

Kingdom Protista

"Catch-All Kingdom"

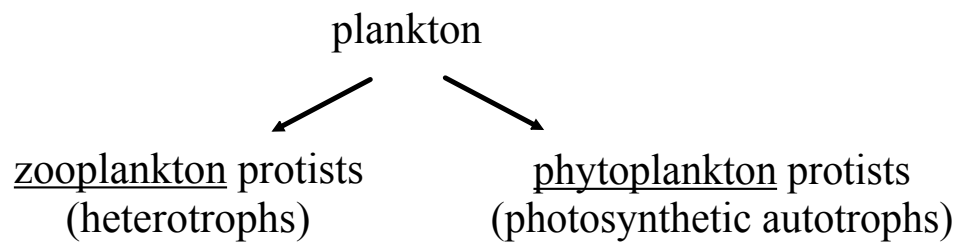
Protists demonstrate an important evolutionary advancement - a discrete, membrane-bound nucleus (ie/ eukaryotic).

Protists contain organelles such as ribosomes, mitochondria and lysosomes.

<http://www.youtube.com/watch?v=Ln69k7LyTsU>



Plankton, tiny floating organisms that include protists, are important producers and consumers in aquatic food chains.



Protist Diversity

There are three distinct groups of protists.

1. Plant-like Protists

Plant-like protists are autotrophic. They can be unicellular, multicellular or live in colonies.

They can live in soil, on the bark of trees, in fresh water and in salt water. They are very important because they produce a lot of oxygen and form the base of aquatic food chains.

The plant-like protists are divided into four basic groups: **euglenoids, dinoflagellates, diatoms** and **algae**.

1. Euglenoids

- **Autotrophs** when sunny
- **Heterotrophs** when dark
- **Unicellular**
- Found mostly in fresh water
- Some have **flagellum** ←



flagellum = tiny whiplike structure used in movement and feeding (flagella is the plural form)

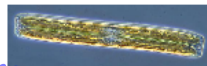
2. Dinoflagellates

- **Unicellular**
- Covered by stiff plates
- Have two **flagella**
- May glow in the dark
- Found in ocean



3. Diatoms

- **Unicellular**
- Glasslike cell walls
 - Used in toothpastes, scouring products, and as filters



4. Algae



<u>Green Algae</u>	<u>Red Algae</u>	<u>Brown Algae</u>
<ul style="list-style-type: none"> • Are green in color • Mostly unicellular, but some form colonies, and a few are multicellular • Live in fresh water, salt water, and a few live on land 	<ul style="list-style-type: none"> • Multicellular • Commonly called sea weed • Live in deep salt water • Are used by humans to help make ice cream and hair conditioner • Are eaten in some Asian cultures 	<ul style="list-style-type: none"> • Multicellular • Commonly called sea weed • Have large leaf-like structures called blades • Have air-filled sacs called air bladders • Have root-like structure called holdfast • Live in salt water • Are used by humans to help make pudding and salad dressing

2. Animal-like Protists

These organisms are known as protozoans and are heterotrophic. Protozoans can be either free-living or parasitic.

Holozoic protists engulf bacteria and other microbes for food.

Saprozoic protists absorb predigested material through the cell membrane.

1. Protists with Pseudopods	2. Protists with Cilia
<p>These protists move by extending their bodies forward and then pulling the rest of their bodies forward as well (check it out). The finger-like structures that they project forward are called <u>pseudopods</u>. The <u>pseudopods</u> are also used to <u>trap food</u>.</p>	<p>These protists move by beating tiny hair-like structures called <u>cilia</u>. The <u>cilia</u> act as tiny oars that allows the protist to move through its watery environment (check it out). The <u>cilia</u> also help the protists capture food.</p>
<p>The <u>ameba</u> is an example of this type of animal-like protist.</p>	<p>The <u>paramecium</u> is an example of this type of animal-like protist.</p>
	

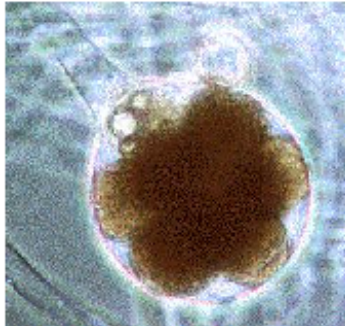

3. Protists with Flagella	4. Others
<p>These protists move by beating their long whiplike structures called <u>flagella</u>. These protists can have one or more <u>flagella</u> that help them move. Many of these protists live in the bodies of other organisms. Sometimes, they help their host, while at other times they harm their host.</p>	<p>These protists are characterized mainly by the way they live. <u>All of these protists are parasites</u>. Many of these protists cause diseases such as <u>malaria</u>.</p>
<p>The <u>Giardia</u> is an example of this type of animal-like protist.</p>	<p>The <u>Plasmodium</u> is an example of this type of animal-like protist.</p>

<http://www.youtube.com/watch?v=QGAm6hMysTA&feature=related>

http://www.youtube.com/watch?v=7pR7TNzJ_pA&feature=related

3. Fungus-like Protists

These protists are heterotrophs with cell walls. They reproduce by forming spores. All are able to move at some point in their lives. There are three types: **water molds**, **downy mildews** and **slime molds**.

Water Molds	Downy Mildews
<ul style="list-style-type: none">• Live in water or moist environments• Look like tiny threads with a fuzzy covering• Attack food such as potatoes, cabbage, and corn and can destroy whole crops	
	

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Slime Molds
<ul style="list-style-type: none">• Live in moist soil and on decaying plants and trees• Very colorful• Move by forming pseudopods• Feed on bacteria and other microorganisms.

