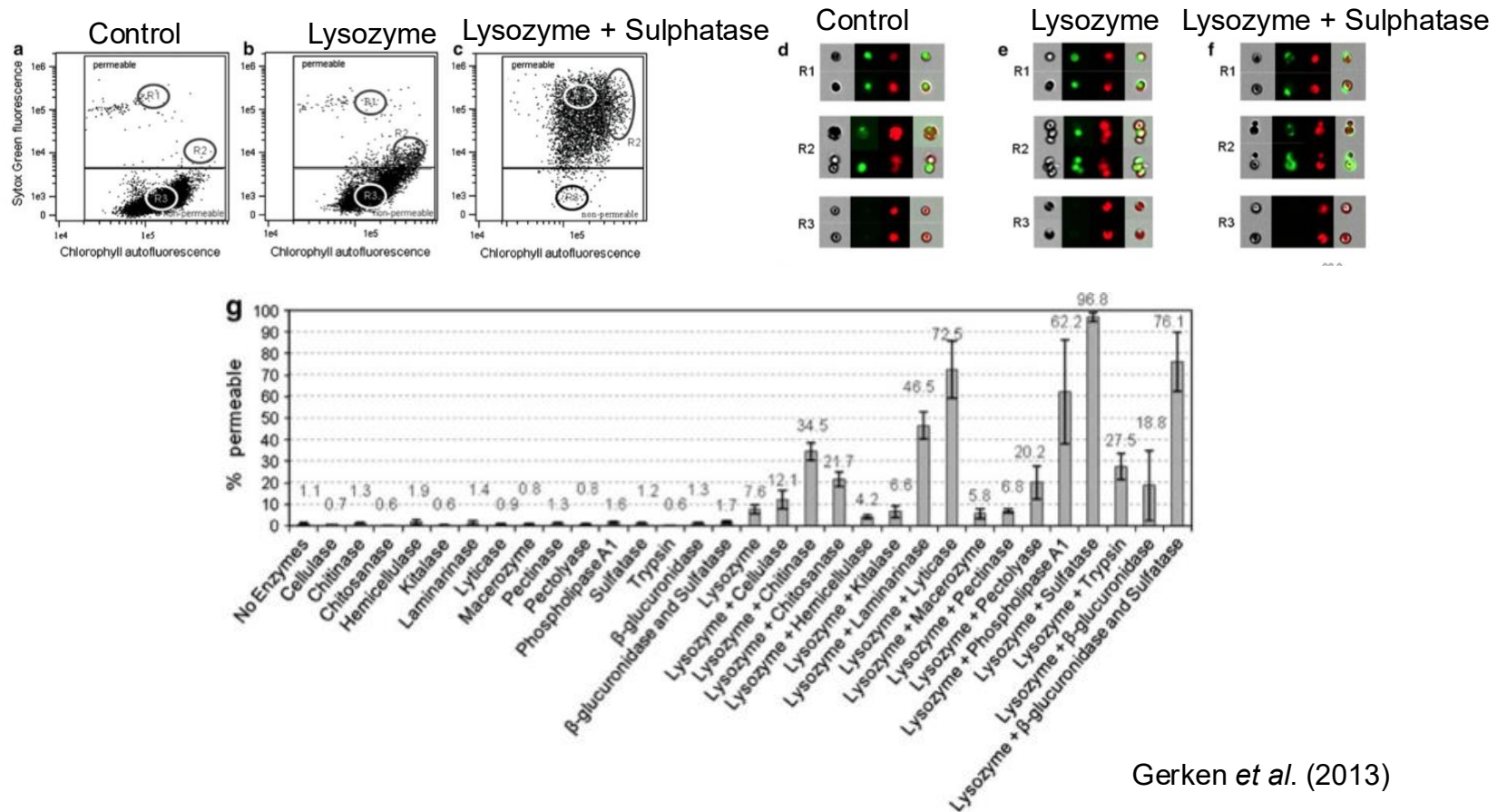


Phylum *Chlorophyta*

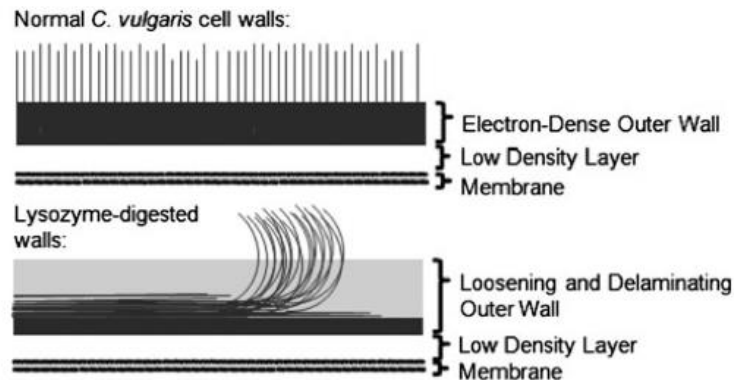
Composition of *Chlorella*'s cell wall



Phylum *Chlorophyta*

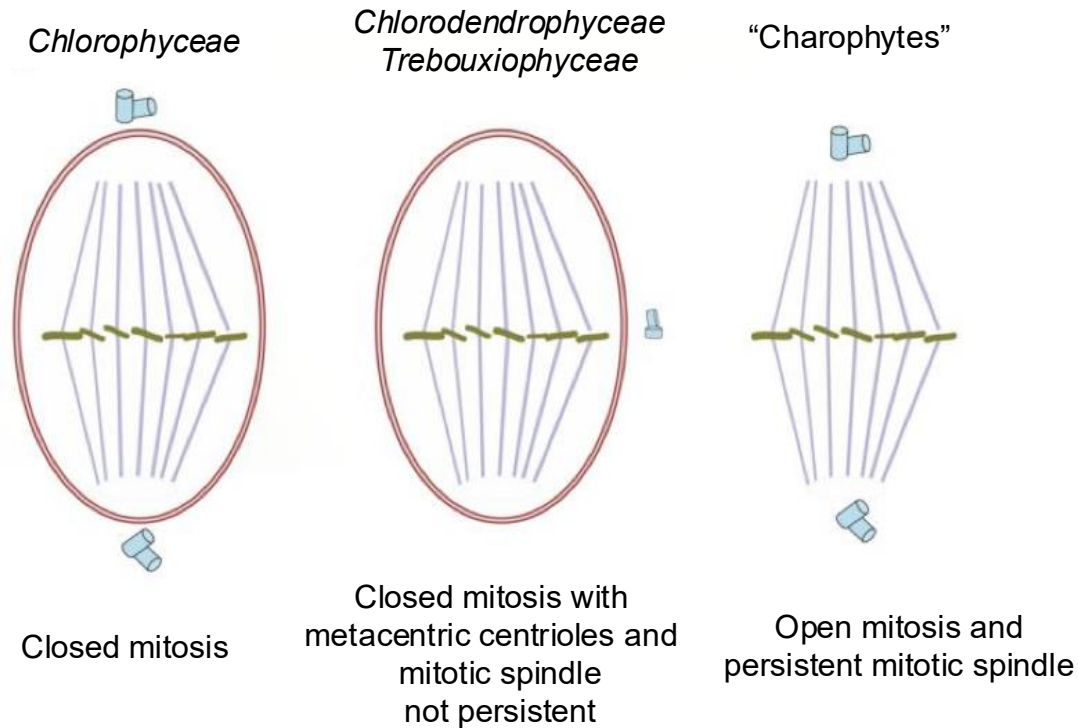
Composition of *Chlorella*'s cell wall

- Sensitive to enzymes that degrade N-acetylglucosamine-containing polymers (peptidoglycan and chitin)
- It has an outer protective layer with lysozyme sensitive hairs that allows more efficient action of other enzymes (e.g., chitinase)
- The drastic action of lysozyme + sulfatase suggests that the cell wall consists of a polymer of sulfated N-acetylglucosamine (-> cell wall of bacteria and the surface of mammalian cells)



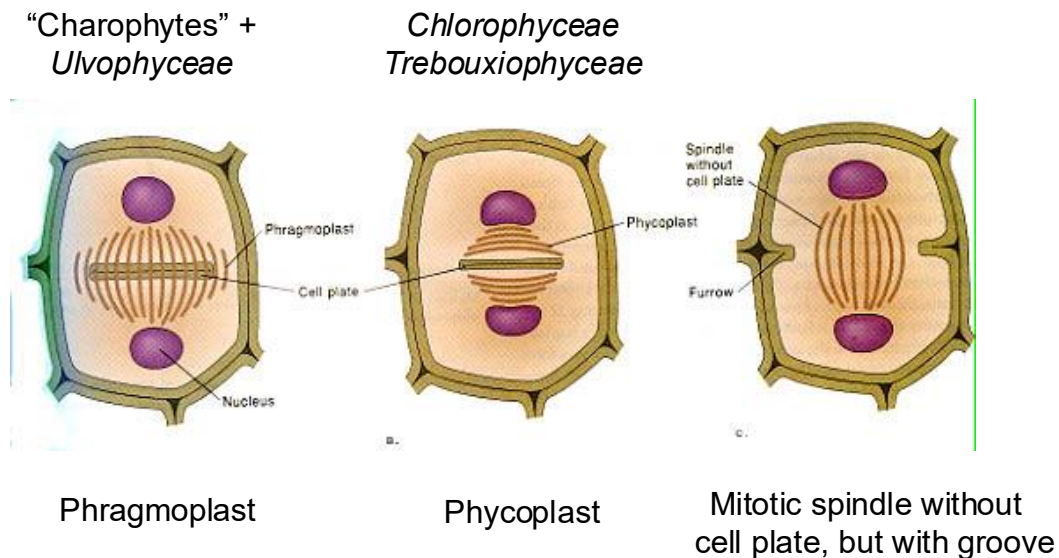
Phylum *Chlorophyta*

Classification according to the type of mitosis :

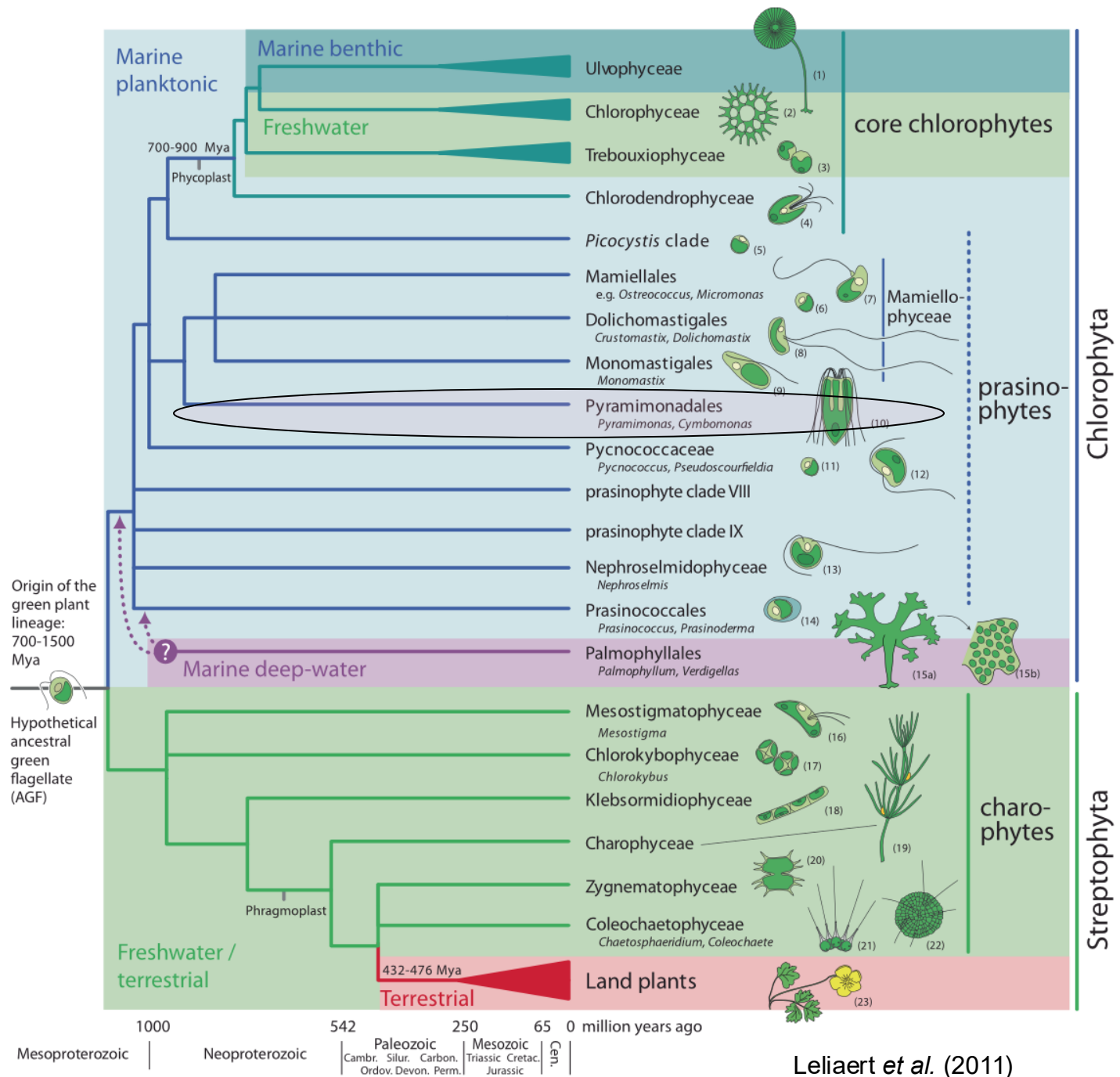
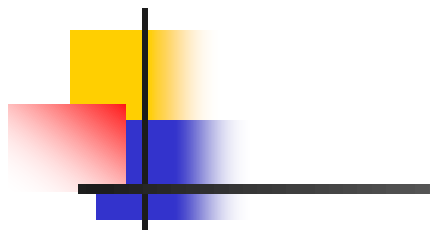


Phylum *Chlorophyta*

Classification according to the type of cytokinesis:

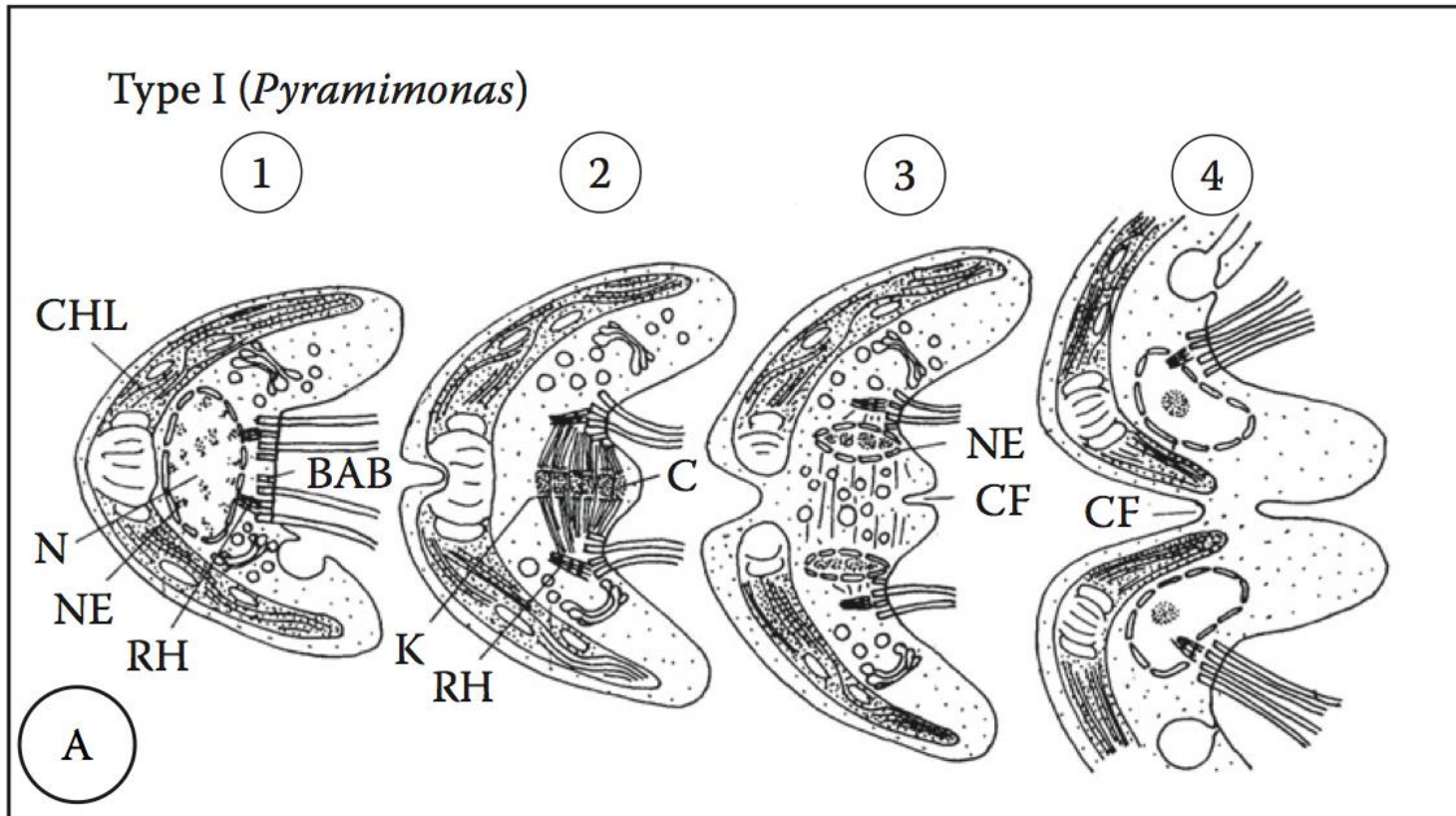


Phylum Chlorophyta

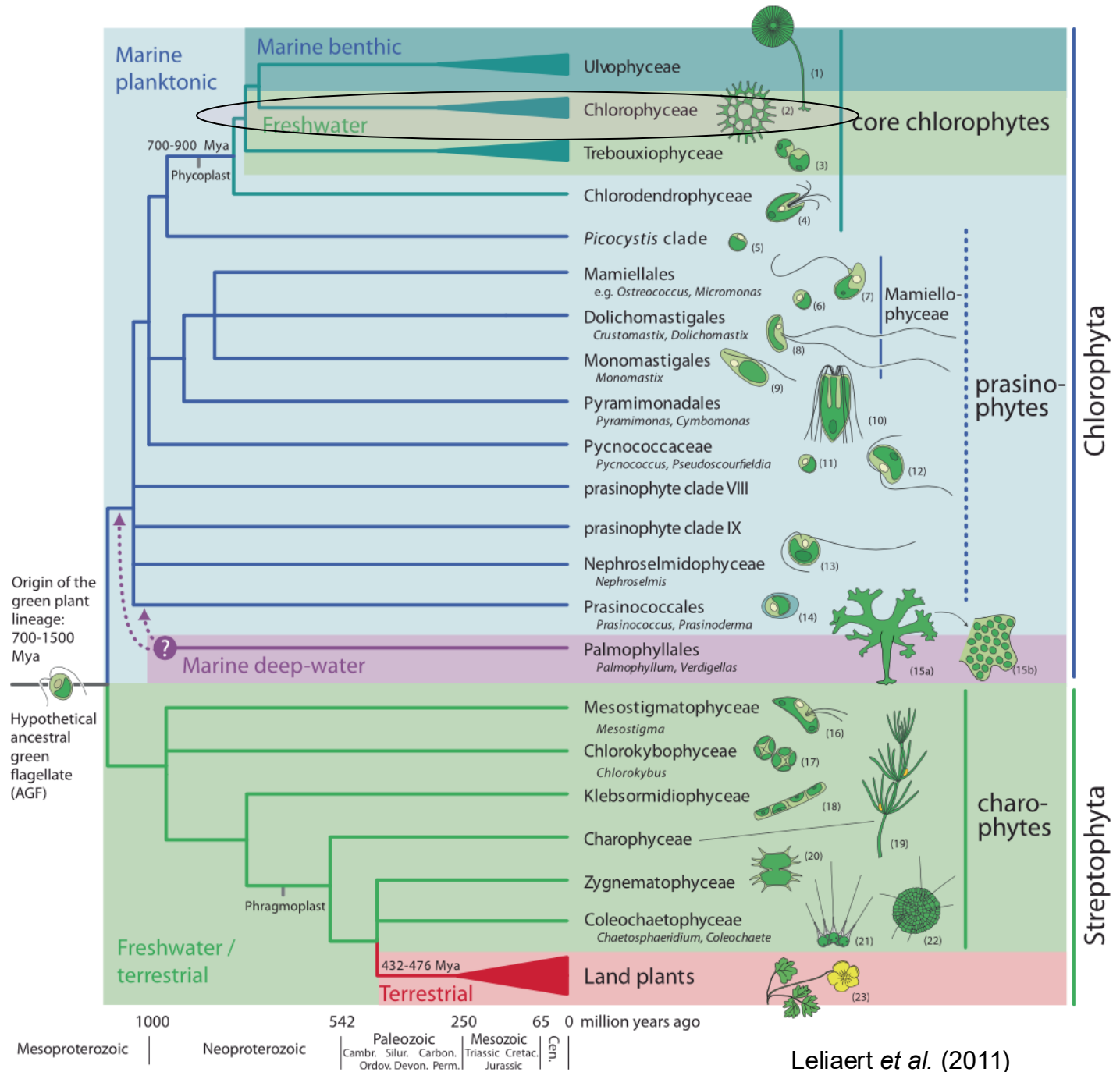
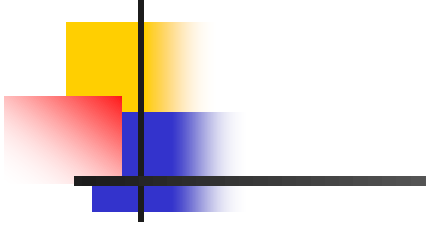


Phylum *Chlorophyta*

Mitose aberta com fuso mitótico persistente e citocinese por sulco (*Pyramimonadales*):

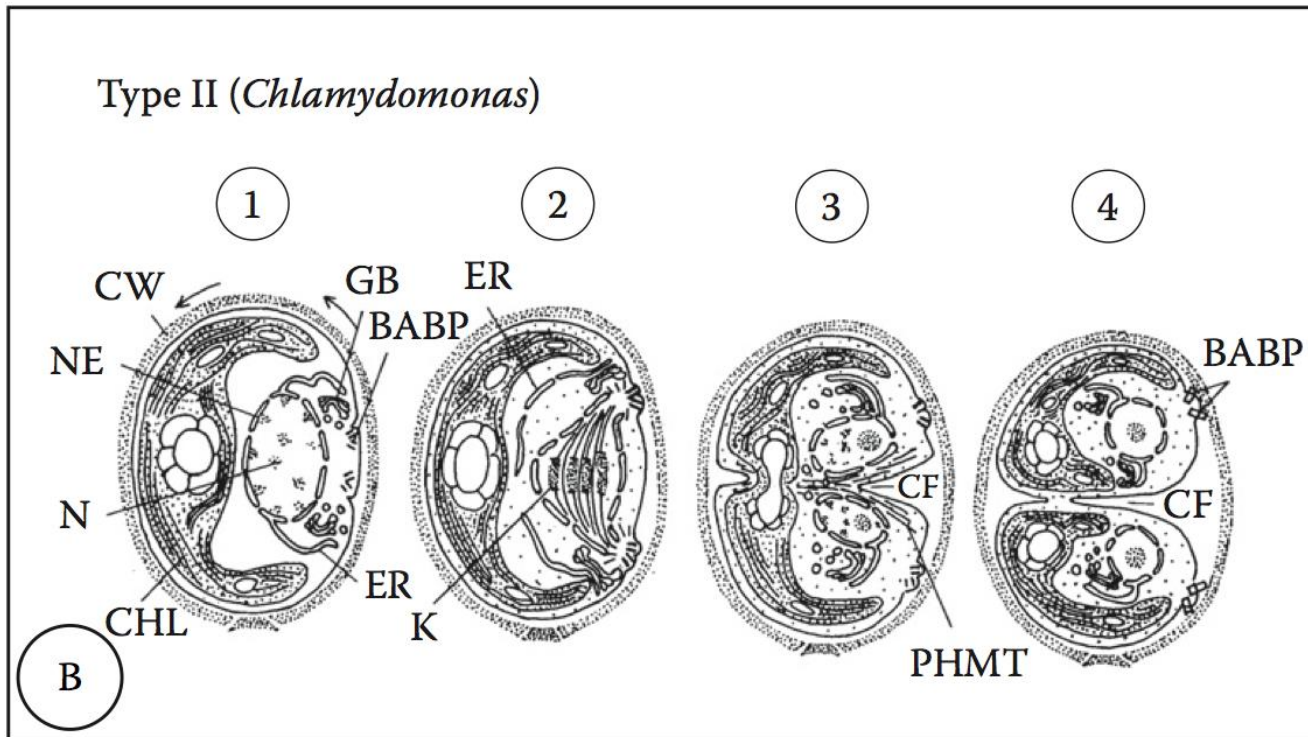


Phylum Chlorophyta



Phylum *Chlorophyta*

Closed mitosis without persistent mitotic spindle and cytokinesis with a growing furrow and phycoplast(*Chlorophyceae*):



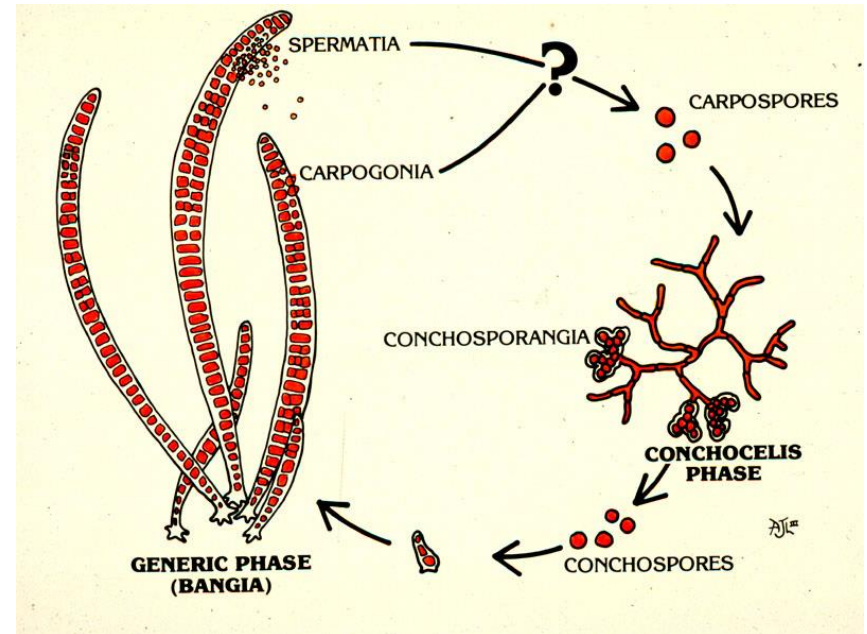
Phylum *Rhodophyta*



Phylum *Rhodophyta*



Rhodella reticulata



Life cycle of a filamentous rhodophyte



Rhodophyta vs. Cryptophyta

Rhodophyta	Cryptophyta
Photosynthetic pigments: chlorophyll <i>a</i> , phycoerythrin, phycocyanin, allophycocyanin (all subunits encoded in the plastid genome)	Photosynthetic pigments: chlorophyll <i>a</i> , <i>c</i> ₂ evolutionarily related to phycoerythrins (the α -subunit is encoded in the nuclear genome)
Phycobilisomes attached to the exterior of simple thylakoids	Biliproteins within the thylakoid lumen; thylakoids grouped in pairs
Non-flagellated in deep water habitats	Flagella inserted near a crypt; superficial water habitats
Floridian cytoplasmic starch	Periplastic starch (between the plastid envelope and the two outer membranes)
Chloroplast with a double membrane and non-stacked thylakoids	Chloroplast surrounded by 4 membranes
ER not associated with chloroplast	ER associated with chloroplast
Mitochondria with tubular cristae	Mitochondria with flat cristae