

## Classification Scheme for the Eukarya (based on Campbell and Reece 2008)

### Domain Eukarya

#### Super Kingdom Excavata

##### Kingdom Parabasala (trichomonads)

Lacking mitochondria

*Trichomonas vaginalis*, vaginal and urethral parasite

##### Kingdom Diplomonadida (diplomonads)

Two separate nuclei, no plastids, no mitochondria, multiple flagella

*Giardia lamblia*, human intestinal parasite

##### Kingdom Euglenozoa (euglenoids and kinetoplastids)

Flagellated, may be autotrophic, mixotrophic or heterotrophic

Phylum Euglenophyta

*Euglena*, organism seen in live in this lab

Phylum Kinetoplastida

*Trypanosoma*, causes African sleeping sickness

#### Super Kingdom Chromalveolata

##### Kingdom Alveolata (dinoflagellates, apicomplexans, ciliates)

Membrane-bound alveoli under cell surface

Phylum Dinoflagellata (dinoflagellates)

Microscopic algae that form the basis of most marine food chains

*Gonyaulax*, responsible for red tides

Phylum Apicomplexa

Parasites of animals

*Plasmodium*, causes malaria in humans

Phylum Ciliophora (ciliates)

Move by undulating cilia, feed by ingesting bacteria or other protists, marine or freshwater

Paramecium, Stentor, Blepharisma

##### Kingdom Stramenopila

Phylum Oomycota (water molds, powdery or downy mildew)  
unicellular or coenocytic

*Phytophthora infestans* causes potato blight

Phylum Bacillariophyta (diatoms)

most diverse algal phylum over 10,000 marine and fresh water species, secrete silica tests (shells)

Phylum Chrysophyta (golden algae)

combination of yellow and brown pigments, unicellular species of ponds and lakes

Phylum Phaeophyta (brown algae)

multicellular marine algae usually known as sea weeds

*Macrocystis* is giant kelp along CA coast

#### Super Kingdom Rhizaria

Phylum Radiolaria (radiolarians and heliozoans)

Phylum Foraminifera (foraminiferans)

Phylum Rhizopoda (maybe some of the amoebas go here!)

#### Super Kingdom Archaeplastida

##### Kingdom Rhodophyta (red algae)

mostly marine algae, mostly multicellular, possess unique red phytopigments

##### Kingdom Chlorophyta (green algae)

unicellular and filamentous algae, fresh water and marine

*Chlamydomonas* - flagellated unicellular fresh water alga

*Volvox* - a colonial flagellate, tendency toward multicellularity shown in the specialized reproductive cells

*Spirogyra* - a filamentous freshwater alga

**Kingdom Charophyceae**

Charophyceans

**Kingdom Plantae**

All the various plant phyla are here:

Phylum Hepatophyta (liverworts)

Phylum Anthocerophyta (hornworts)

Phylum Lycophta (lycophytes: *Lycopodium*)

Phylum Pterophyta (whisk ferns, horsetails and true ferns)

Phylum Ginkophyta

Phylum Cycadophyta

Phylum Gnetophyta (Mormon tea, *Welwitschia*)

Phylum Coniferophyta (conifers)

Phylum Anthophyta (flowering plants)

**Super Kingdom Unikonta**

**Kingdom Amoebozoa**

Phylum Myxogastriida (plasmodial slime molds)

Phylum Dictyostelida (cellular slime molds)

Phylum Gynamoeba

Phylum Entamoeba

Phylum Nucleariida

**Kingdom Fungi**

Phylum Chytridiomycota

Phylum Zygomycota

Phylum Ascomycota

Phylum Basidiomycota

**Kingdom Choanoflagellata**

**Kingdom Animalia**