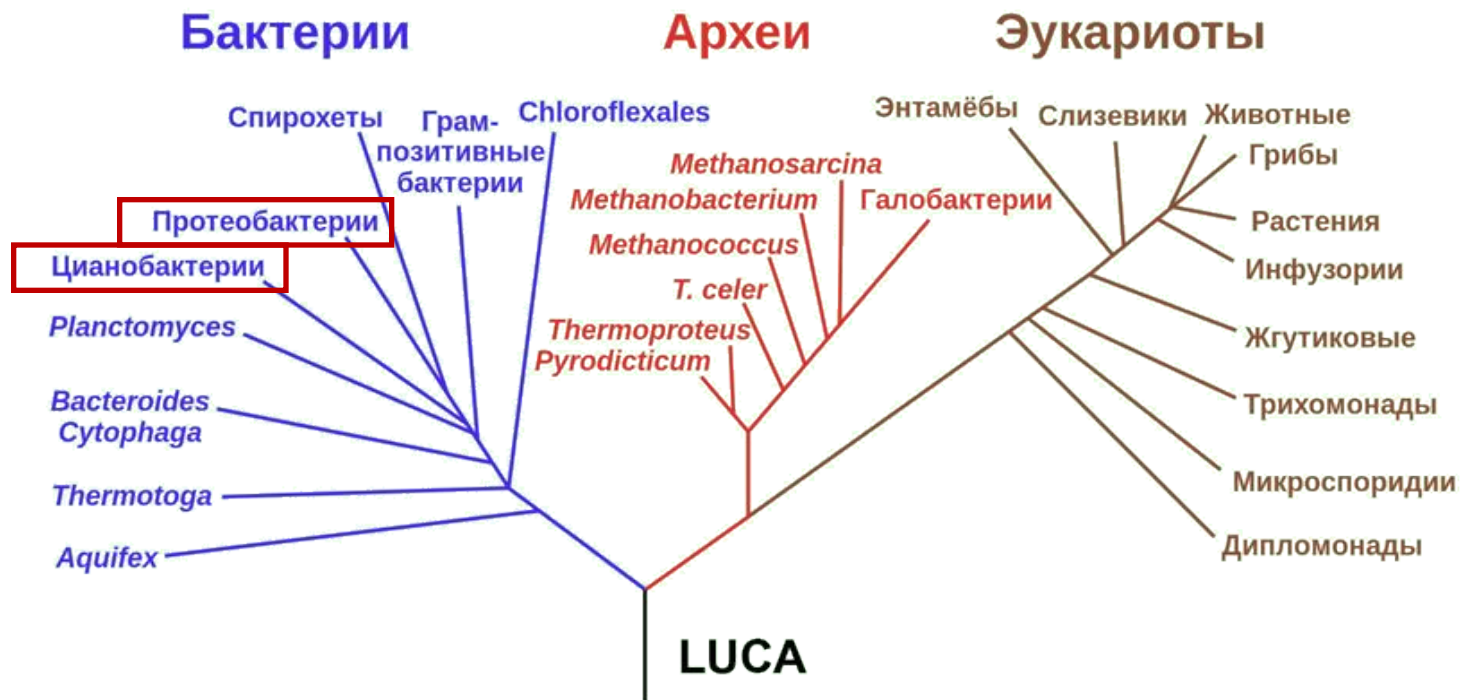
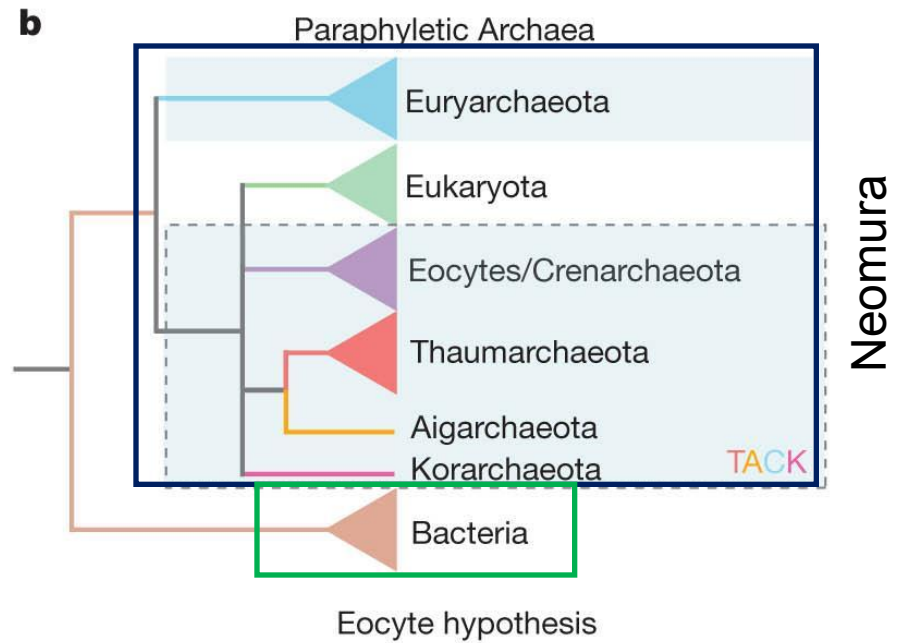
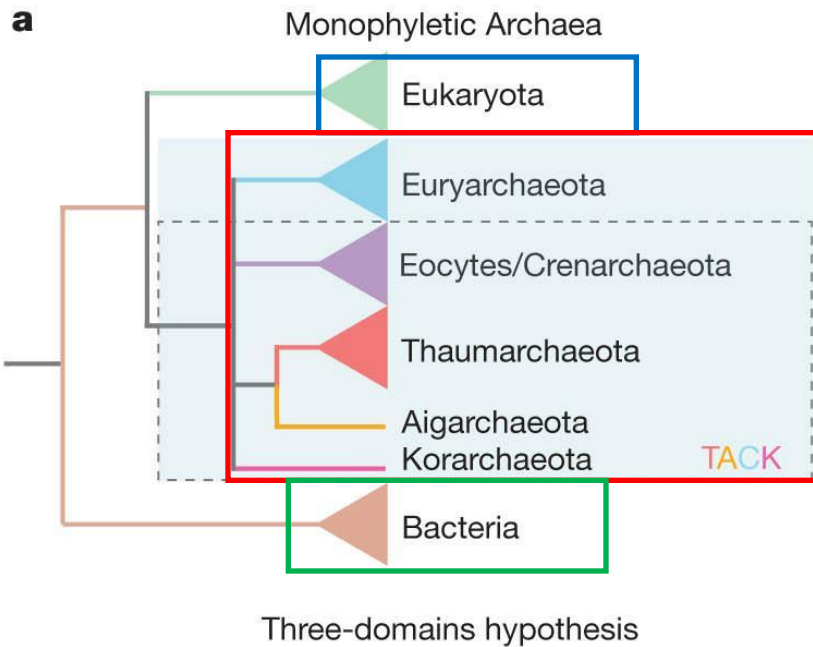
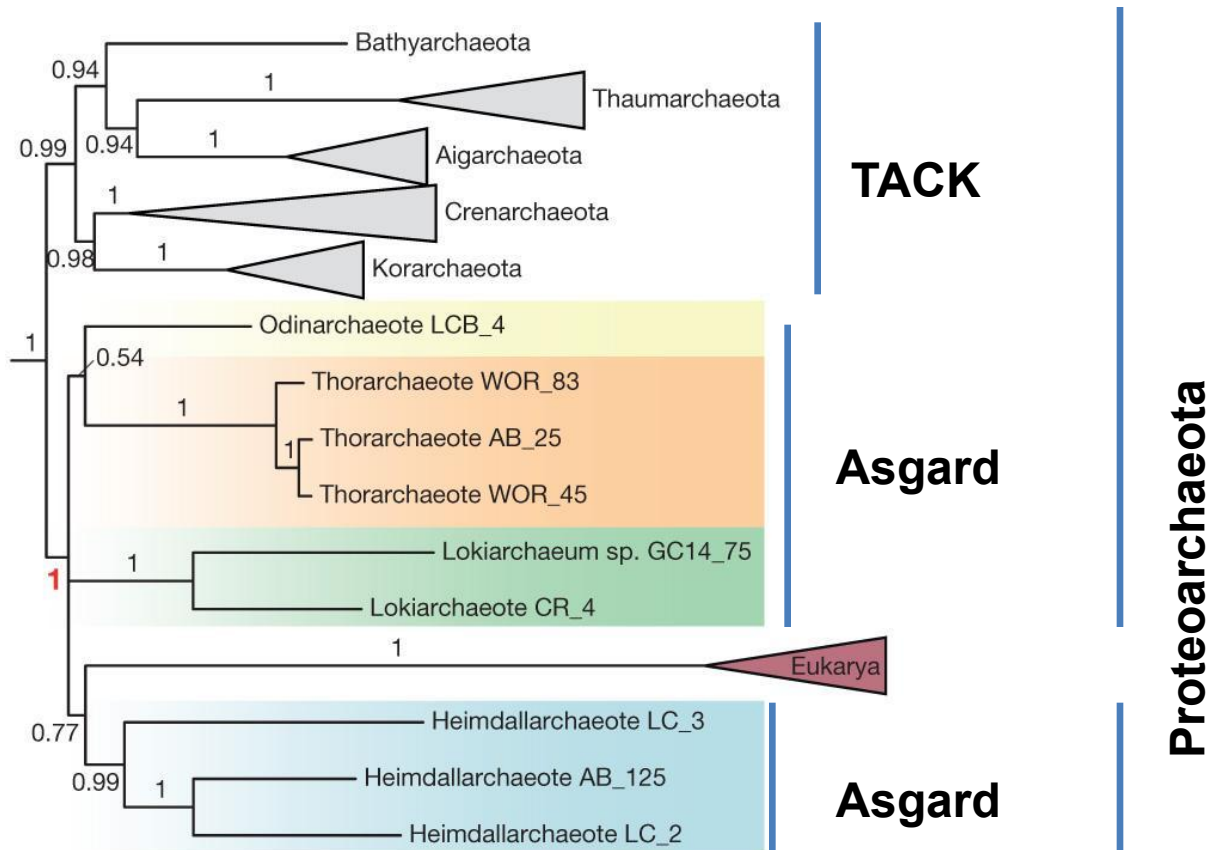




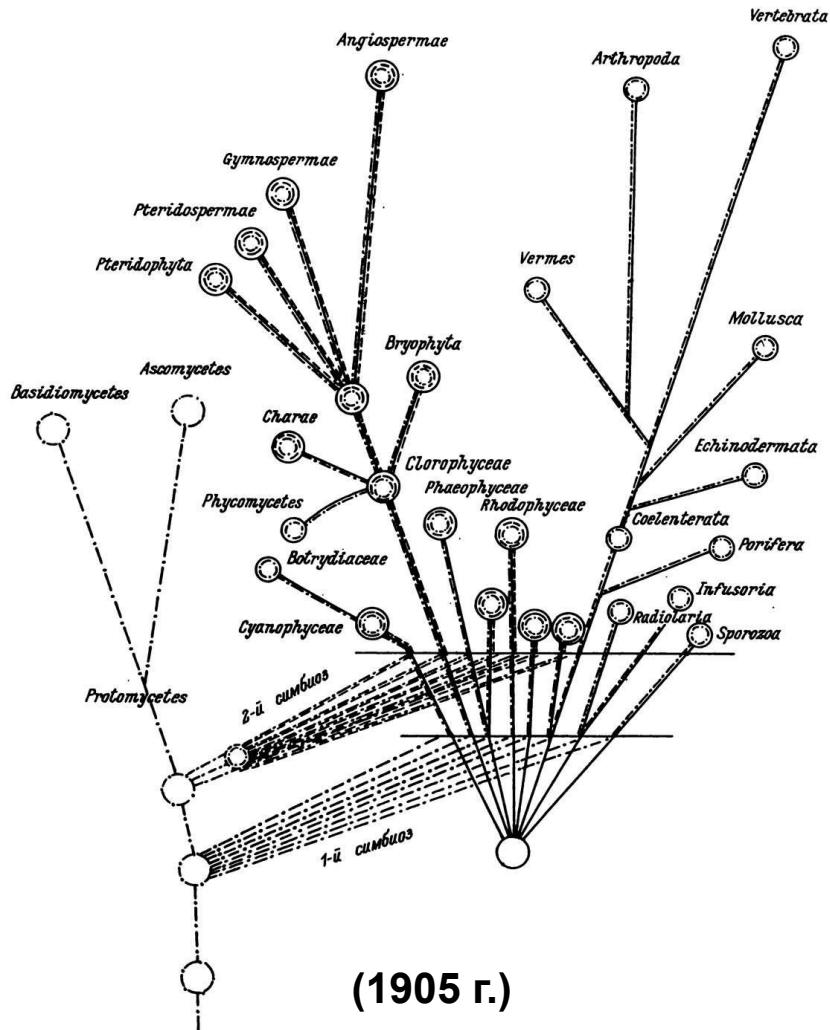


	Bacteria	Archaea	Eucaryota
Пептидогликан (муреин)	есть	нет	нет
Гистоны	нет	есть	есть
Иницирующая аминокислота при биосинтезе белков	N-формилметионин	миеонин	миеонин
РНК-полимераза	1 тип	Несколько типов	Несколько типов

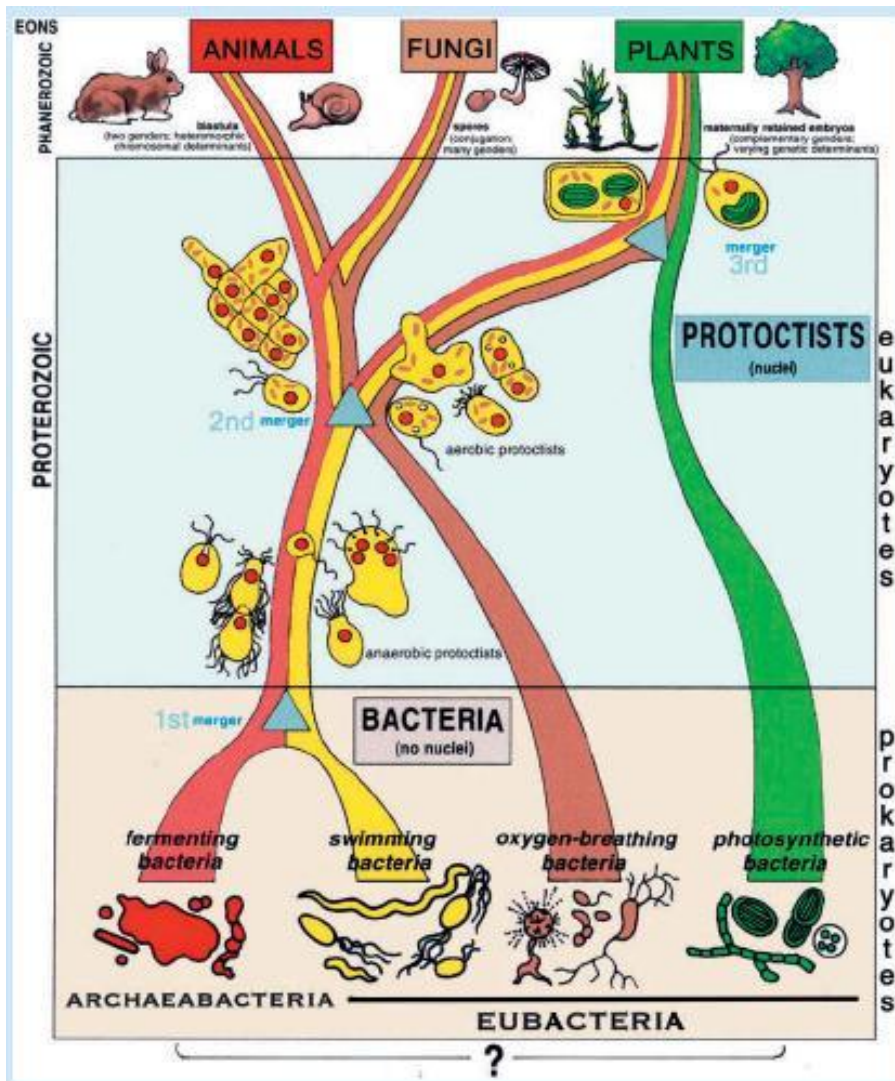
Парафилия архей



Теория симбиогенеза

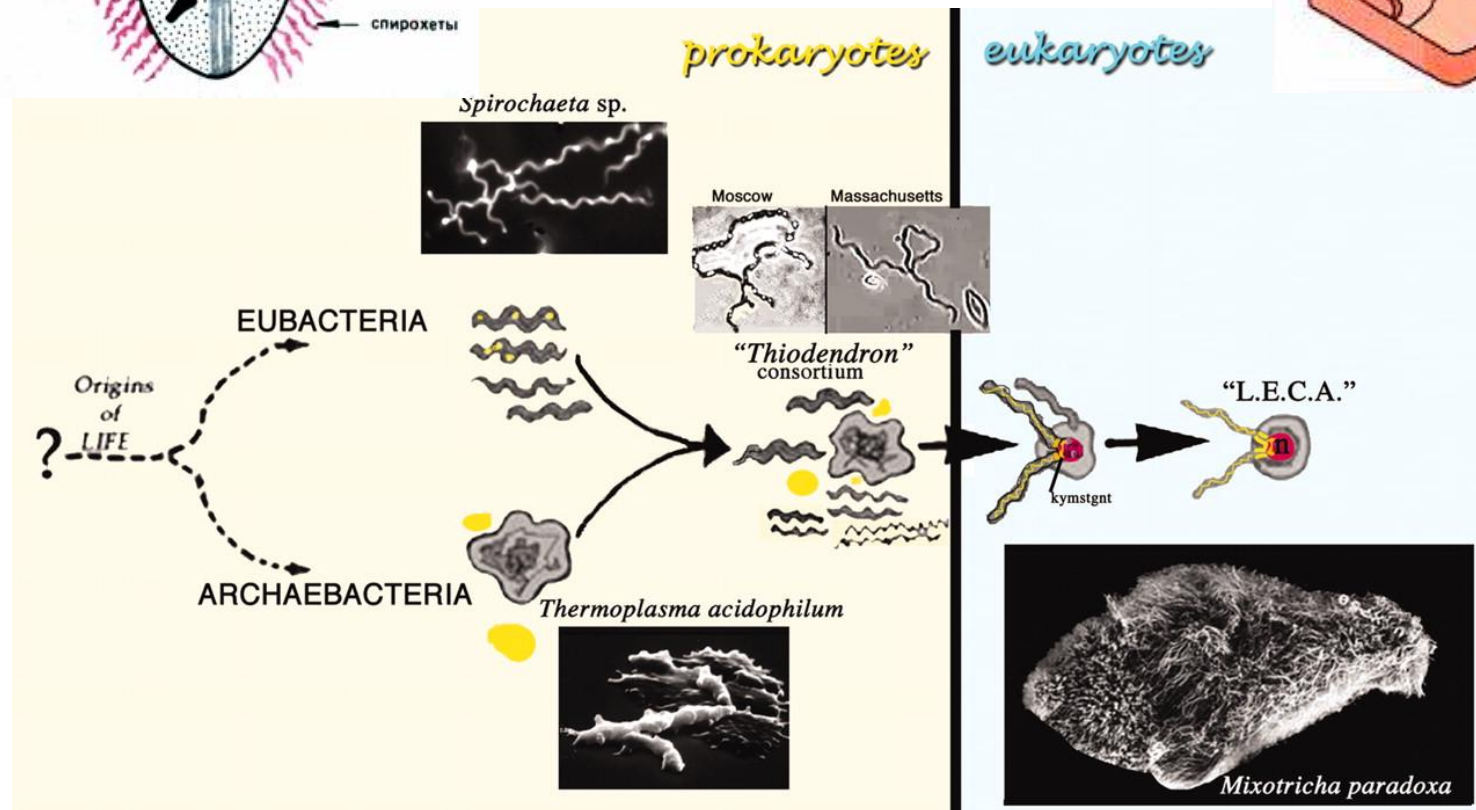
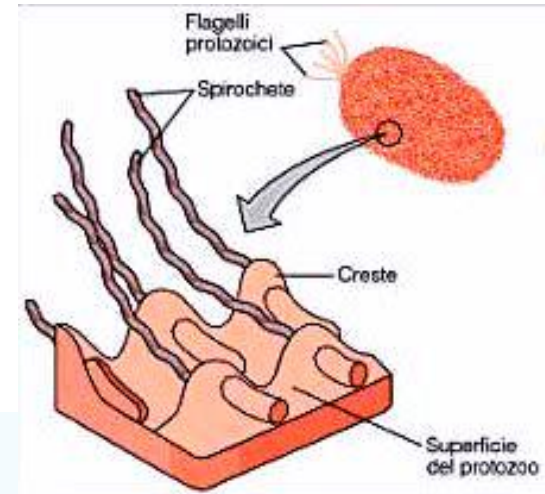
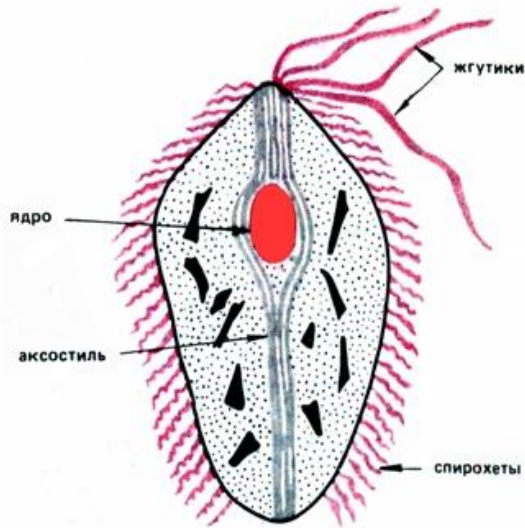


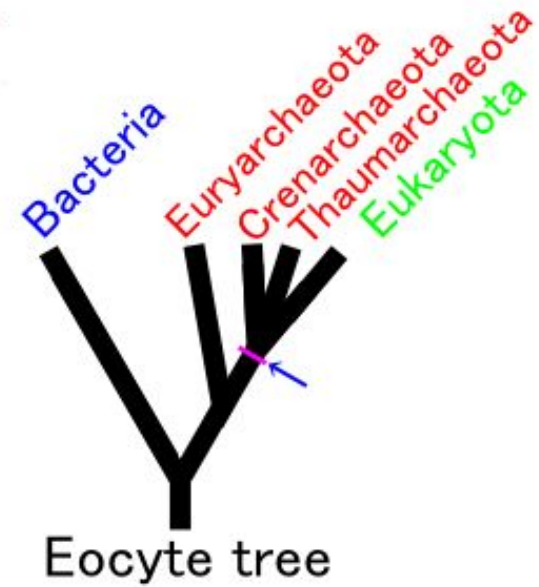
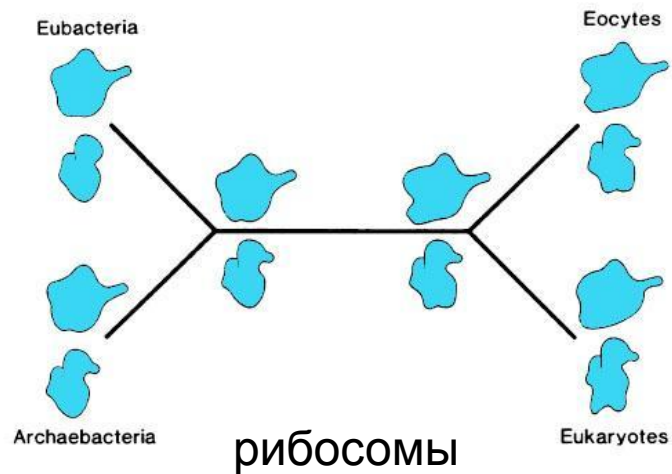
Константин
Сергеевич
Мересковский



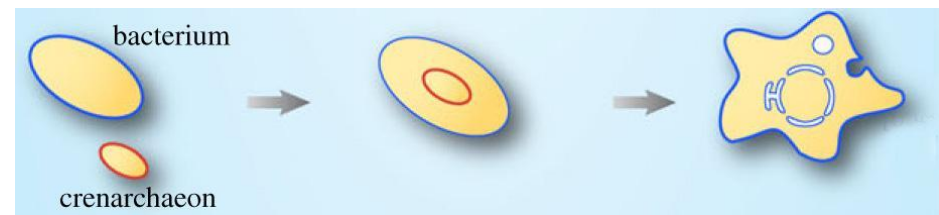
Линн
Маргулис
(1938-2011)

Mixotricha paradoxa



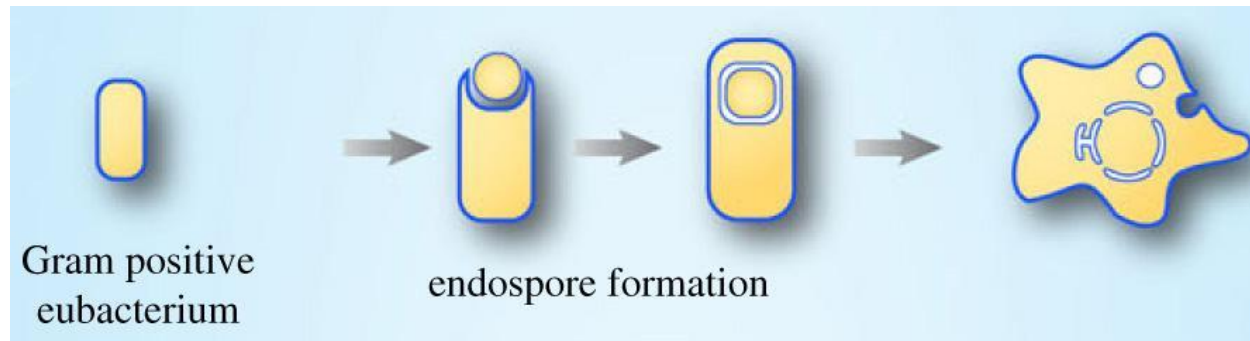


Автогенетическая гипотеза происхождения ядра на основе архейной клетки

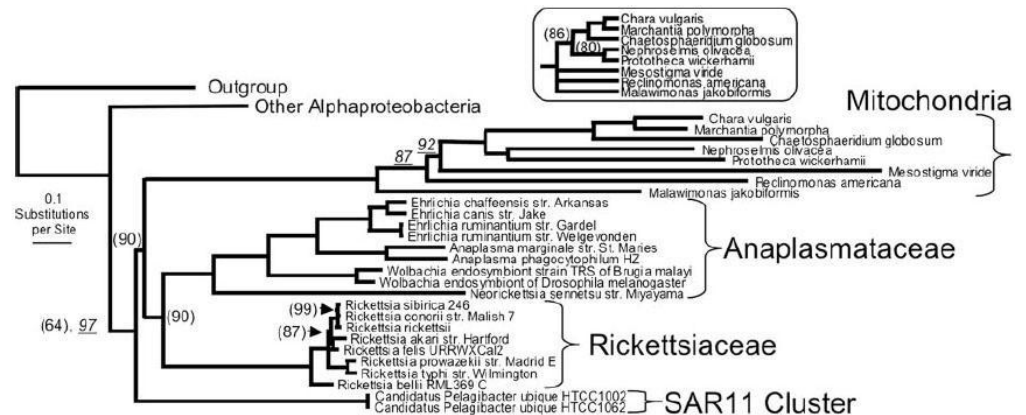


Симбиогенетическая гипотеза происхождения ядра на основе архейной и бактериальной клеток

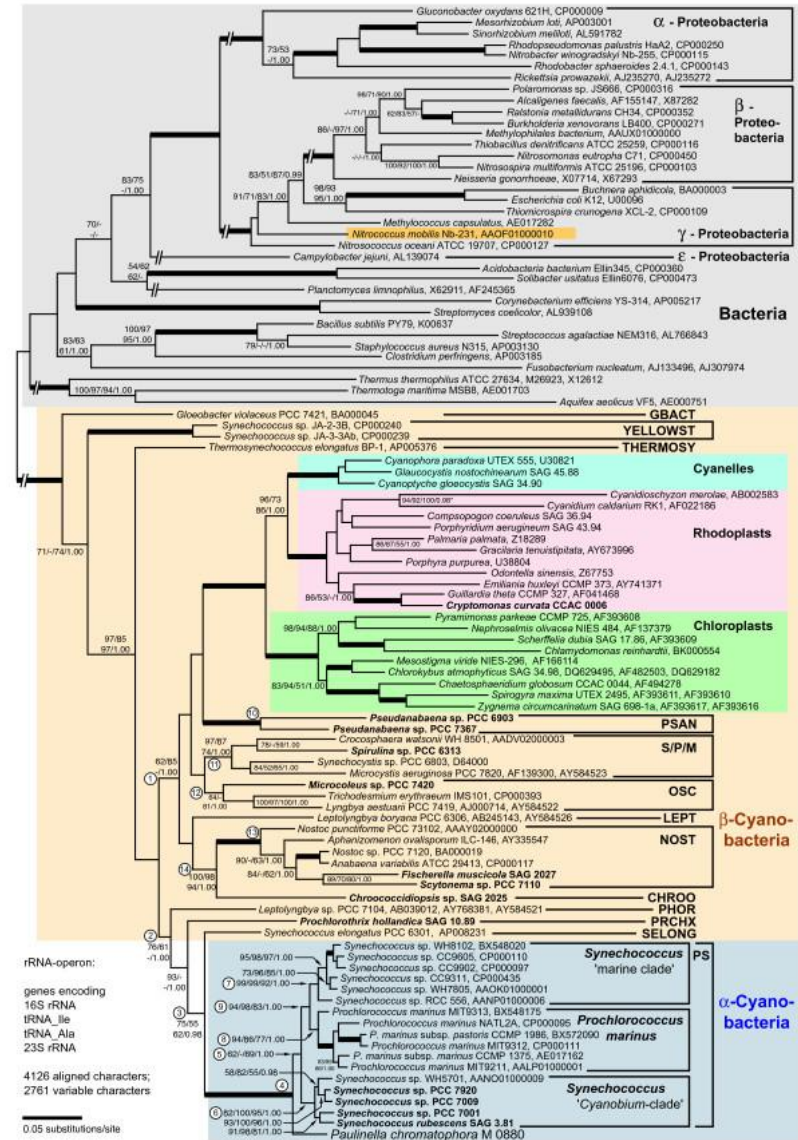
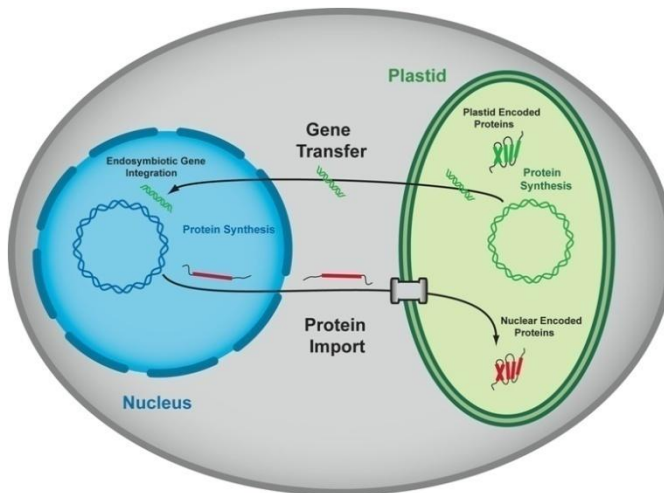
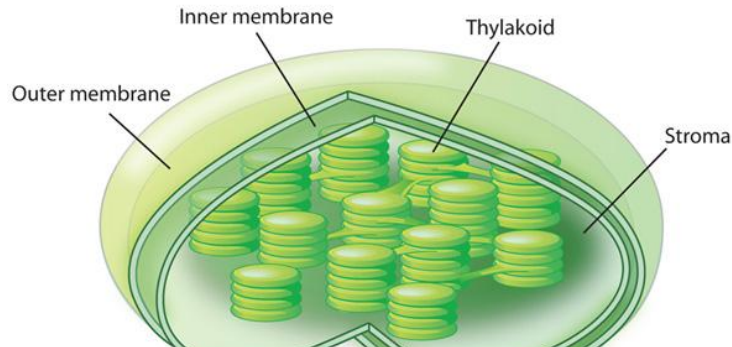
Автогенетические гипотезы происхождения ядра на основе бактериальных клеток



Митохондрии – видоизмененные альфапротеобактерии, близкие к риккетсиям

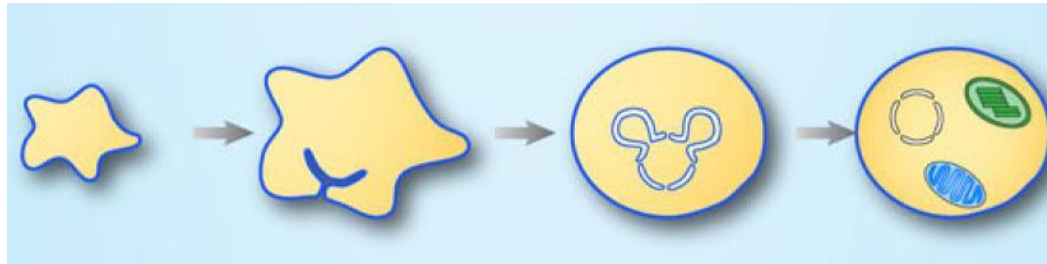


Пластиды – видоизмененные цианобактерии

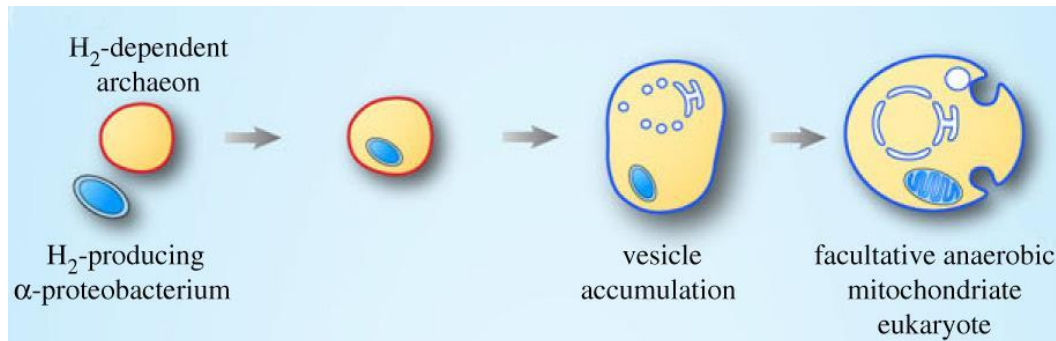
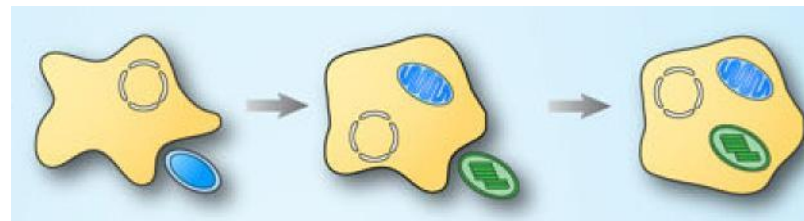


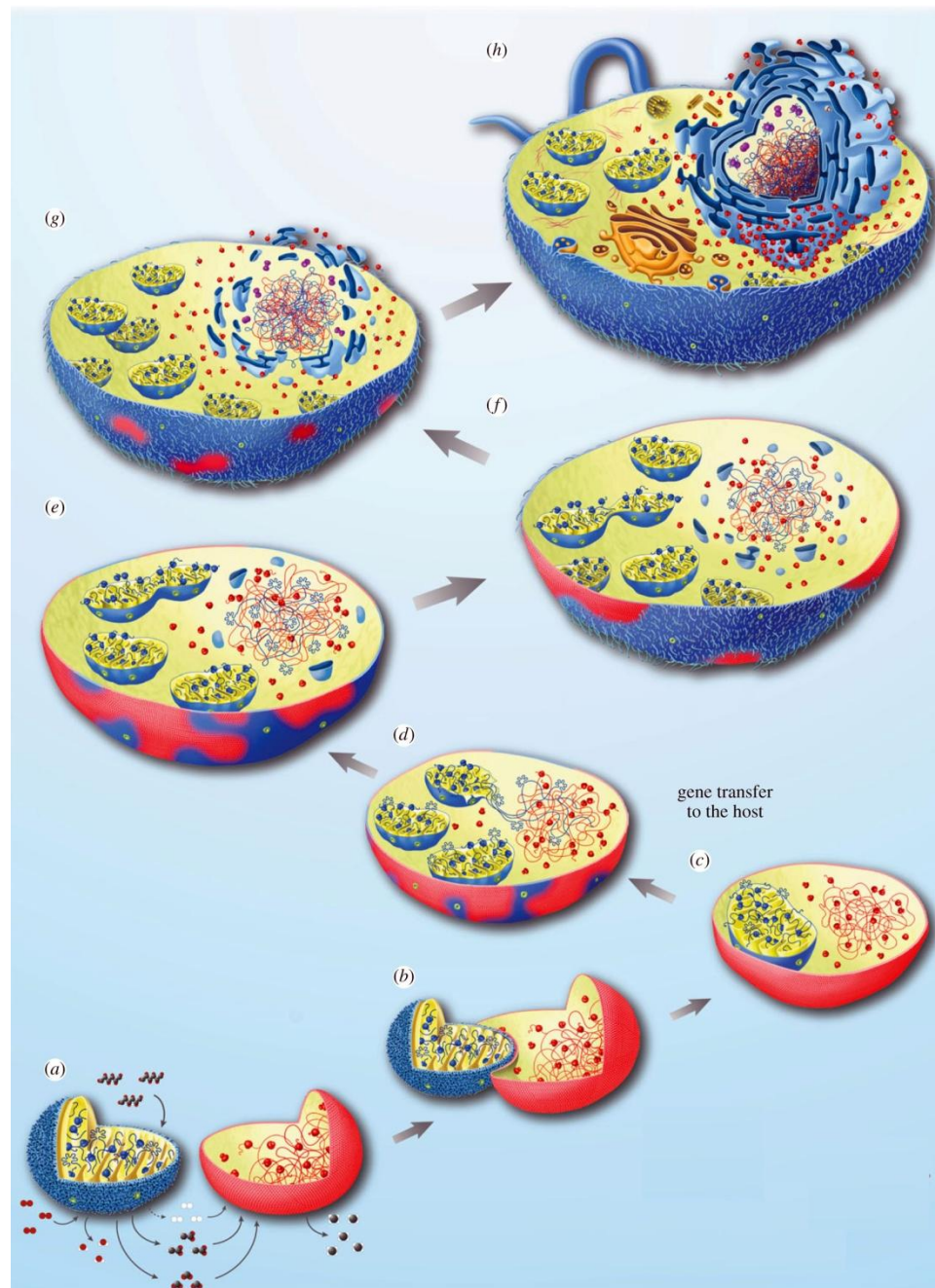
Гипотезы происхождения митохондрий и хлоропластов

Автогенетическая гипотеза

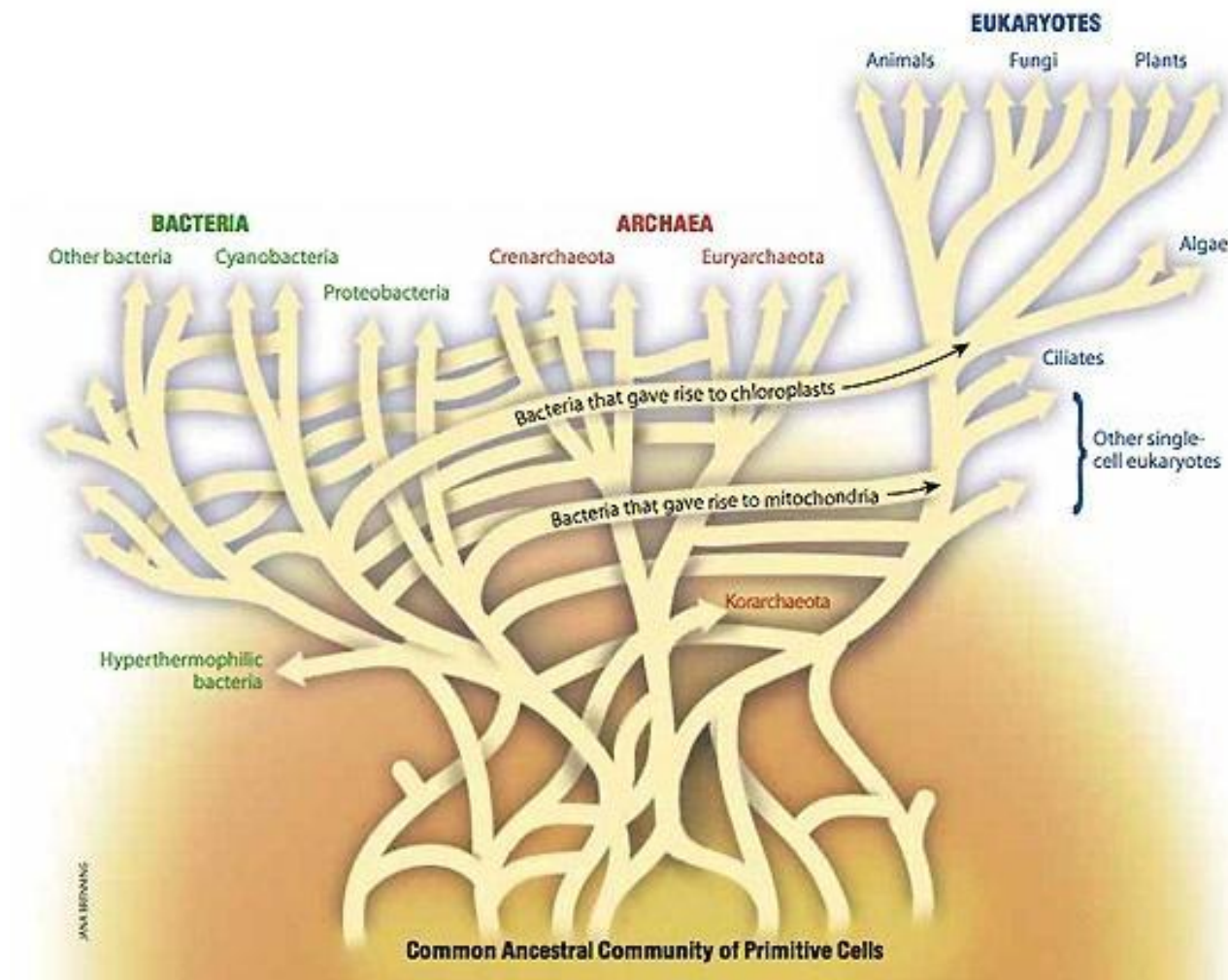


Симбиогенетическая гипотеза

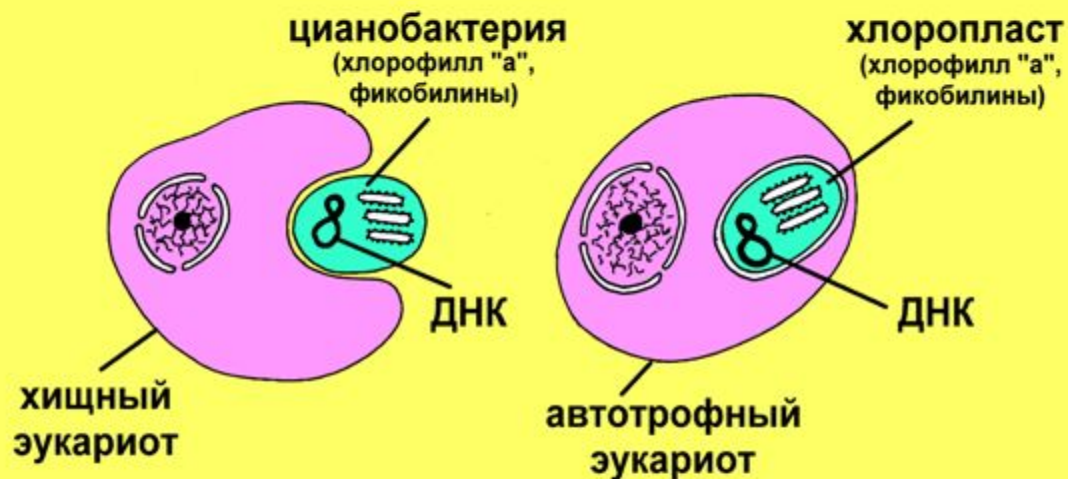




Горизонтальный перенос генов



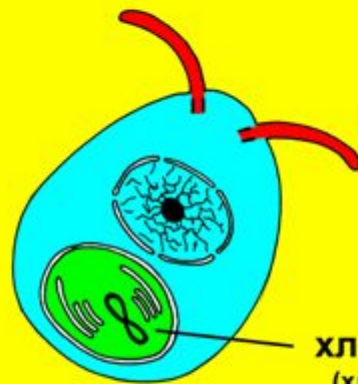
ПРОИСХОЖДЕНИЕ КРАСНЫХ ВОДОРΟΣЛЕЙ



ПРОИСХОЖДЕНИЕ ЗЕЛЕННЫХ ВОДОРОСЛЕЙ



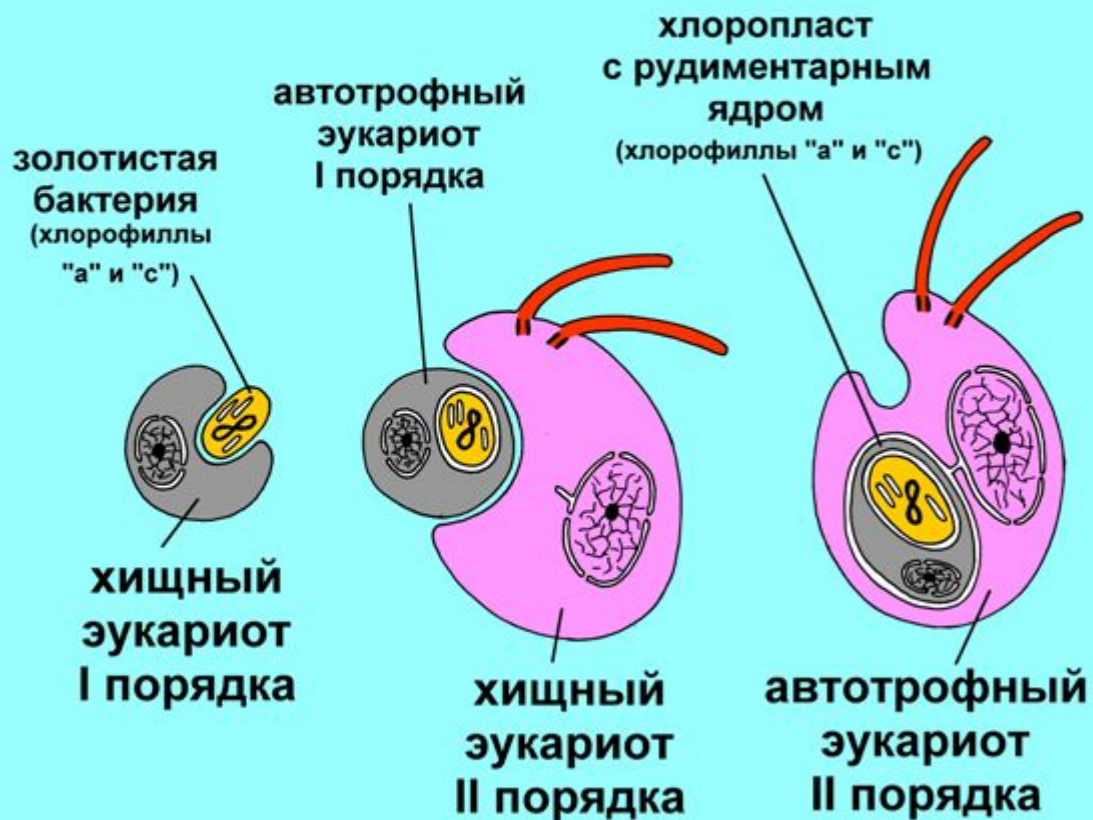
**хищный
жгутиковый
эукариот**



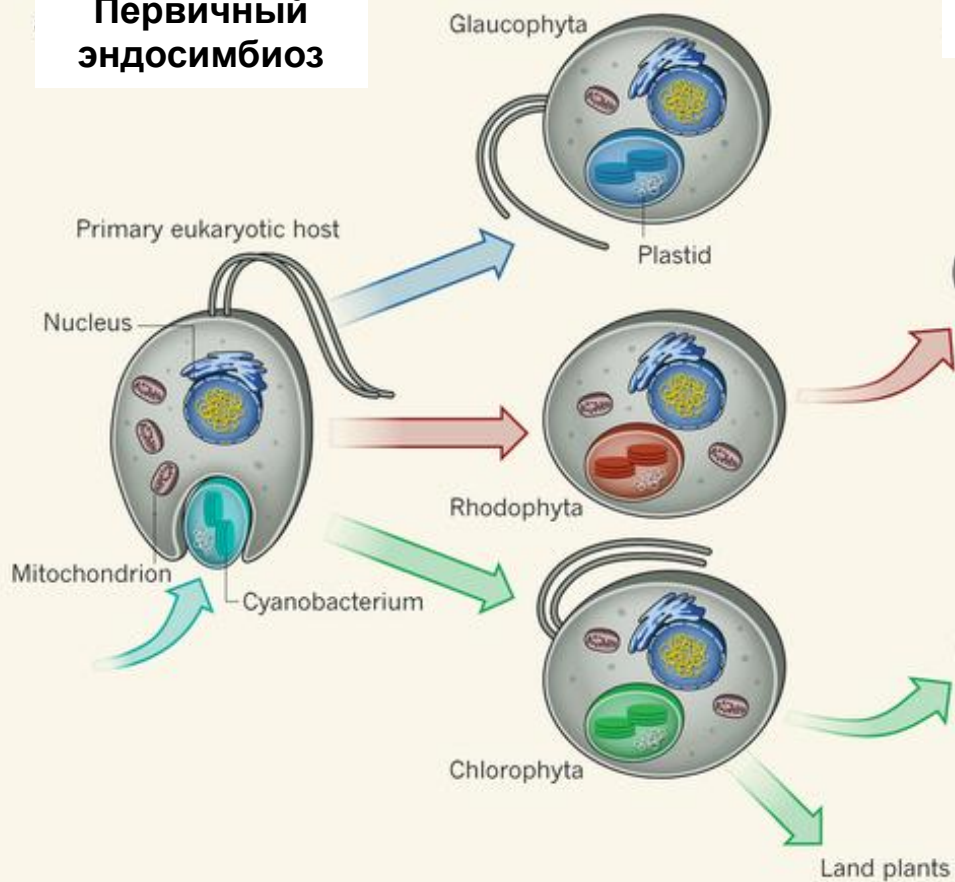
**автотрофный
жгутиковый
эукариот**



ПРОИСХОЖДЕНИЕ КРИПТОФИТОВЫХ, ЗОЛОТИСТЫХ, БУРЫХ И ДИАТОМОВЫХ ВОДОРОСЛЕЙ

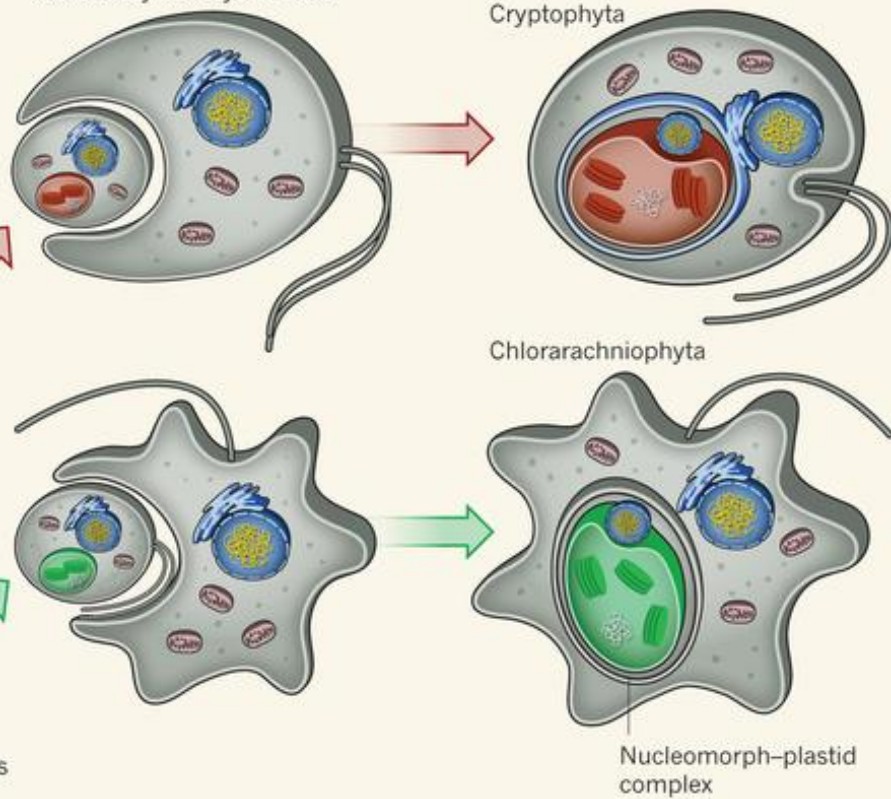


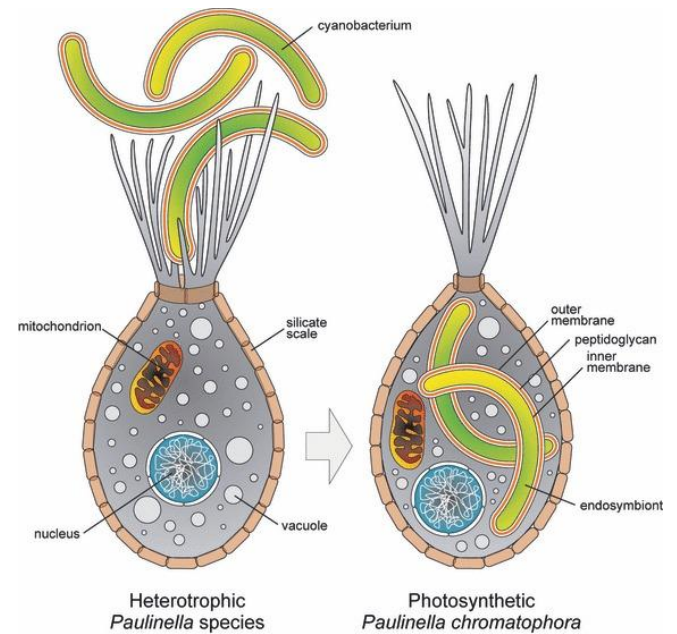
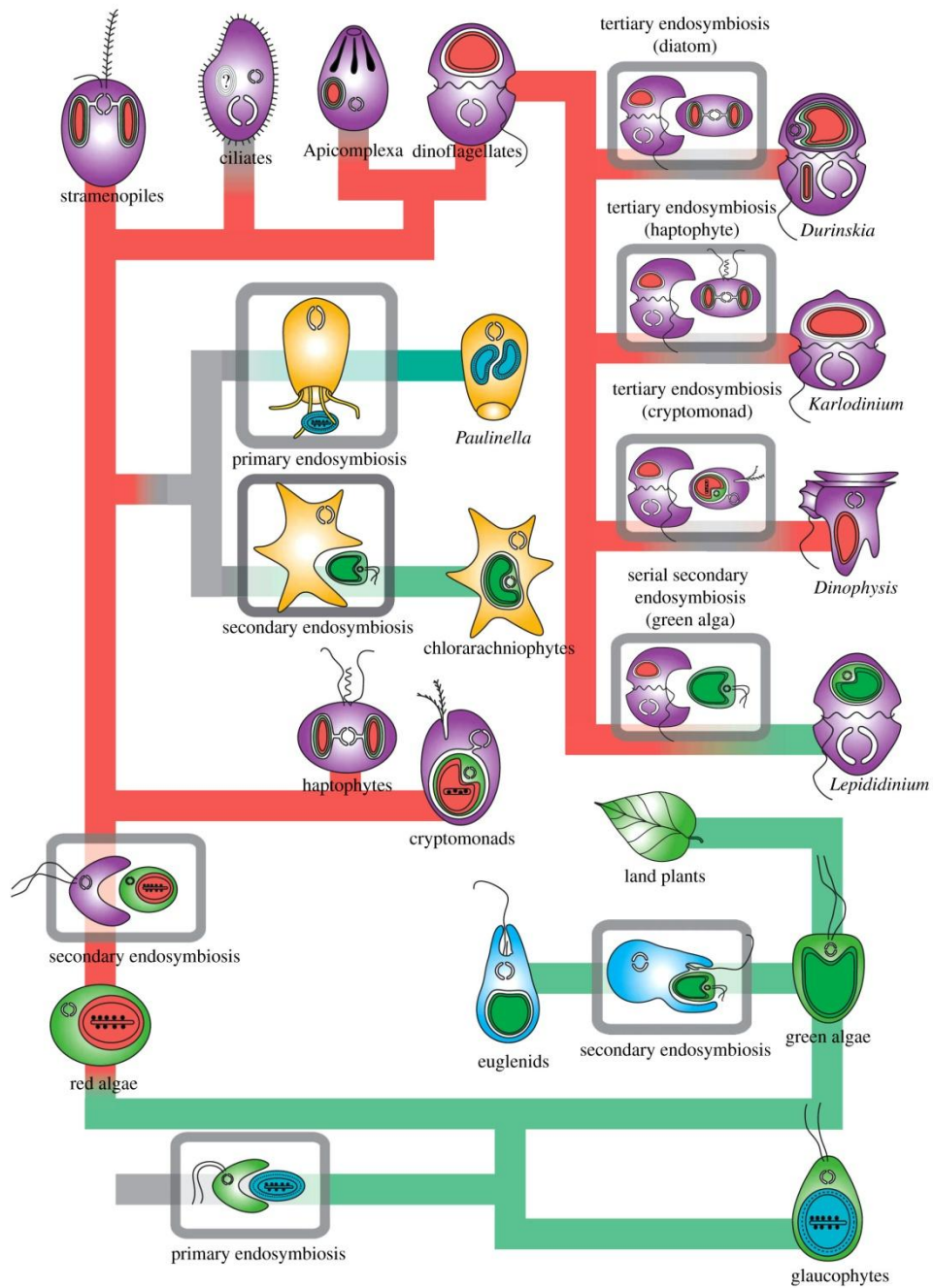
Первичный эндосимбиоз



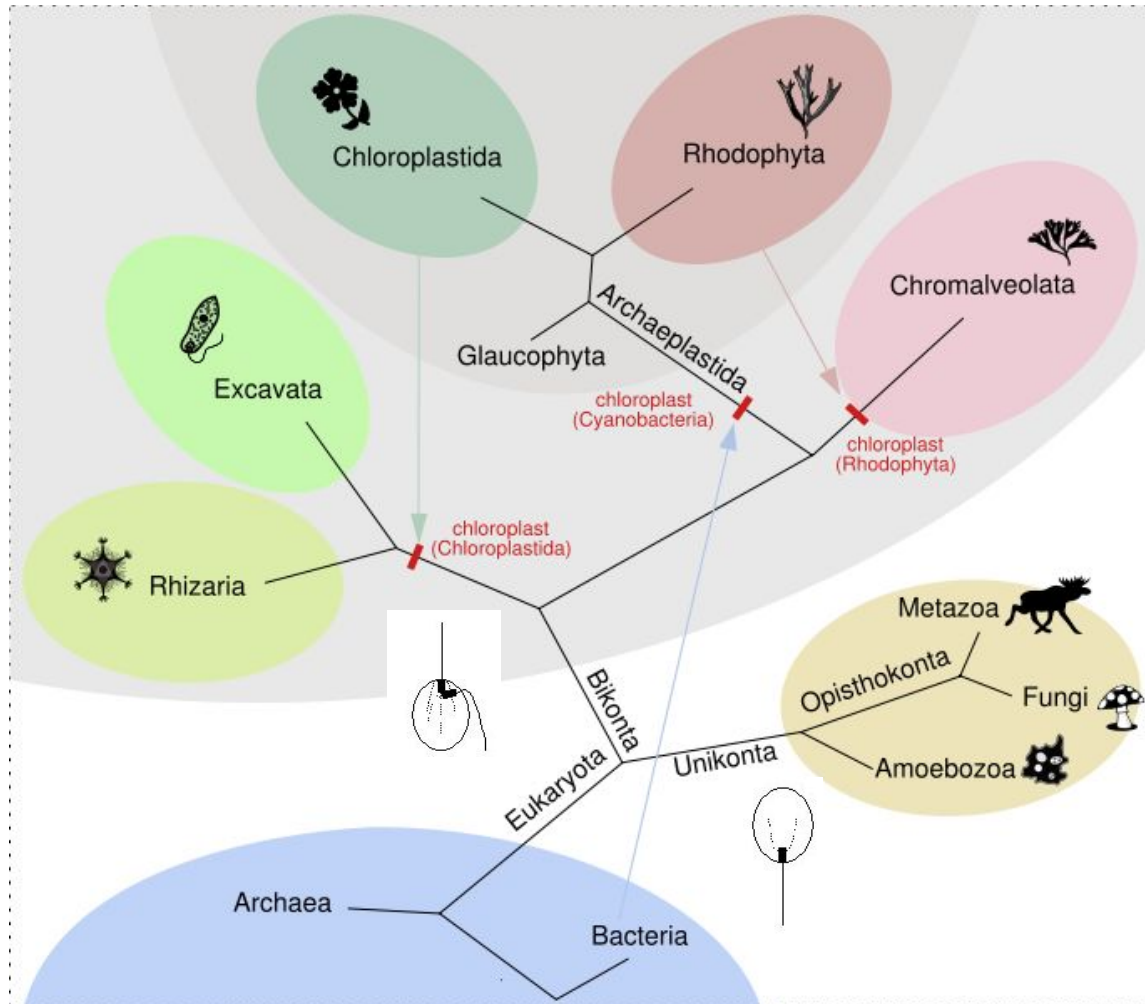
Вторичный эндосимбиоз

Secondary eukaryotic host

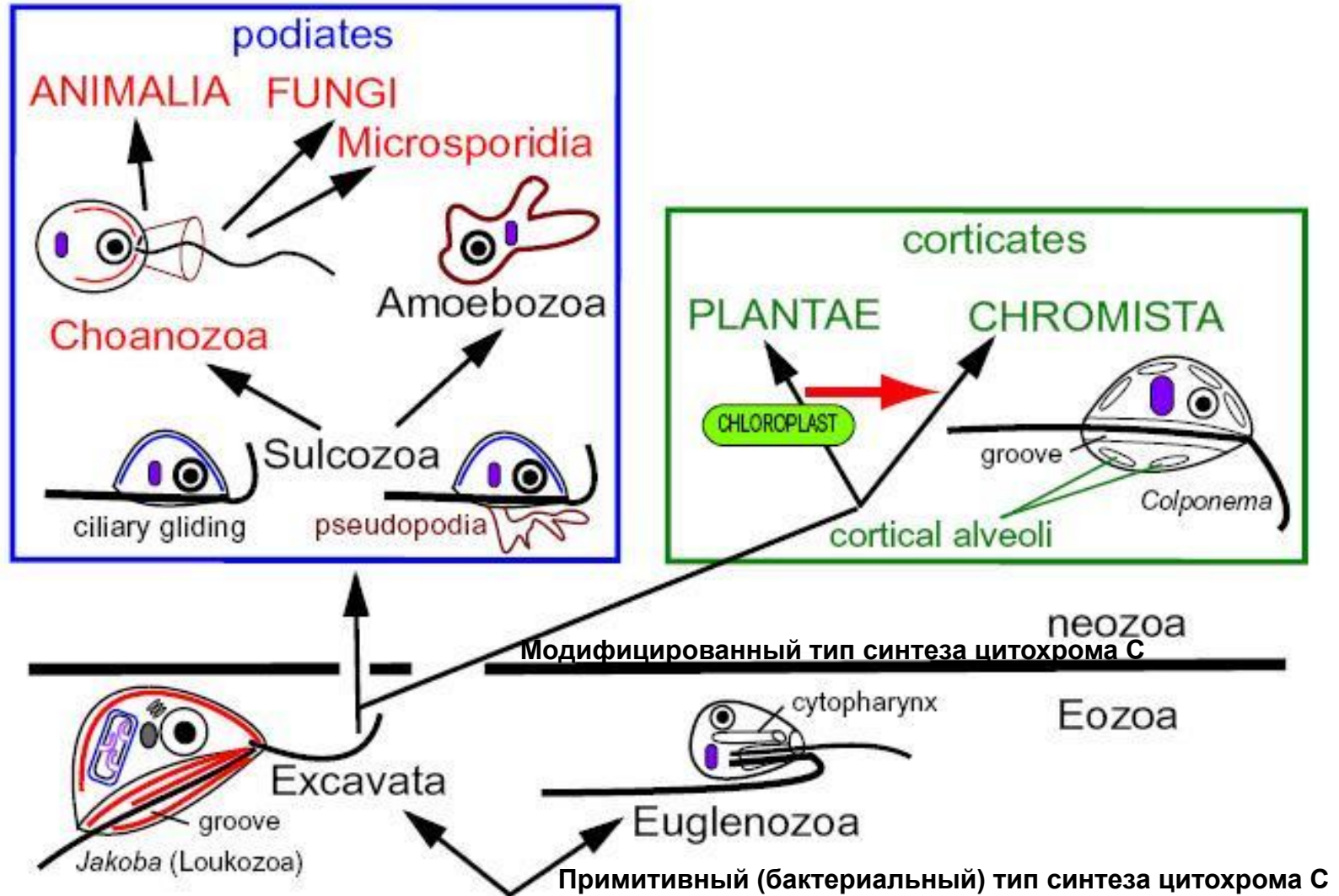




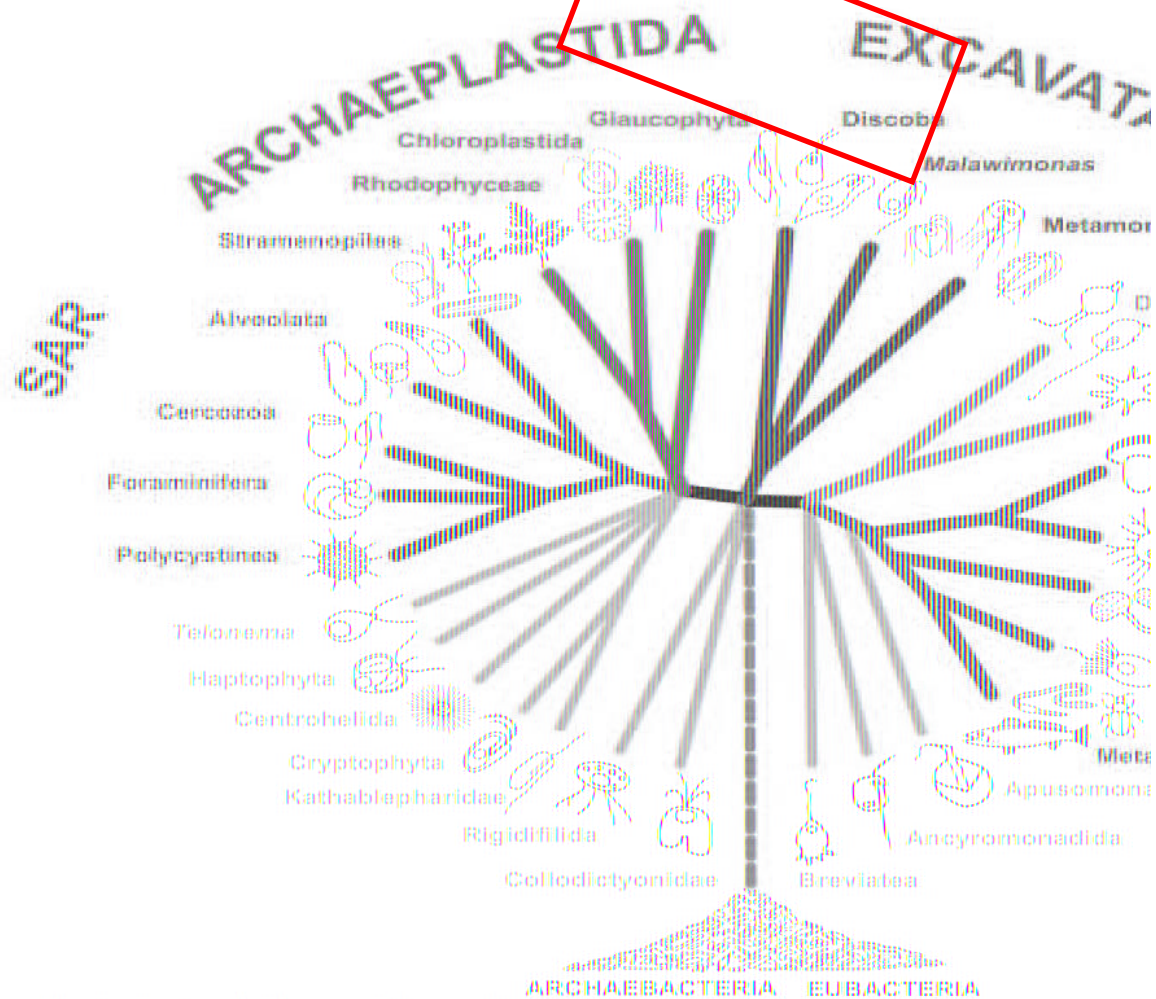
Надцарства Bikonta и Unikonta

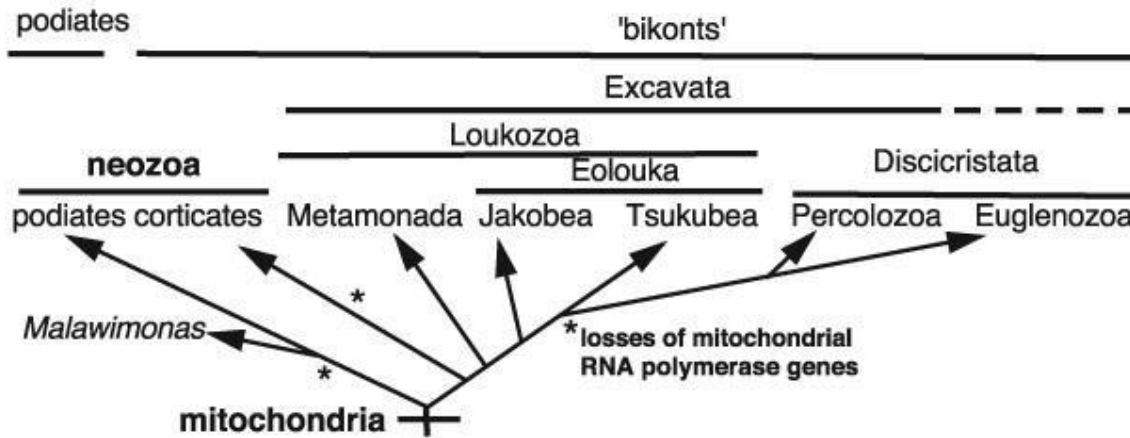


Надцарства Eozoa и Neozoa



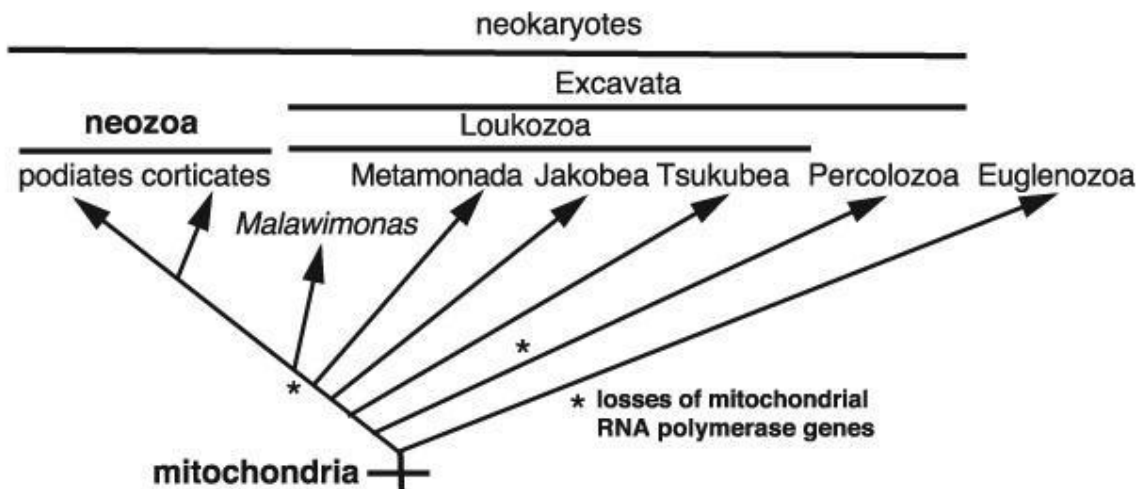
Царство Excavata



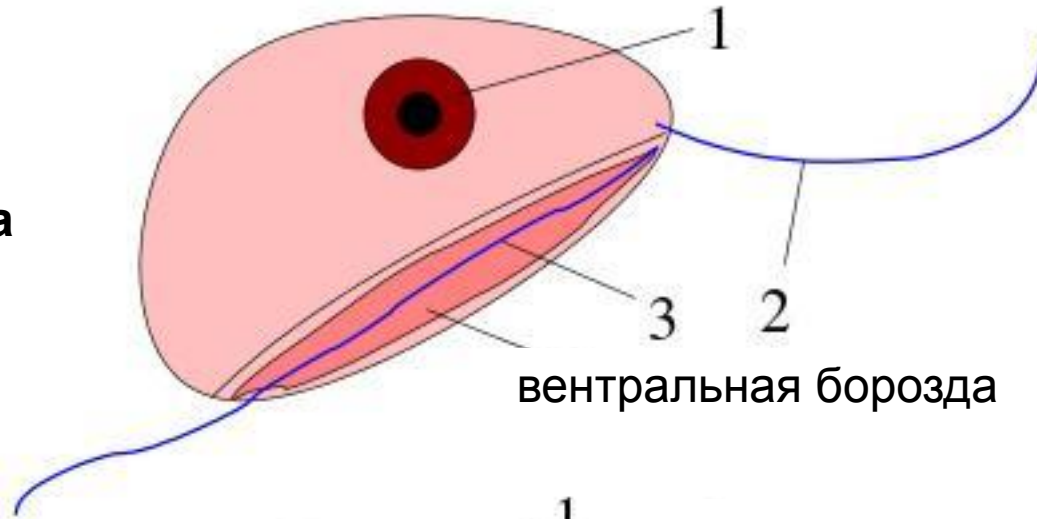


Надтипы

Discoba
Metamonada
Percolozoa
Loukozoa

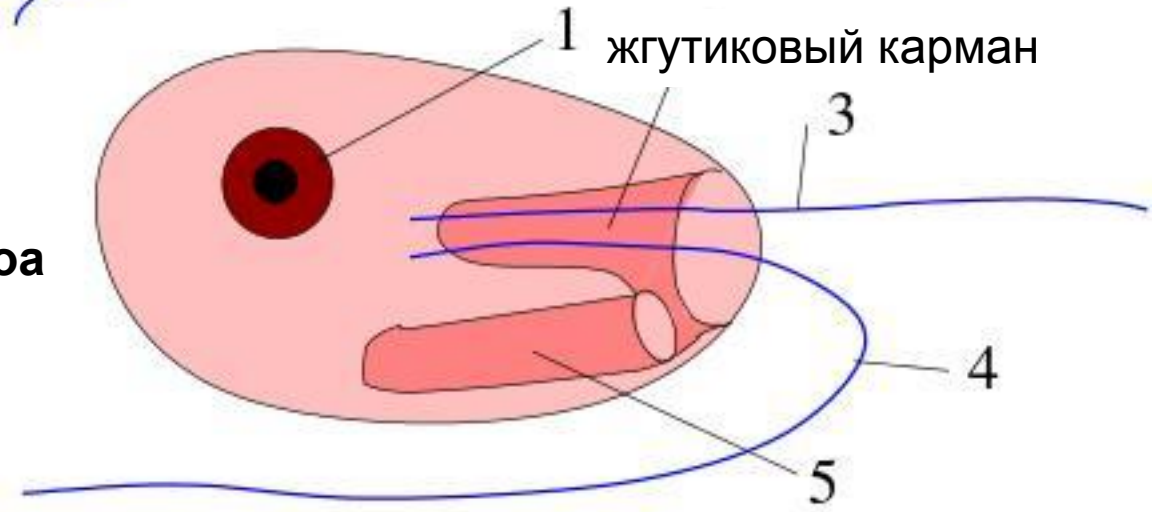


Jakobida



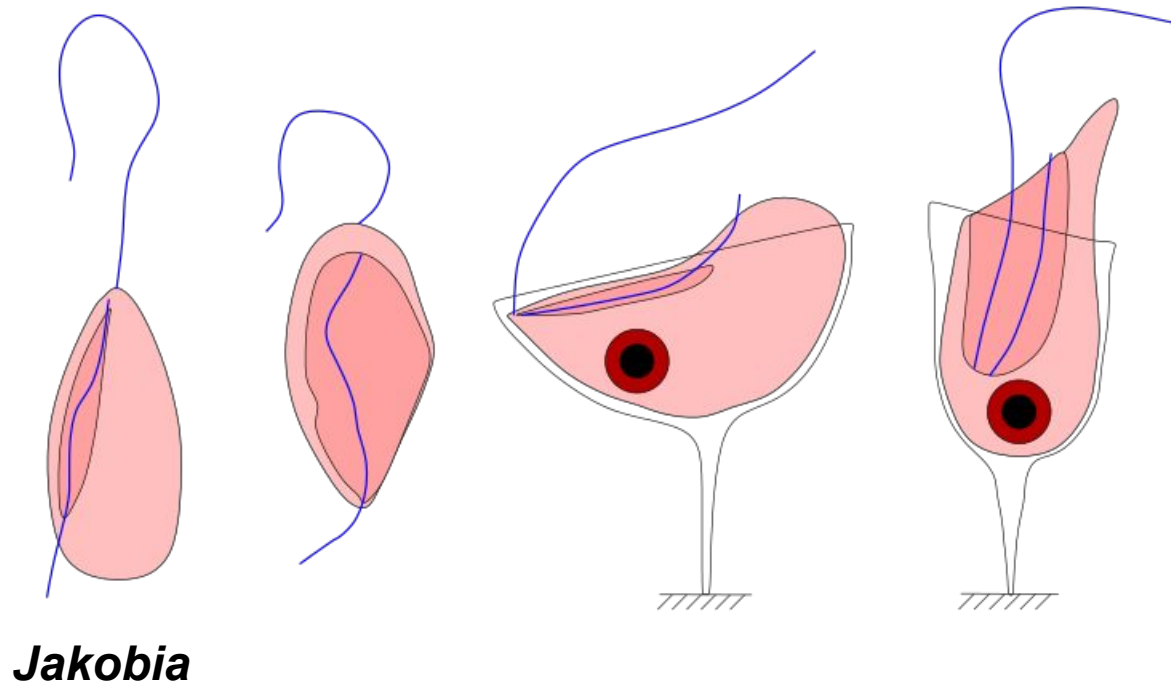
вентральная борозда

Euglenozoa



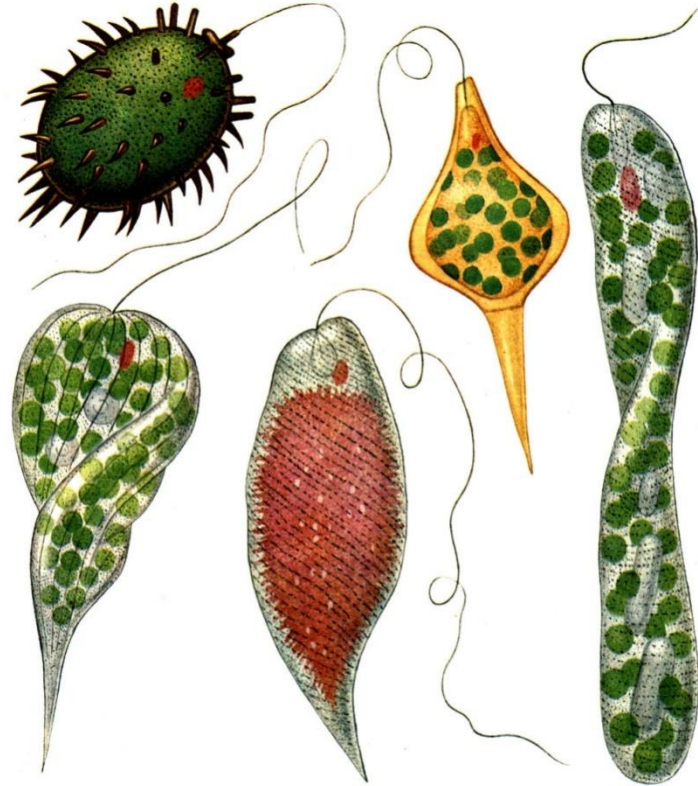
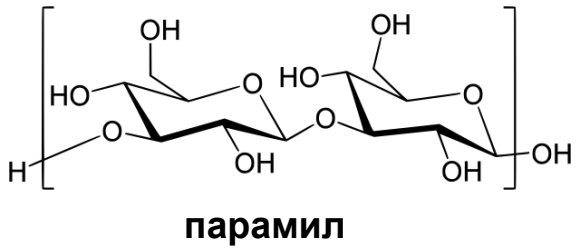
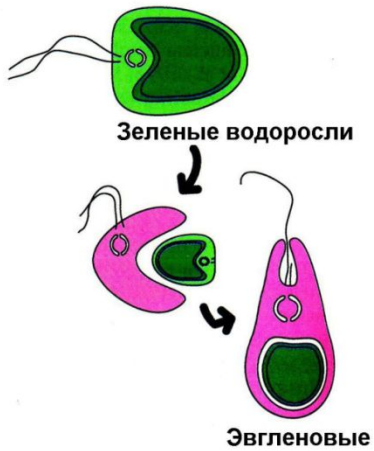
жгутиковый карман

Тип Jakobea



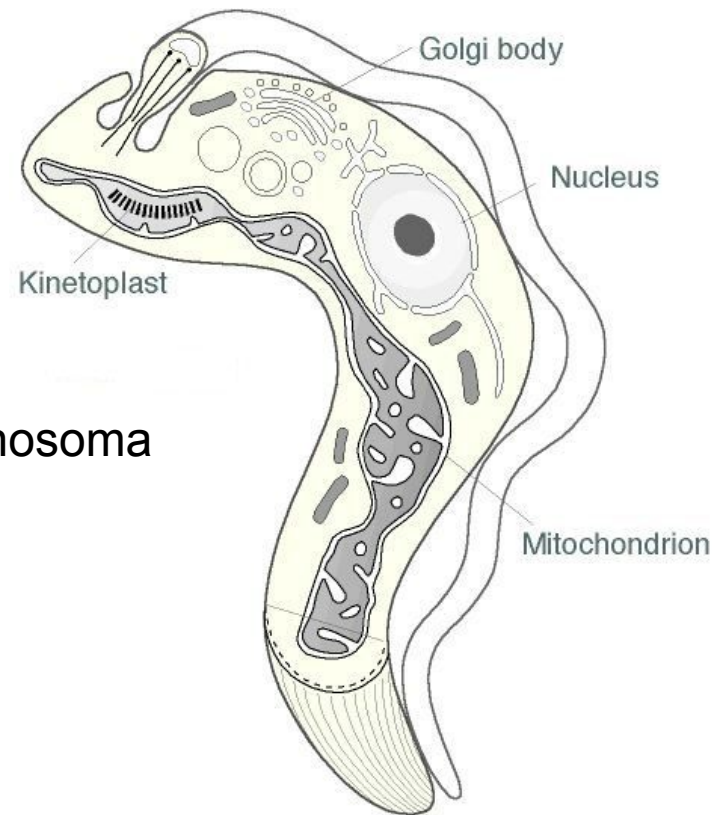
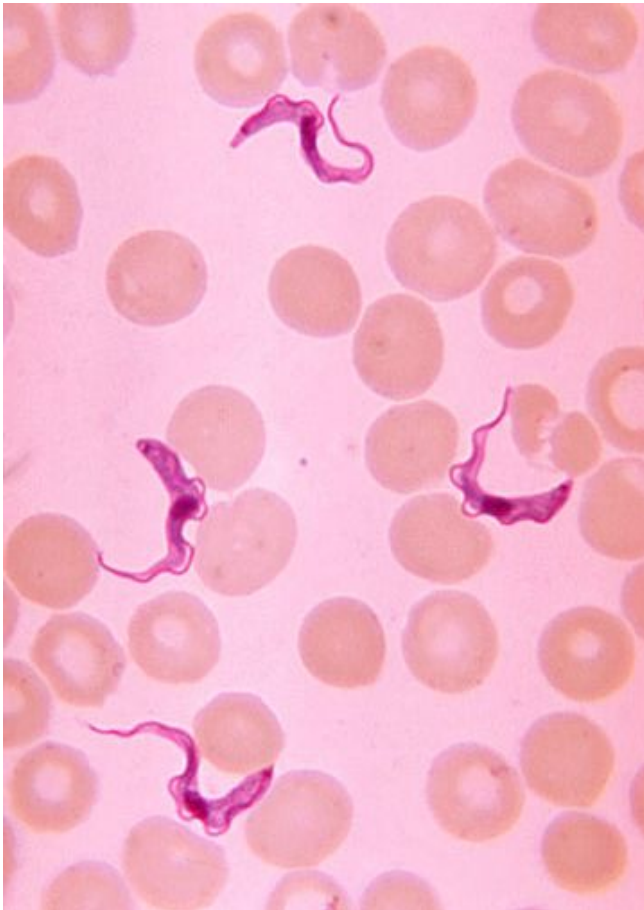
Тип Euglenozoa
Класс Эвгленовые водоросли

Хлорофилл *a* и *b*



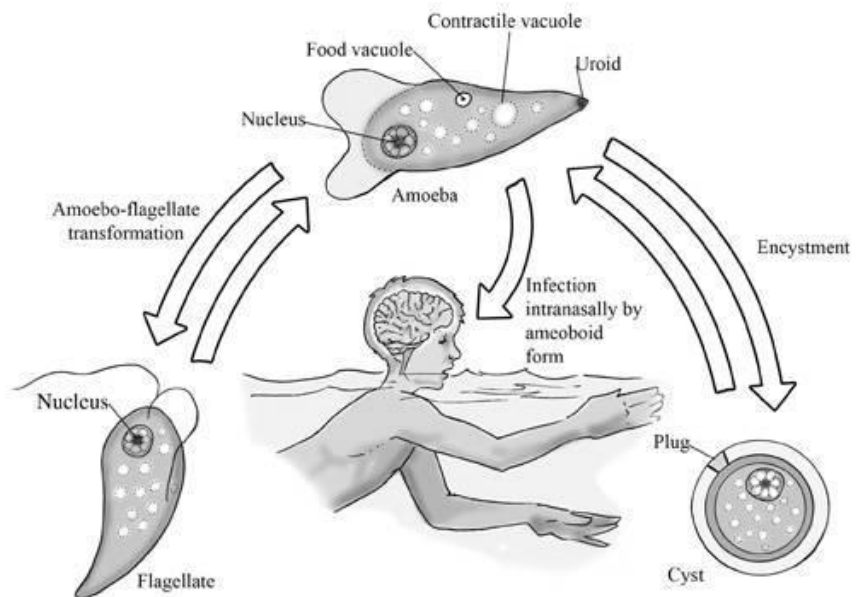
Тип Euglenozoa

Класс Кинетопластыды

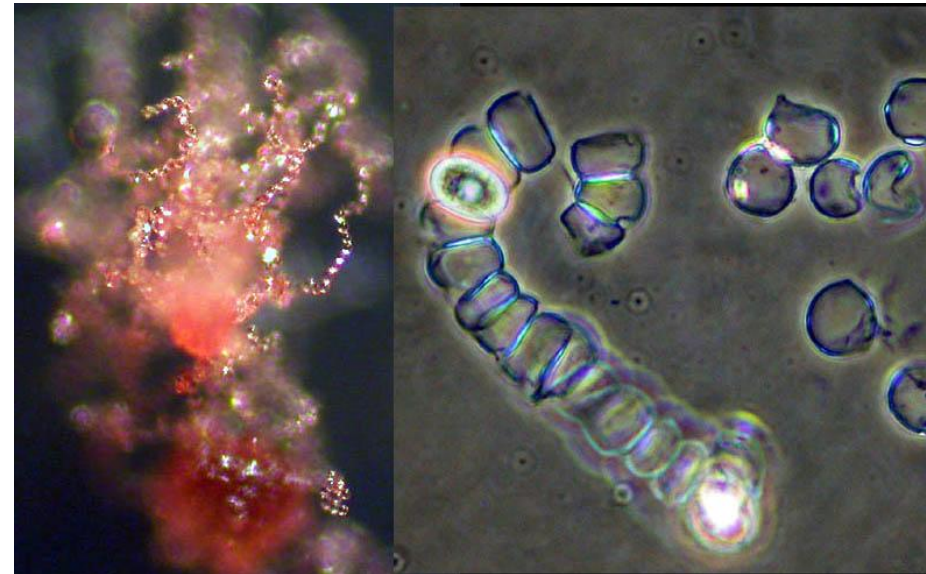


Trypanosoma

Тип Percolozoa

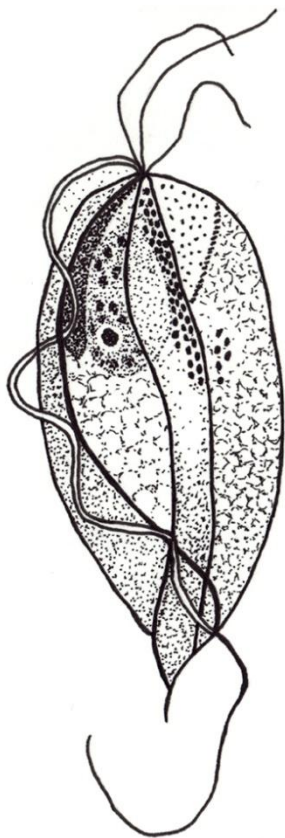


Naegleria

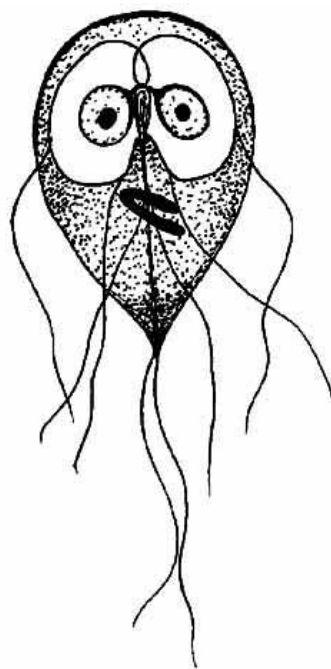


Acrasis

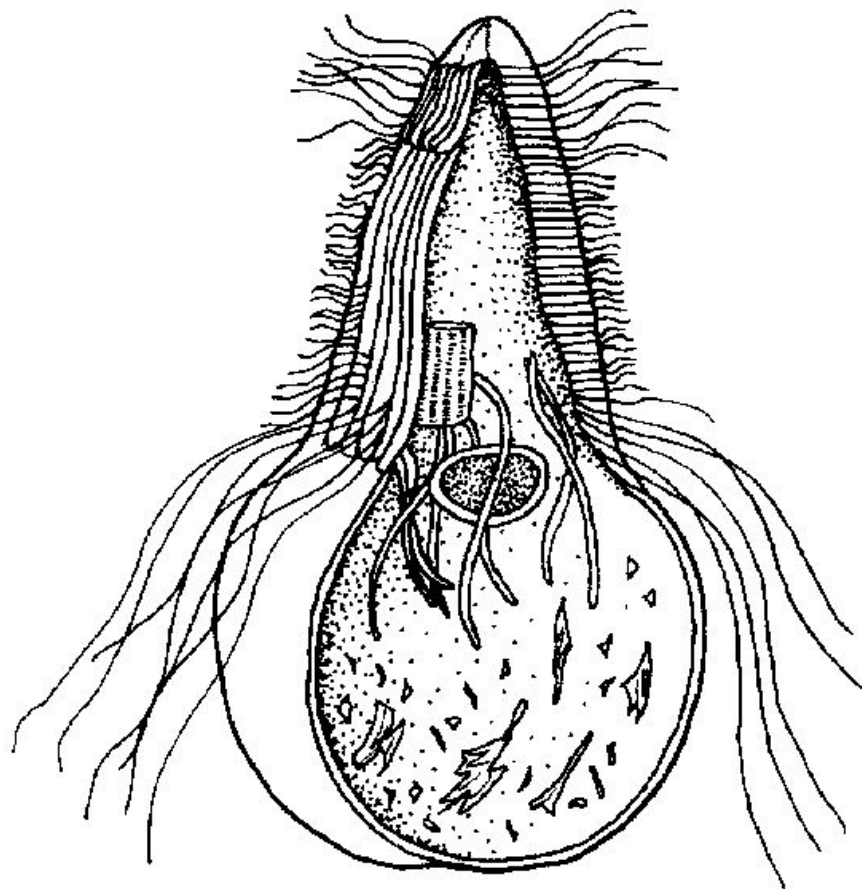
Тип Metamonada



Trichomonas

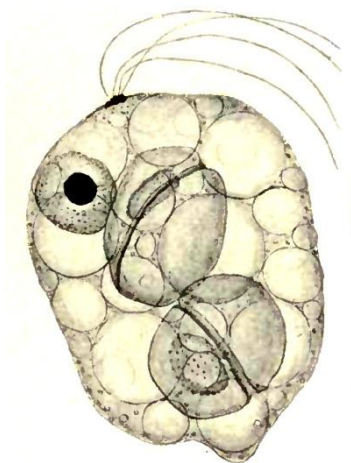


Giardia

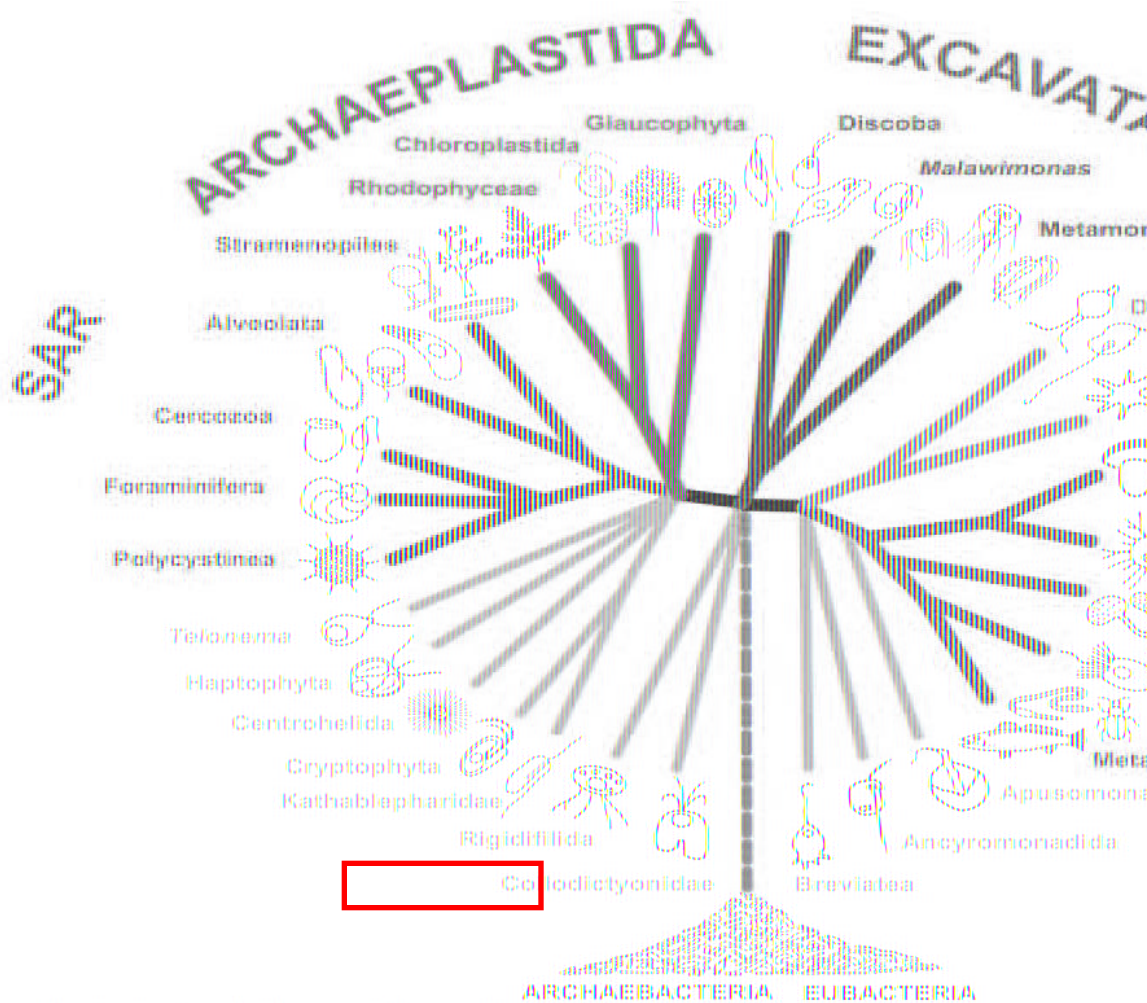


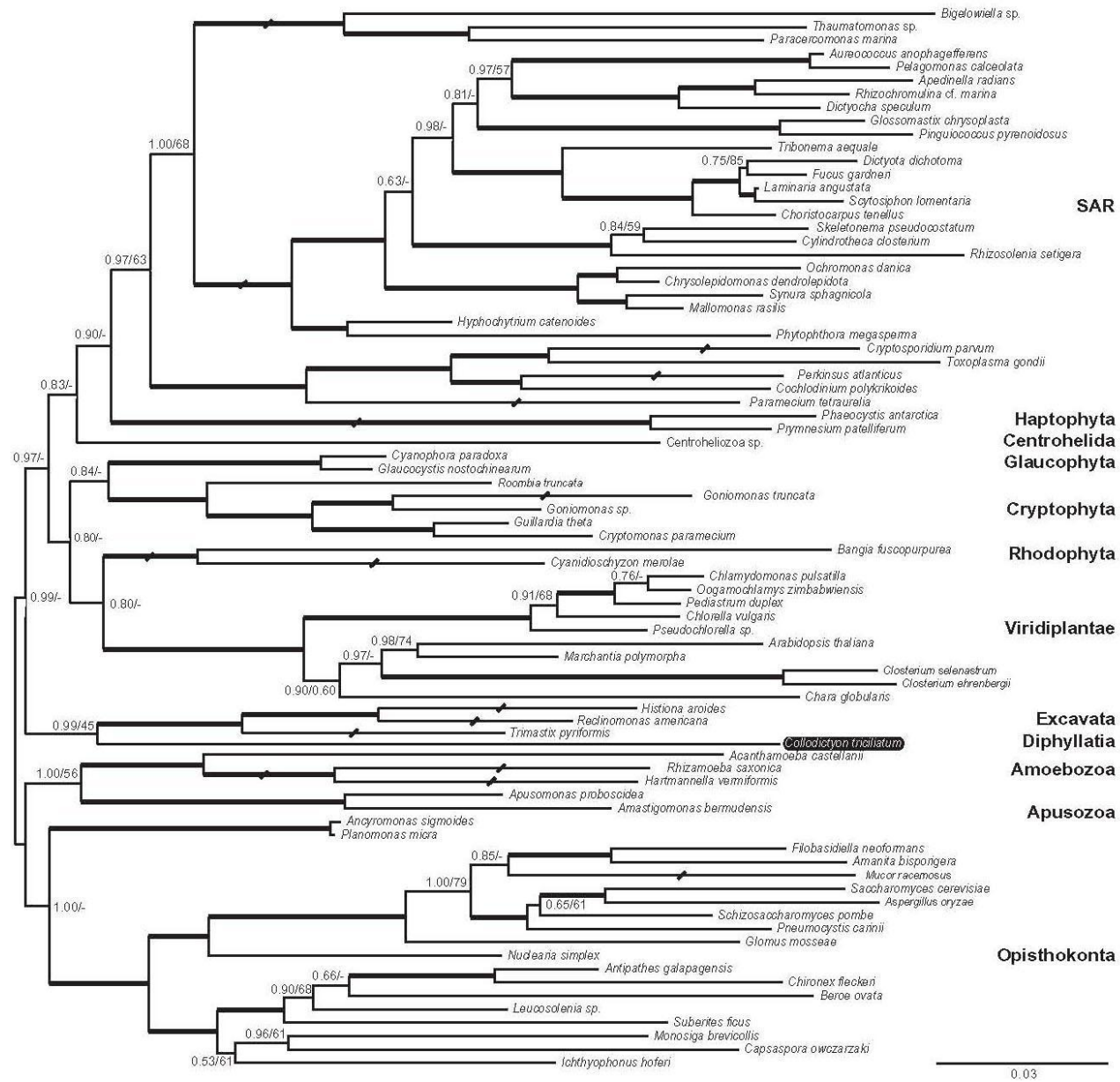
Trichomonynpha

Тип Varisulca

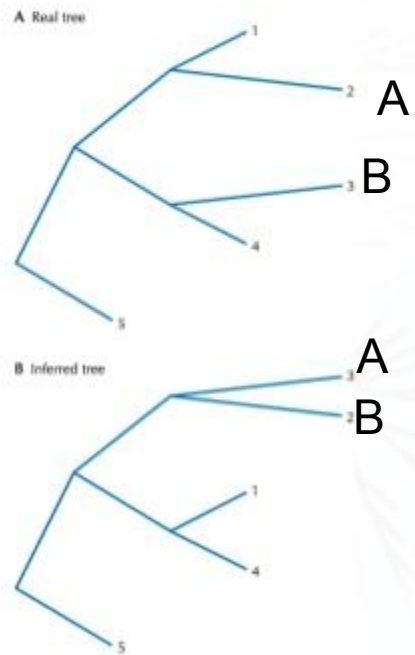


Collodictyon



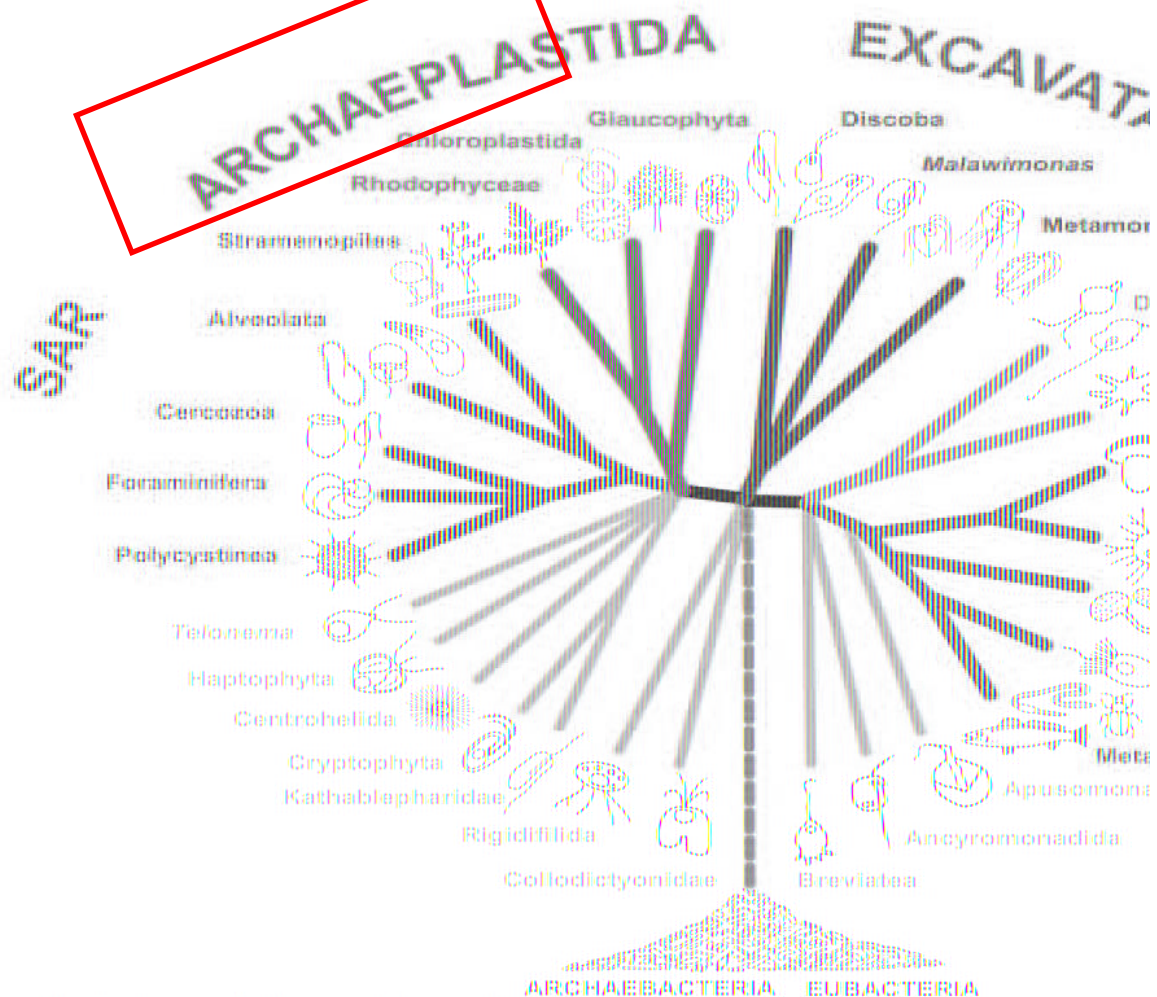


Long branch attraction

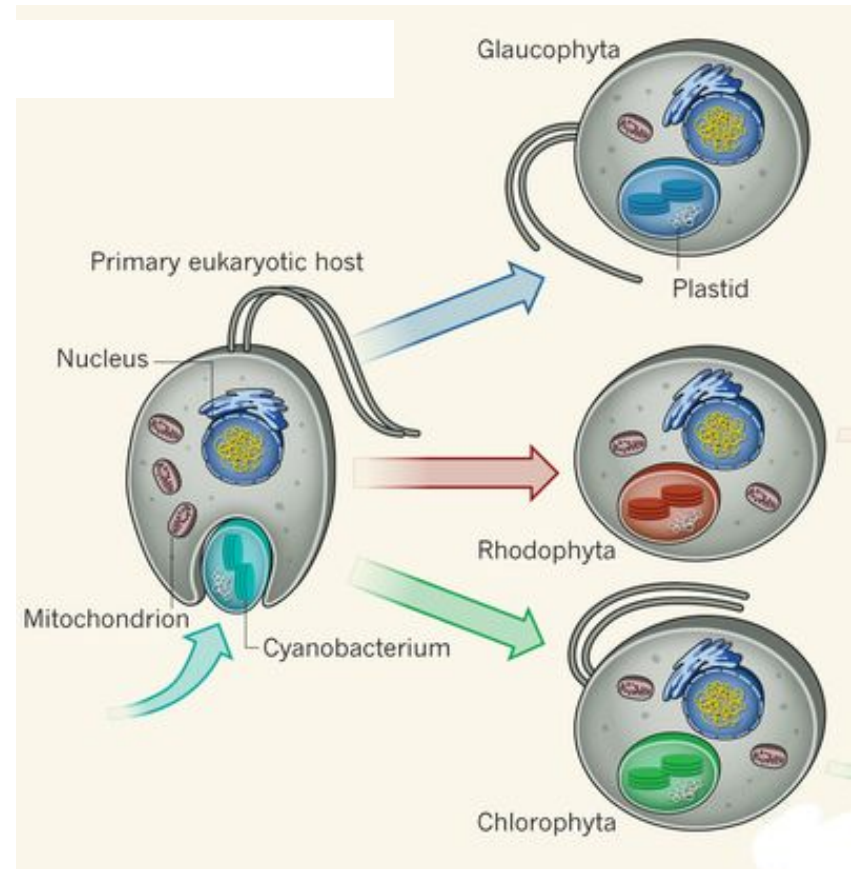
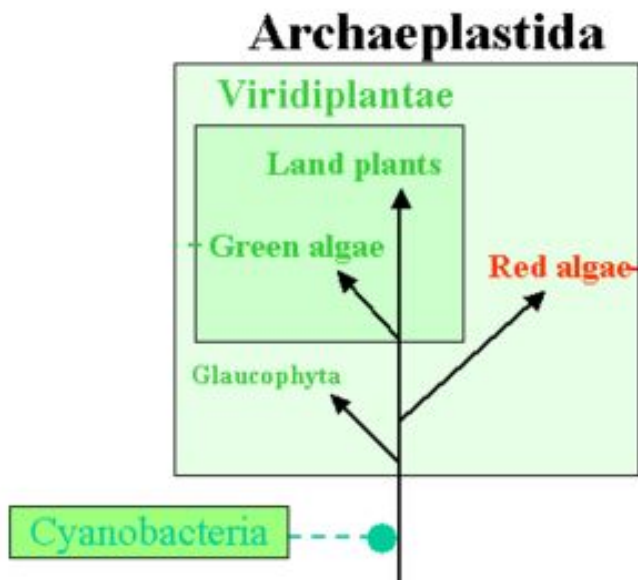


Царство Archaeplastida (= Plantae)

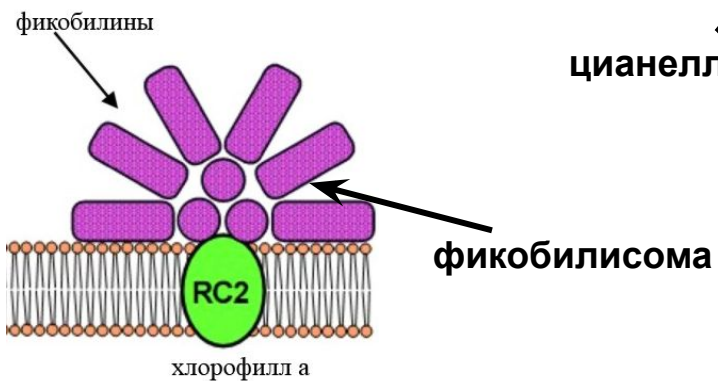
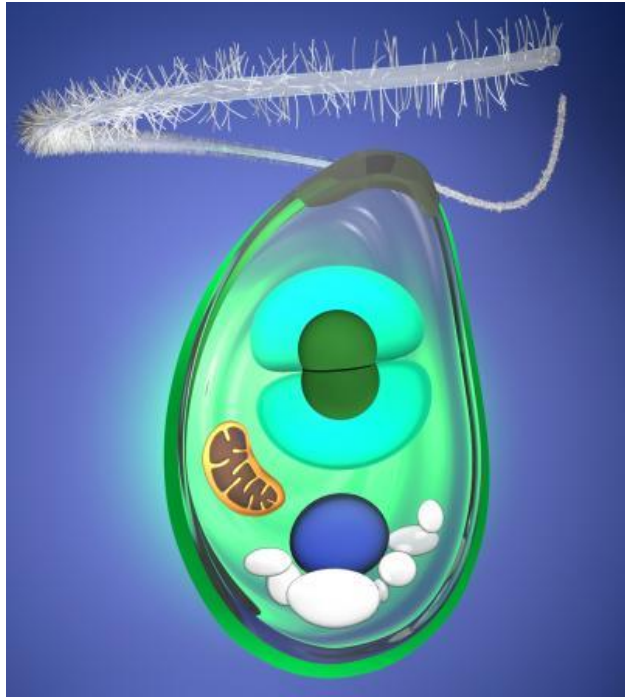
Подцарства:
“Biliphyta”
Viridiplantae



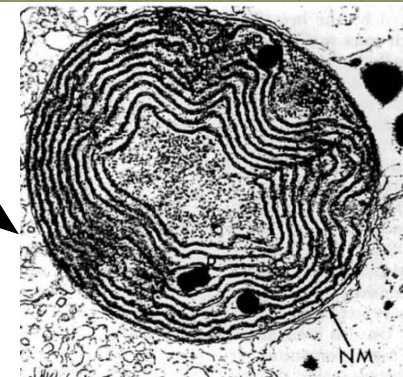
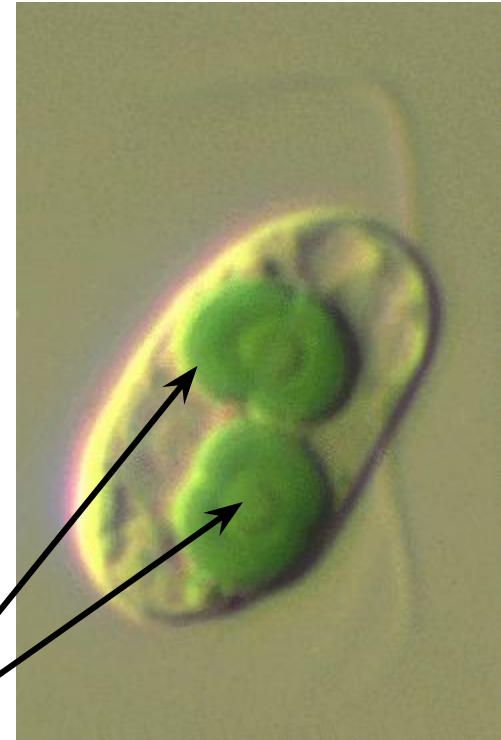
Царство Archaeplastida – настоящие растения



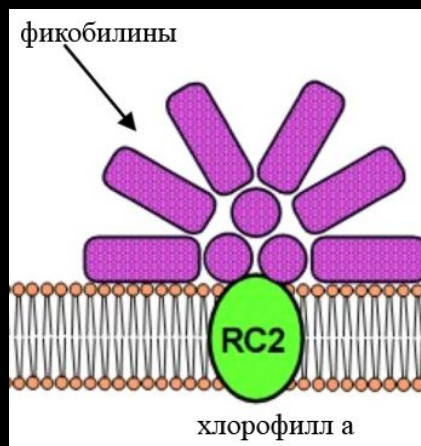
Тип Glaucophyta – глаукофитовые водоросли



цианеллы



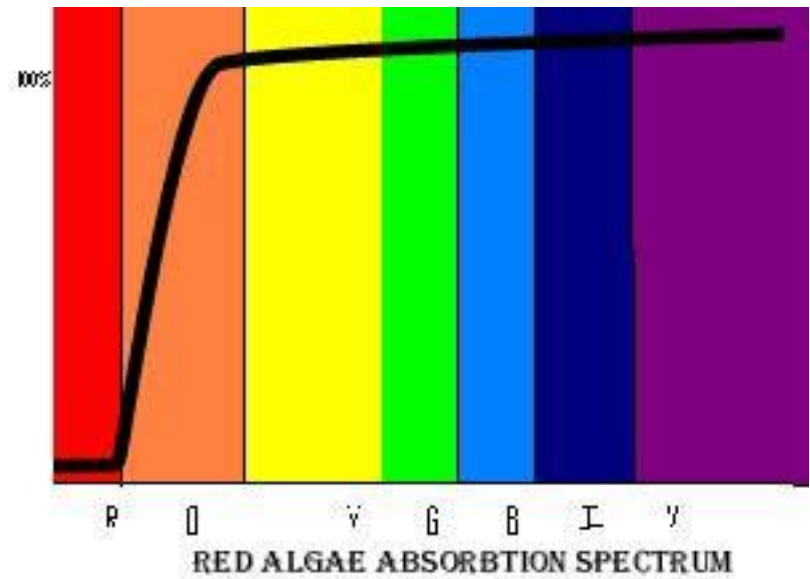
Тип Rhodophyta –красные водоросли



Багрянковый крахмал



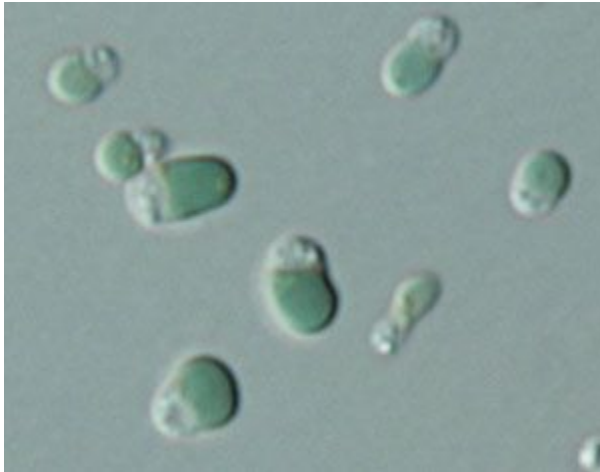
Багрянки – наиболее глубоководные водоросли



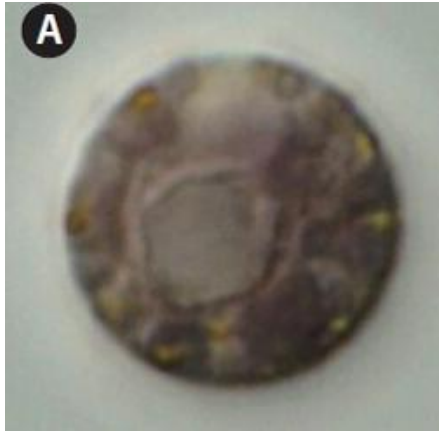
Subphylum Cyanidiophytina

Подтип Cyanidiophytina (Тип Cyanidiophyta)

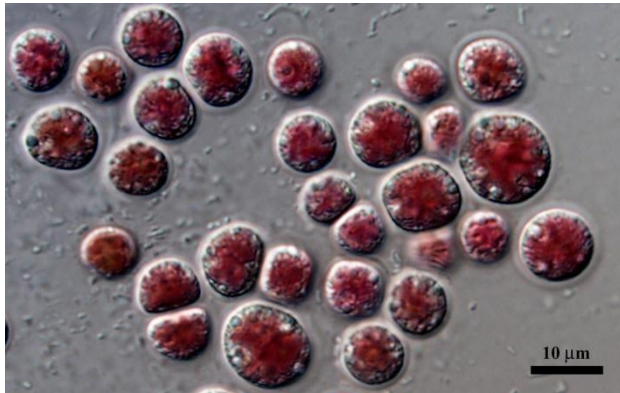
Класс Cyanidiophyceae – наиболее древние красные водоросли



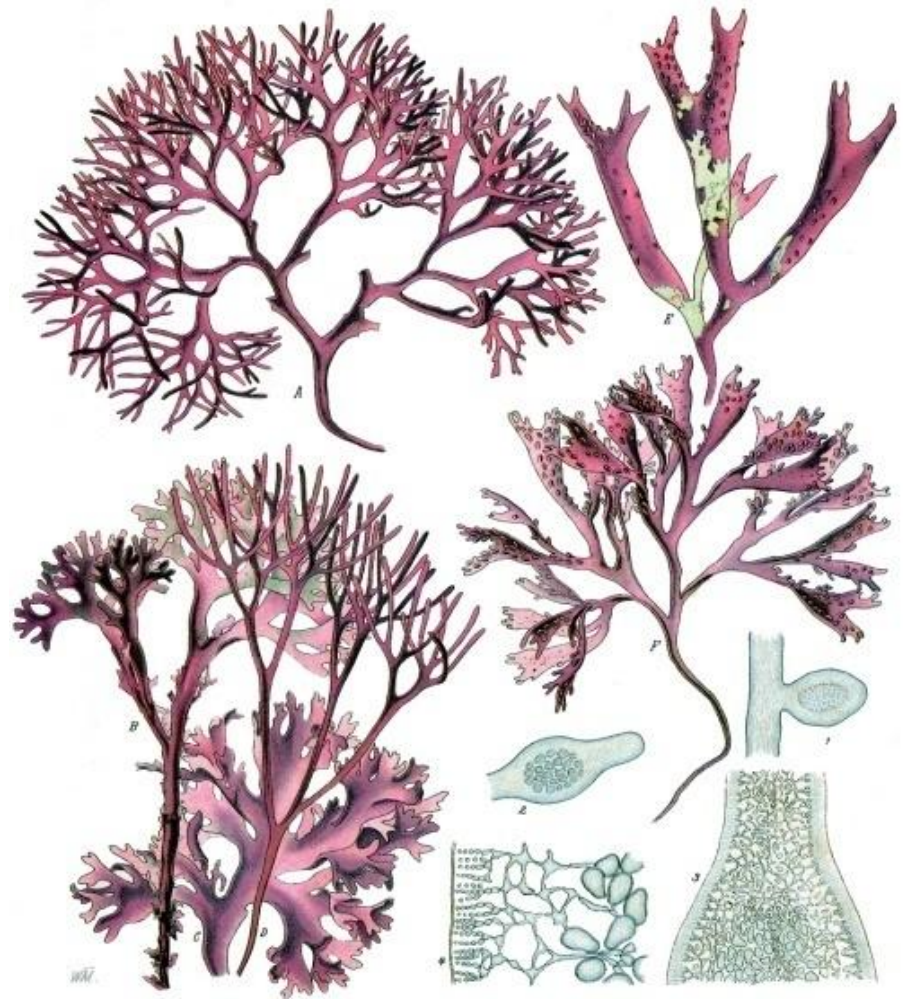
Subphylum Rhodophytina



Rhodella reticulata



Porphyridium cruentum

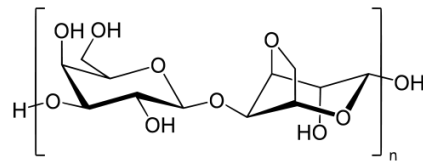


Агароза



Анфельция

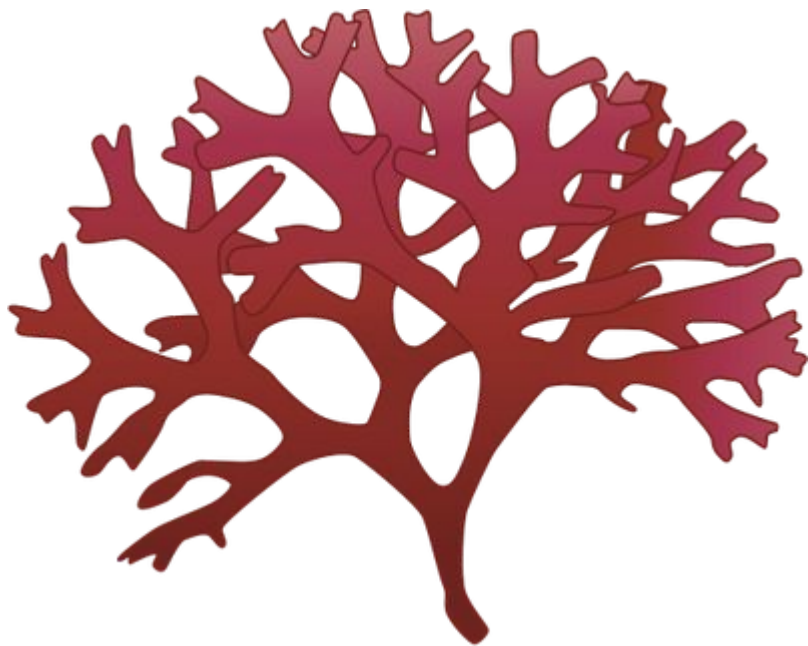
Грацилярия



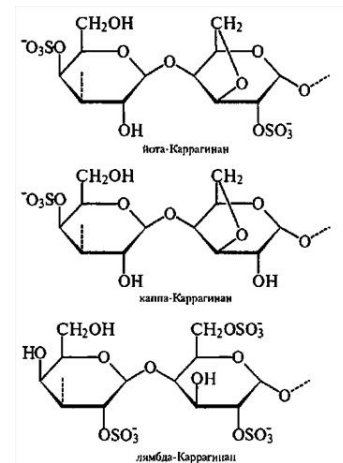
Агароза



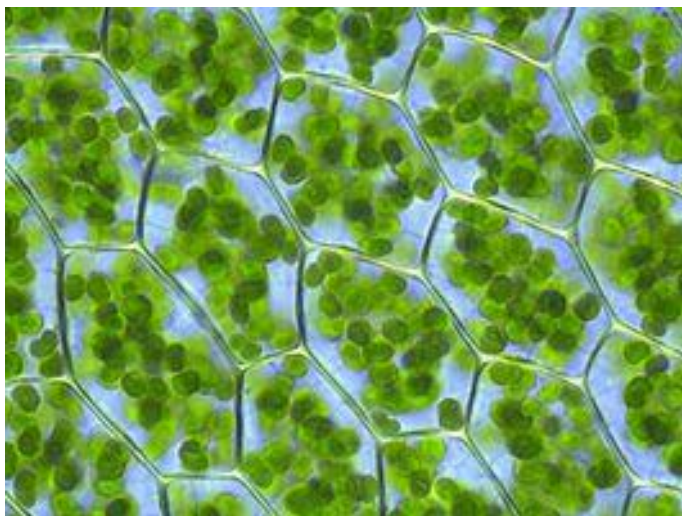
Каррагинаны



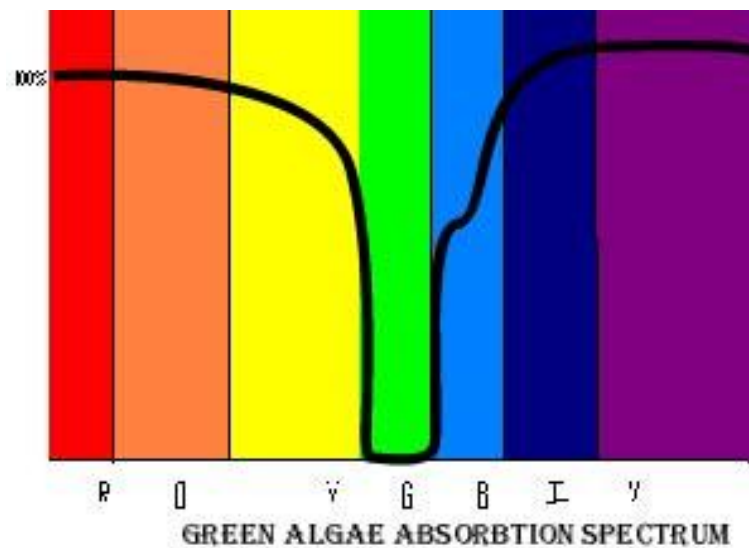
Хондрус



Подцарство Viridiplantae – зеленые растения

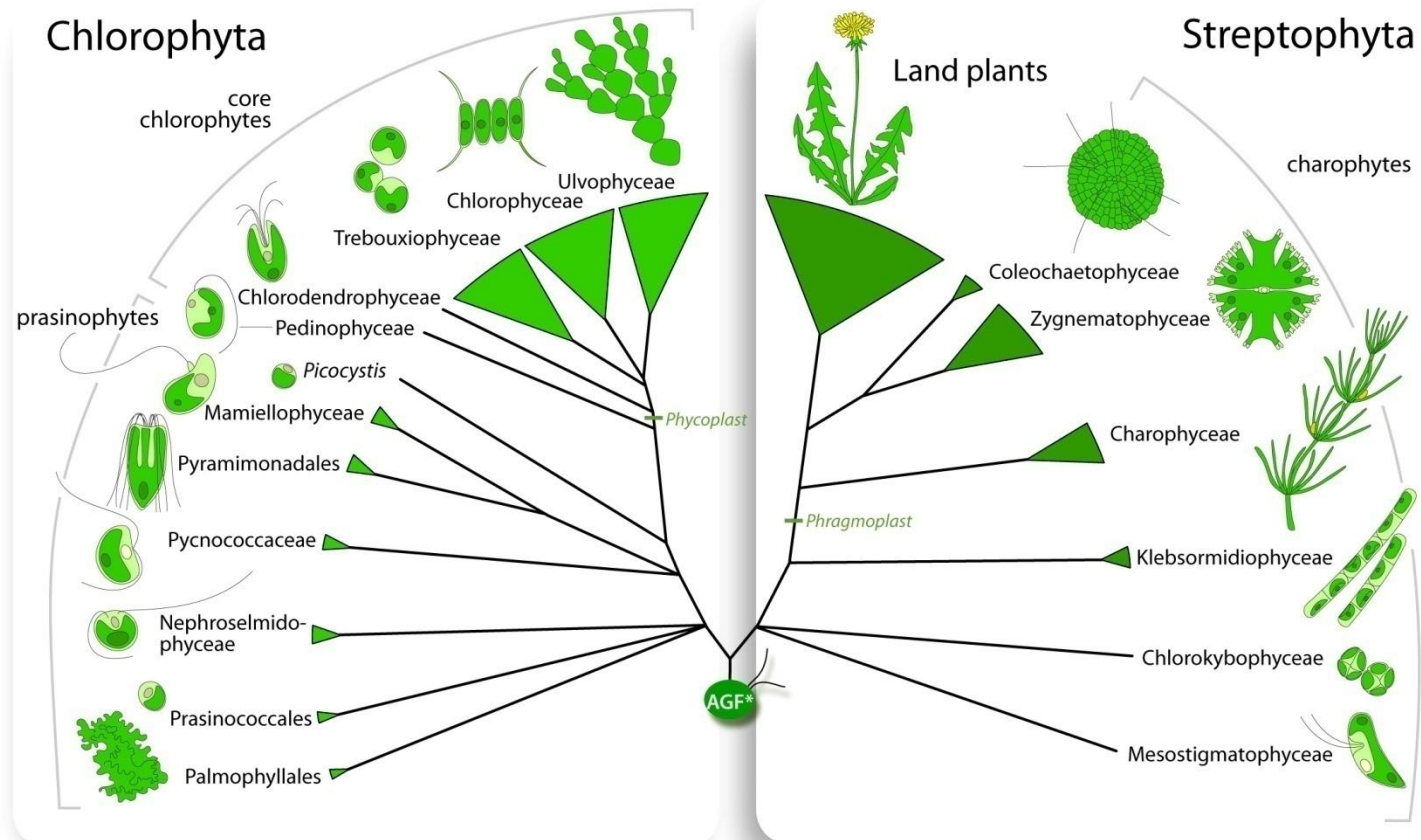


Хлорофиллы *a, b*
+ каротины и
ксантофиллы



Зеленые водоросли

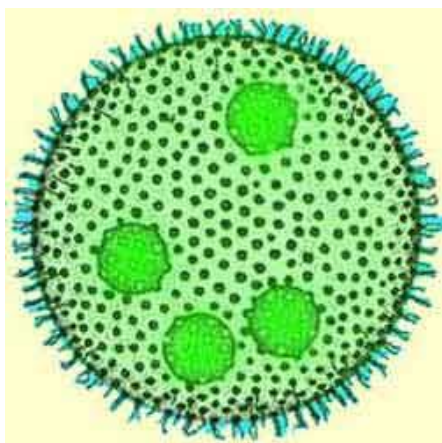
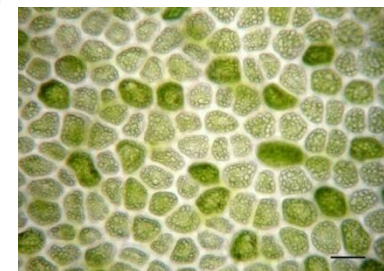
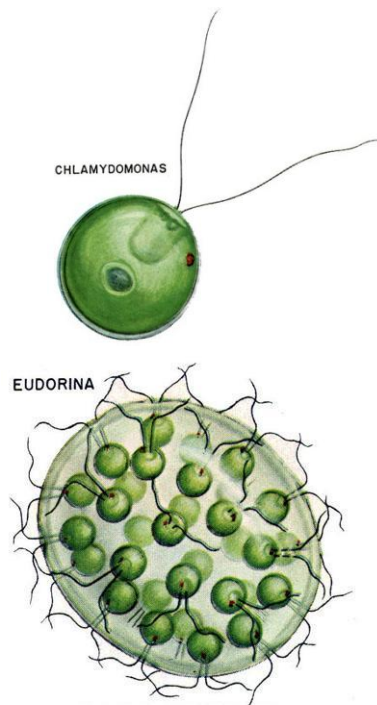
Высшие растения



*AGF: (hypothetical) ancestral green flagellate

Leliaert et al., *Crit. Rev. Plant Sci.* 31:1-46 (2012)
updated 8 Aug 2012

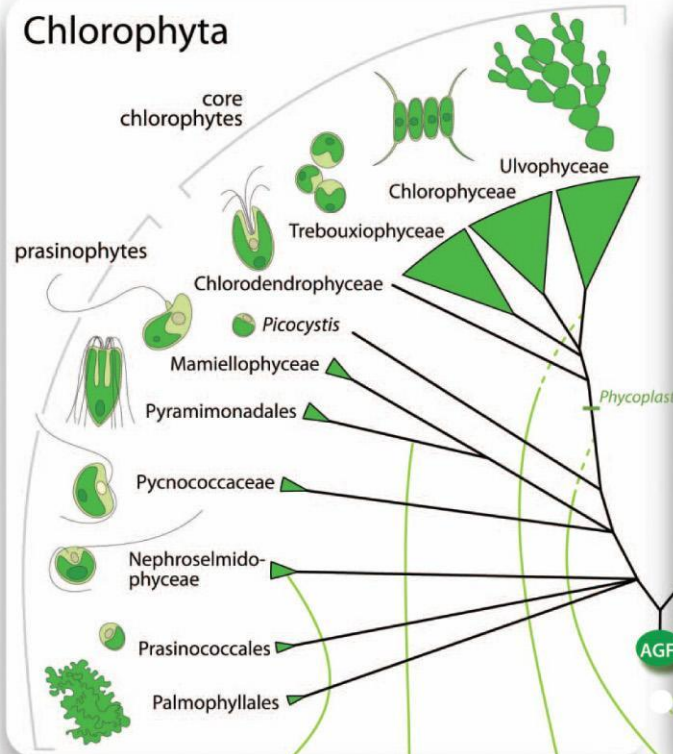
Зеленые водоросли



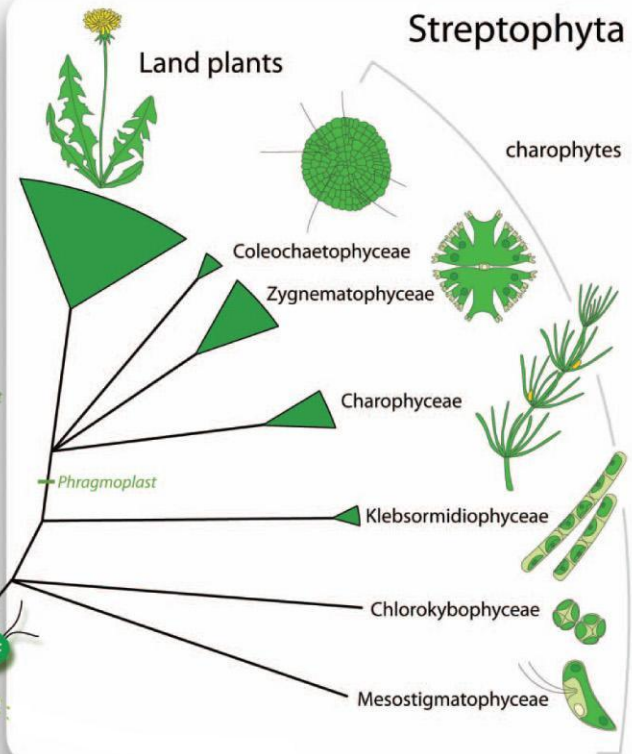
Volvox



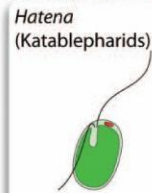
Chlorophyta



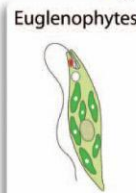
Streptophyta



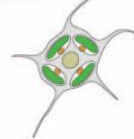
Putative secondary symbiosis in progress



Secondary endosymbiosis



Chlorarachniophytes

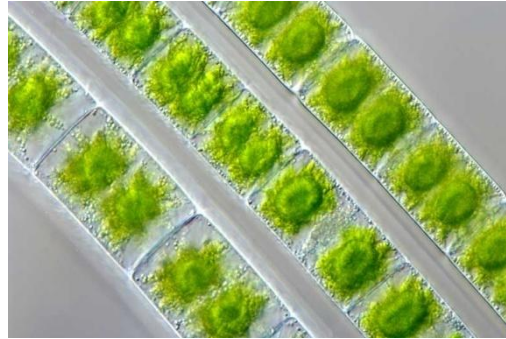
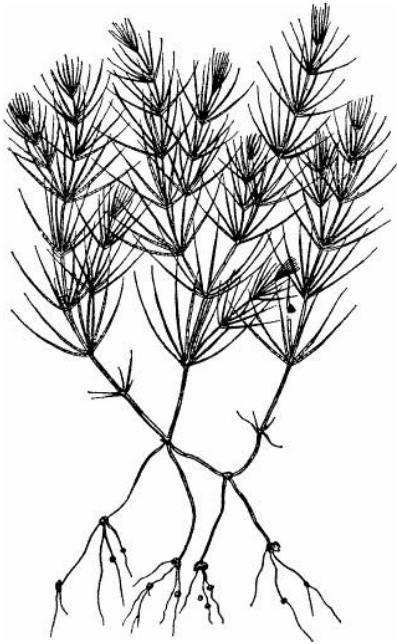


Serial secondary endosymbiosis

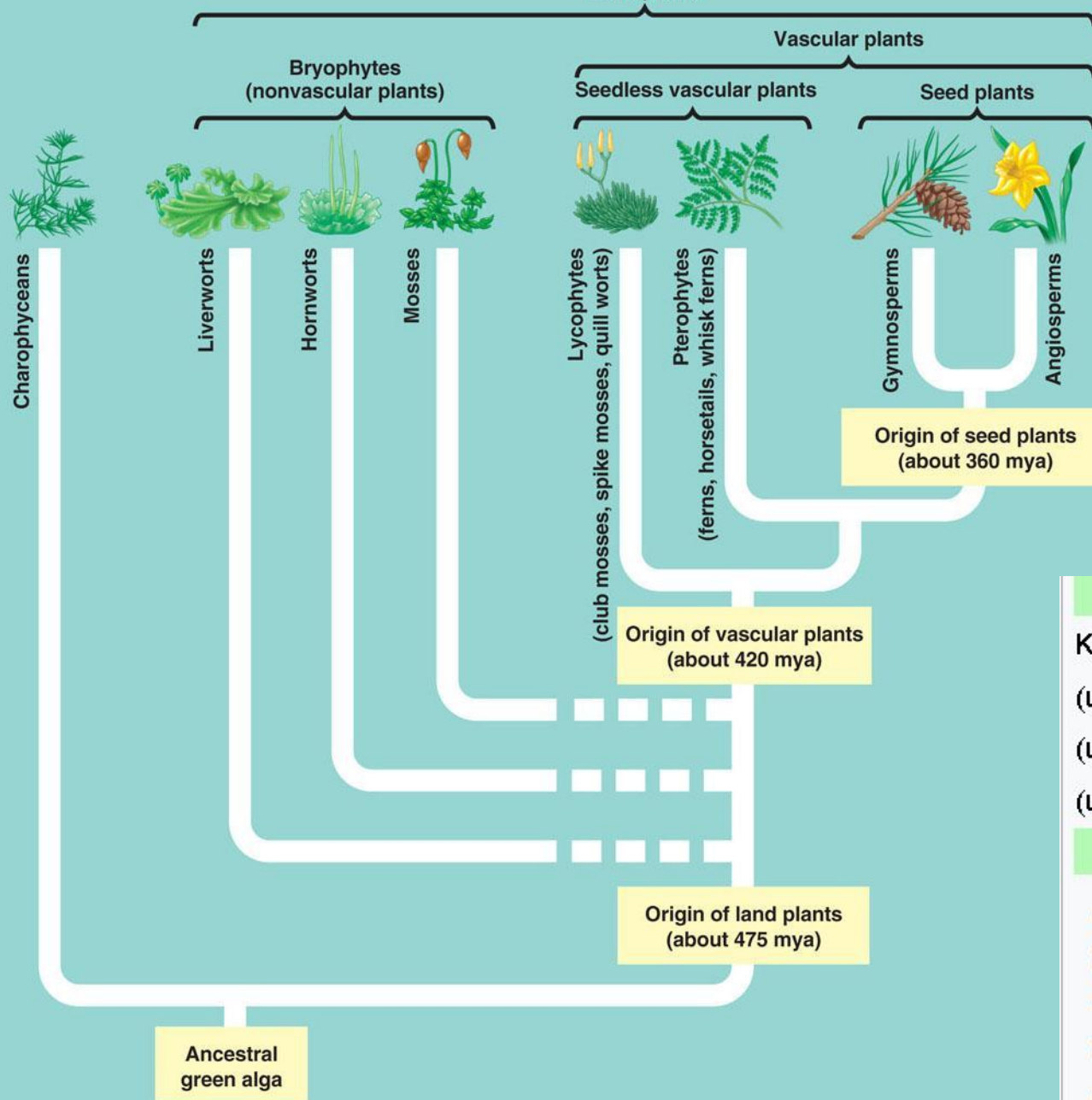
Green dinoflagellates



Высшие растения



Land plants



Domain: **Eukaryota**

Kingdom: **Plantae**

Clade: **Streptophyta**

Jeffrey 1967,^[1] sensu Leliaert
et al. 2012

Divisions

- Klebsormidiophyceae
- Phragmoplastophyta
 - Charophyceae
 - Coleochaetophyceae
 - Zygnematophyceae
 - Embryophyta

Scientific classification

Kingdom: **Plantae**

(unranked): **Embryophyta**

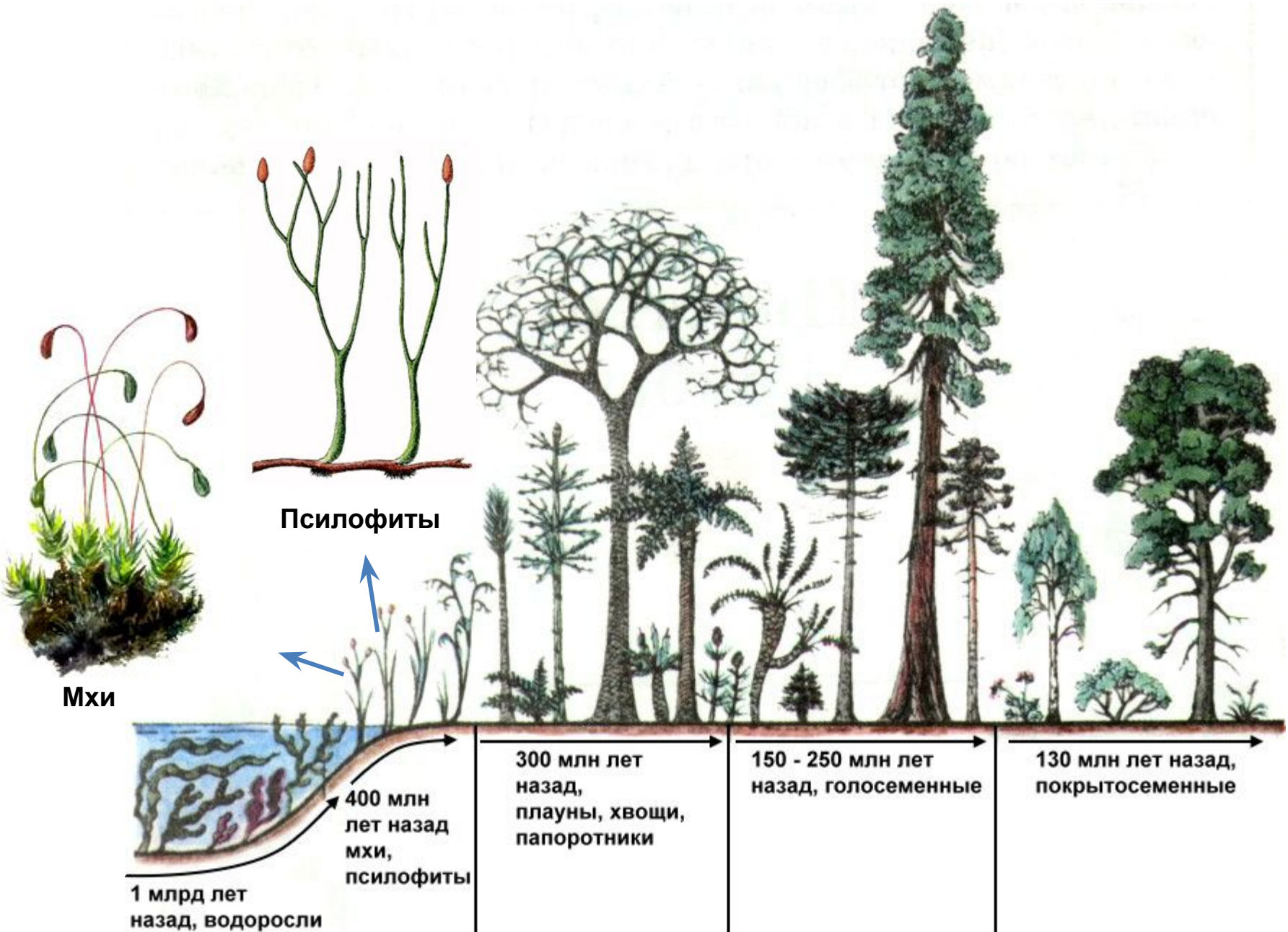
(unranked): **Tracheophyta**

(unranked): **Spermatophyta**

Divisions

- Cycadophyta
- Ginkgophyta
- Pinophyta
- Gnetales
- Angiospermae
- Pteridospermatophyta†

Основные этапы развития наземных растений





Core angiosperms

