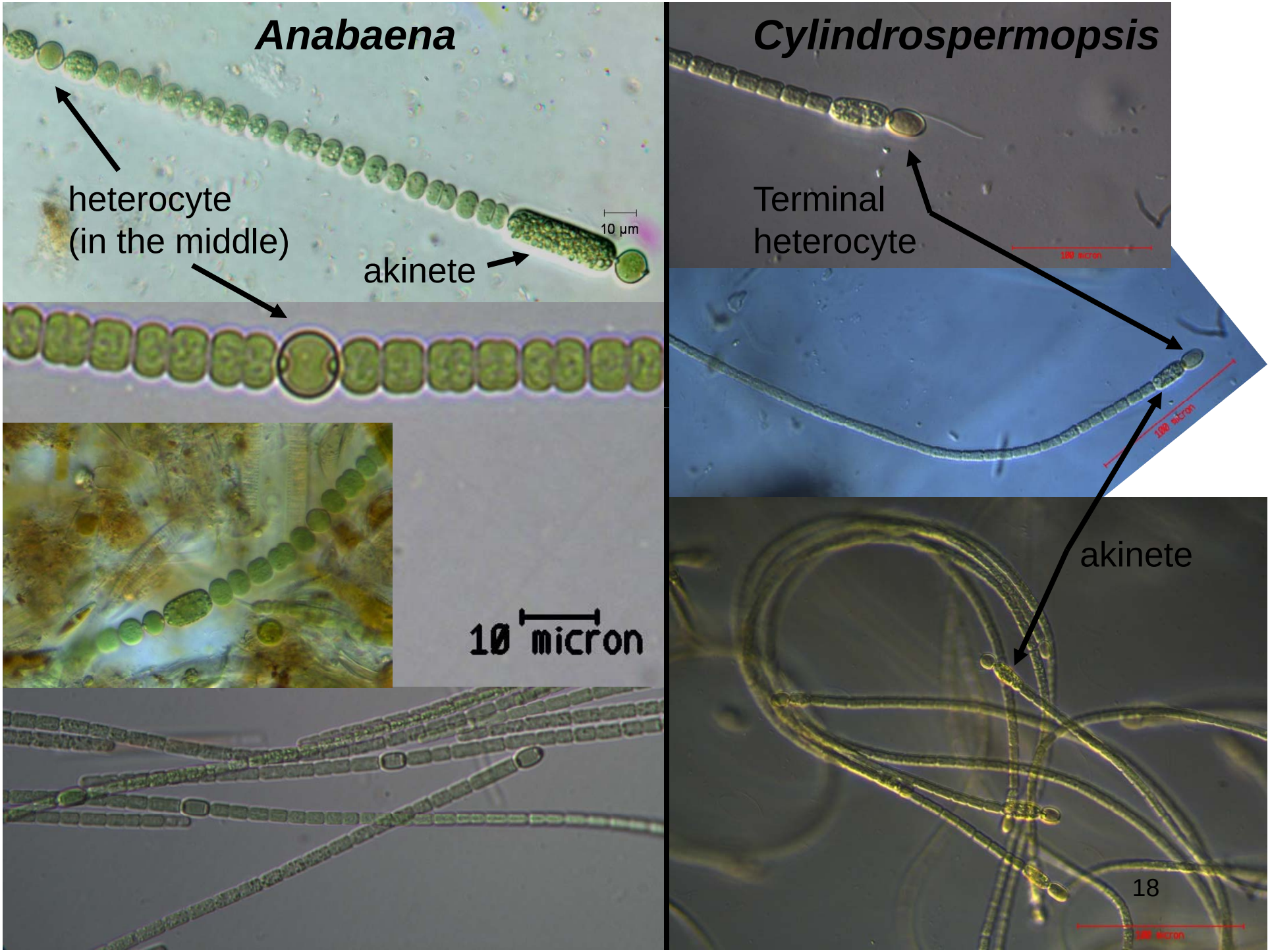
Dunaliella



Coleochaete

Cyanobacteria

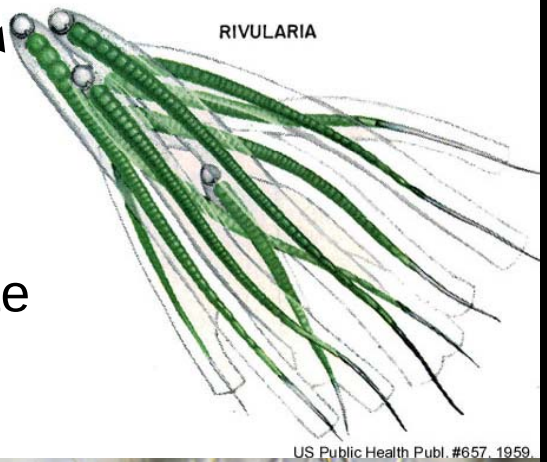


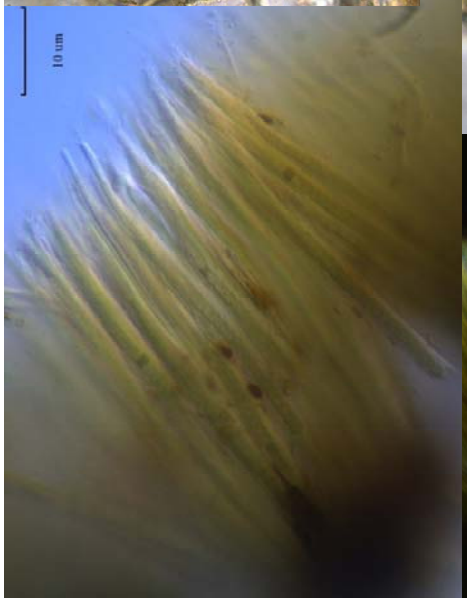

Anabaena
heterocyte
(in the middle)
akinete
10 µm
10 micron
Cylindrospermopsis
Terminal
heterocyte
akinete

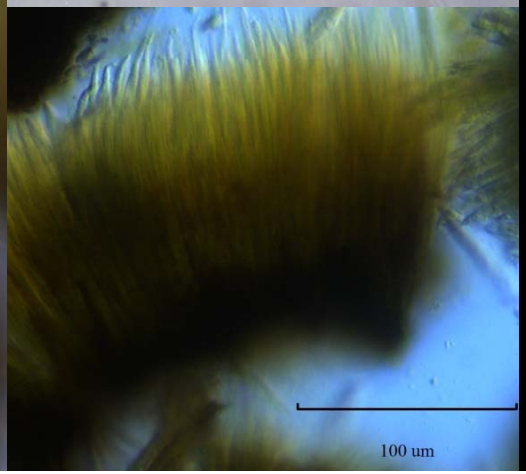
Rivulariales

Rivularia

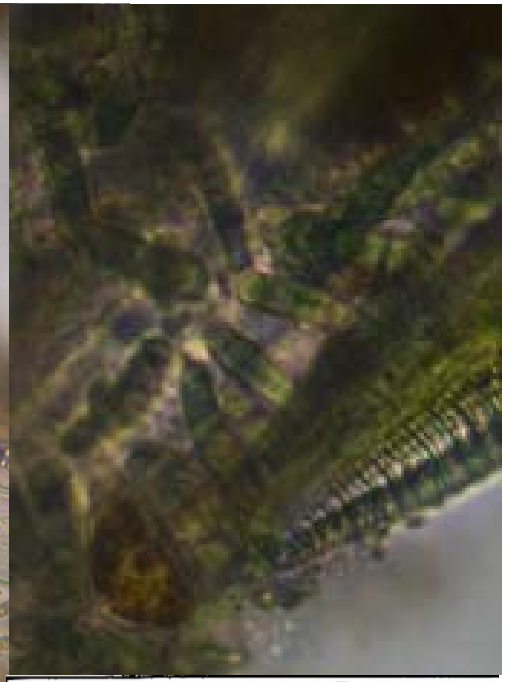
terminal heterocyte



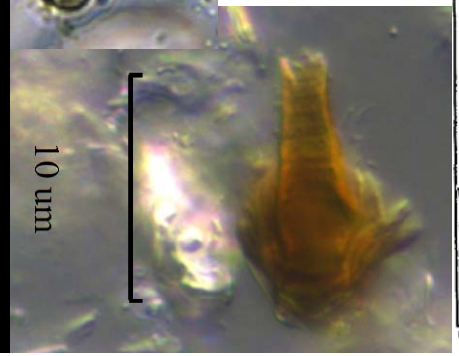


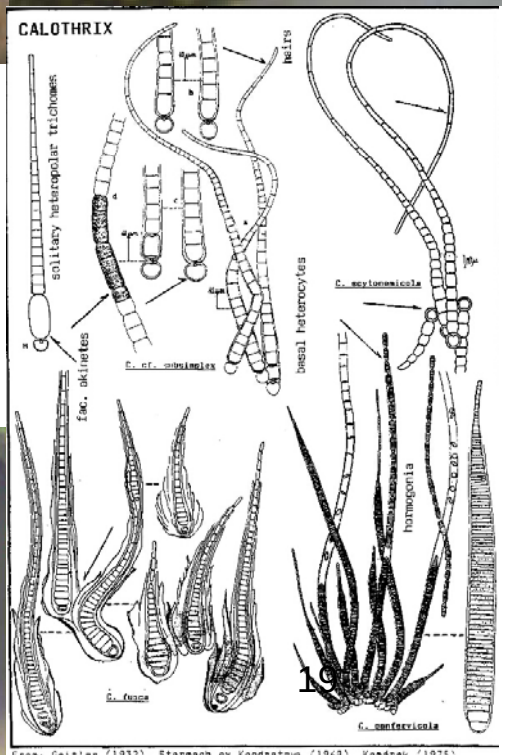


Calothrix

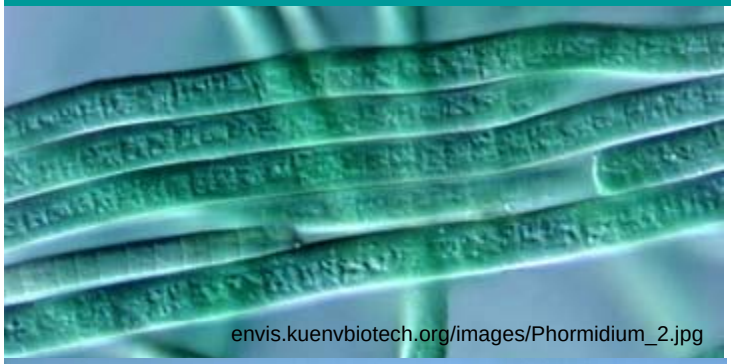


Solitary trichome



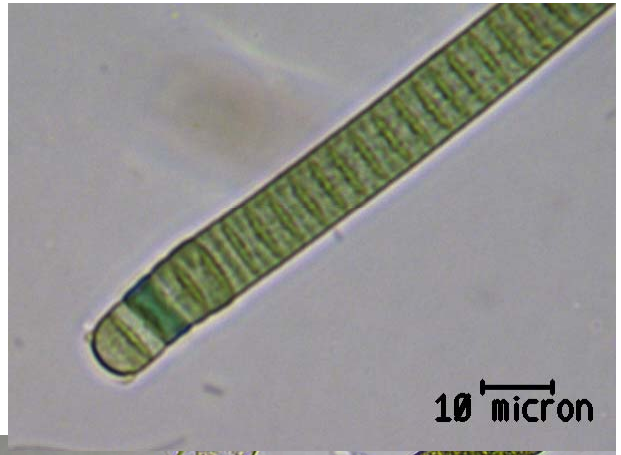


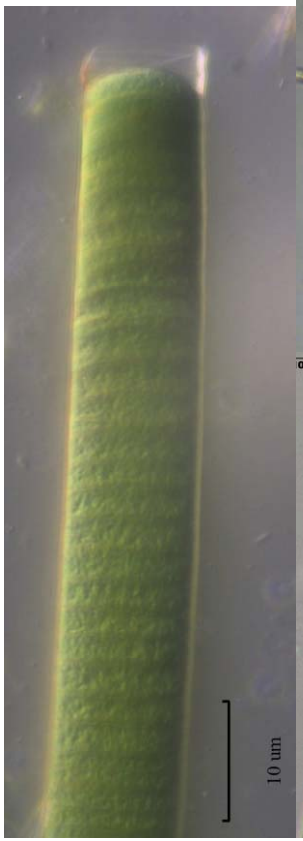
Oscillatoriales

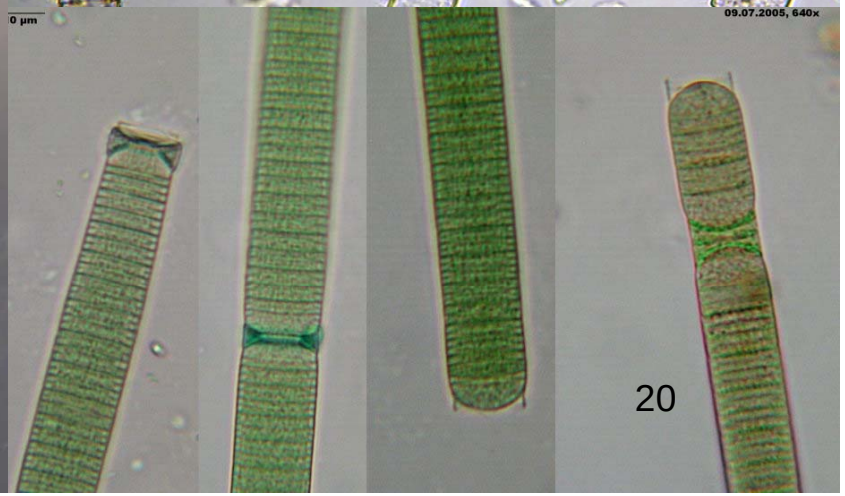

envis.kuenvbiotech.org/images/Phormidium_2.jpg

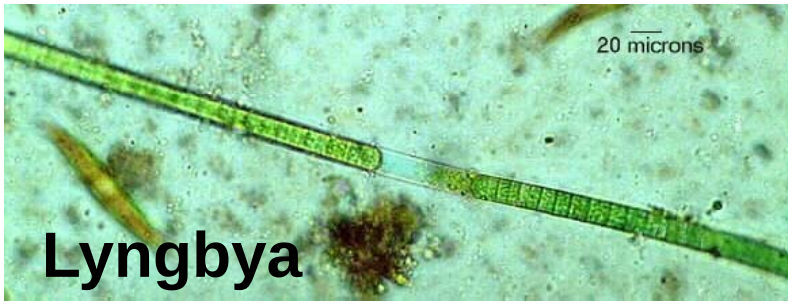
Phormidium

Oscillatoria

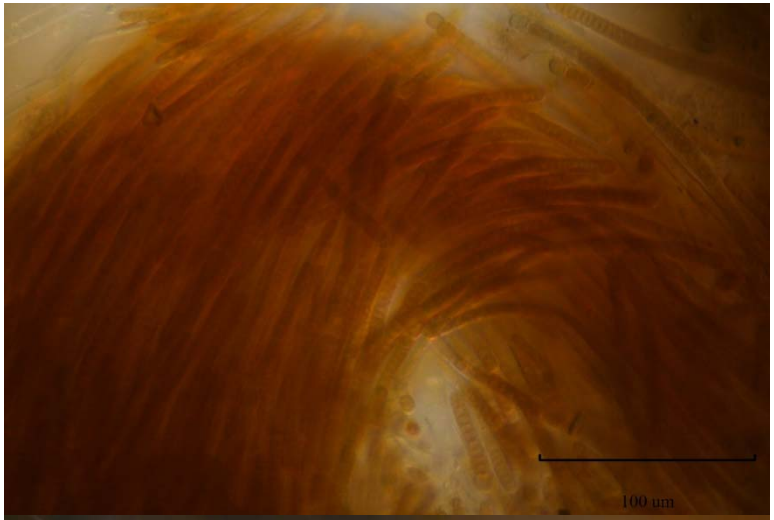


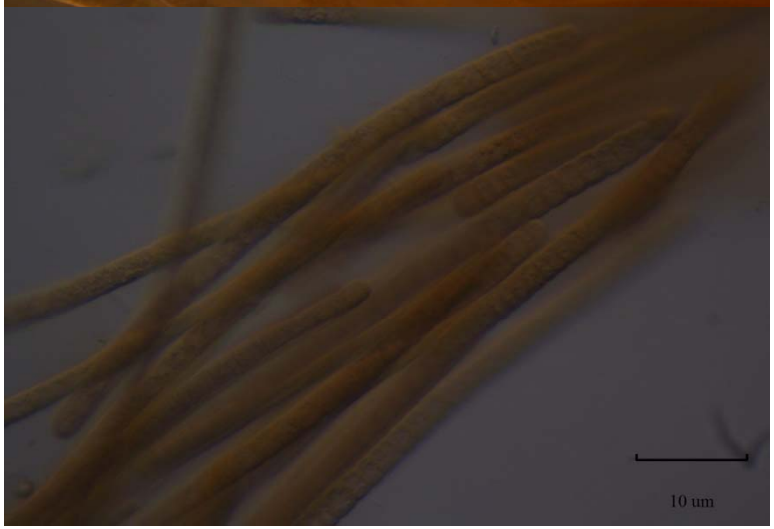


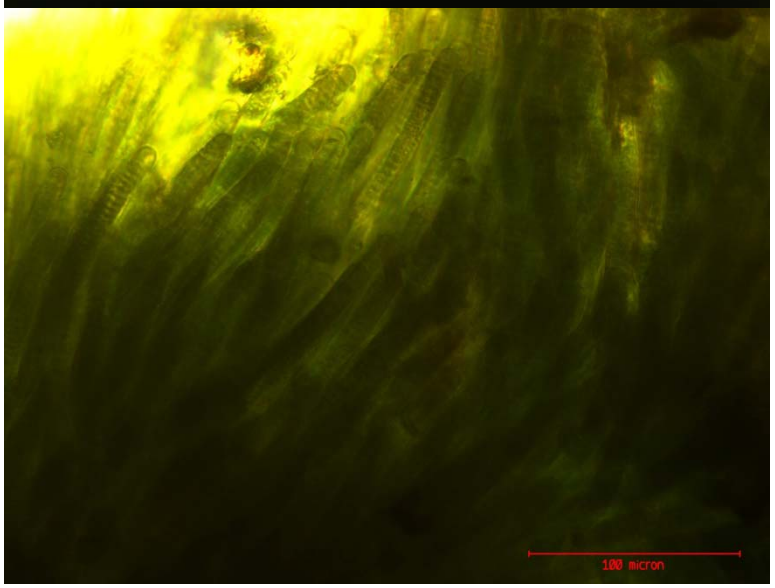




Lyngbya

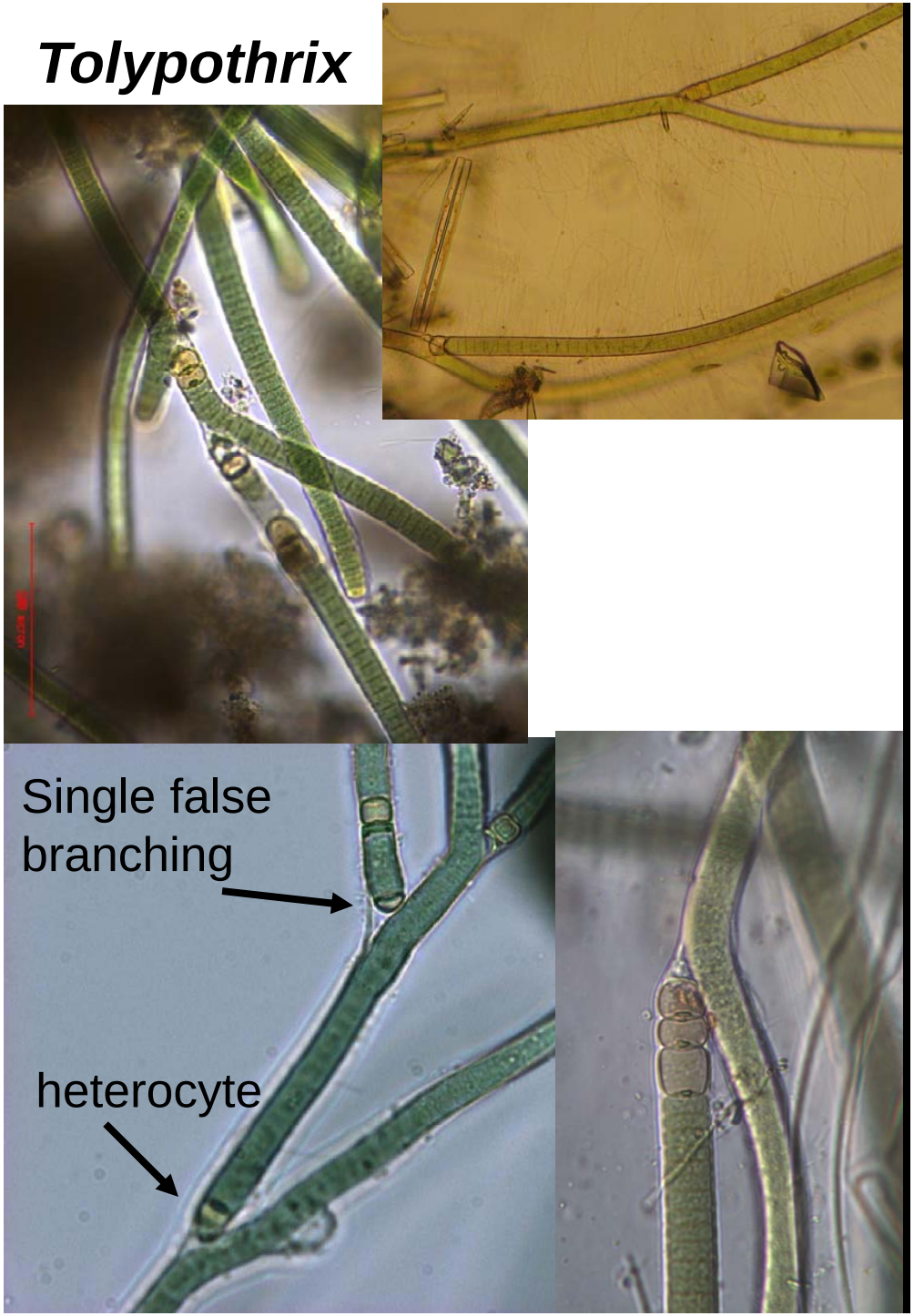




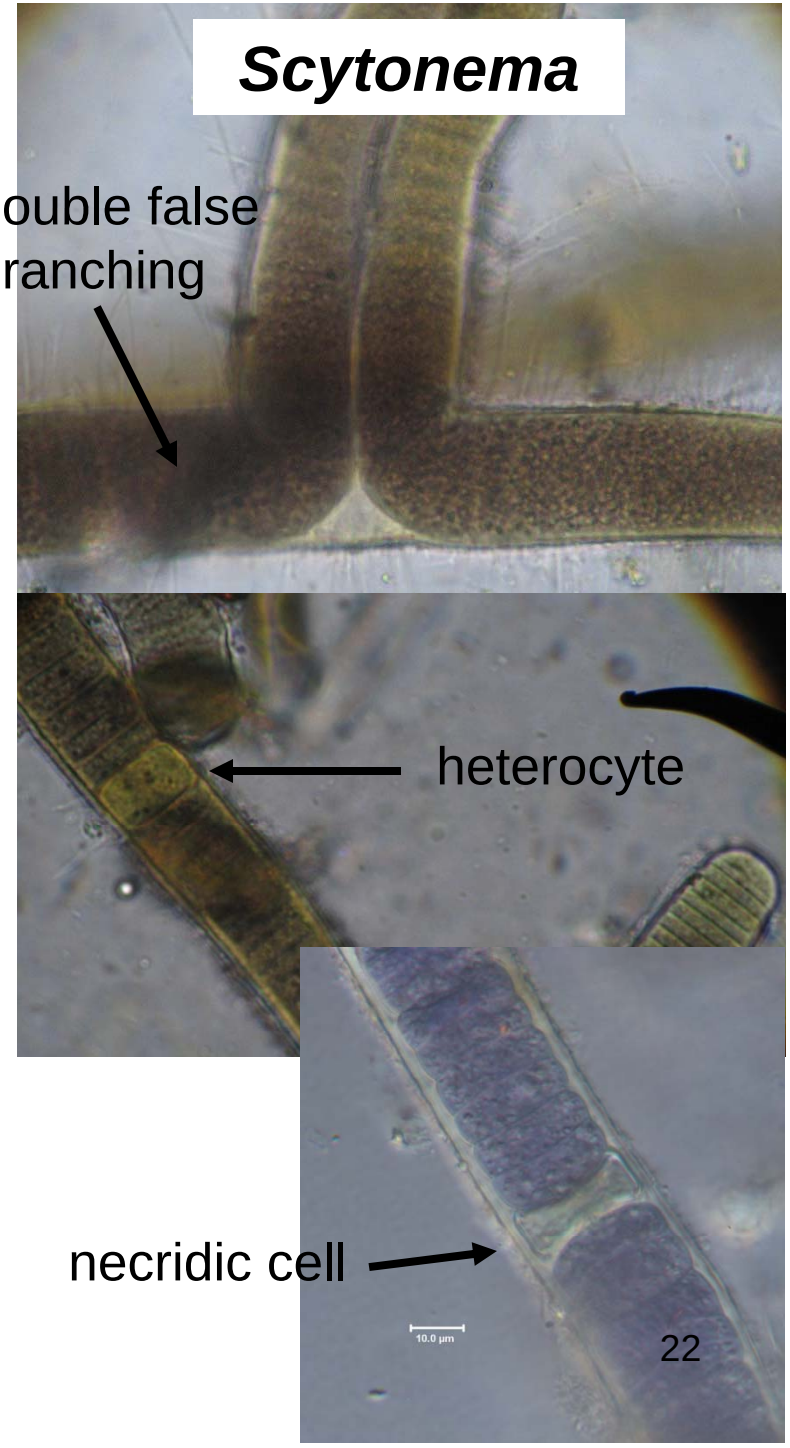


Other fixing cyanobacteria

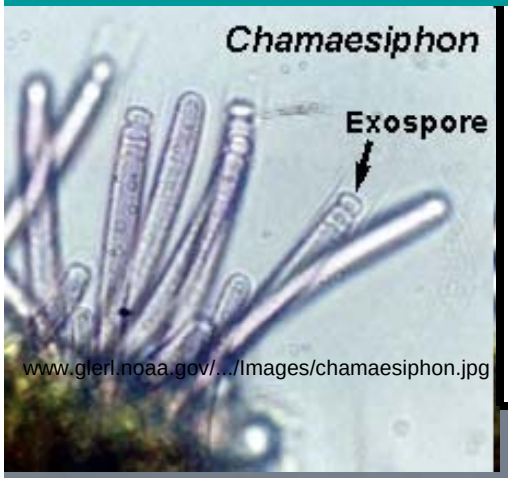
Tolypothrix

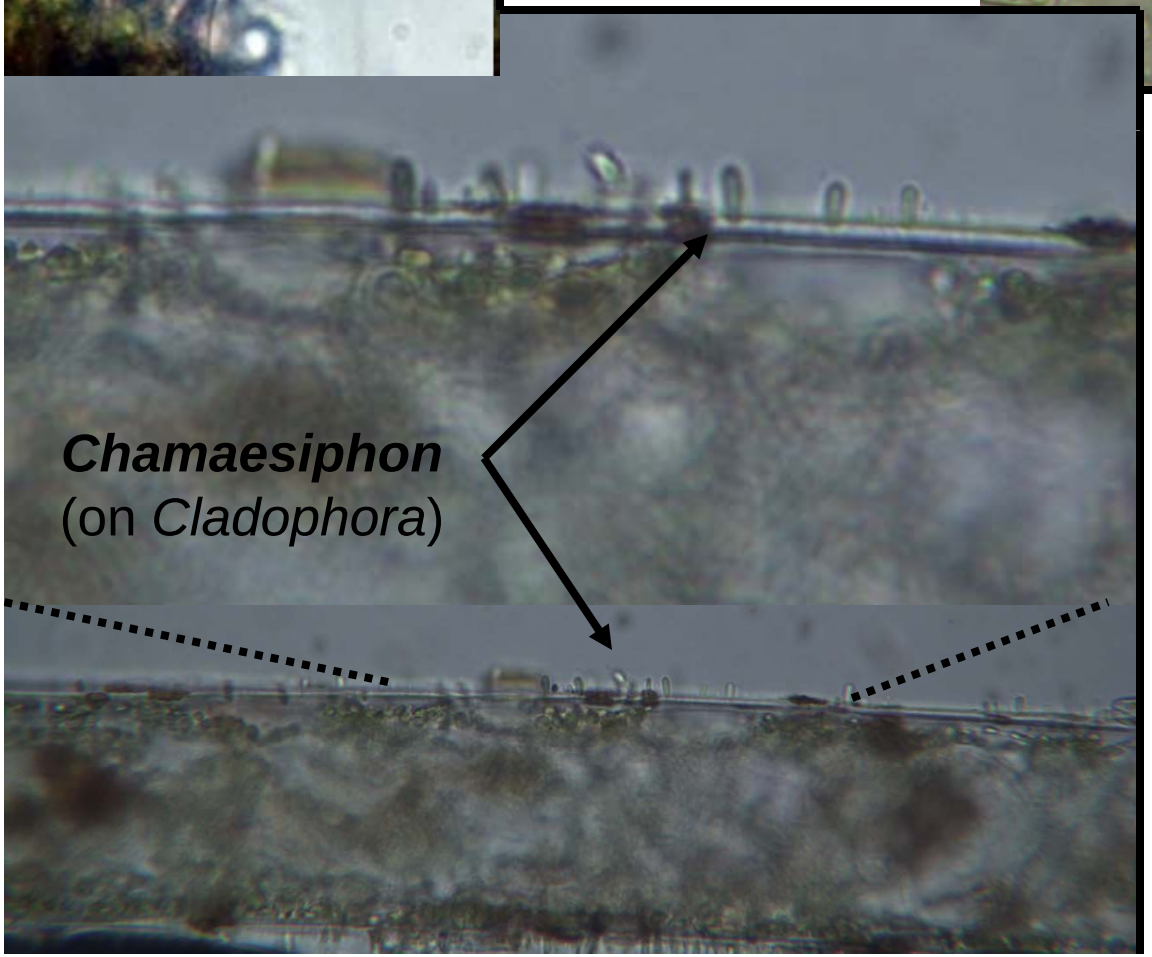


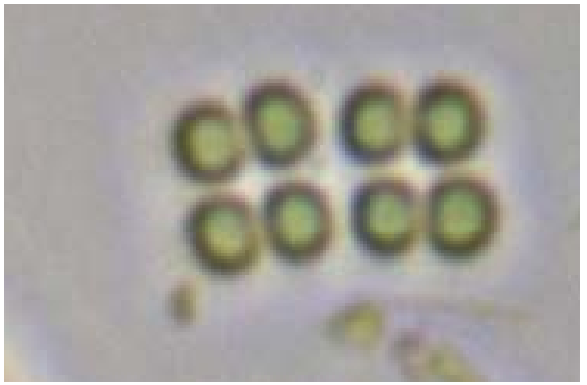
Scytonema



Other Cyanobacteria



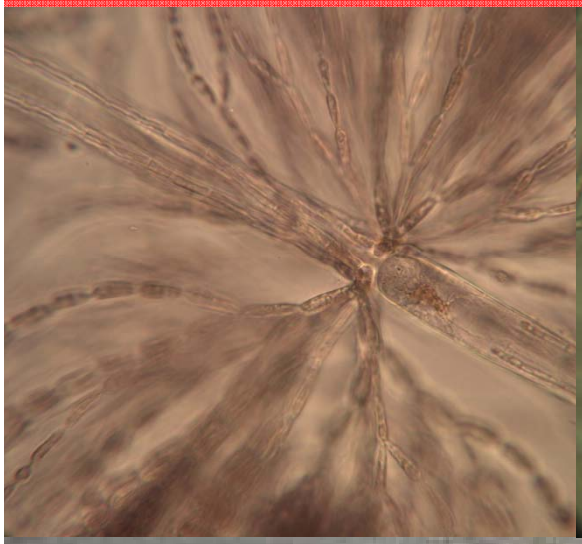


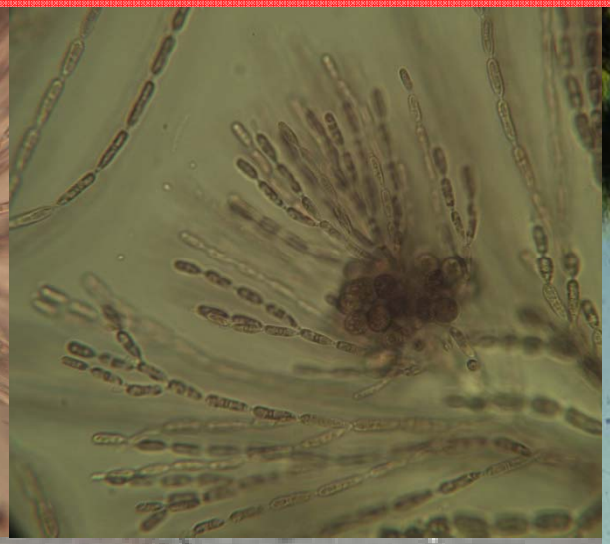


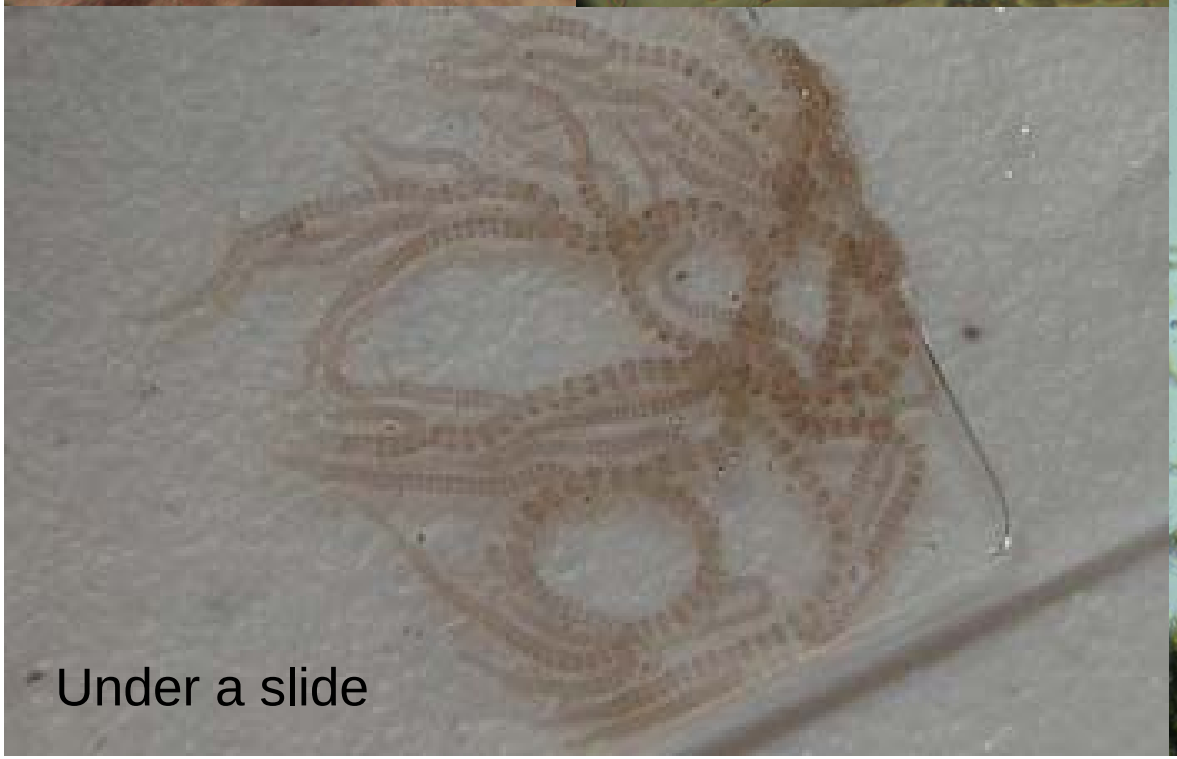
Merismopedia

Rhodophyta – red algae: ***Batrachospermum***

(sometimes called ‘frog-spawn’ algae after its’ appearance)







Under a slide

Chrysophyta

Mallomonas

Synura

Chrysosphaerella longispina

Dinobryon

Euglenophyta

Trachelomonas

Euglena

Phacus

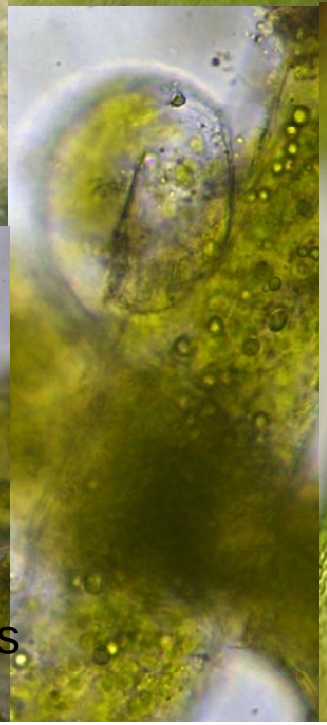
Dinoflagellates

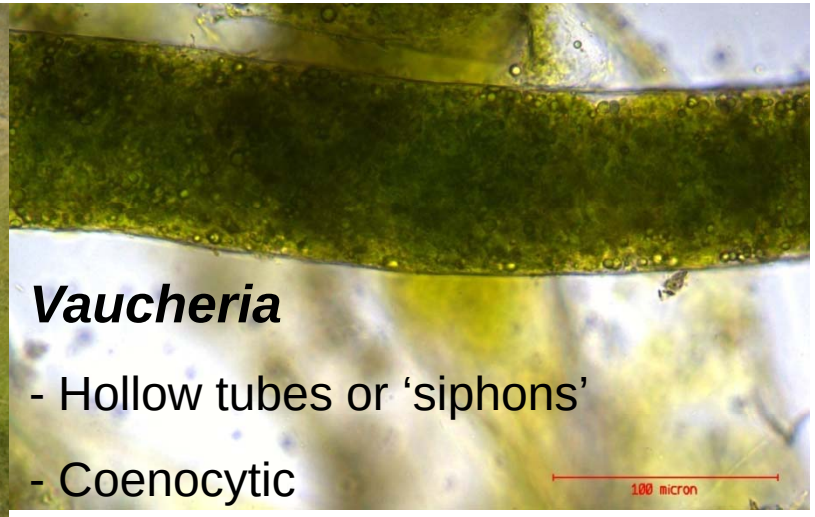
Gymnodinium

Xanthophyceae (yellow-green algae)

Feels like cat fur,
or a felt-like mat.

Reproductive structures



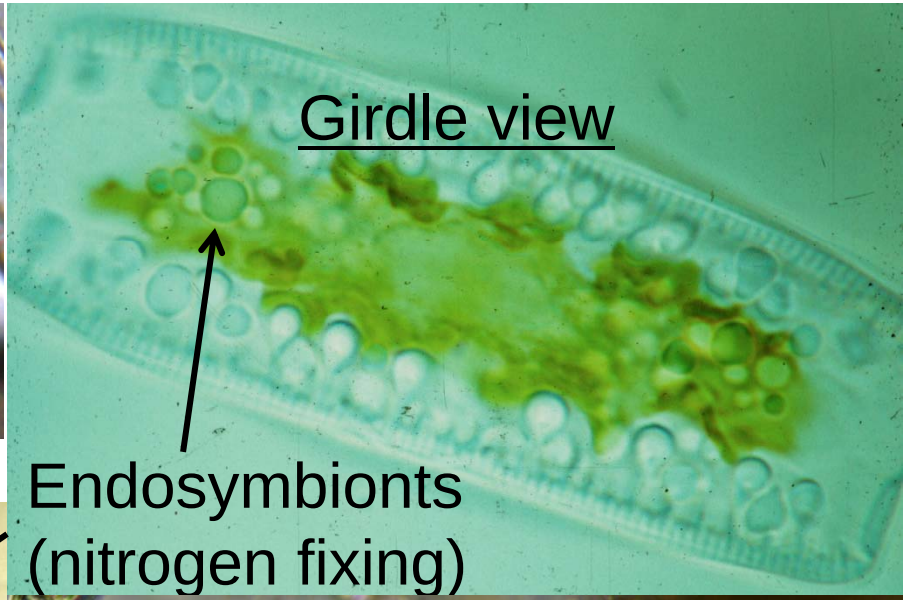


Vaucheria

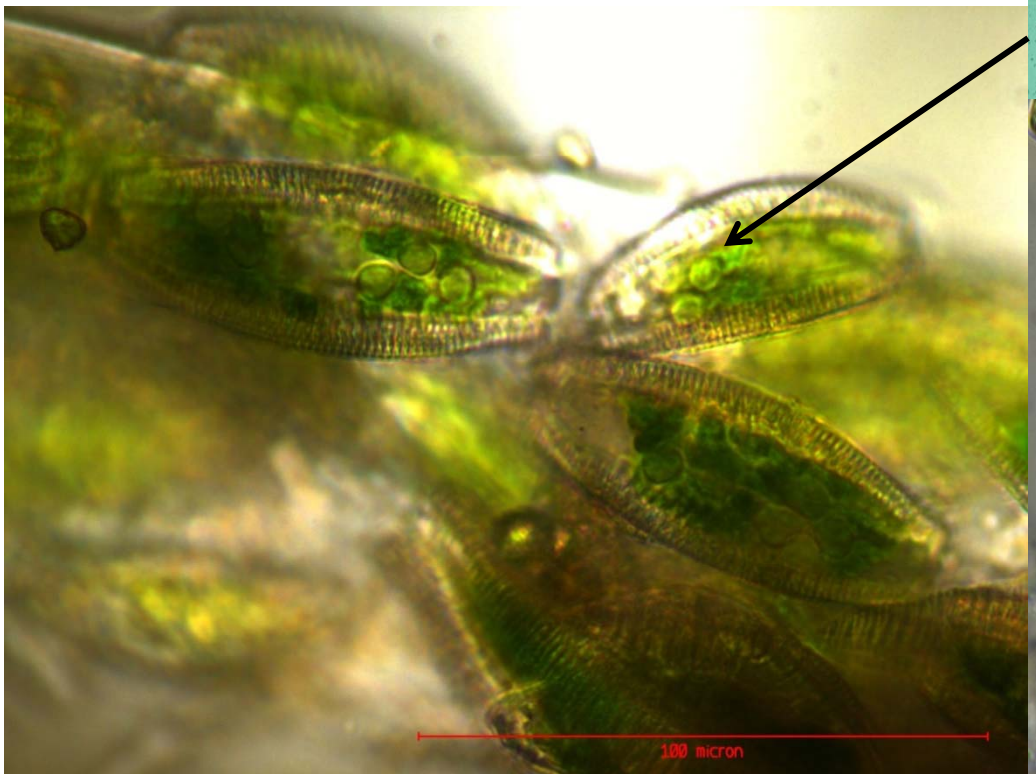
- Hollow tubes or ‘siphons’
- Coenocytic

Chloroplasts often align on the outside of the cell where the most light is.

Bacillariophyta
(diatoms)

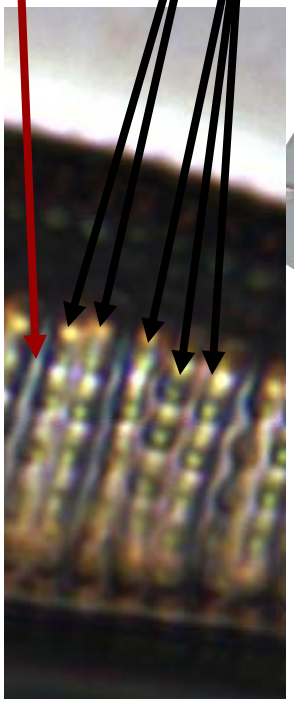


Endosymbionts
(nitrogen fixing)

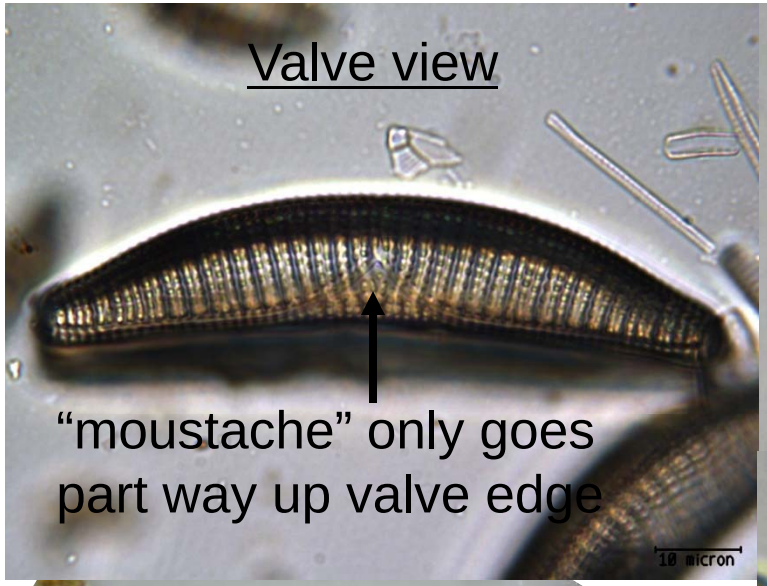


Epithemia turgida

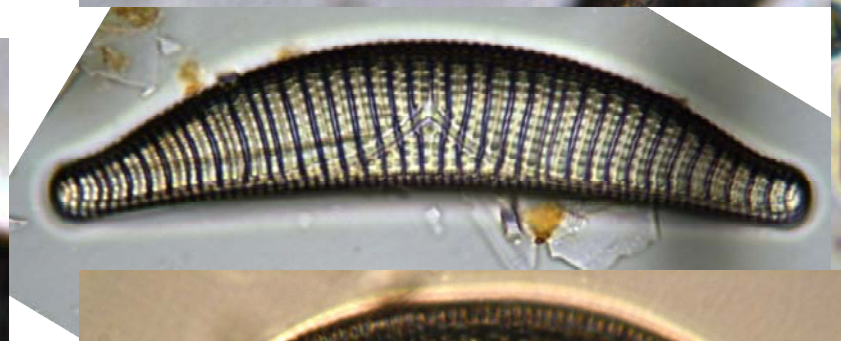
3 or fewer rows of striae between fibulae



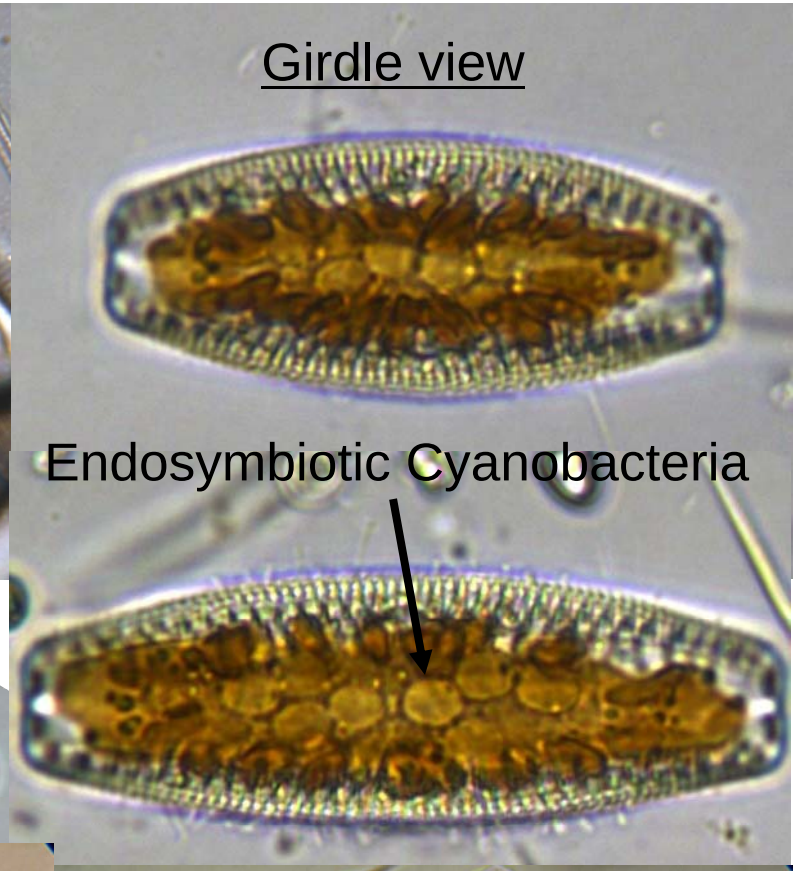
Valve view



"moustache" only goes part way up valve edge



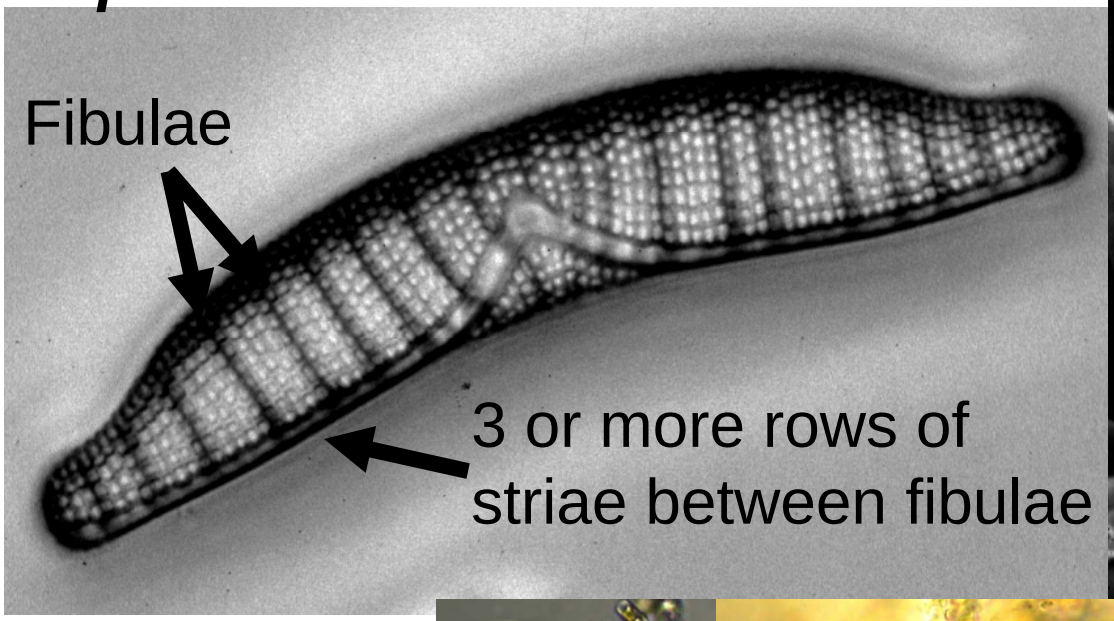
Girdle view



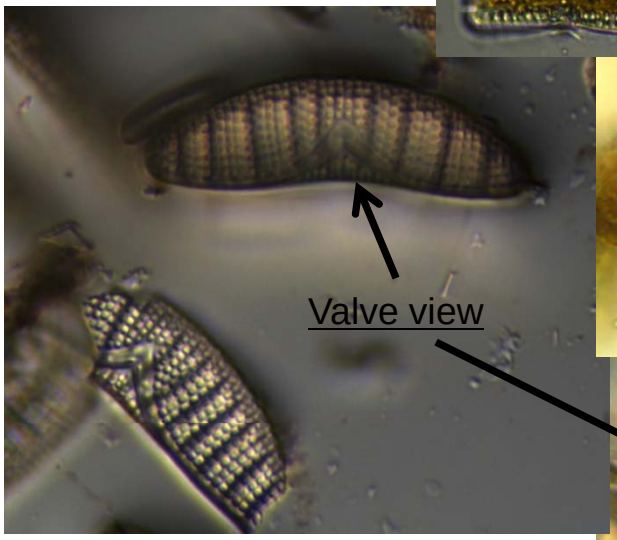
Endosymbiotic Cyanobacteria

Epithemia turgida Ehrenberg (Kützing)

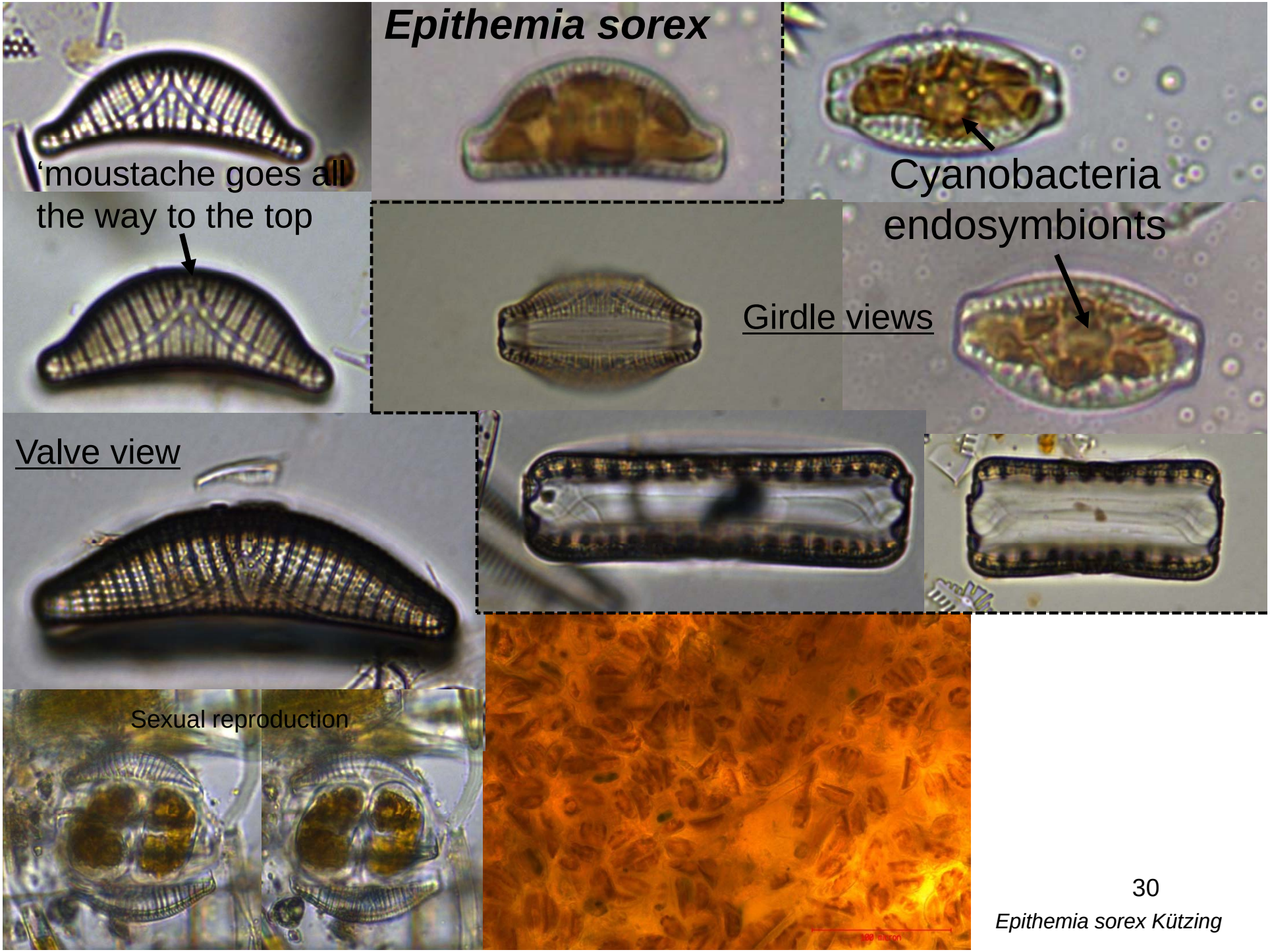
Epithemia adnata



Girdle view

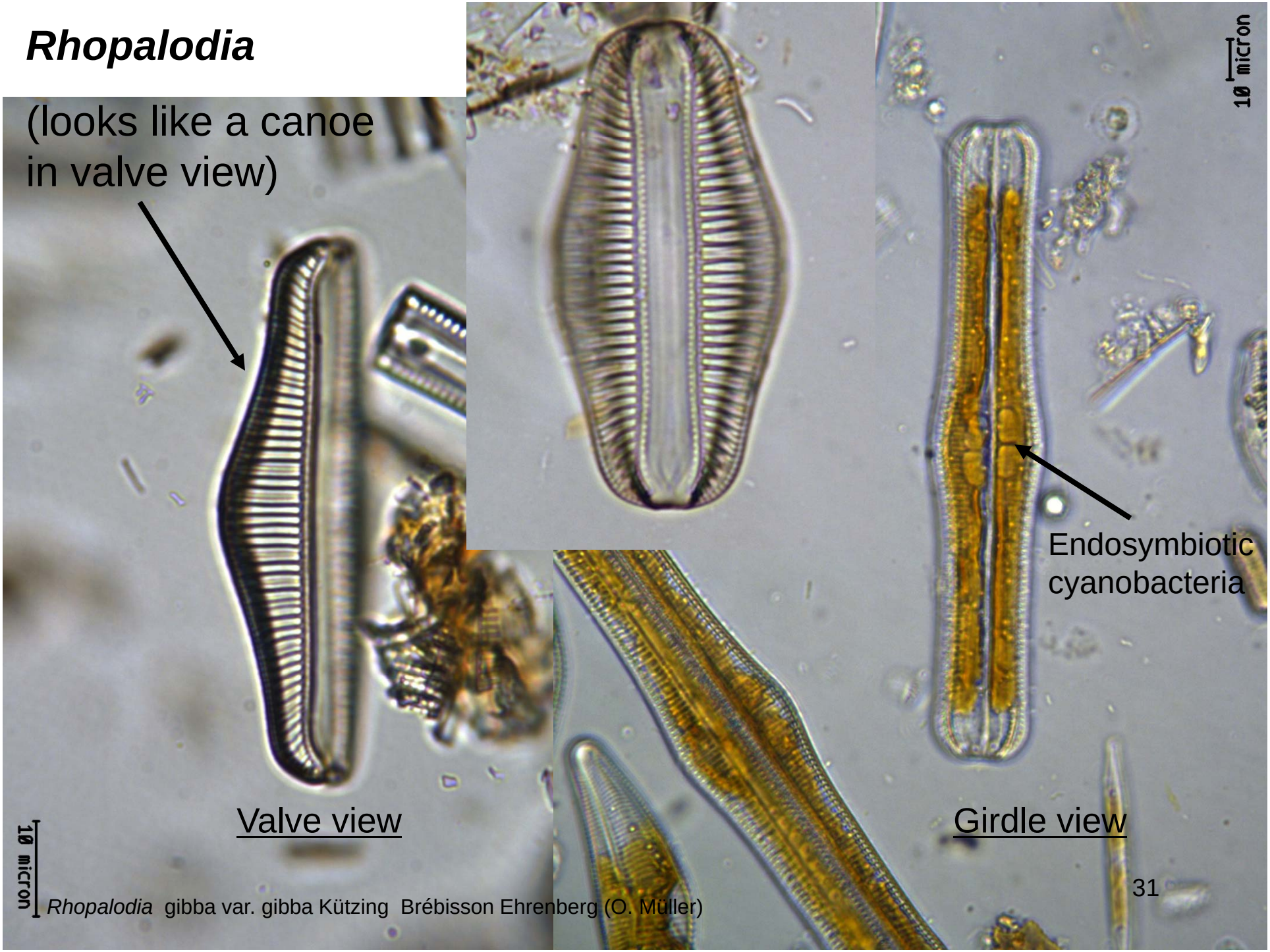


Epithemia adnata (Kützing) Brébisson



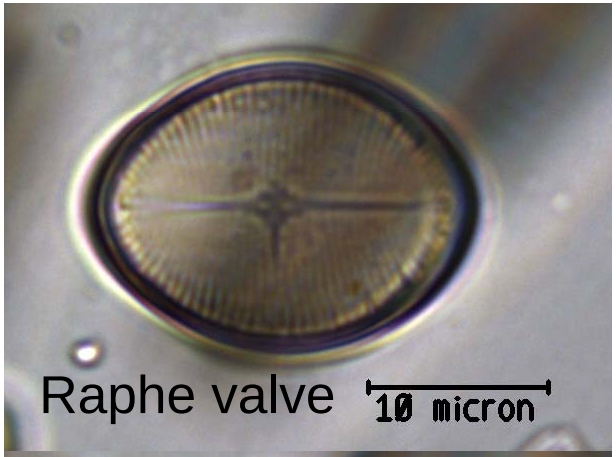
Epithemia sorex Kützing

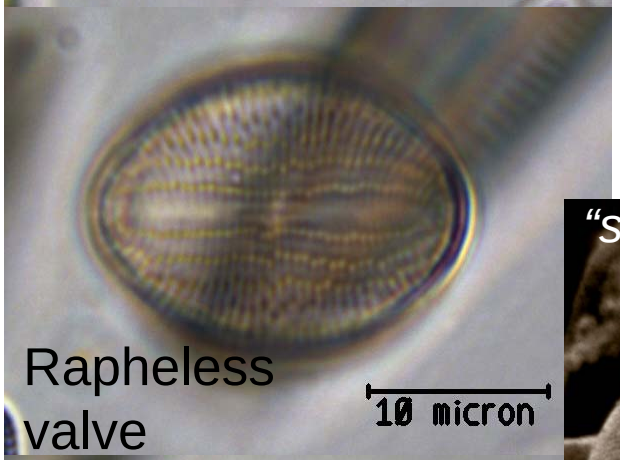
Rhopalodia

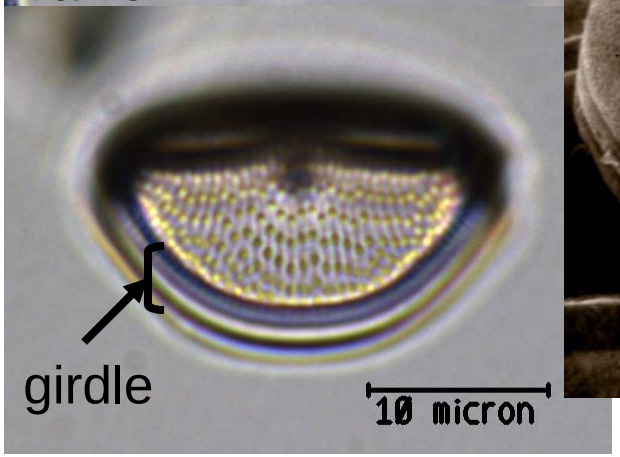


Rhopalodia gibba var. gibba Kützing Brébisson Ehrenberg (O. Müller)

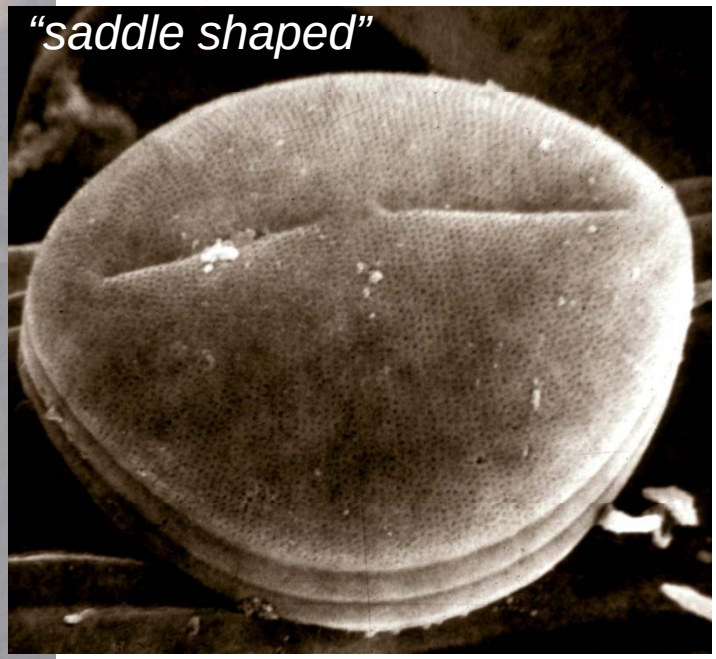
Cocconeis pediculus





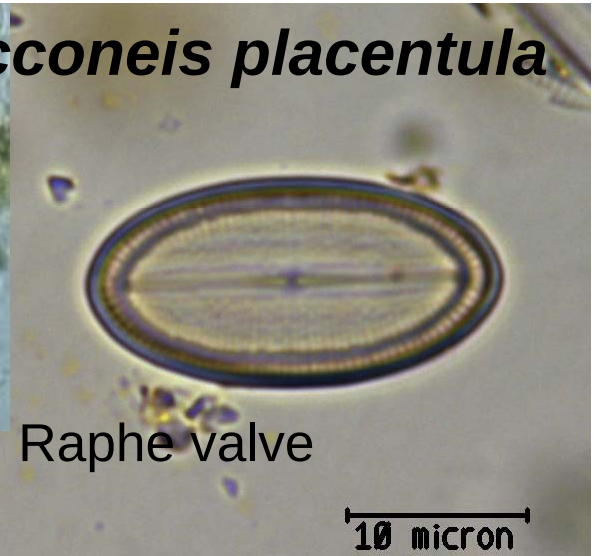


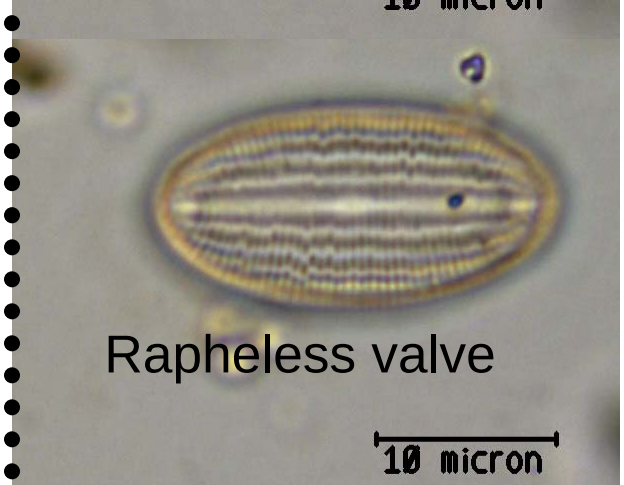
Cocconeis spp.

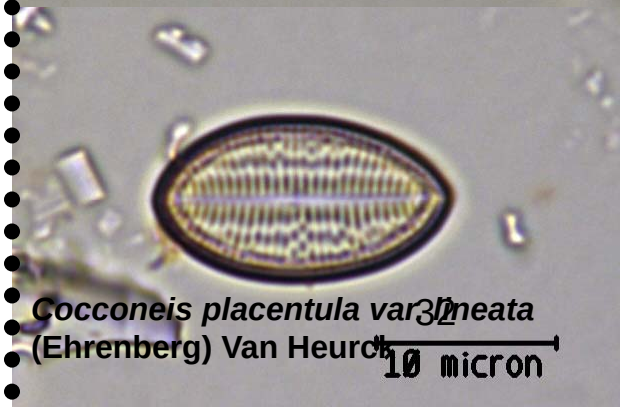


***Cocconeis pediculus* Ehrenberg**

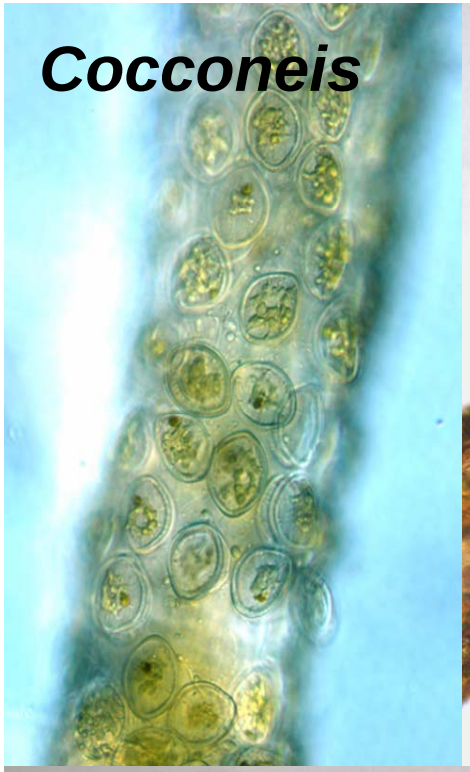
Cocconeis placentula



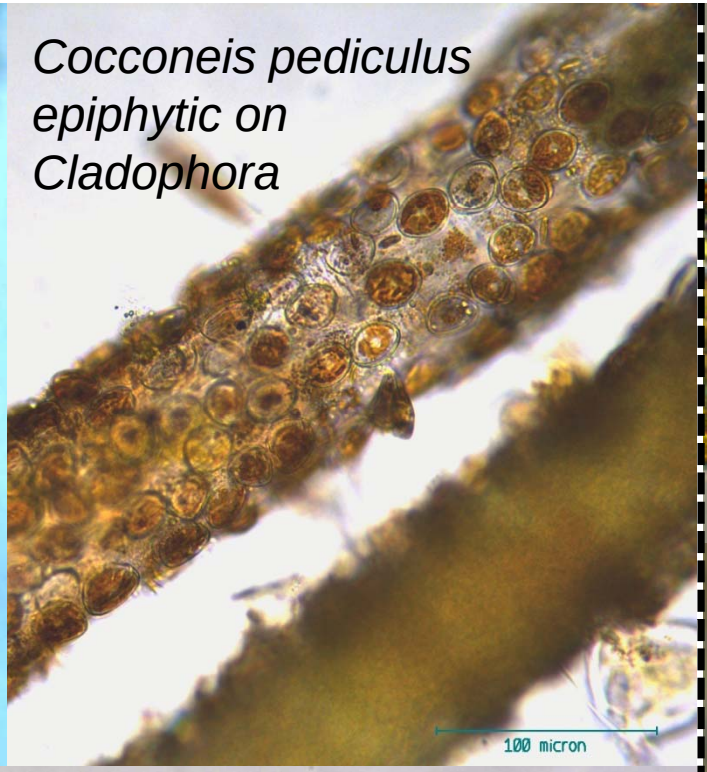




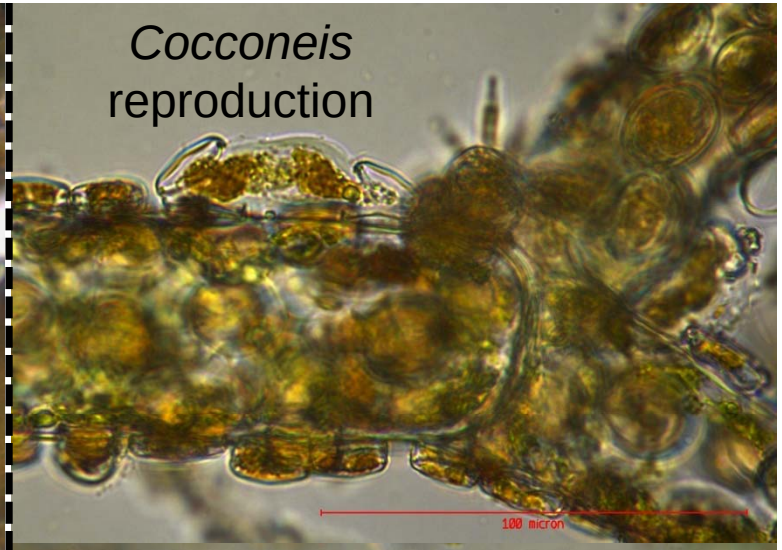
***Cocconeis placentula* var. *lineata* (Ehrenberg) Van Heurck**



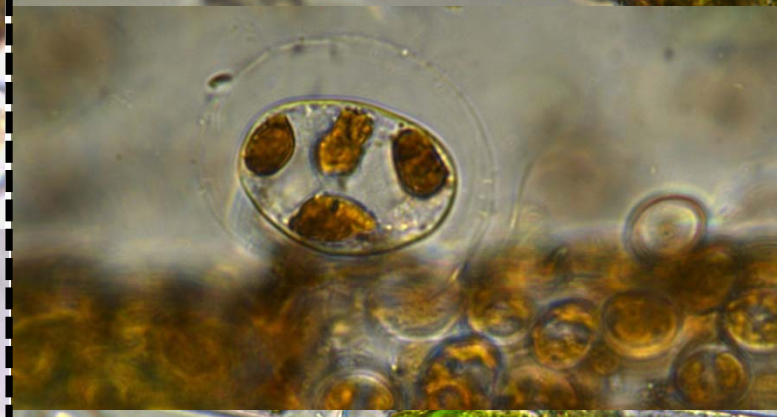
Cocconeis

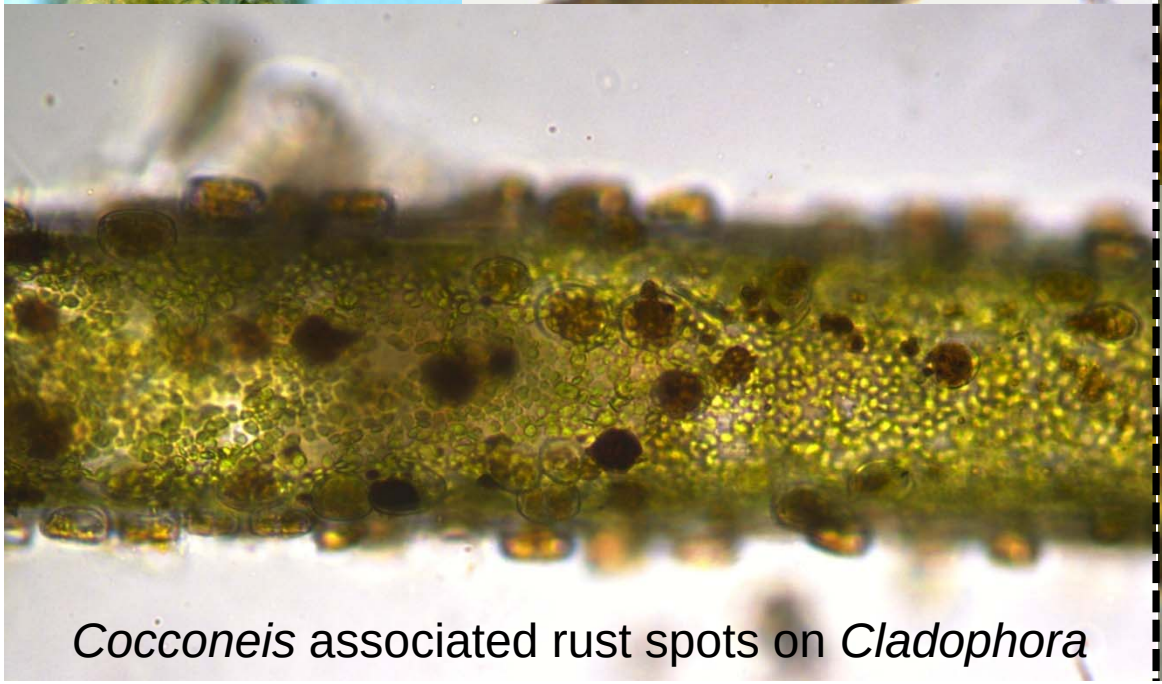


Cocconeis pediculus epiphytic on Cladophora



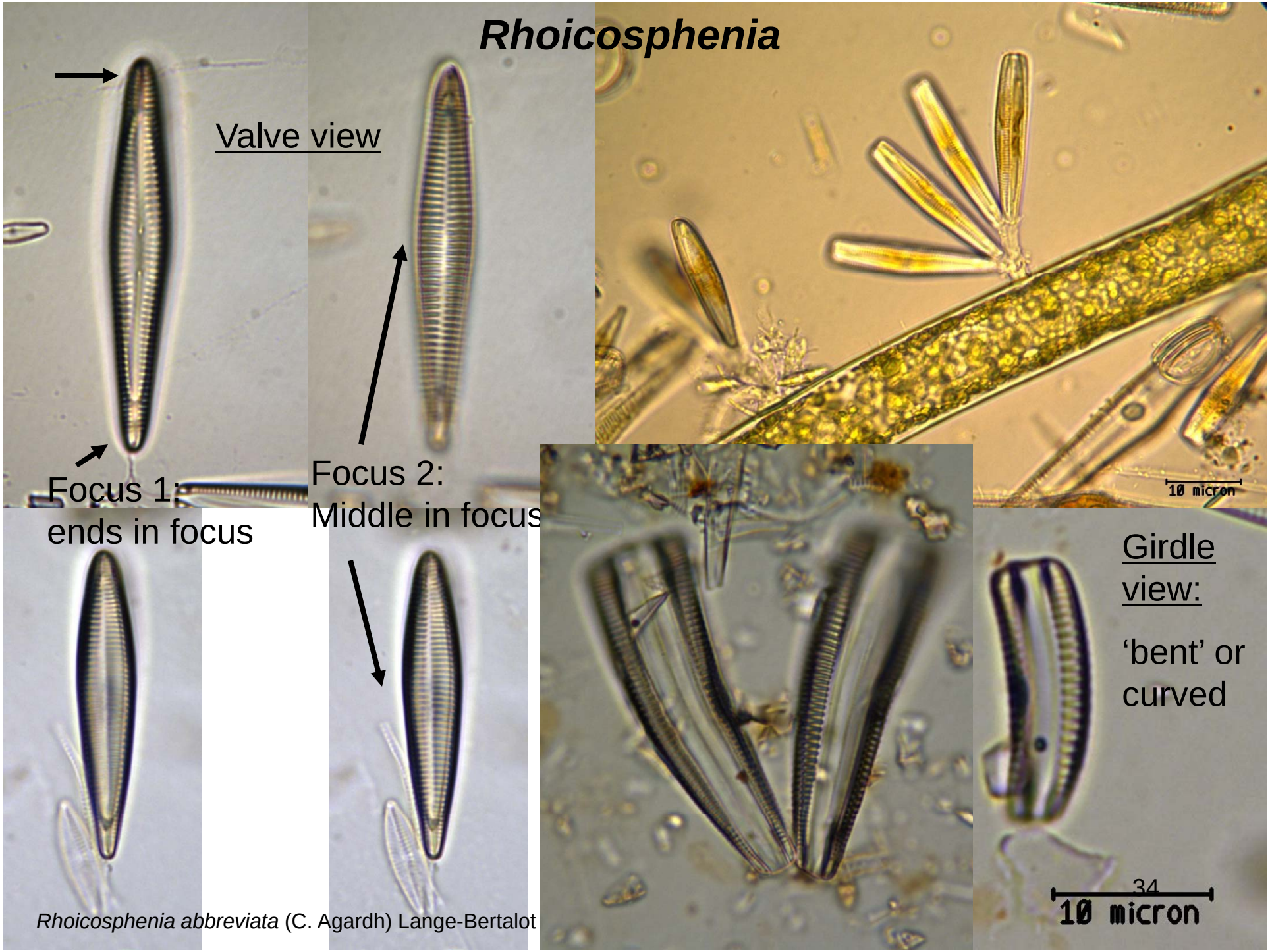
Cocconeis reproduction





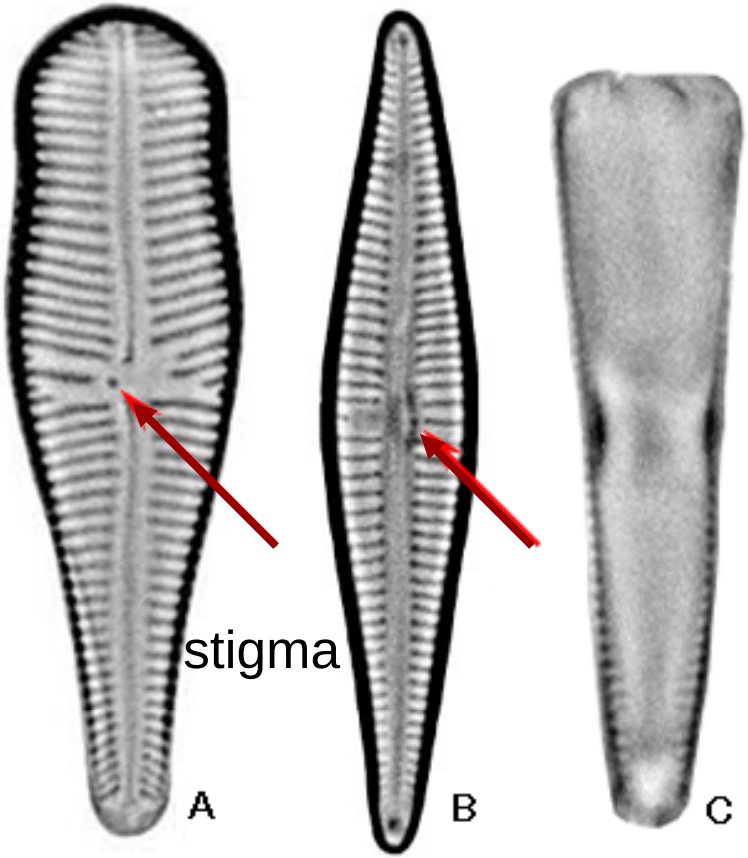
Cocconeis associated rust spots on *Cladophora*

Rhoicosphenia

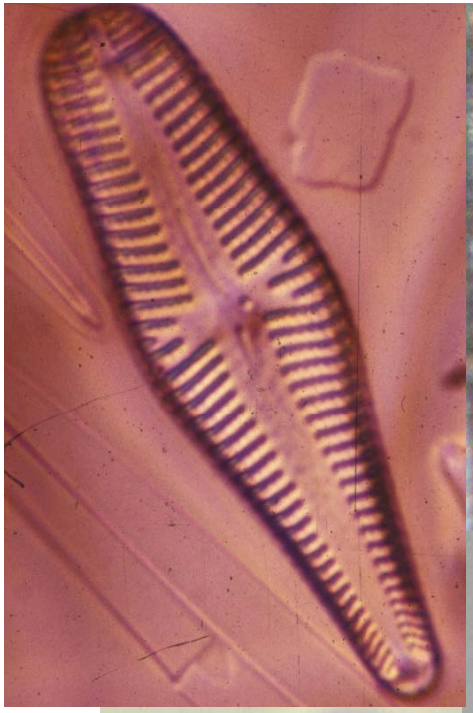


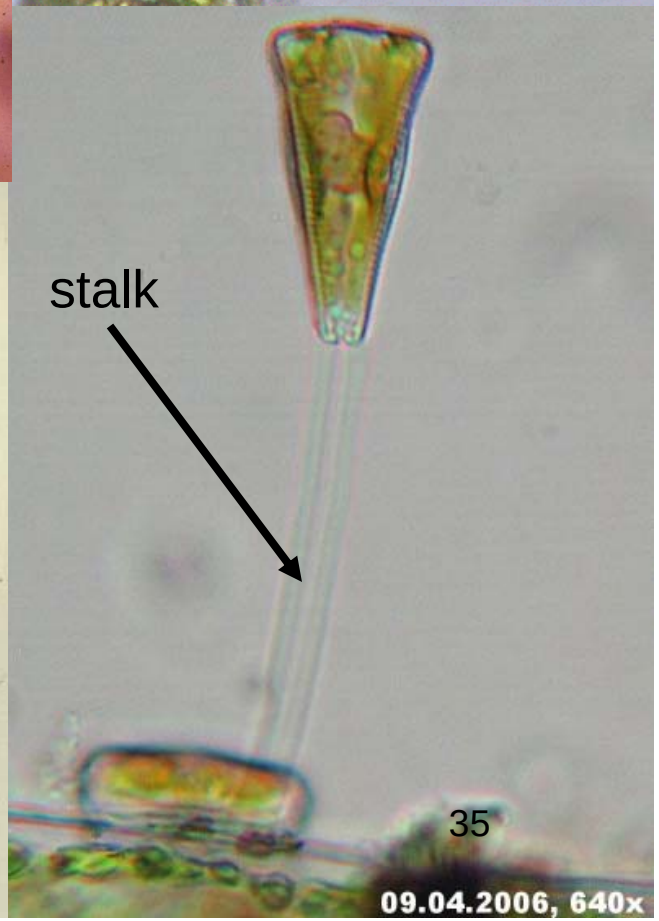
Rhoicosphenia abbreviata (C. Agardh) Lange-Bertalot

Gomphonema spp

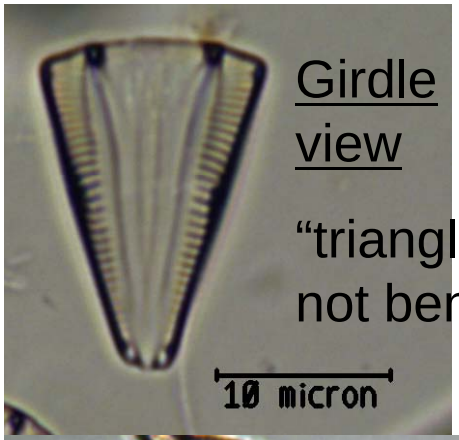


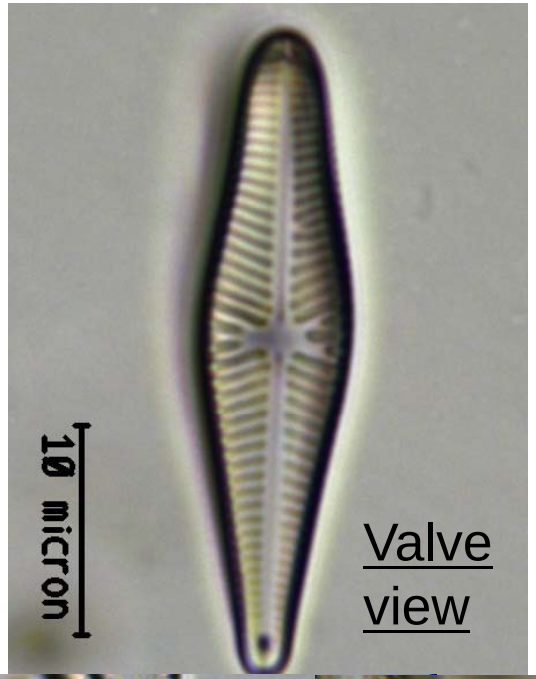
keisou.hp.infoseek.co.jp/.../gomphone.html

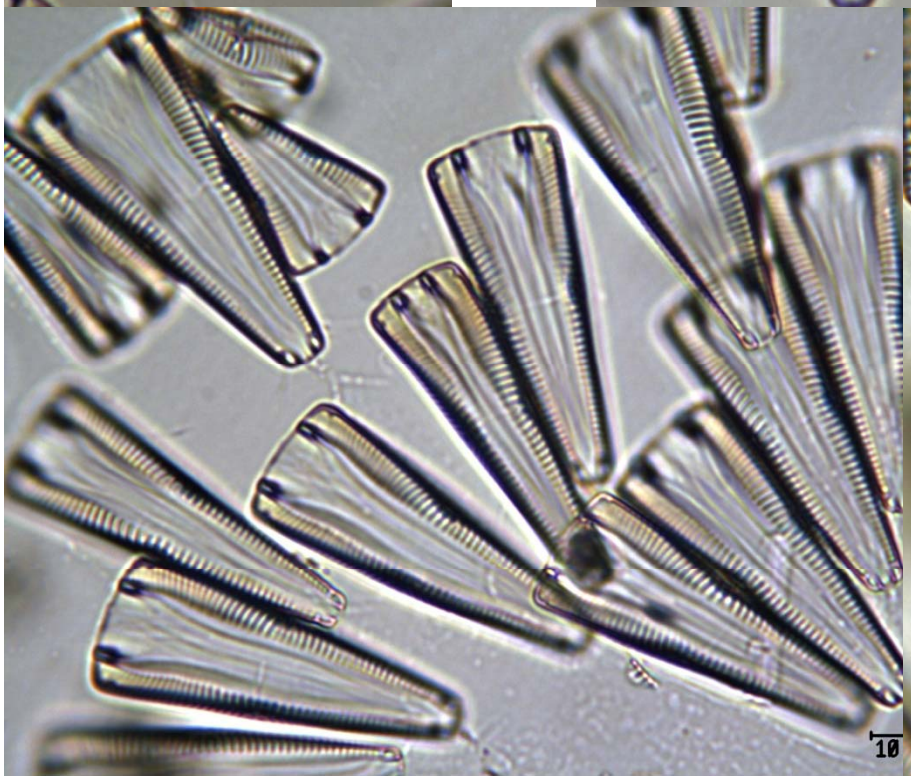




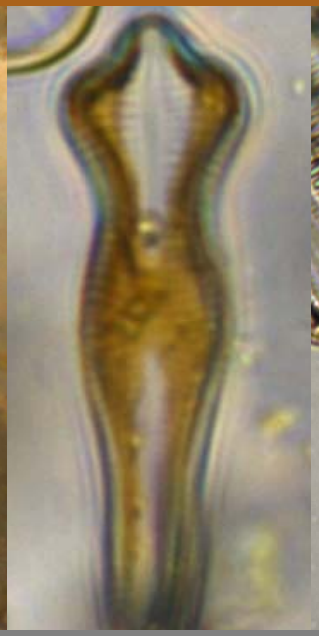
Gomphonema sp 1

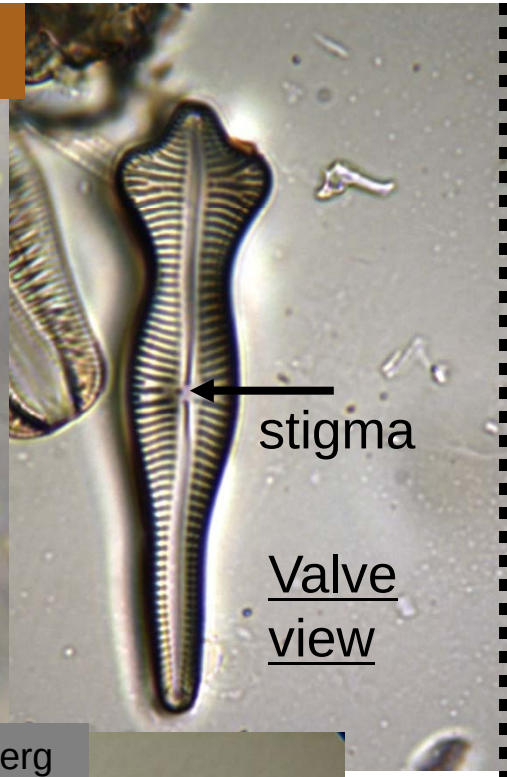




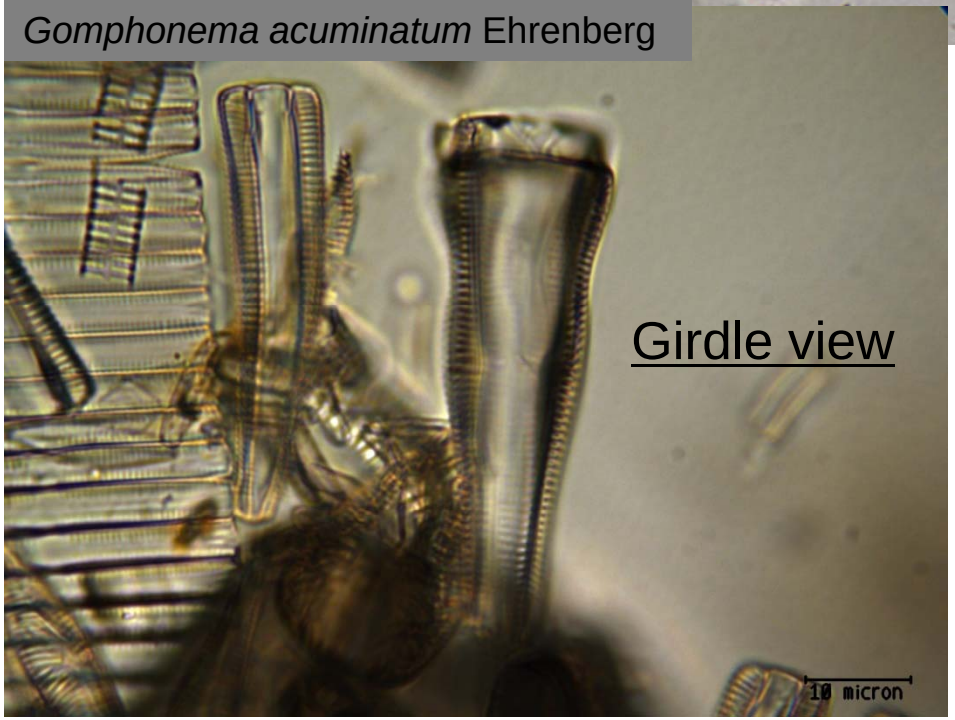


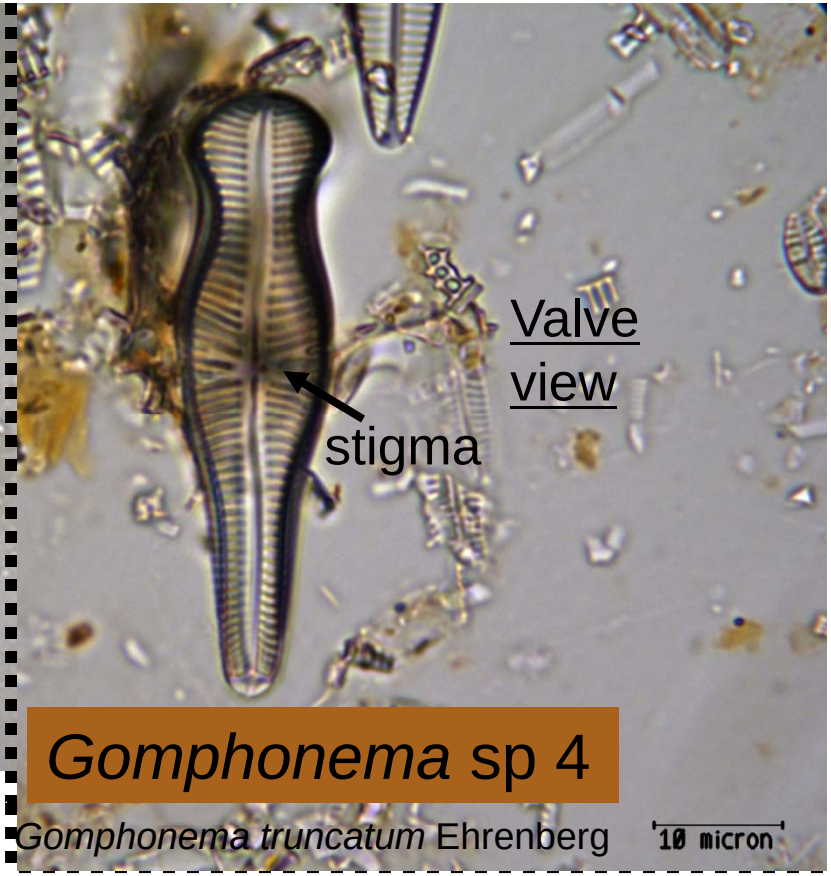
Gomphonema sp 2





Gomphonema acuminatum Ehrenberg

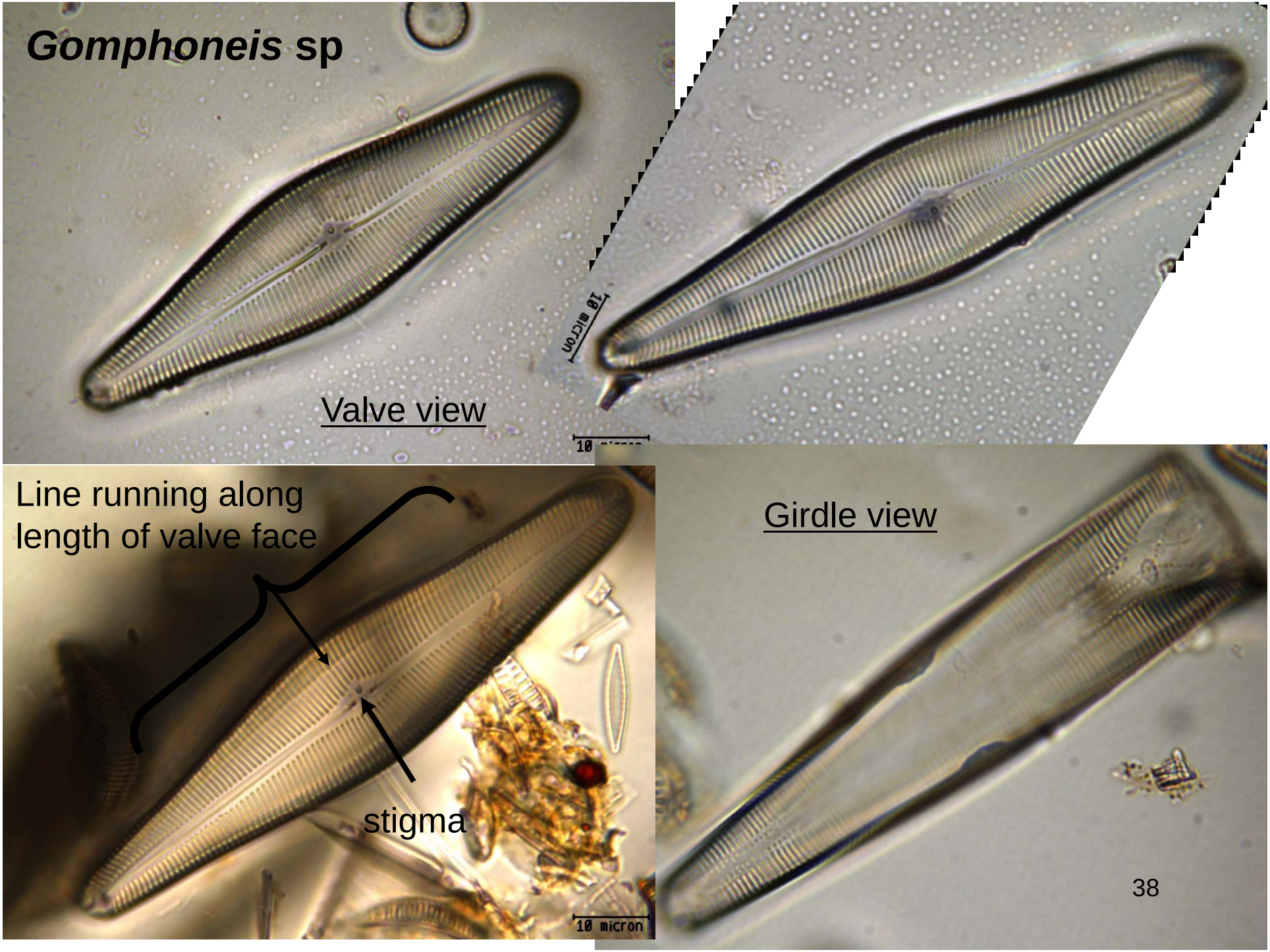


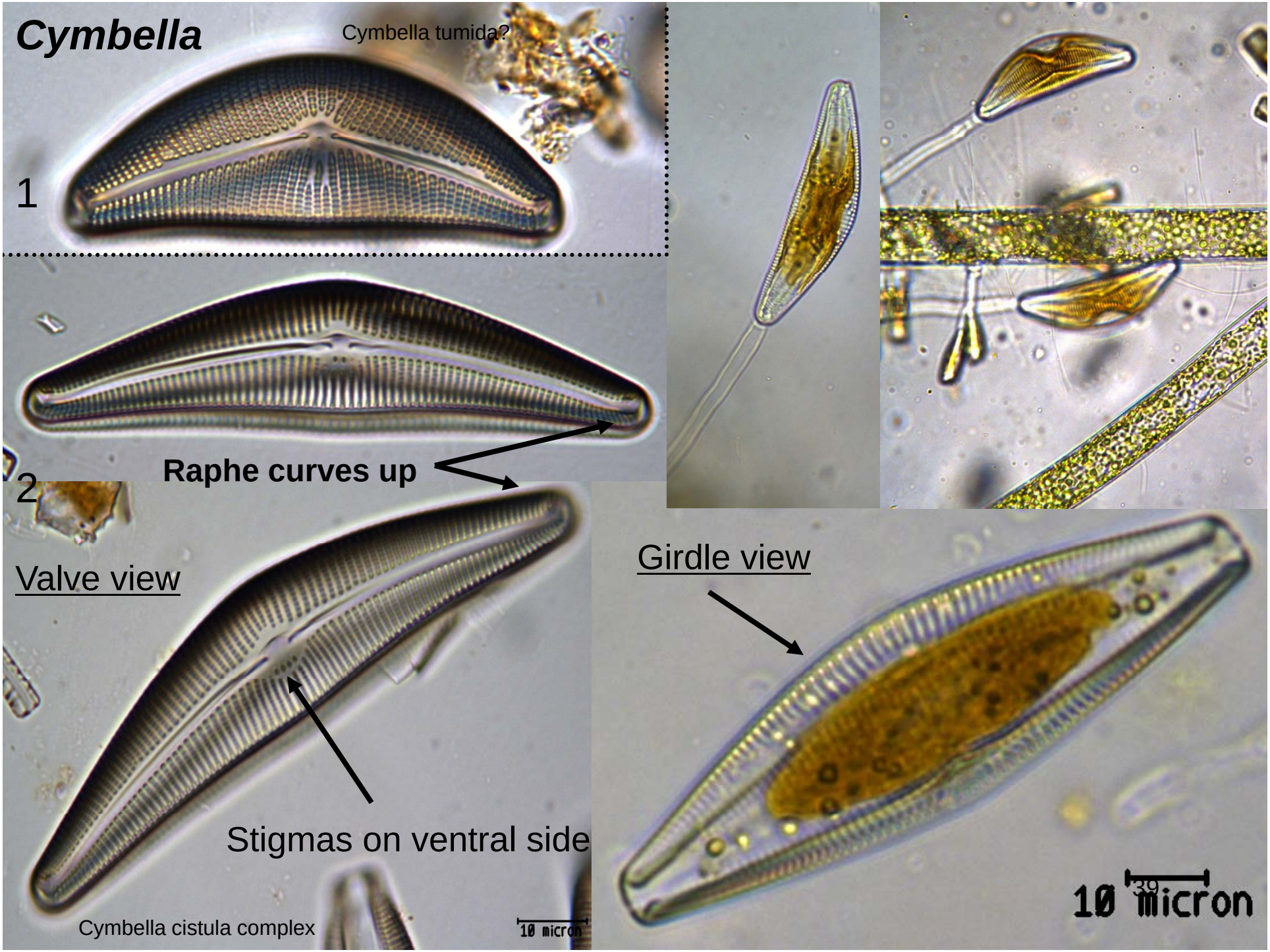


Gomphonema sp 4

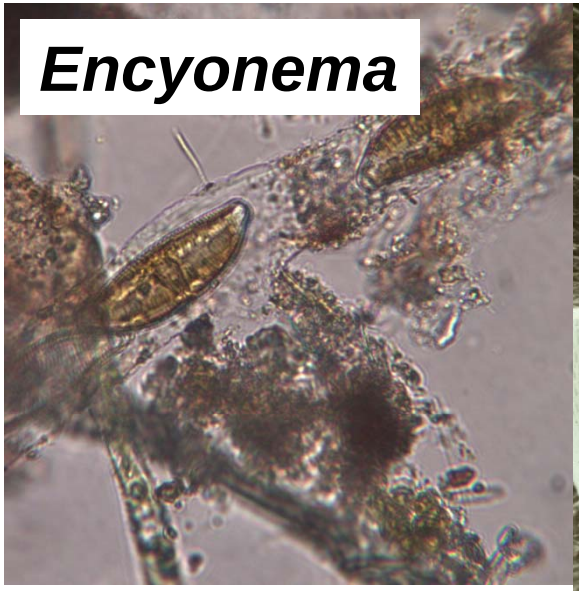
Gomphonema truncatum Ehrenberg

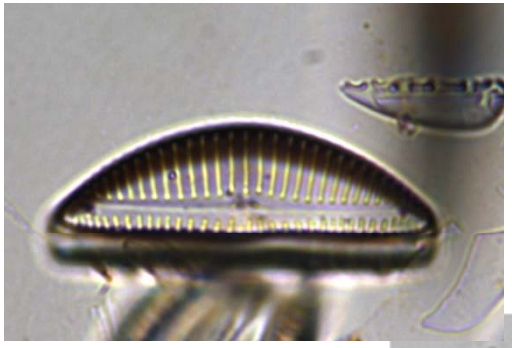
Gomphonema sp 5

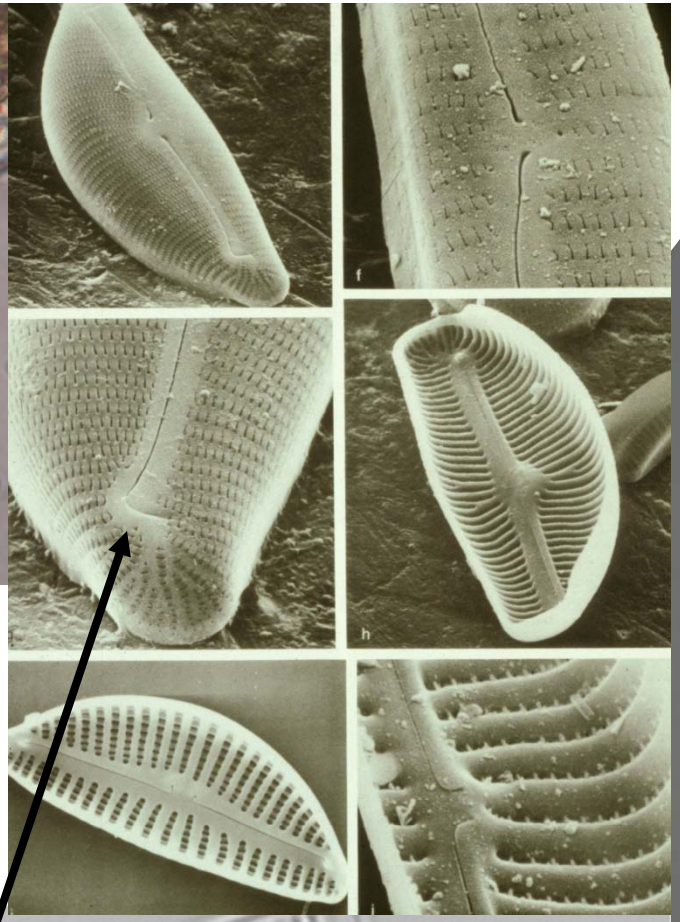

Gomphoneis sp
Valve view
10 micron
Line running along
length of valve face
stigma
10 micron
Girdle view

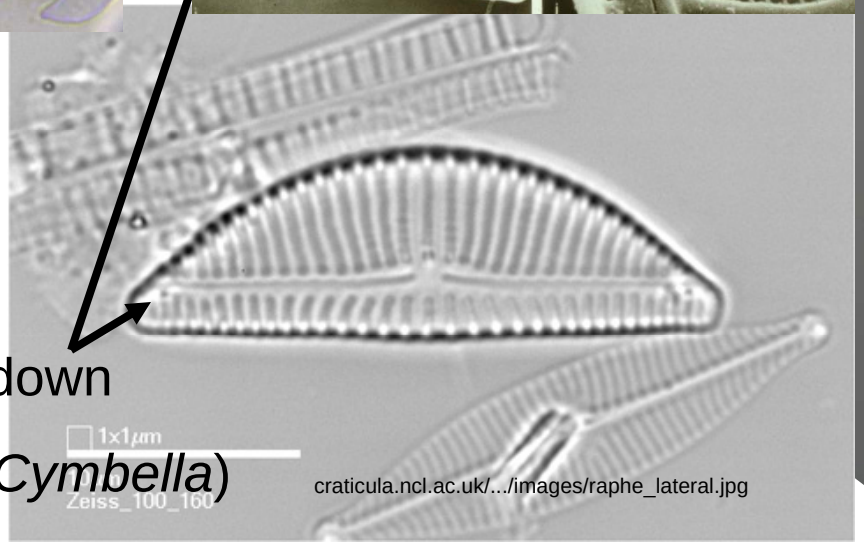

Cymbella
Cymbella tumida?
1
2
Raphe curves up
Valve view
Girdle view
Stigmas on ventral side
Cymbella cistula complex
10 micron
10 micron

Encyonema







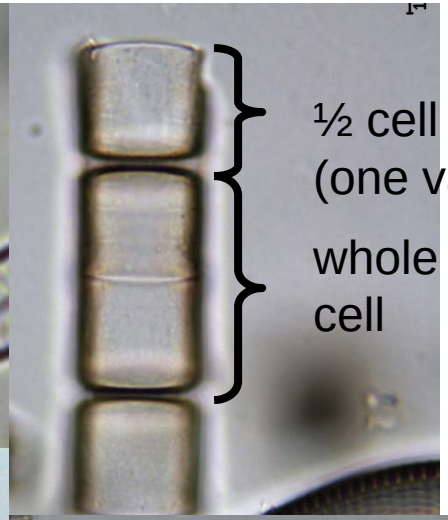


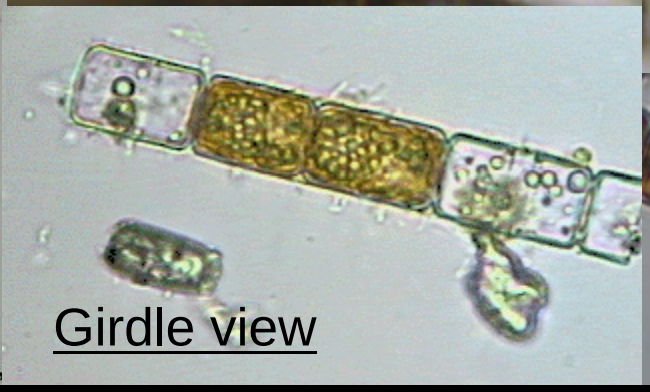
craticula.ncl.ac.uk/.../images/raphe_lateral.jpg

Raphe curves down

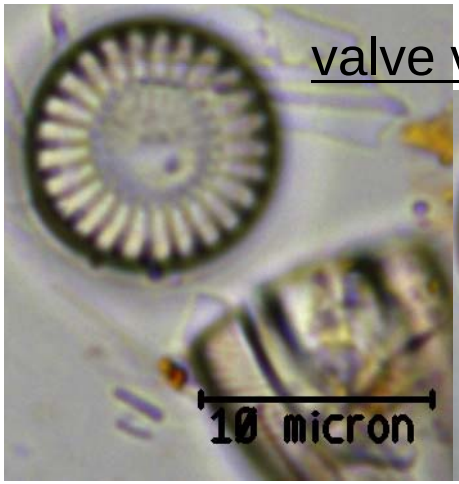
(compare with *Cymbella*)

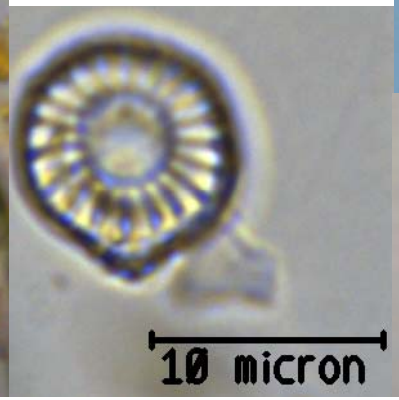
Centric diatoms

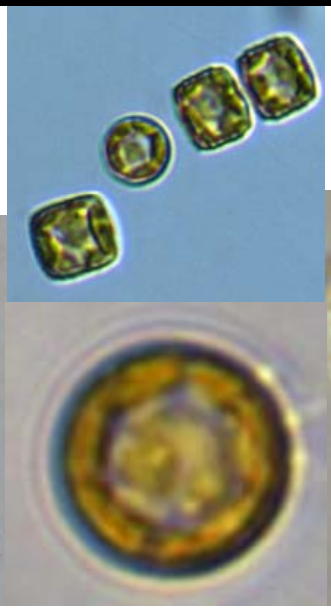


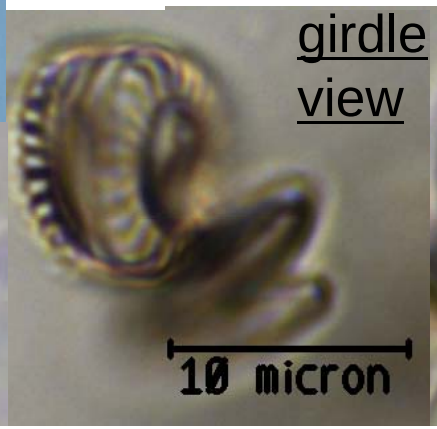


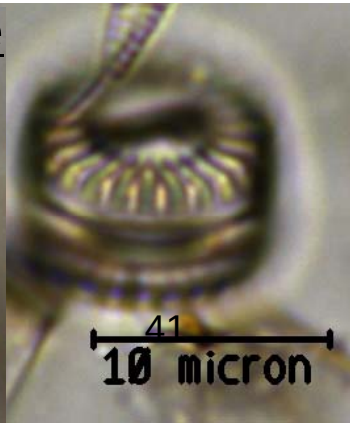
Cyclotella



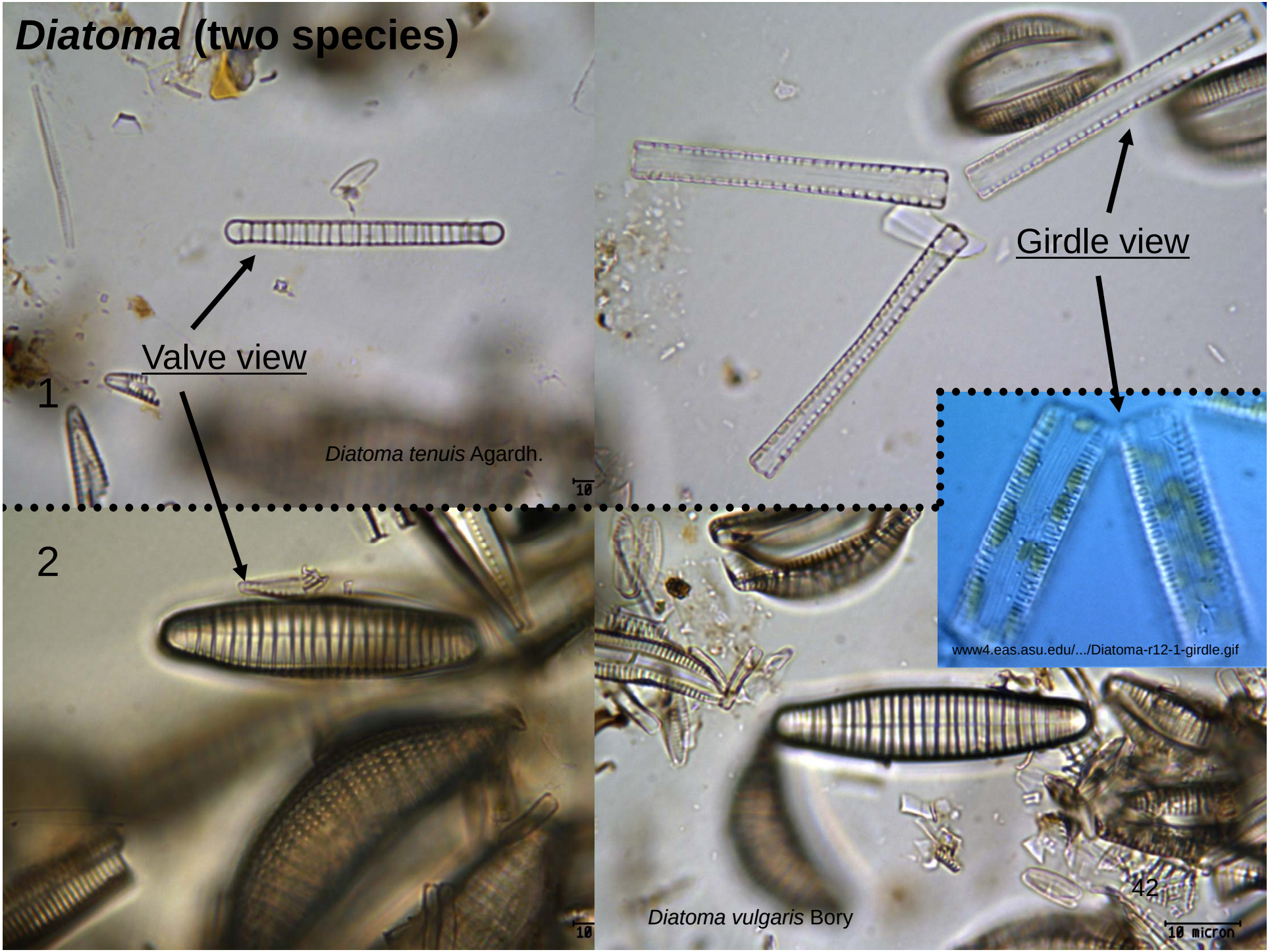






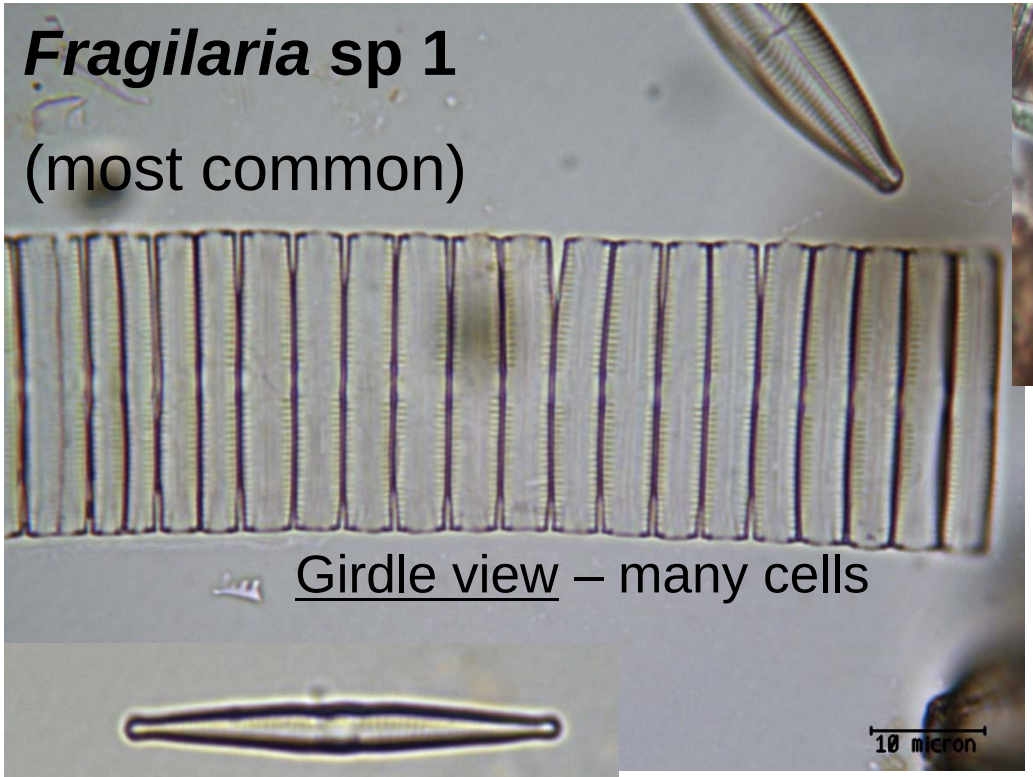


Diatoma (two species)

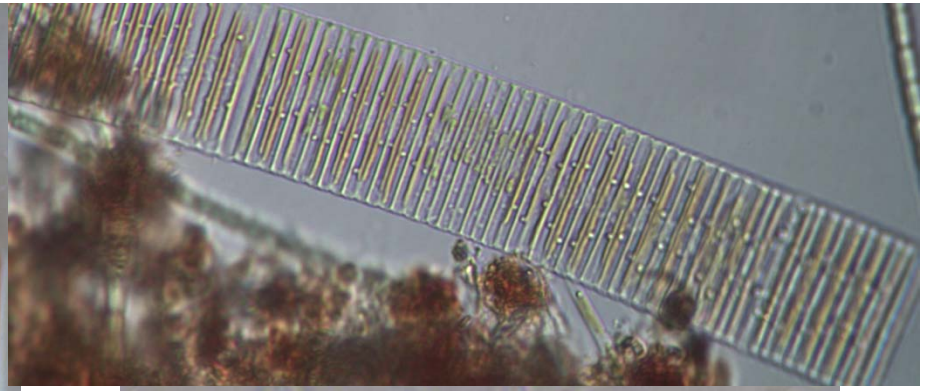


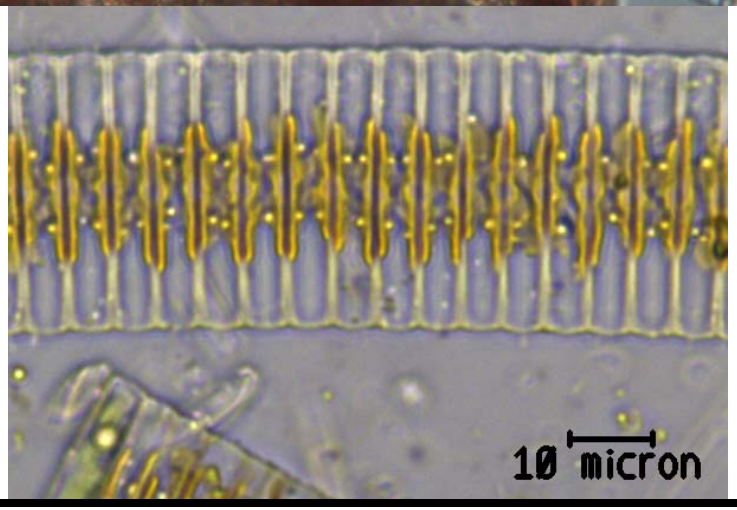
Fragilaria sp 1

(most common)

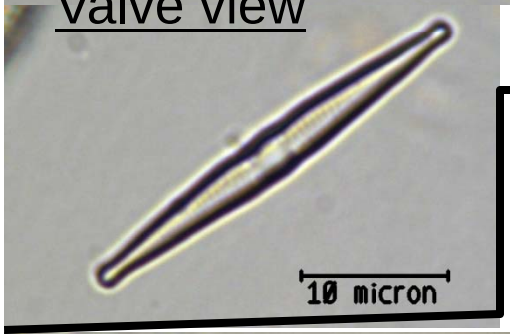


Girdle view – many cells

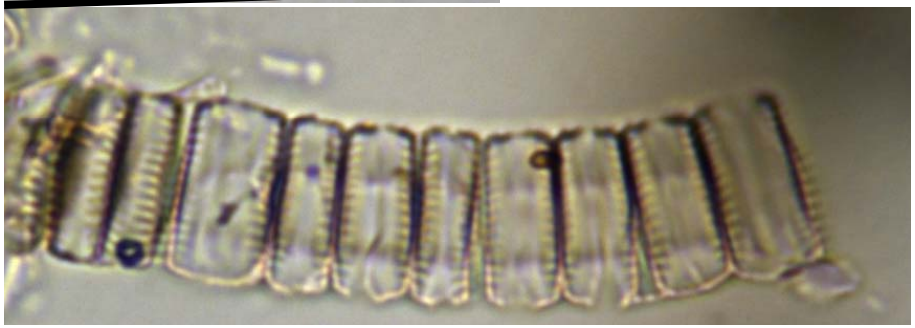


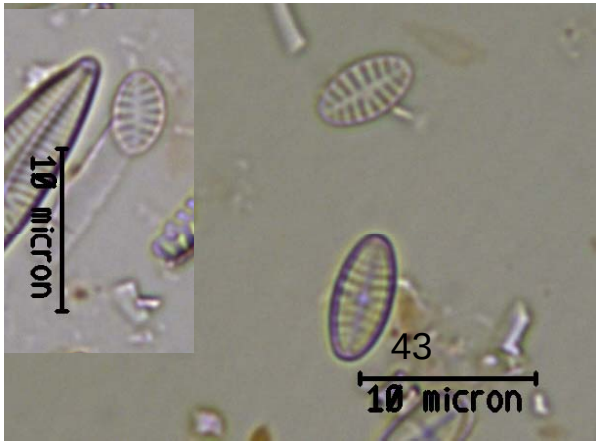


Valve view

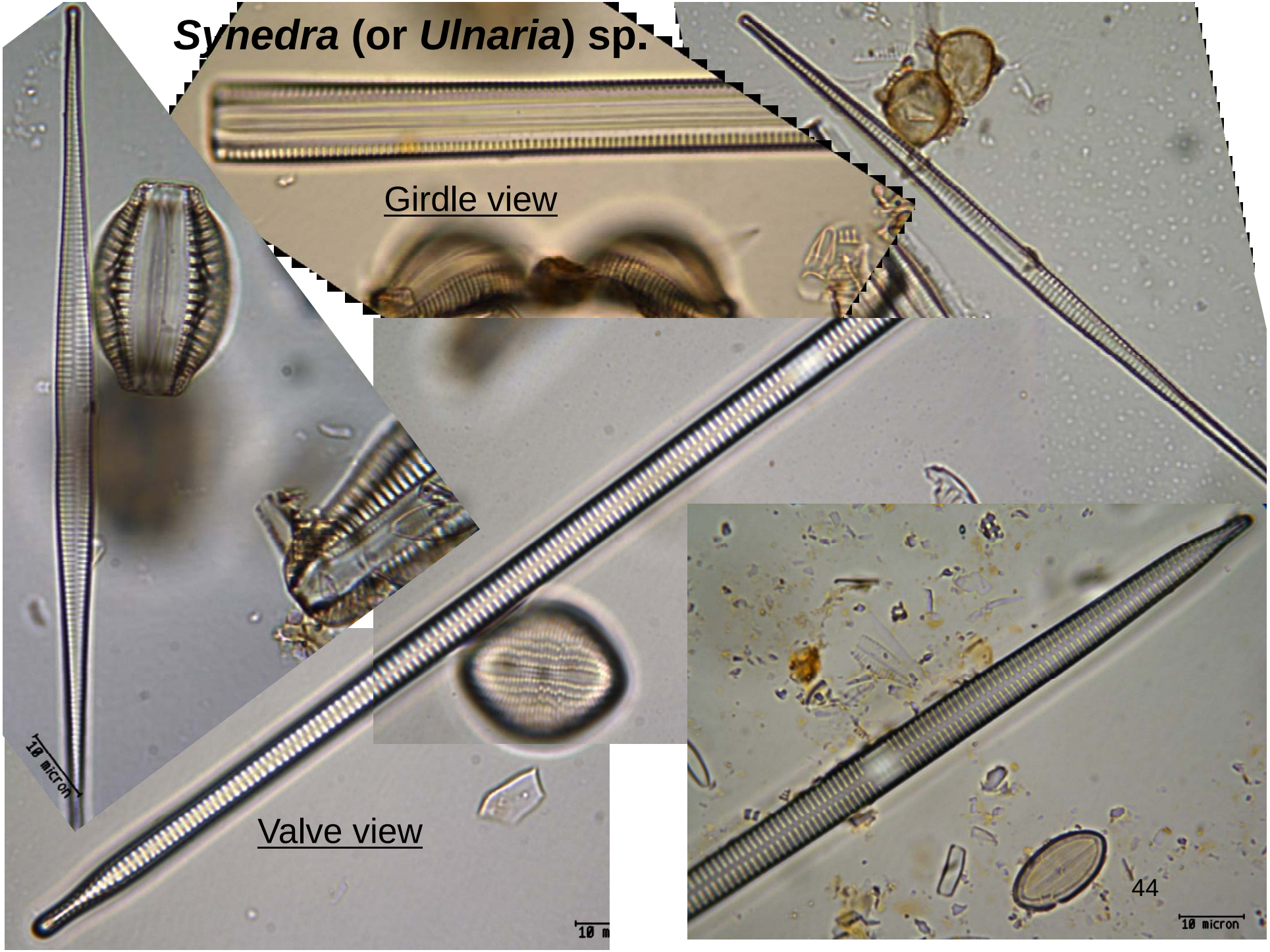


Other *Fragilaria* sp

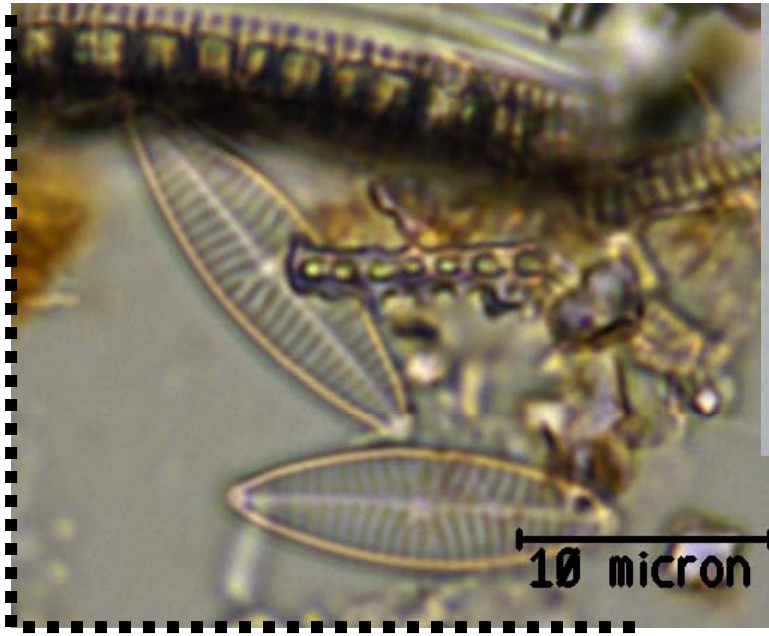




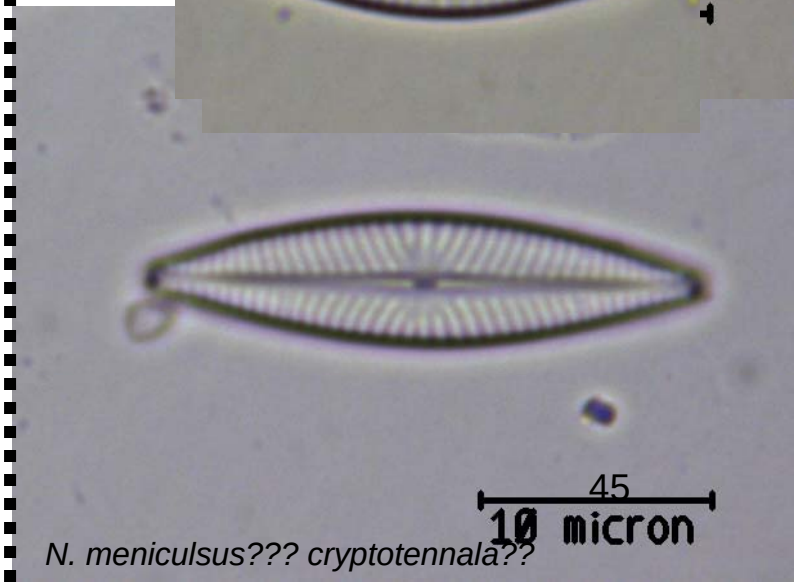
Synedra (or *Ulnaria*) sp.



Navicula spp



Sp2



Sp 1

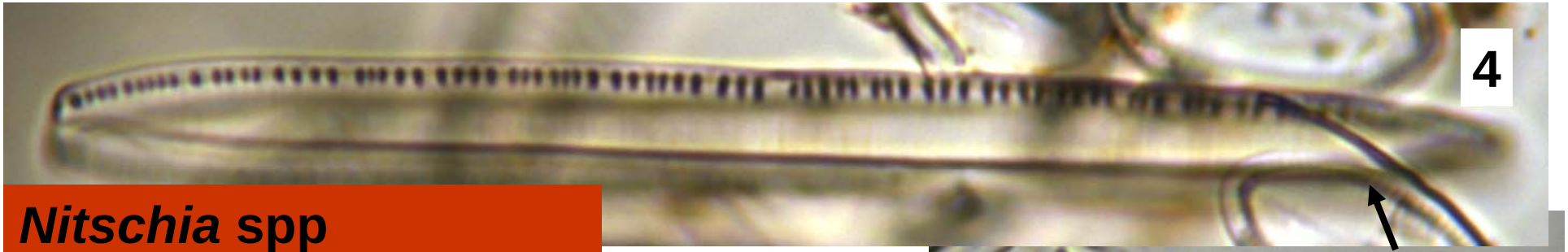
(larger and more heavily silicified relative to Sp 2 which is faint

N. meniculsus??? cryptotennala??

Navicula sp. 3

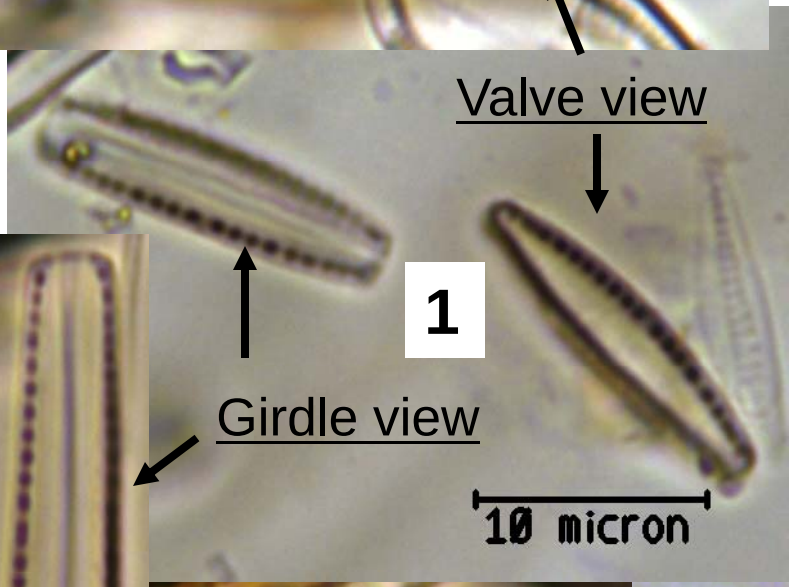
Note pinched ends

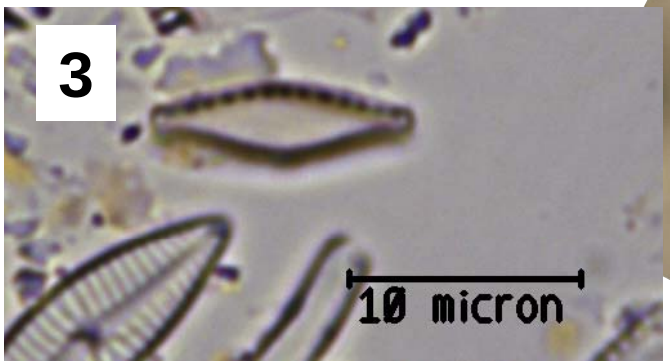
Navicula capitoradiata???

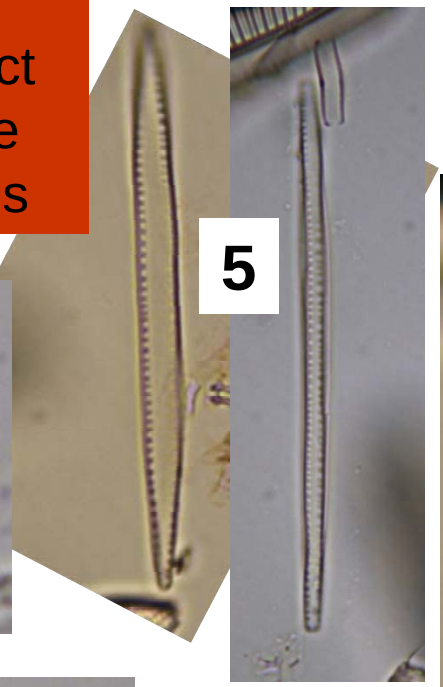


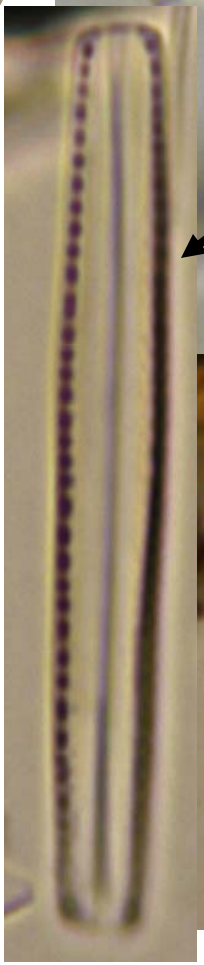
Nitschia spp

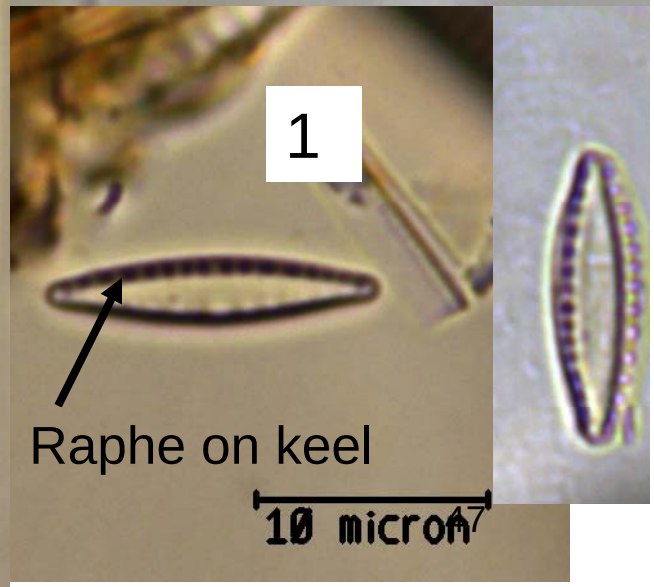
- Be sure to optically dissect the diatom to see the raphe (up on a keel) on both sides

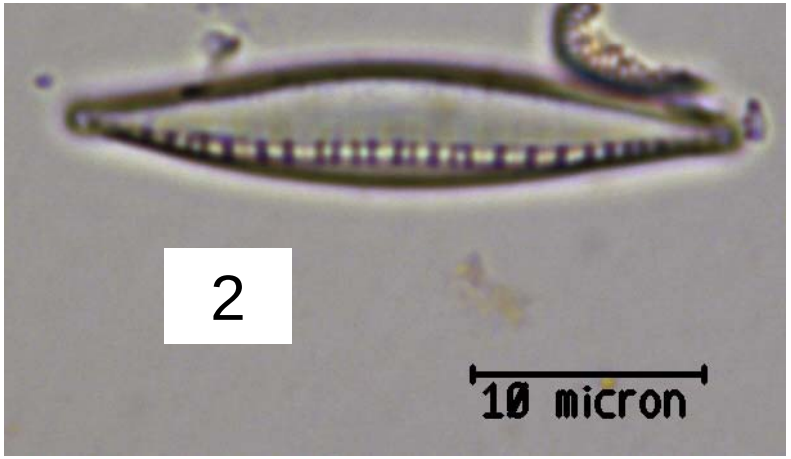






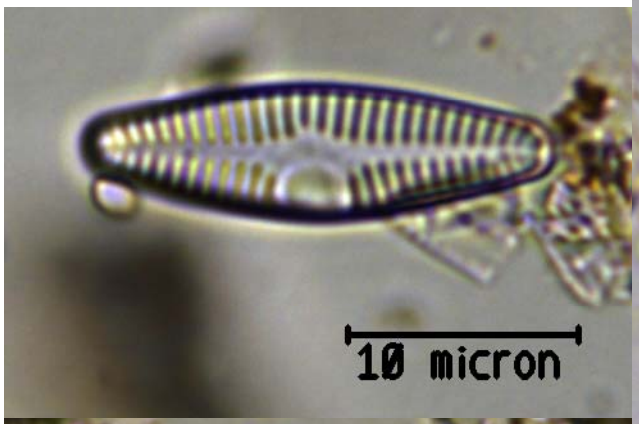


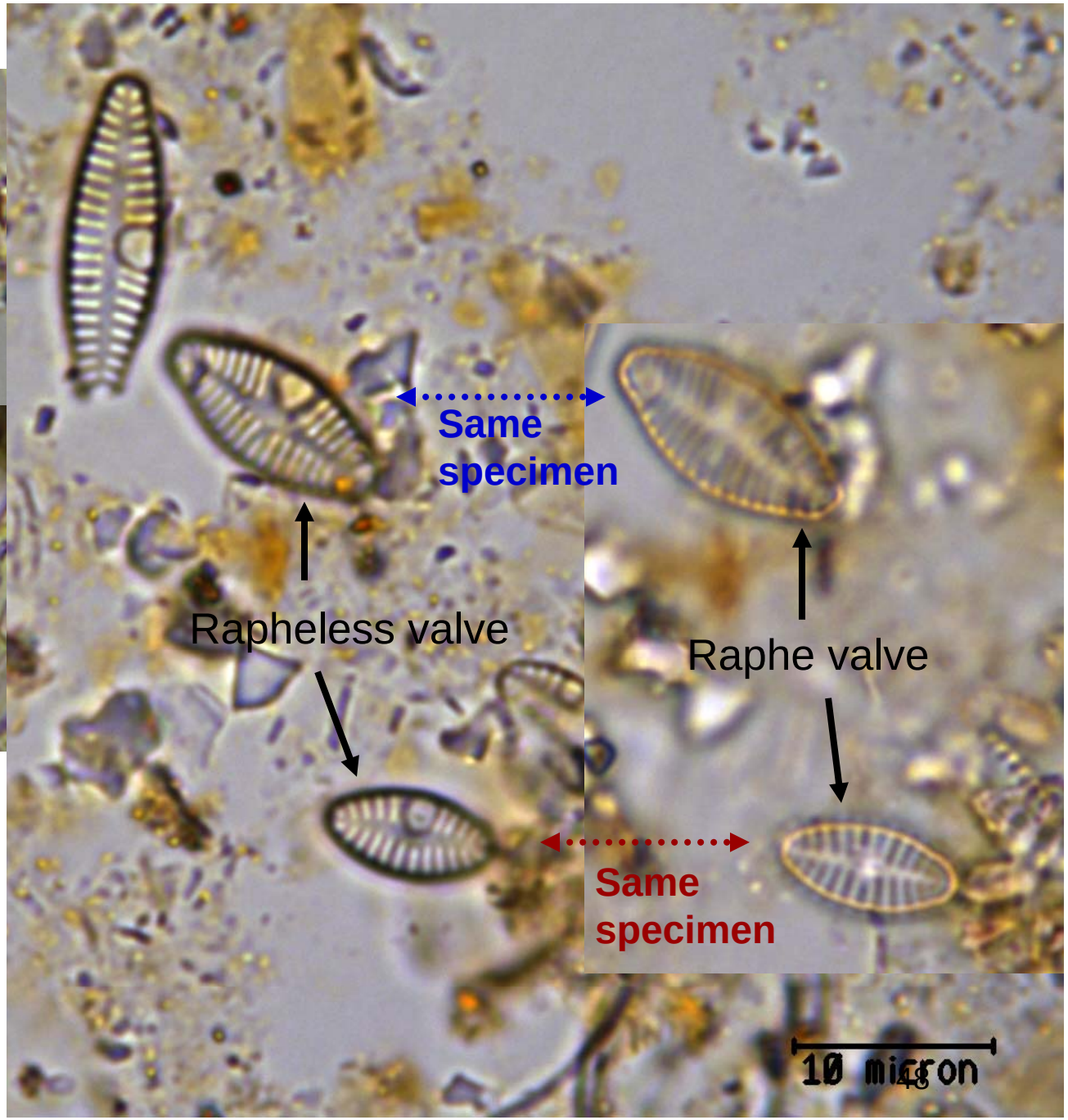




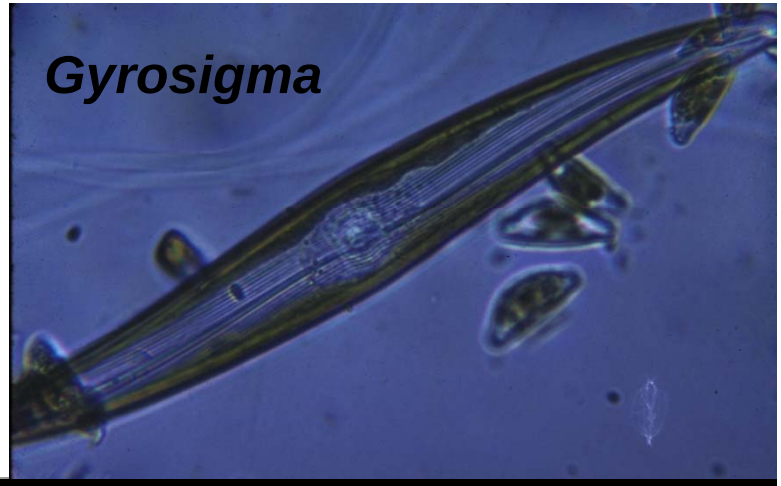
7

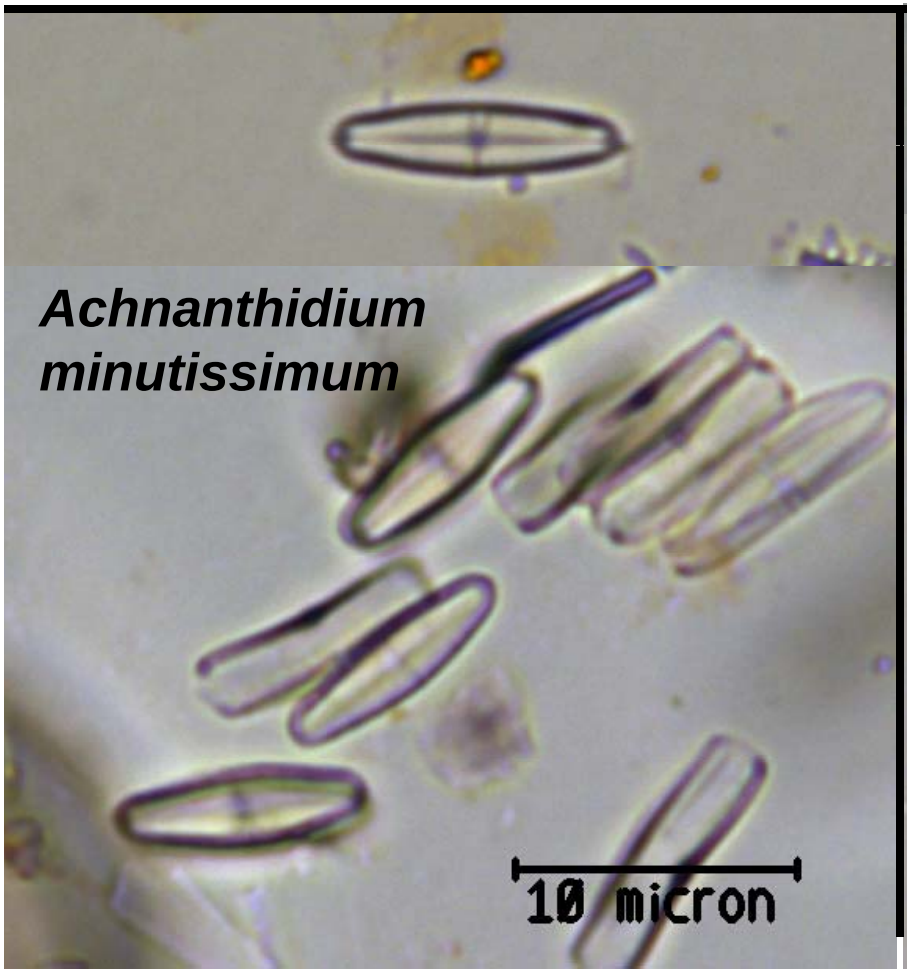
Planothidium

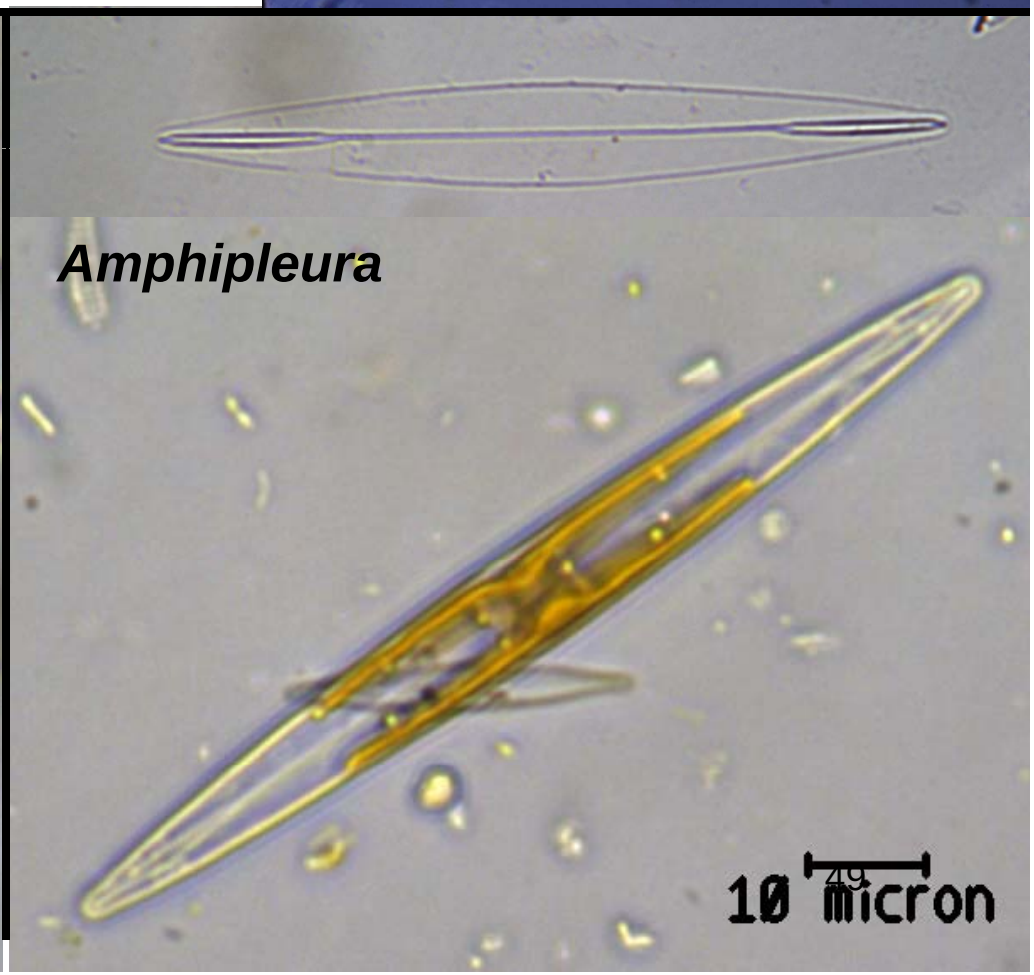




Miscellaneous diatoms








Play Hard
Sports