

Eukaryotic Classification

Protista
Fungi

Protista

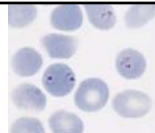
- Alveolata
- Cercozoa
- Radiolata
- Amoeba
- Euglenozoa
- Diplomonadida
- Parabasala
- Stramenopila



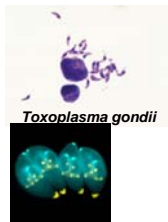
http://biology.unm.edu/ccouncil/Biology_203/Summaries/Protists.htm

Alveolates

- Alveoli under membrane (unknown fxn)
- Unique mitochondrial structure
- Ex. *Balantidium*, *Plasmodium*, *Cryptosporidium*, *Toxoplasma*, *Dinoflagellates*



Plasmodium spp.

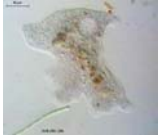
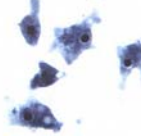


Toxoplasma gondii



Red Tide and Dinoflagellates

Amoeba



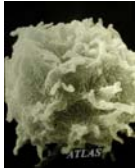



Naegleria fowleri

- Amoeba, Slime molds
- Non-shelled
- Pseudopodia
- Binary fission
- Ex. Entamoeba, Naegleria, Acanthamoeba




Acanthamoeba spp.

Slime Molds

Cerczoa & Radiolata



- Marine, Shelled (calcium carbonate or silica)
- Use pseudopodia
- Can be heterotrophic or photosynthetic
- Foraminifora shells form limestone

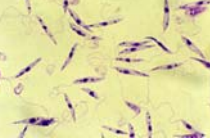
Diffugia oblonga

Foraminifora

Radiolarians


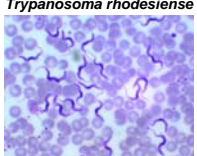
Euglenozoa



Leishmania spp.

- Photosynthetic or heterotrophic
- Unique flagellar structure
- Unicellular

- Free-living or parasitic
- "eye" spots allow phototaxis
- Ex. Euglena, Trypanosoma, Leishmania

Euglena gracilis

Trypanosoma rhodesiense

Diplomonadida & Parabasala

- Unicellular, flagellated, no chloroplasts or mitochondria
- Anaerobic, use fermentation
- Mutualistic or parasitic
- Diplo's have 2 nuclei (ex. Giardia)
- Para's have 1 nuclei (ex. Trichomonas)
- Hydrogenosomes

Trichomonas spp.



Giardia trophozoite and cyst



Stramenopila & other algae

Brown Algae



Water molds



Green Algae

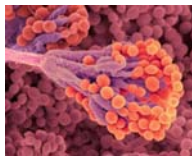


Diatom



- Photosynthetic, some heterotrophic
- Free-living marine or aquatic
- Algae & water molds
- Ex. Seaweeds, diatoms, *Phytophthora spp.*

Fungi Classification



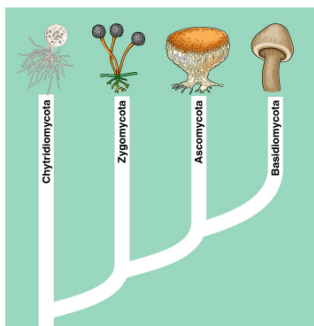
Zygomycota

Ascomycota

Basidiomycota

Deuteromycota

Lichens



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Fungal Anatomy: Thalli

hyphae

mycelium

Reproductive Structures: Fruiting Bodies

sporangium filled with sporangiospores

serial hypha (sporangiophore)

Sporangiospores - Zygomycota


Chlamydospores - most groups

Conidiospores - ascomycota

Zygomycota: *Rhizopus spp.*

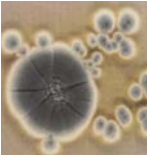
- saprobes or parasites
- often causes food spoilage
- opportunist - can cause "Zygomycosis"
- asexual spores are sporangiospores

Ascomycota:



Saccharomyces cerevisiae


- Largest group
- Very diverse
- sexual spores are ascospores
- asexual spores are conidiospores



Penicillium spp.




Black truffles




Dutch Elm Disease


Basidiomycota




Soybean rust

- Form basidiospores
- Multicellular
- Mushrooms, shelf fungi, rusts, smut, puffballs and stinkhorns






Stinkhorn



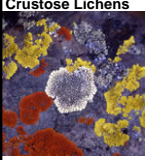
Shelf fungi




Amanita & Agaricus spp.

Lichens


- Endosymbionts of fungi and algae or cyanobacteria
- Reproduce independantly



Crustose Lichens




Foliose Lichen




Spanish Moss (Fruticose Lichen)

**Other
Eukaryotes**


- **Insect vectors**
 - Arachnids: mites and lice
 - Insects: flies, mosquitos, fleas, lice and kissing bugs
- **Helminths: cestodes, trematodes and nematodes**




Tick




Mosquito



Sand Fly



Hookworm



Tapeworm
