

# Protista

- Protists are **eukaryotic** organisms that are often grouped and referred to as plant-like or animal-like or fungus-like.
- Often found in aquatic environments or damp soils. Some are parasites.
- Have been on earth for 1.7 billion years.
- Most are single celled but some like kelp are multicellular and can be 100 feet tall.
- Some are autotrophic (plant-like) and others are heterotrophic (animal-like and fungus-like).
- They mainly reproduce asexually.

In many ways, protists are grouped together in a kingdom because they lack the characteristics that would let them fit into any other kingdom.

# Protozoans

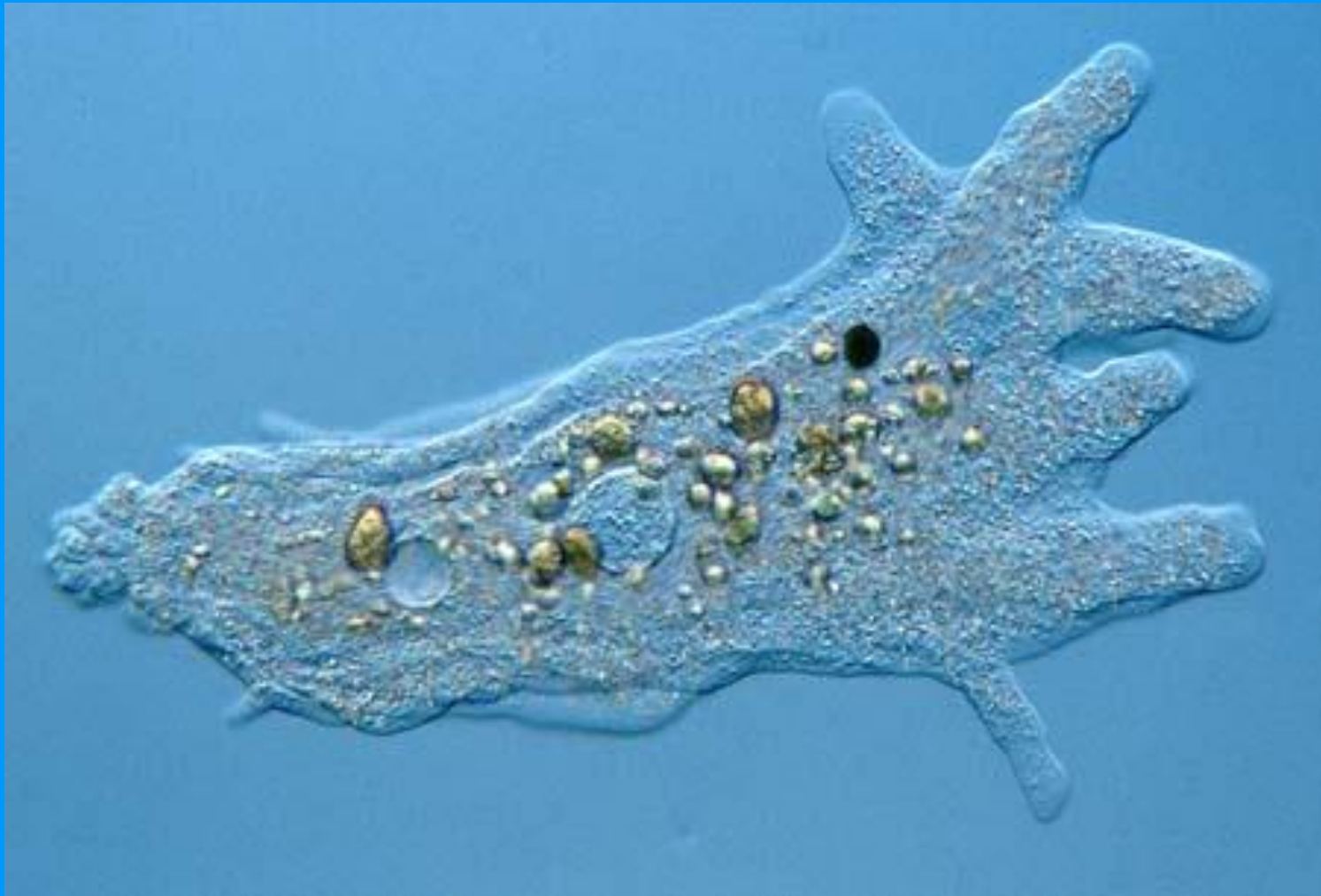
## (Animal-Like Protists)

- unicellular.
- heterotrophic.
- most live in aquatic environments and moist soils.
- some are parasitic living inside hosts.  
(Trypanosoma protozoa can cause sleeping sickness in humans)

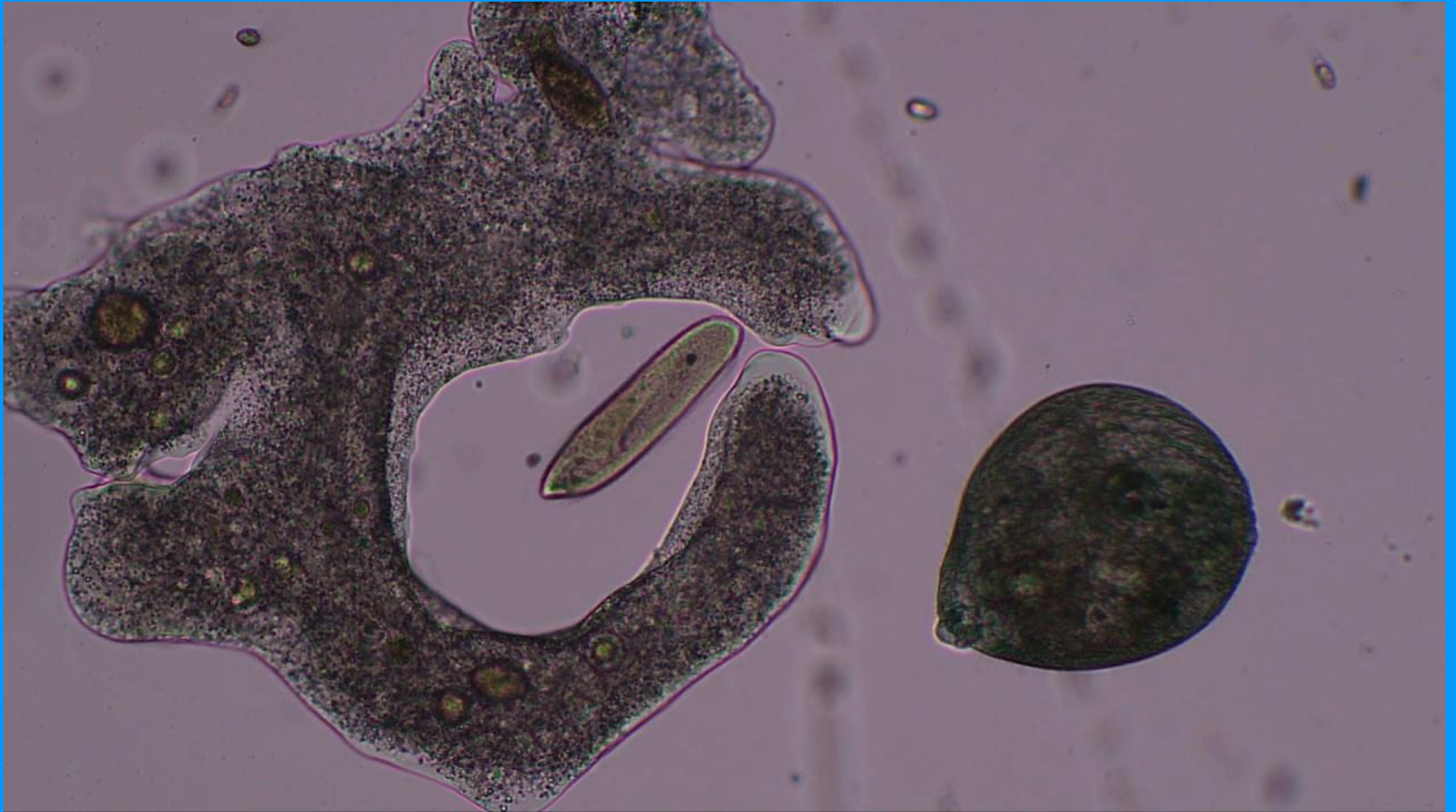
# Four main groups of protozoans

- 1. Amoeboid Protozoans** – aquatic and moist soils, move via pseudopods.  
Example: amoeba
- 2. Flagellated Protozoans** – some free-living some parasitic, move via flagella.  
Example: euglena
- 3. Ciliated Protozoans** – always aquatic, move via cilia.  
Example: paramecium
- 4. Sporozoans** – produce spores, most are parasitic.  
Example: plasmodium (which leads to malaria)

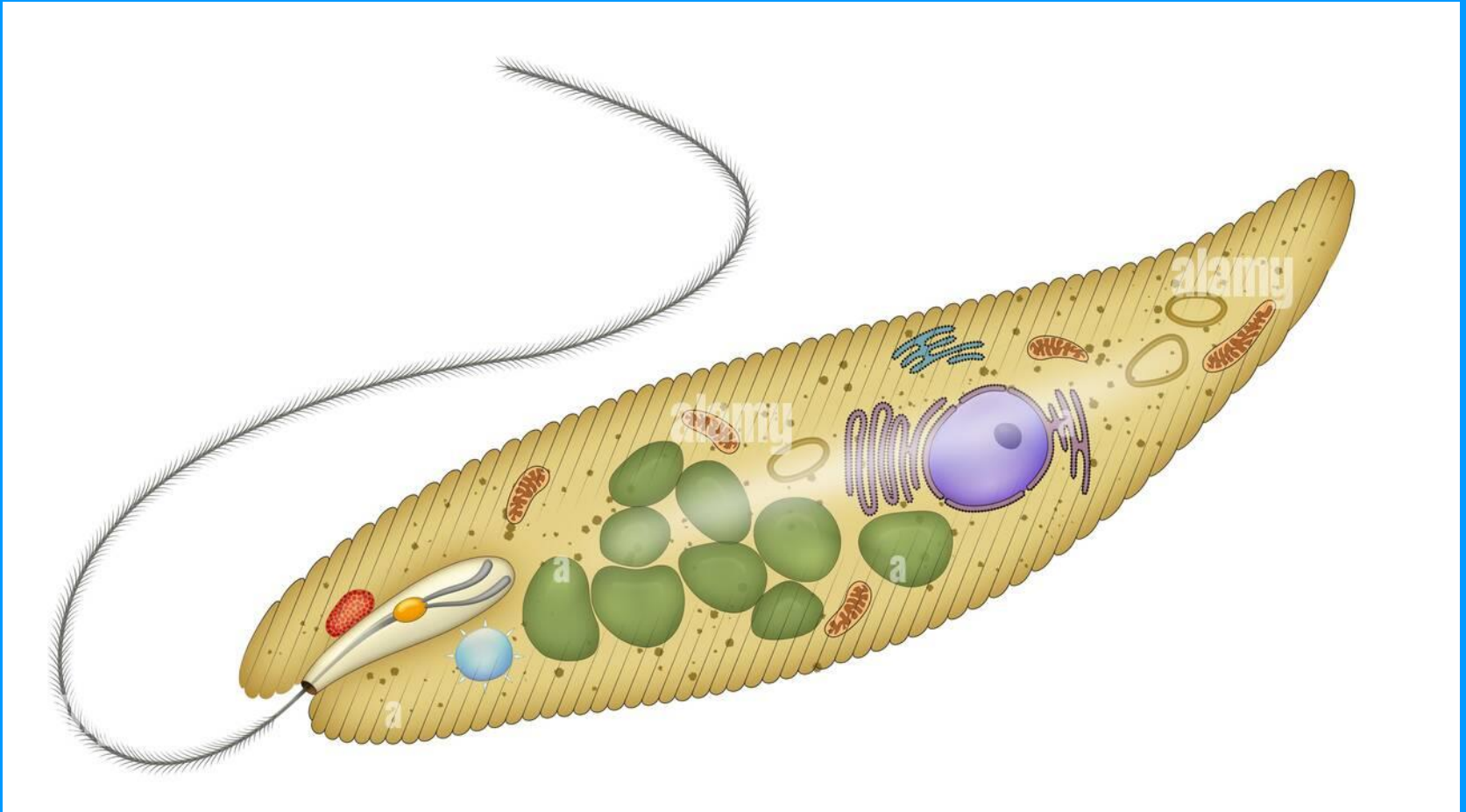
# Amoeboid Protozoans Move by pseudopods.



# Amoeba eating



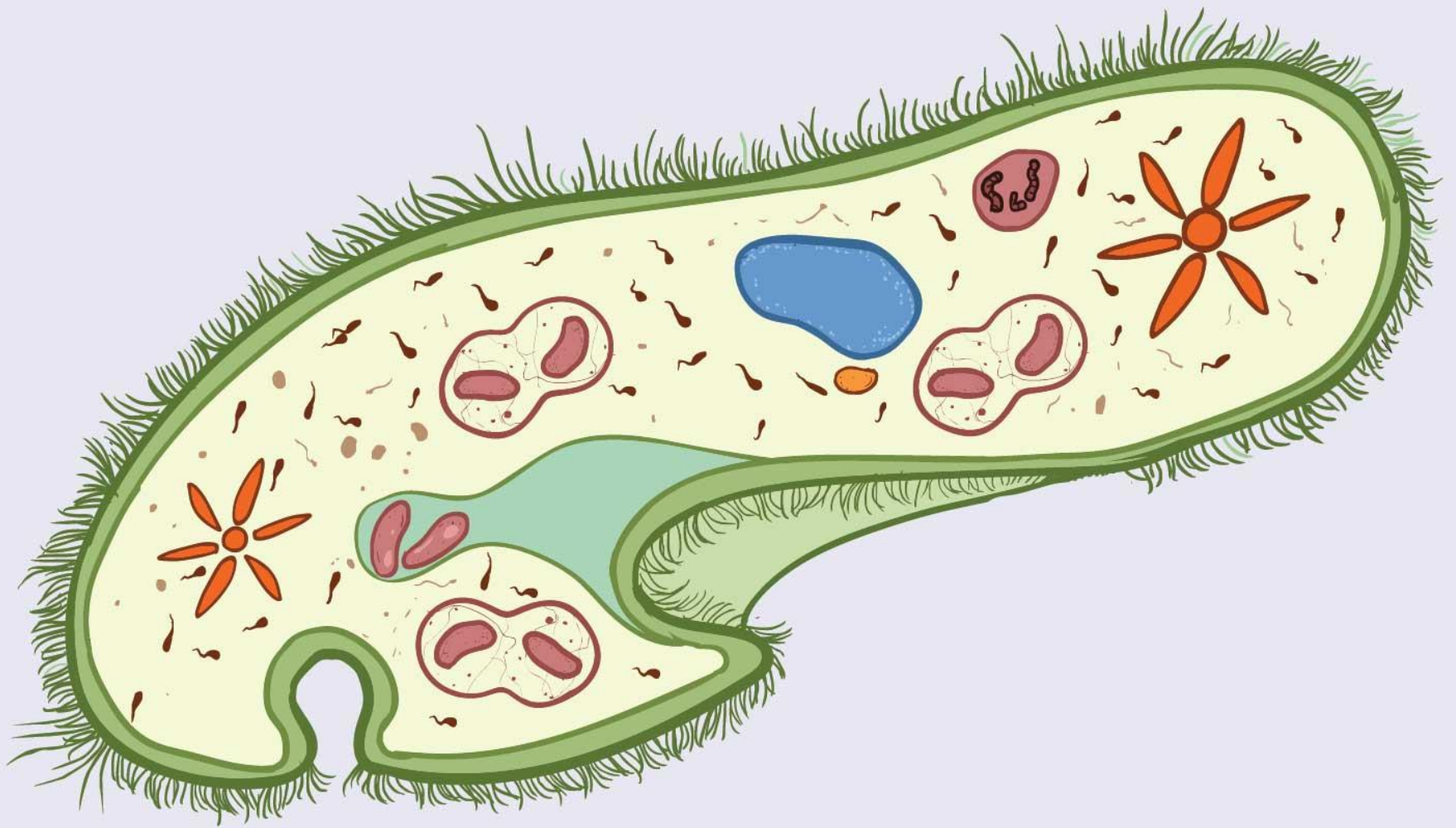
# Flagellated Protozoans



# Ciliated – Protozoans

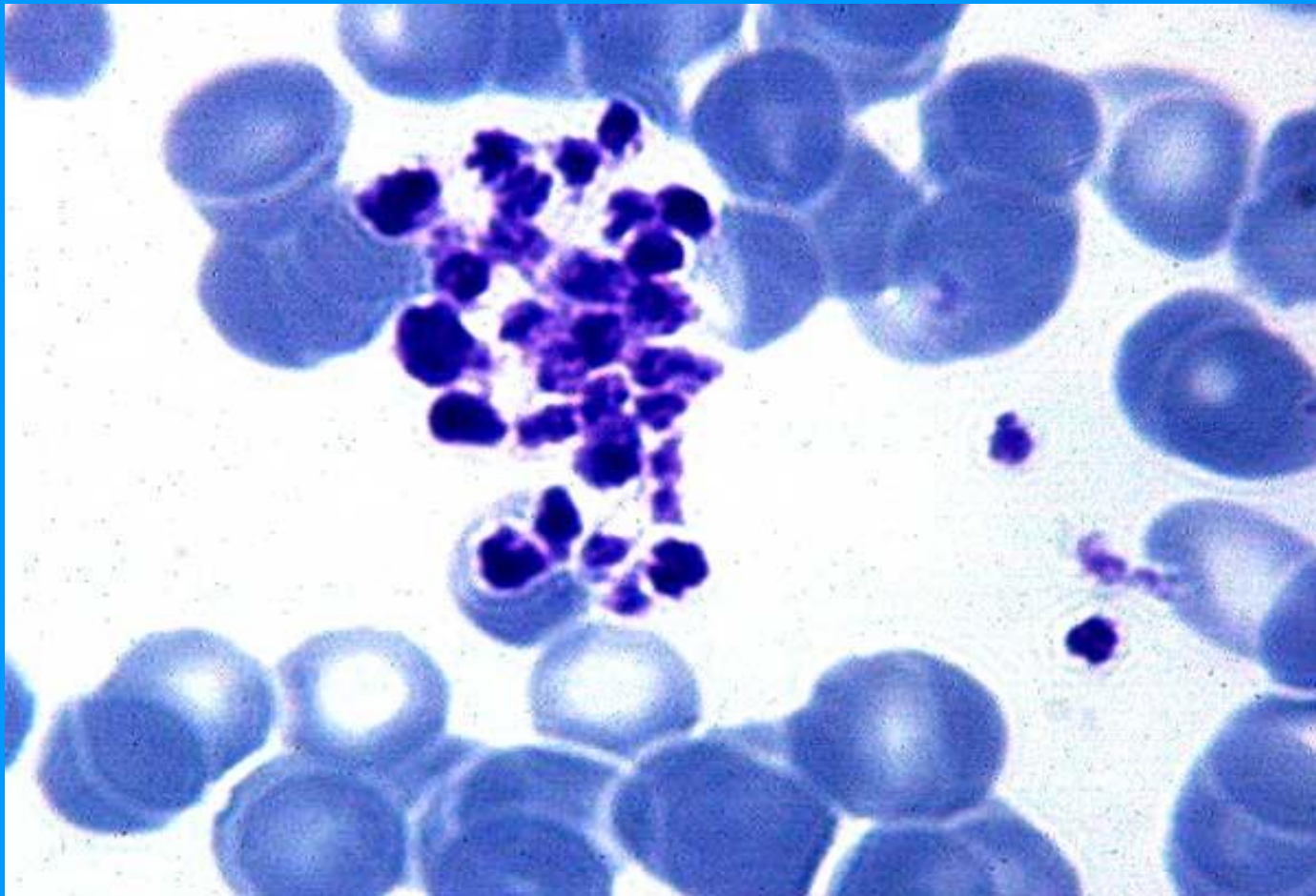


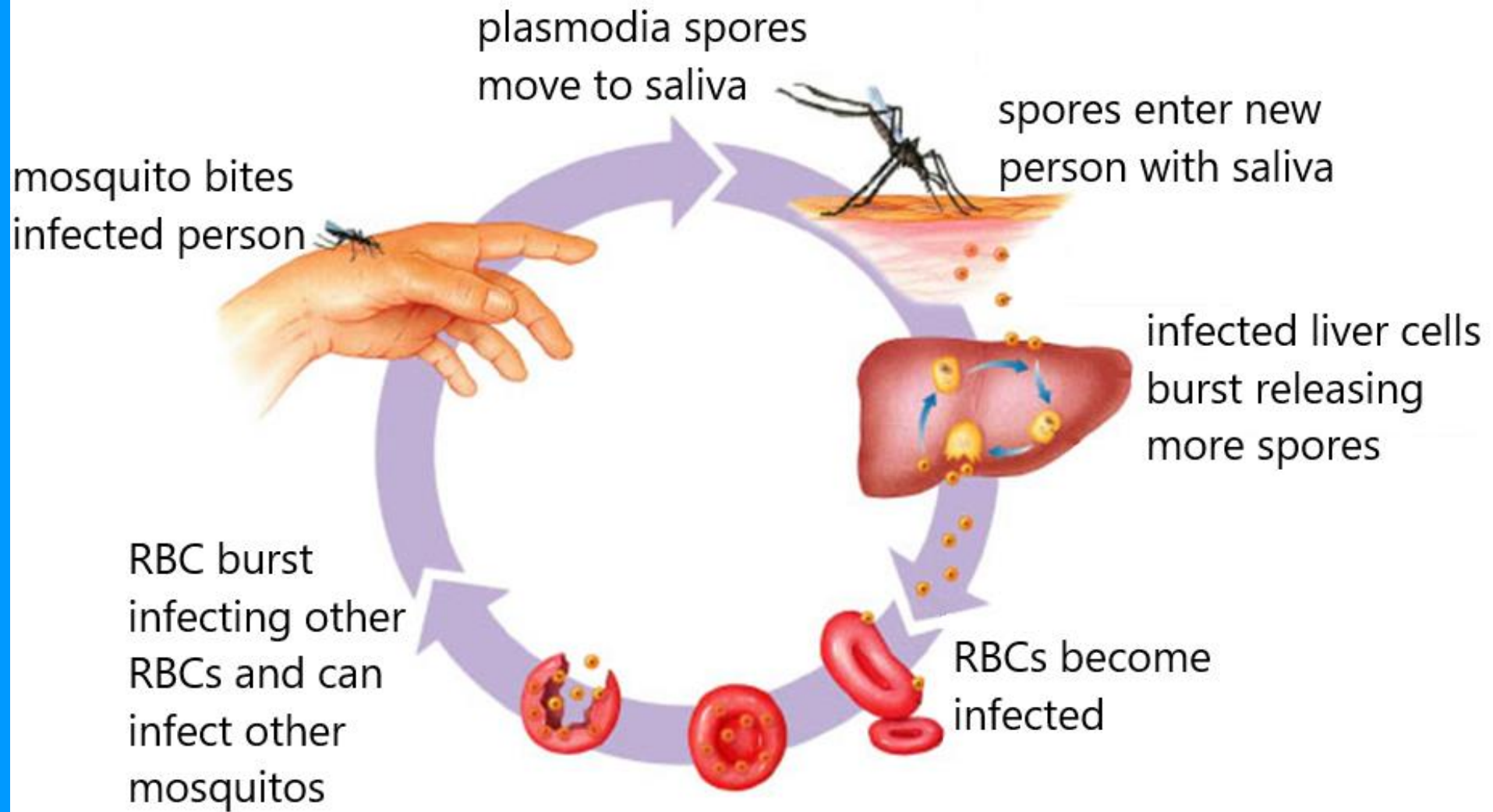




# Sporozoans

Plasmodia are parasitic protozoa that can cause malaria.





# Plant-Like Protists

- are both photosynthetic and aquatic.
- many are referred to as green or brown or red algae.
- both unicellular and multicellular.
- others are divided into **three** groups;
  1. Chrysophytes
  2. Dinoflagellates
  3. Euglenoids

# Chrysophytes

- (aka diatoms)
- form phytoplankton in oceans which are both the foundation of marine ecosystems but also produce a tremendous amount of atmospheric oxygen.

# Diatoms



# Dinoflagellates

- exhibit bioluminescence can cause red tide.



# Bioluminescence





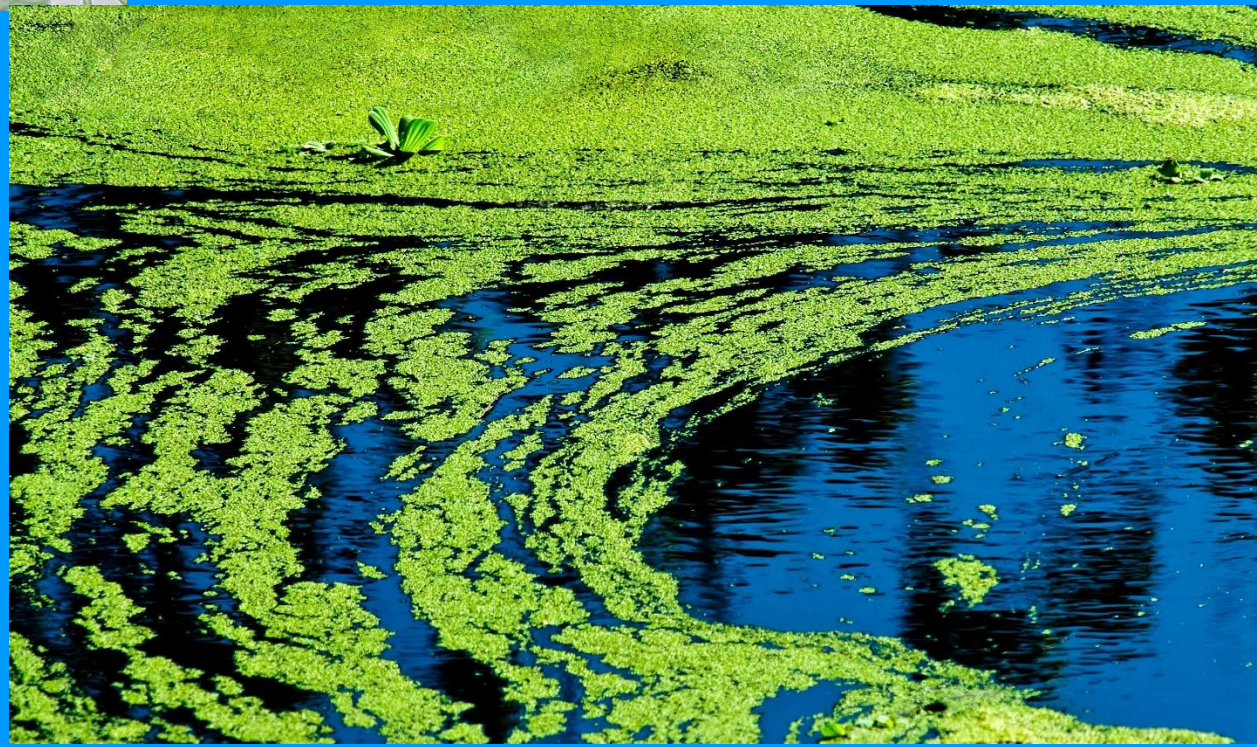
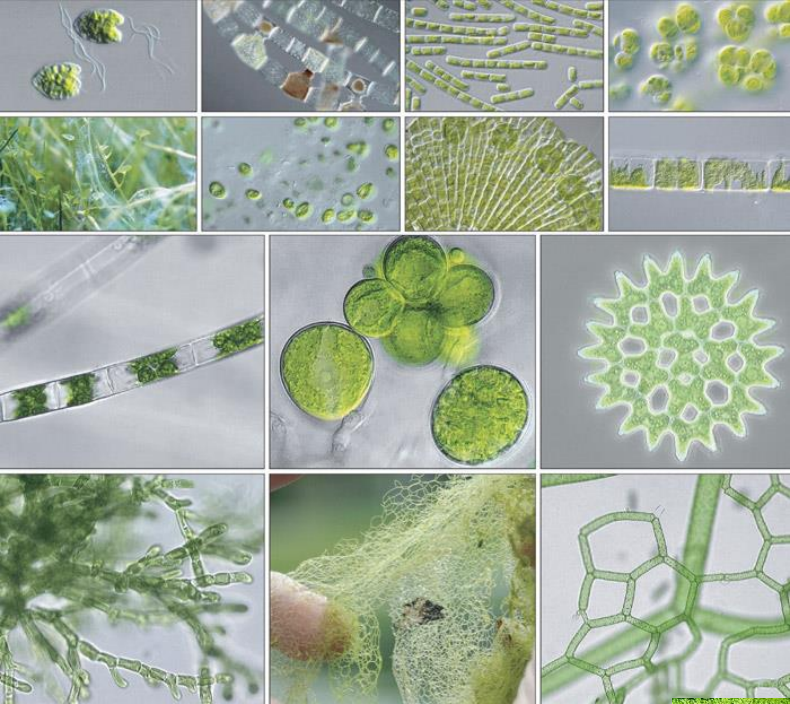
# Euglenoids

- Unique plant and animal like organisms.
- In the presence of light they photosynthesize
- In the absence of light they feed on other smaller organisms.

# Euglenoids



# Green algae



# Red algae



# Brown algae



# Fungal-Like Protists

- They are decomposers.
- Heterotrophic
- Slime Molds are examples



# Slime mold



# Slime mold





# Slime mold

