

Protozoan Groups

Characteristics of Unicellular Eukaryotes

1. Unicellular
2. Mostly microscopic
3. All symmetries represented
4. No germ layer present
5. No organs or tissues - nucleus may be single or multiple

Characteristics of Unicellular Eukaryotes

6. Free-living, mutualism, commensalism, and parasitism all represented

7. Locomotion by pseudopodia, flagella, cilia, and direct cell movement. Some Sessile

8. Some given simple endoskeleton or exoskeleton, but most are “naked”

Characteristics of Unicellular Eukaryotes

9. Nutrition of all types

10. Aquatic or terrestrial habitat

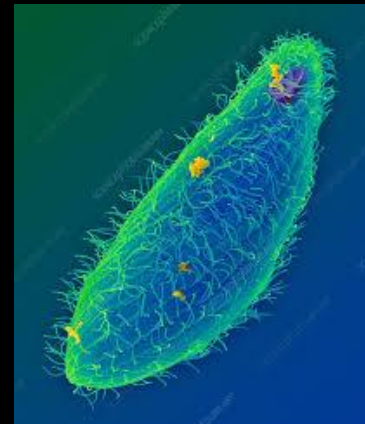
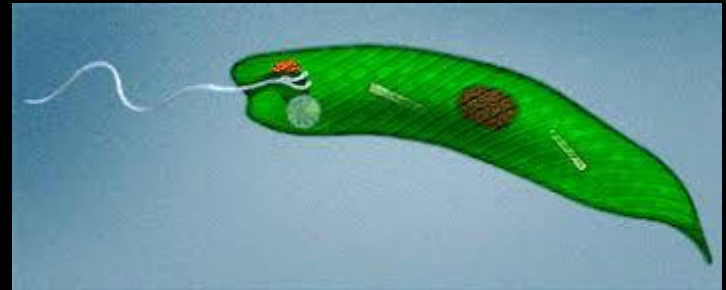
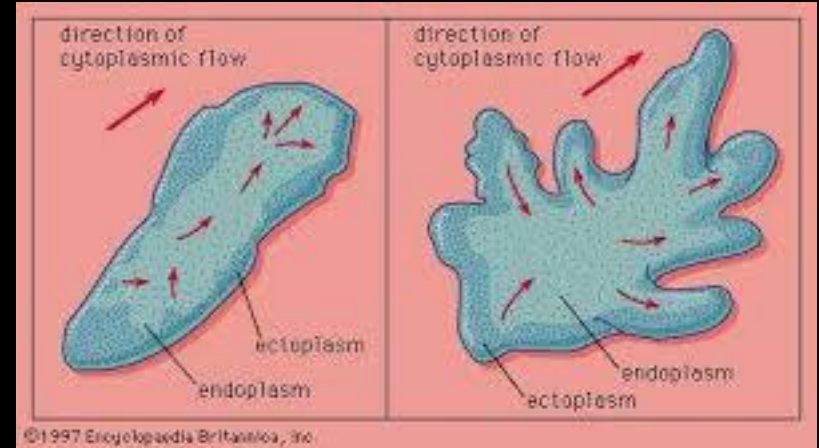
11. Reproduction

- asexual = fission, budding, and
cysts

- sexual = conjugation or
syngamy

Locomotion

- Pseudopodia - “fake feet”
- Flagella – single tail - like structure
- Cilia – many small surrounding



Retortamonada

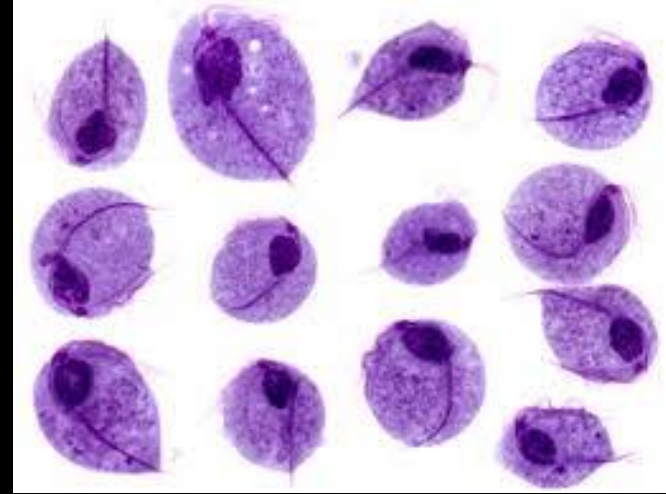
- Retortamonads
 - Commensal and parasitic unicells
 - Lack mitochondria and golgi bodies



- Diplomonads
 - Lack mitochondria
 - *Giardia*
 - Infect human digestive tracts
 - Non fatal diarrhea

Parabasalids

- Contain axostyle
 - Stiffening rod that extends along body
- Modified Golgi Complex
- Flagellated stage
- Common Organisms –
 - *Trichomonas vaginalis* – vaginitis in females
 - *Pentatrichomonas hominis* – cecum and colon
 - *Trichomonas tenax* – lives in the mouth



Heterolobosea

- Naked amebas
- Most feed on bacteria and harmless to humans
- EXCEPT – *Naegleria fowleri*
 - Lives in hot pools and causes meningoencephalitis when entering through the nasal cavity

Euglenozoa

- Euglenida

- Double membrane

- Pellicle – series of longitudinal microtubules to stiffen the membrane

- *Euglena viridis*

- Freshwater streams and ponds

- Kinetoplasta

- *Trypanosoma brucei*

- African sleeping sickness

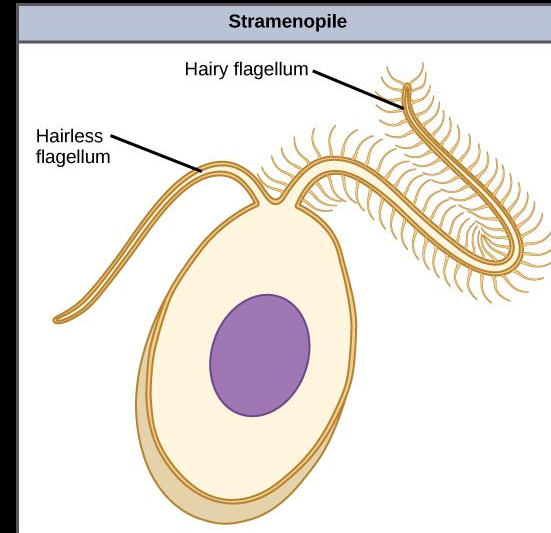
- *Trypanosoma cruzi*

- Chagas' disease



Stramenopiles

- Heterokont = different poles
 - Two different flagella both at the anterior end
- Examples
 - Brown algae, yellow algae, and diatoms



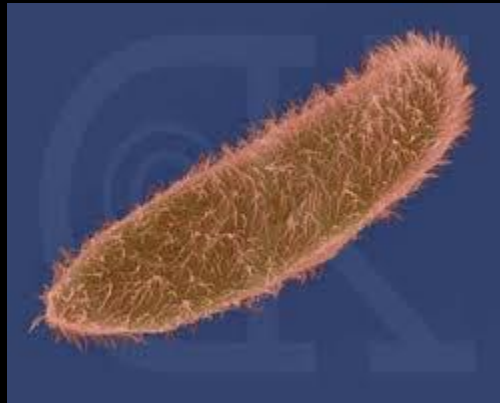
Alveolata

- Three phyla containing **alveoli**
 - Membrane bound sacs that lie beneath the plasma membrane



Ciliophora

- Body covered in cilia and beat in coordinated, rhythmical manner
- Suctorians – young possess cilia, but adults form stalk

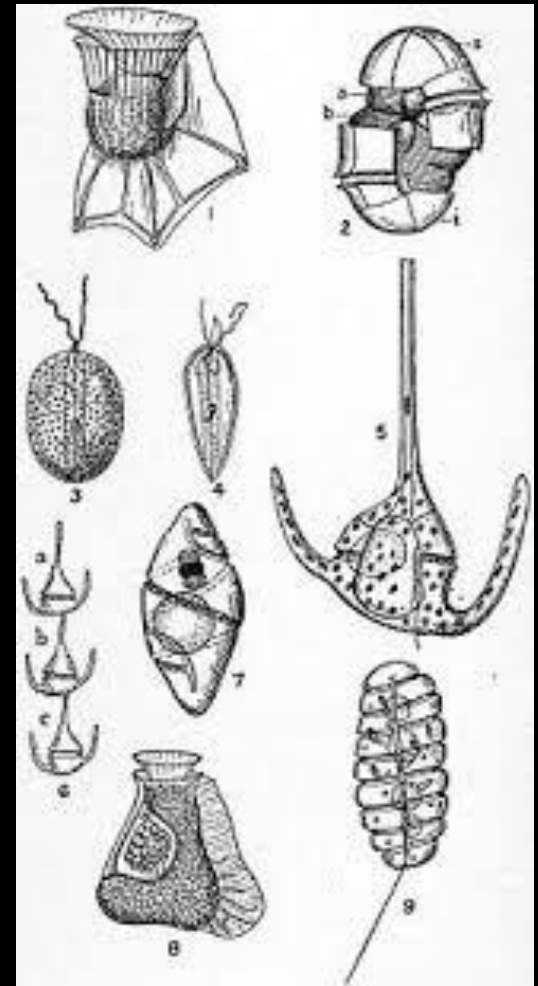


Symbiotic Ciliates

- *Balantidium Coli* – lives in large intestine of humans, pigs, and other mammals
- *Entamoeba histolytica* – dysentery
- *Ichthyophthirius* – ick in fish

Dinoflagelleta

- ½ Photoautotrophic,; others are colorless and heterotrophic
- Zooxanthellae have mutualistic relationship of certain invertebrates



Apicomplexa

- Contain apical complex – certain combination of organelles
- Coccidia
 - *Plasmodium*
 - Causes malaria
 - *Toxoplasma gondii*
 - 16% of the population is infected

Foraminifera

- Slender pseudopodia
- Ancient group of shelled amoebas

