



Algal Diversity

(photo by V. Flechtner)

Representative green algae: 1. *Halimnobia* cf. *minor*; prasinophyte (photo by C. O'Kelly); 2. Two conjugating filaments of *Spirogyra maxima*; charophyte (photo by C. Drummond); 3. *Klebsormidium flavescens*; charophyte (photo: 3-5 by C. F. Delwiche); 4. *Chlorella* sp.; charophyte. 5. Marine macro-alga, *Codium*; an ulvophyte. 6. *Monostroma*; flagellate charophyte. 7. View of part of a *Colobosira orbicularis* thallus, with egg; charophyte. 8. *Enteromorpha flexilis*; charophyte. 9. *Ulva* sp.; ulvophyte. 10. *Myrrocystis* sp.; trebouxiophyte (photo by V. Flechtner). 11. Colonial planktonic alga, *Plectonon duprezii*; chlorophyte. 12. *Microcystis* sp.; trebouxiophyte. Figs. 13 and 14. Macroscopic and microscopic view of the water net, *Hydrocoleum reticulatum* from a pond in Connecticut; chlorophyte. 15. *Nitzschia kuetzingii* with orange secondary pigments forming a shaggy coat on rocks at Point Reyes, California; ulvophyte. 17. *Chlorococcoides* sp.; chlorophyte.



A dinoflagellate showing its transverse flagellum.
Image: Harvey Marchant

<http://www.aad.gov.au/default.asp?casid=3432>



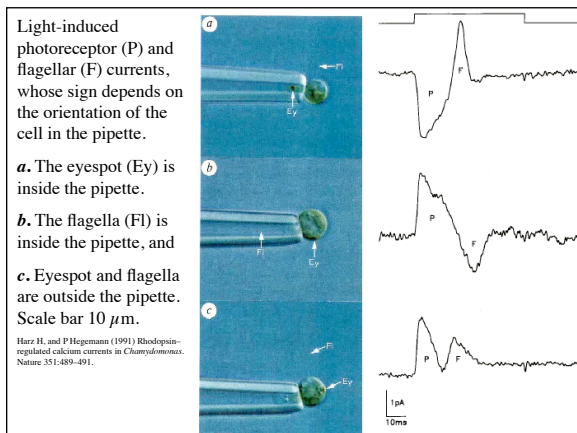
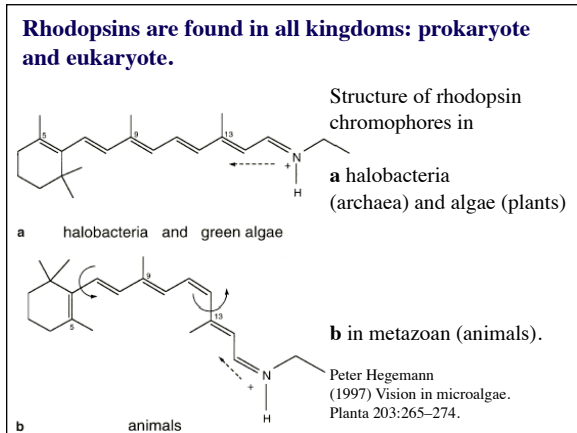
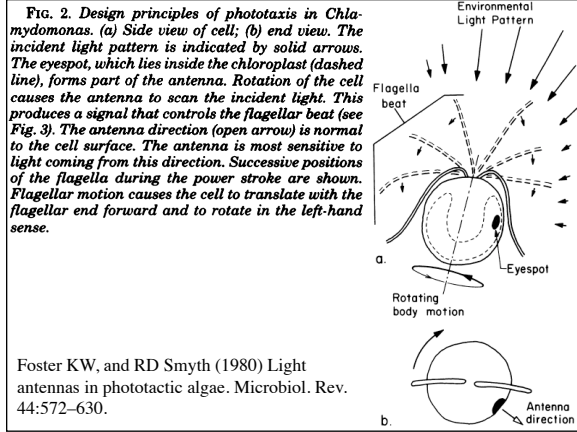
Dinoflagellate containing ingested diatoms.
Image: Harvey Marchant

<http://www.aad.gov.au/default.asp?casid=3433>



Movement by deformation. Euglenoid.
Image: Harvey Marchant

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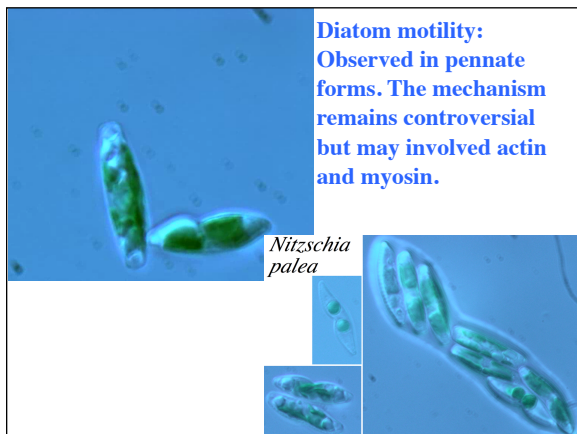
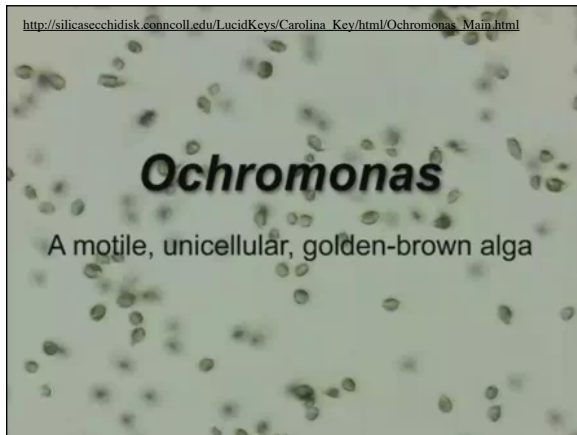
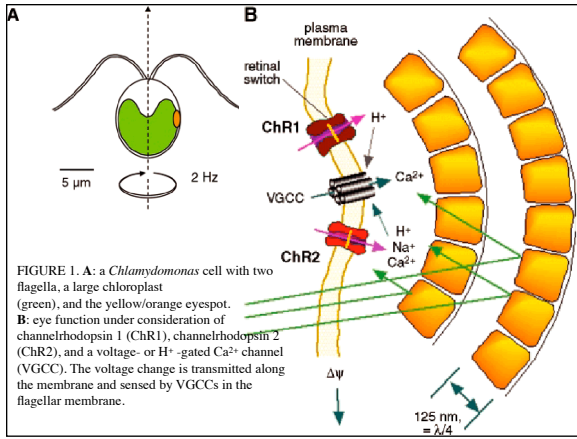
“Vision” in Single-Celled Algae

Suneel Kateriya,¹ Georg Nagel,² Ernst Bamberg,² and Peter Hegemann¹

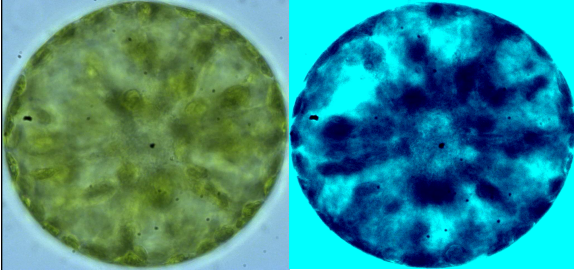
¹Institut für Biochemie, Universität Regensburg, 93040 Regensburg; and ²Max-Planck-Institut für Biophysik, 60439 Frankfurt am Main, Germany

Photosynthetic unicellular algae have a unique visual system. In *Chlamydomonas reinhardtii*, the pigmented eye comprises the optical system and at least five different rhodopsin photoreceptors. Two of them, the channelrhodopsins, are rhodopsin-ion channel hybrids switched between closed and open states by photoisomerization of the attached retinal chromophore. They promise to become a useful tool for noninvasive control of membrane potential and intracellular ion concentrations.

News Physiol. Sci. 19:133–137 [2004]



Cells and Chloroplasts

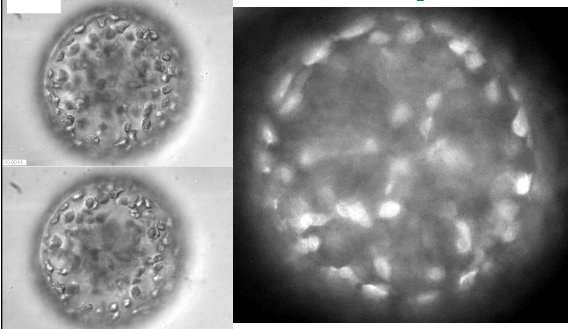


Brightfield

467 nm (blue)
(to highlight chloroplasts)

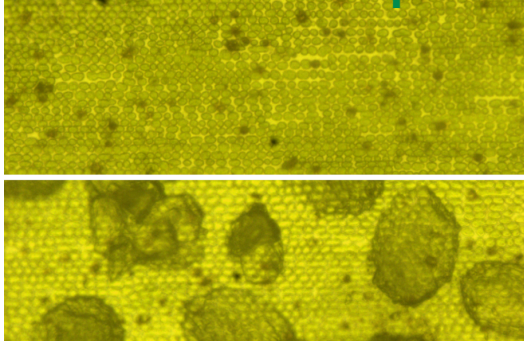
Eremosphaera viridis

Cells and Chloroplasts

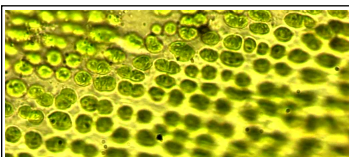


Eremosphaera viridis

Cells and Chloroplasts

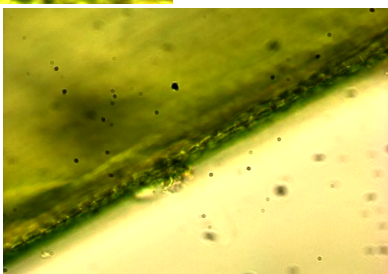


Chara australis

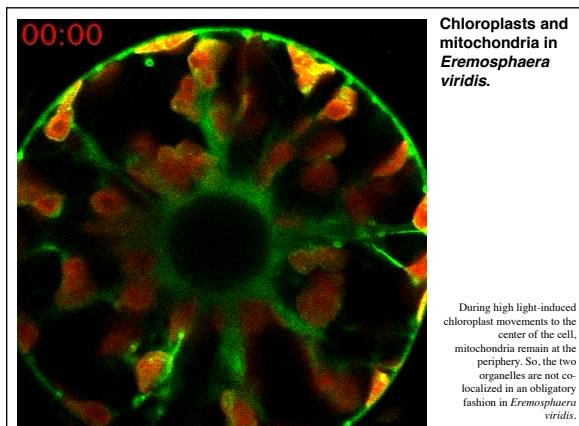
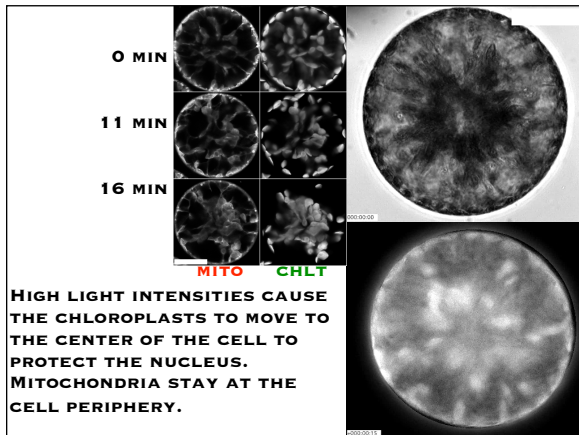
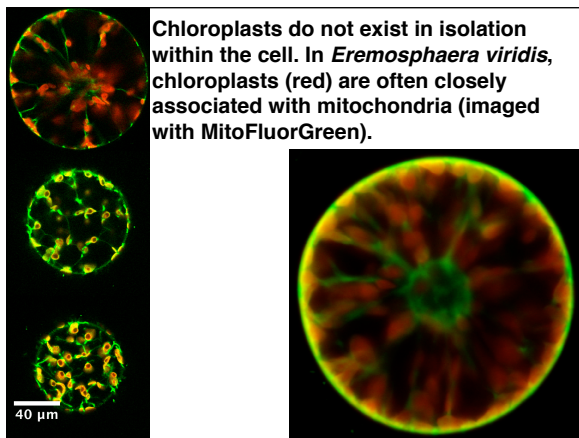
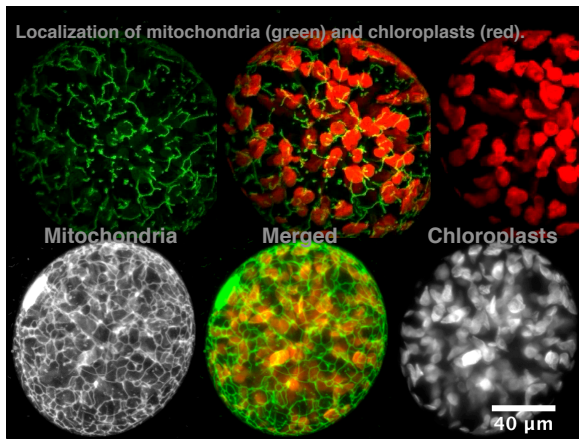


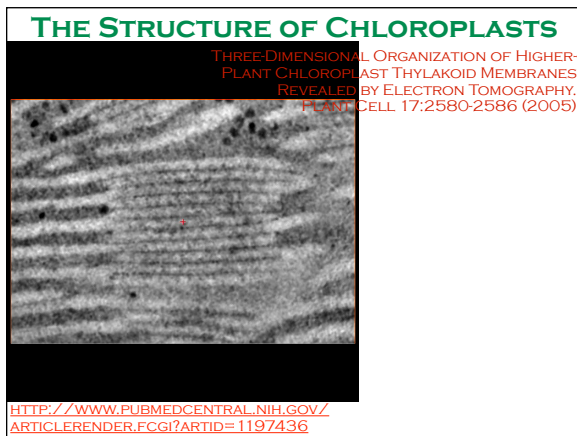
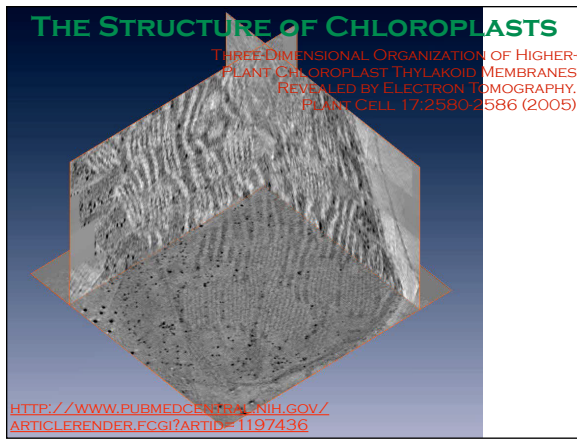
Cells and Chloroplasts

Cytoplasmic movement behind the peripheral sheath of chloroplasts probably serves to move photosynthate products throughout the cell.



Chara australis

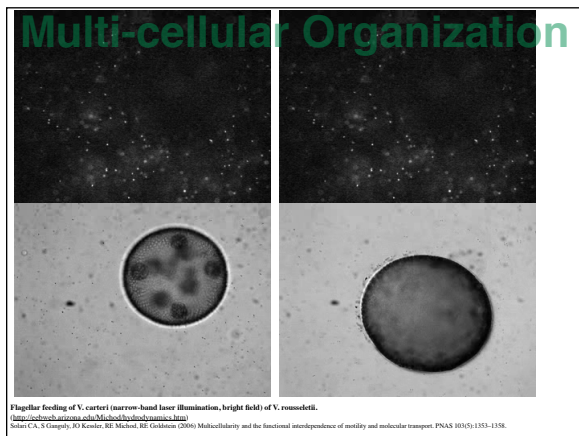
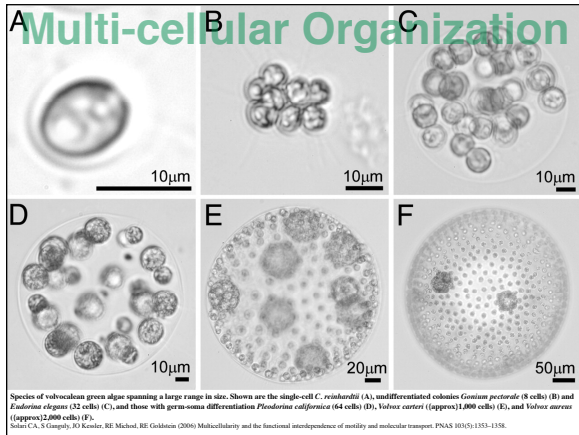
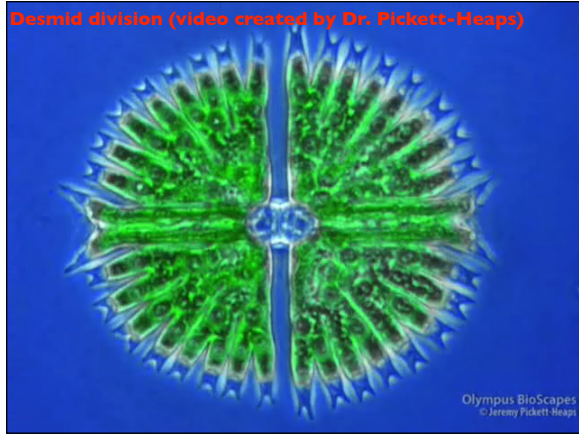




Warning: The following movies may not be suitable for all audiences due to depiction of graphic algal sex and cell division.

Parental Guidance is advised



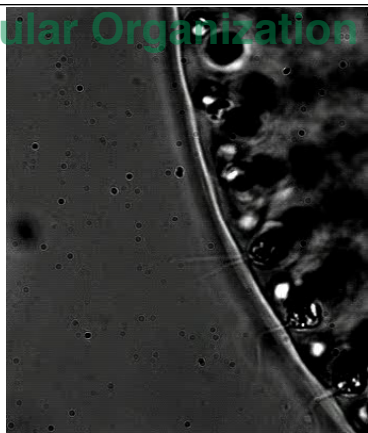


Multi-cellular Organization

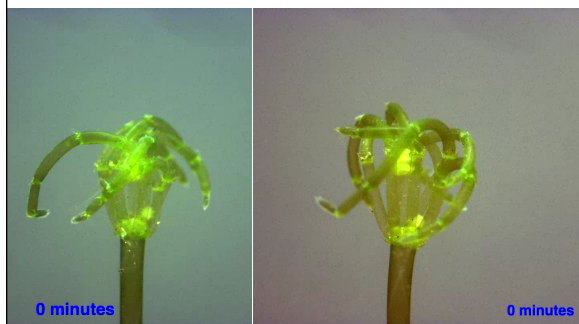
High-speed movie (125 fps) showing flagella (brightfield)

University of Cambridge > DAMTP > Goldstein Lab > Pictures and Movies

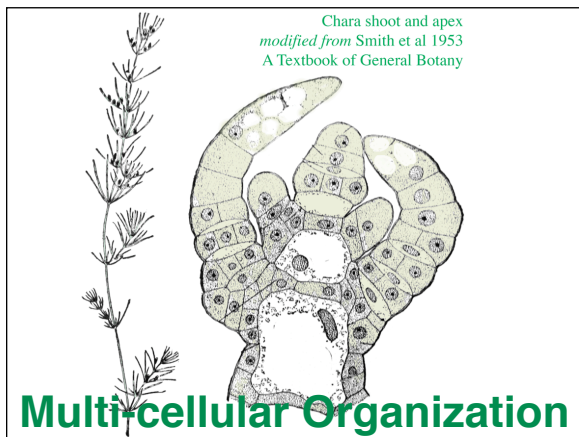
<http://www.damtp.cam.ac.uk/user/gold/movies.html>



Multi-cellular Organization



Chara australis



Multi-cellular Organization

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Bull Kelp (Phaeophyceae)

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Algal Diversity



(photo by V. Flechtner)