

Protist Notes



What is a Protist?

- Mostly single-celled eukaryotes that can't be classified as a plant, an animal, or fungi – some are multi-cellular
- Three main categories
 1. Animal-like
 2. Plant-like
 3. Fungus-like

Animal-like Protists

- Called Protozoans
- Are heterotrophs - get energy from other organisms
- Can move to obtain food
- Made of cells with a nucleus and no cell wall - just like an animal cell
- Unicellular – made up of one cell

4 Main Groups of Animal-like Protists

1. Sarcodines

2. Ciliates

3. Flagellates

4. Parasites

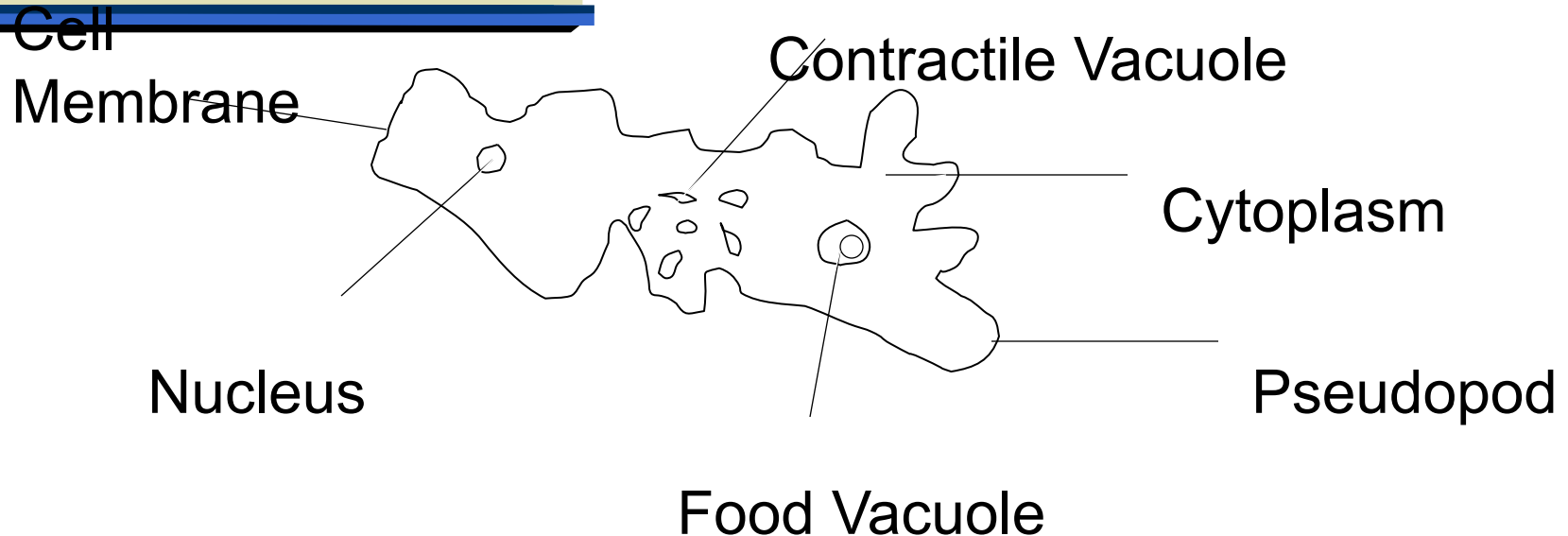
1. Sarcodines

- Animal-like protist that moves to obtain food
- They feed using pseudopods (“false feet”)
 - a temporary bulging/extension of the cell that is used to capture and engulf food and used to move
- Have a **Contractile vacuole** - structure that collects and expels extra water from the cell
- Example - **Amoeba**



Amoeba Proteus

- Most well known amoeba.
- Was named for the Greek god of the sea, Proteus, that could change shape!



Amoeba

■ Amoeba Movement



2. Ciliates

- Animal-like protists that **use cilia** to move and eat
- **Cilia** - hair-like projections from the cell that move with a wavelike motion
 - They work together like oars, which beat to move
 - It sweeps food to the ciliates
- Example - Paramecium

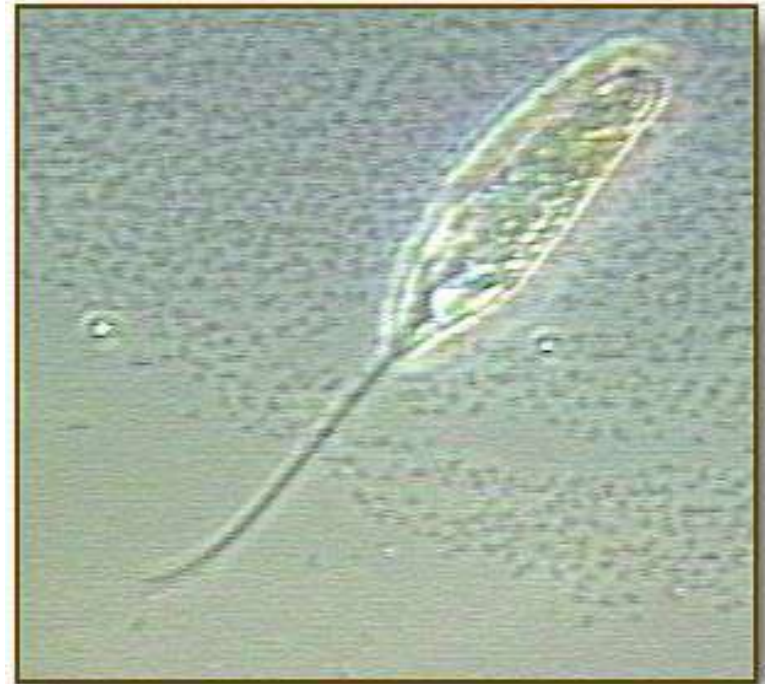


3. Flagellates

- Animal-like protists that use flagella (whip-like tail structure) to move

- They can have one or more flagella

- Ex. Peranema



4. Parasites

- Animal-like protists that feed on the cells and body fluids of their host
- Many of them have more than one host
- Example - Plasmodium (causes malaria)

Plasmodium in a human blood sample



Plant-like Protists

- Commonly called algae
- Autotrophic - use the sun's energy to produce their own food
- Some are unicellular
- Some are multicellular
- There are 7 main types

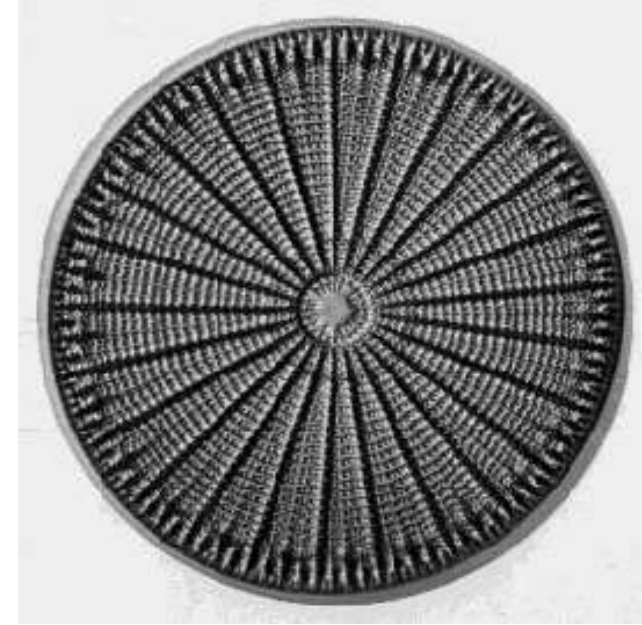
7 Main Types

1. Algae
2. Diatoms
3. Dinoflagellates
4. Euglenoids
5. Red Algae
6. Green Algae
7. Brown Algae

1. Algae

- Plant-like protists
- VERY IMPORTANT in oxygen production
- Most live in water, some on damp surfaces
- All algae contain chlorophyll and photosynthesize

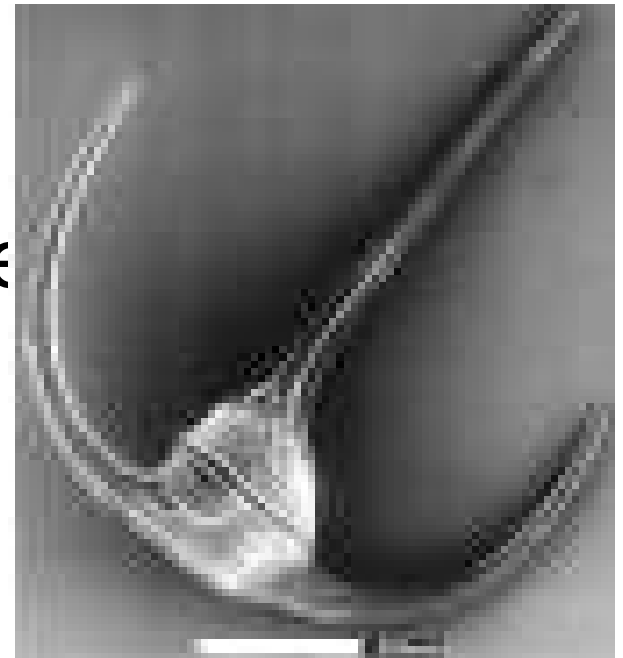
2. Diatoms



- Unicellular protists that have glass-like cell walls
- Float near the surface of lakes and oceans
- Move by oozing chemicals out of slits in their cell walls
- Used in household scouring products and insecticides

3. Dinoflagellates

- Unicellular algae surrounded by stiff plates
- They come in a variety of colors (many glow in the dark)
- All have two flagella
- Responsible for "red tide"



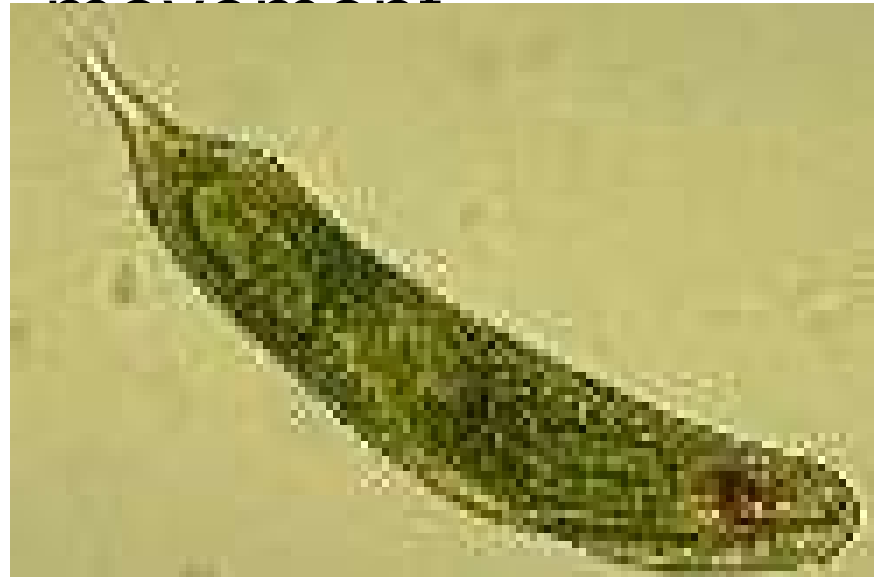
Red Tides

- Common name for **algal bloom**.
- Usually in costal areas.
- Are a result of **rapid accumulation of algae** (specifically dinoflagellates) in the water column.
- Have the potential marine mammals, organisms



4. Euglenoids

- Green, unicellular algae found mostly in fresh water
- Can be autotrophs or heterotrophs
- Use flagella for movement



5. Red Algae

- Multi-cellular seaweed
- It only needs a small amount of sunlight
- It is used in hair conditioner and ice cream
- Contains red chlorophyll which gives it its color.



6. Green Algae

- Contain green pigments
- Unicellular, multicellular or colonial
- Colonial organisms lives attached to others
- They are closely related to plants



7. Brown Algae

- Seaweed with many pigments
- It has many plant-like structures



Fungus-like Protists

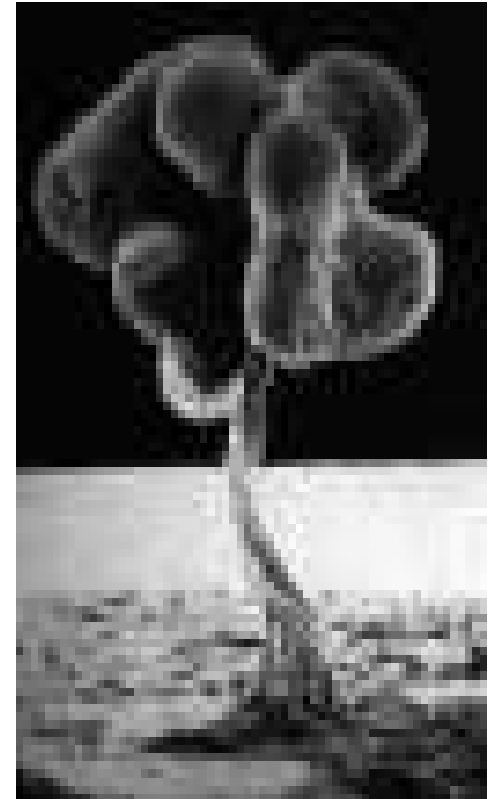
- Heterotrophs
- They have cell walls
- They use spores to reproduce
- Spore - a tiny cell that can grow into a new organism
- Two Main Types: 1. Slime Mold
2. Water Molds and Downy Mildew

1. Slime Mold

- Brightly colored

- Live in moist, shady places

- They are tiny in size to
as big as several meters



2. Water Molds and Downy Mildews

- Most live in water
- They grow in tiny threads that look like fuzz
- Responsible for Irish Potato Famine

Water Mold (from a stream)



ew

