



Protists & Fungi

Protists



- Single celled or multi-celled organisms that live in moist areas
- Eukaryotic organisms
- Characteristics of plants, animals and fungi
- Grouped in to three main groups*
 - Plant Like
 - Animal Like
 - Fungus Like

What are the three main groups of protists?*

Plant like protists

- Known as algae
- Are plantlike because they make their own food*
- *Plant like protists are classified by color**
- The root word phyte refers to plants*

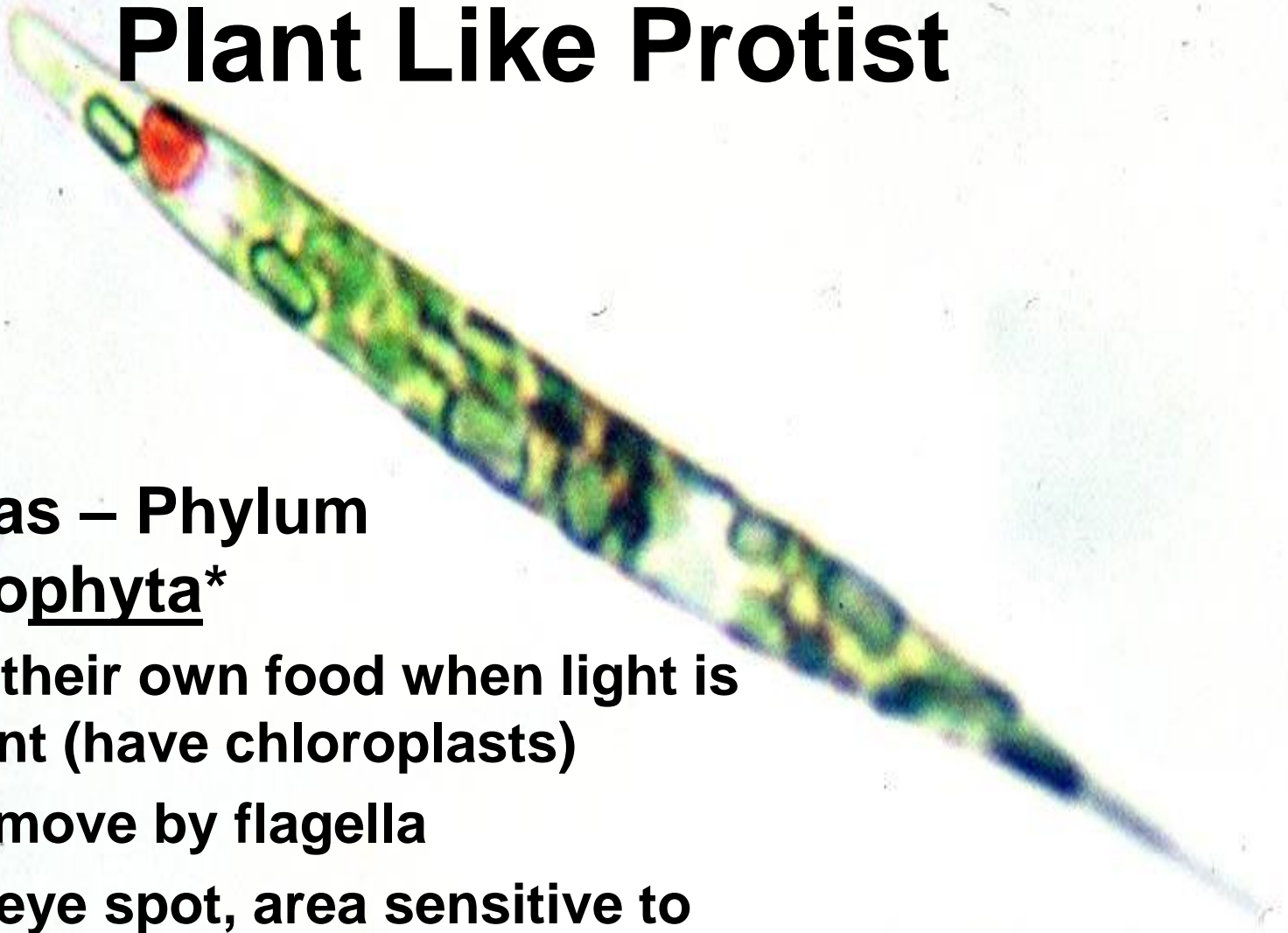
*How are plantlike protists classified?**

*What characteristics do plants and algae have in common?**

*What does the root word phyte mean?**



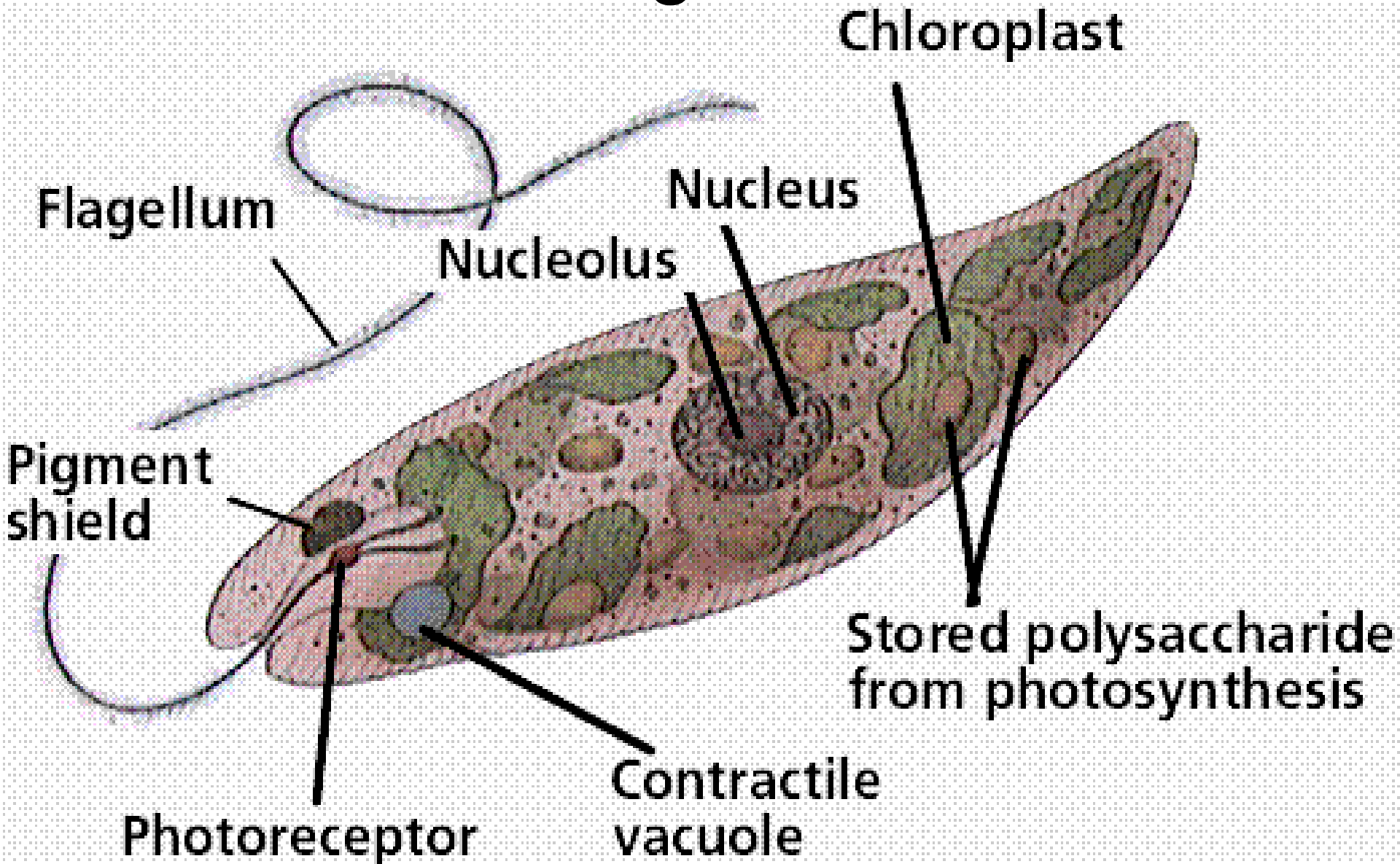
Plant Like Protist



- **Euglenas – Phylum Euglenophyta***
 - Make their own food when light is present (have chloroplasts)
 - Most move by flagella
 - Have eye spot, area sensitive to light

To what phylum do euglena belong?*

Euglena



Plant Like Protists

- **Diatoms - Phylum Chrysophyta Golden algae (chryso means gold)***
 - Have golden brown pigment that covers the green of chlorophyll
 - Silica shell is left behind when they die
 - The shell is used as scouring powder, tooth past, reflective paint and food conditioner

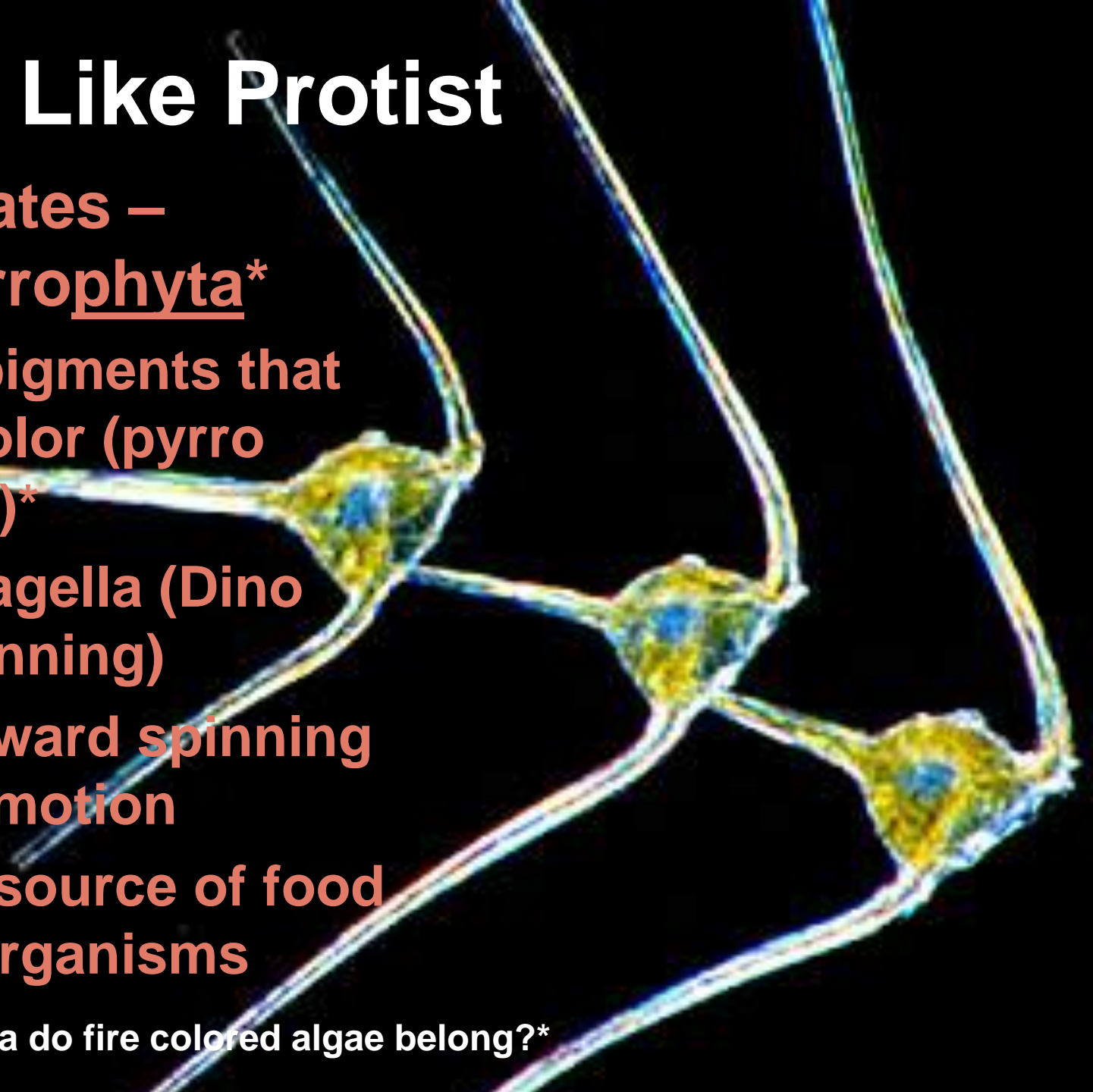
*To what phyla do golden algae belong?**

Plant Like Protist

Dinoflagellates – Phylum Pyrrophyta*

- Have red pigments that give red color (pyrro means fire)*
- Has two flagella (Dino means spinning)
- Have a forward spinning rotational motion
- Important source of food for other organisms

To what phyla do fire colored algae belong?*



Dinoflagellates



Plant like Algal Protists

- Green algae - Phylum Chlorophyta*
 - Have chlorophyll that makes them green (chloro – means green*) Volvox
- Red Algae Phylum Rhodophyta*
 - Red Algae Rhodo - means red*
 - Live deeper in the ocean because of red pigment
 - Used to give smooth texture to food (Carageenan)

To what phyla to the green algae belong?*

To what phyla to the red algae belong?*



Vattenkikaren

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Plant Like Algae

- **Brown Algae Phylum Phaeophyta***
 - **Grow tall**
 - **Giant kelp**
 - **Used as food by animals and humans**
 - **Used in ice-cream and marshmallows**
 - **Used as fertilizers**
- P 234 Table 9-1**

To what phyla do brown algae belong?



Quiz

Name _____

1. How are protists classified?

2. How are plant like protists classified?

Match the following:

_____ 3. red algae

_____ 4. brown algae

_____ 5. green algae

_____ 6. golden algae

_____ 7. dinoflagellates

_____ 8. euglena

a. Chlorophyta

b. Crysophyta

c. Pyrrophyta

d. euglenophyta

e. phaeophyta

f. rodophyta

Animal Like Protists (Protozoa)

- Protozoa - *classified according to movement**
- *The root zoa means animal**
- *They are like animals because they move and do not do photosynthesis**
- **Sarcodines - Phylum Sarcodinia**
 - Move by false foot called a pseudopod*
 - Engulf food by phagocytosis*
 - Move by amoeboid movement*
 - Live in water or liquid environments

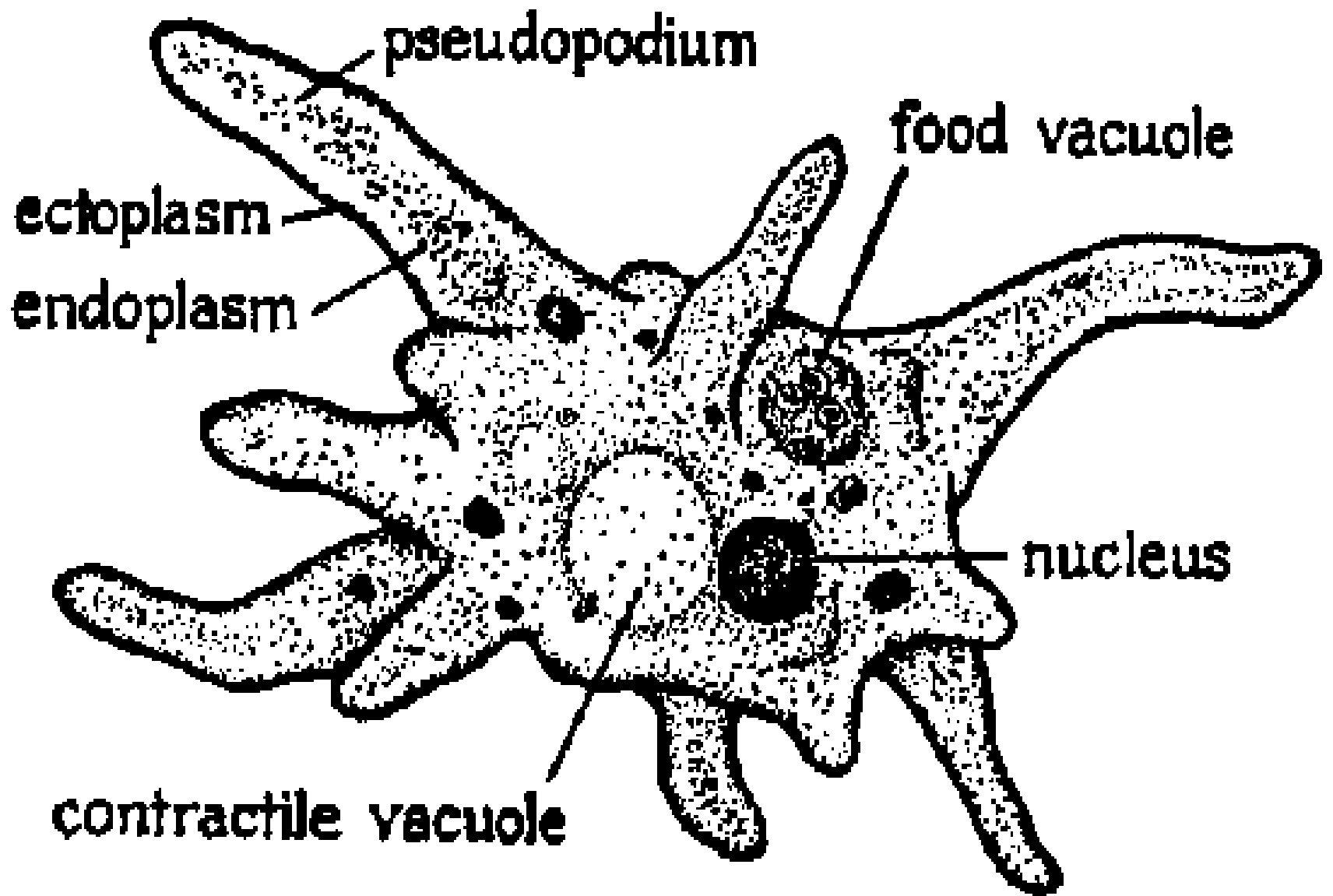
How are animal like protist classified?

*How are protozoa like animals?**

*What is amoeboid movement?**

*What organism eats by phagocytosis?**

*What does the root word zoa mean?**



Structure of *Amoeba* (Class SARCODINA).

Protozoa

- **Flagellates phylum mastigophora**
 - Move by flagella
 - Some cause disease (African Sleeping Sickness)
 - Some help termite digest wood

Protozoa

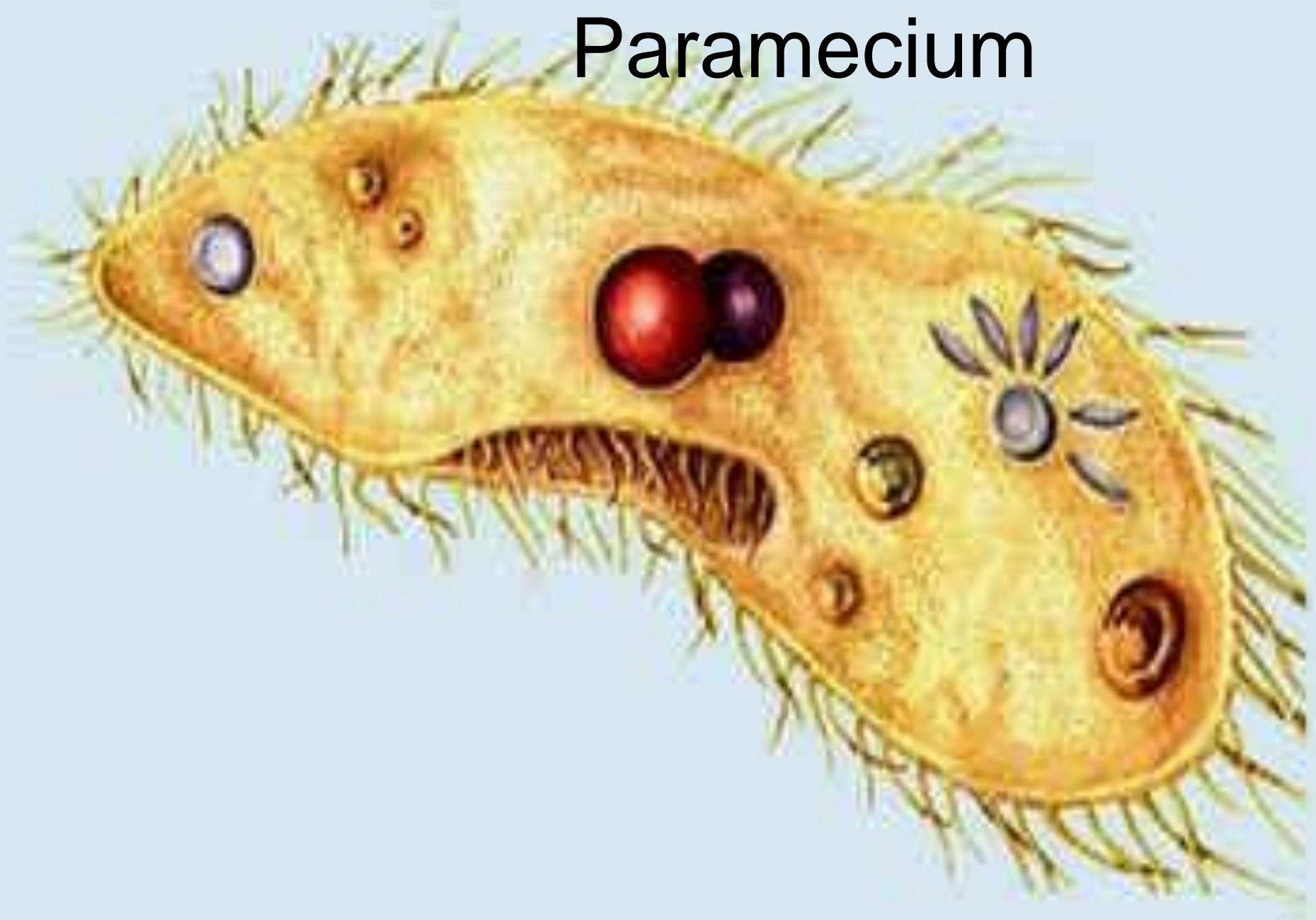
- **Ciliates** phylum **Ciliophora**
 - Move by cilia **Paramecium** are typical ciliates
 - Cilia are hair like structures that help are used for movement*
 - Two nuclei*
 - Macronucleus
 - Micronucleus
 - Oral groove - for obtaining food
 - Waste removed through the anal pore

*What is cilia?**

Ciliates

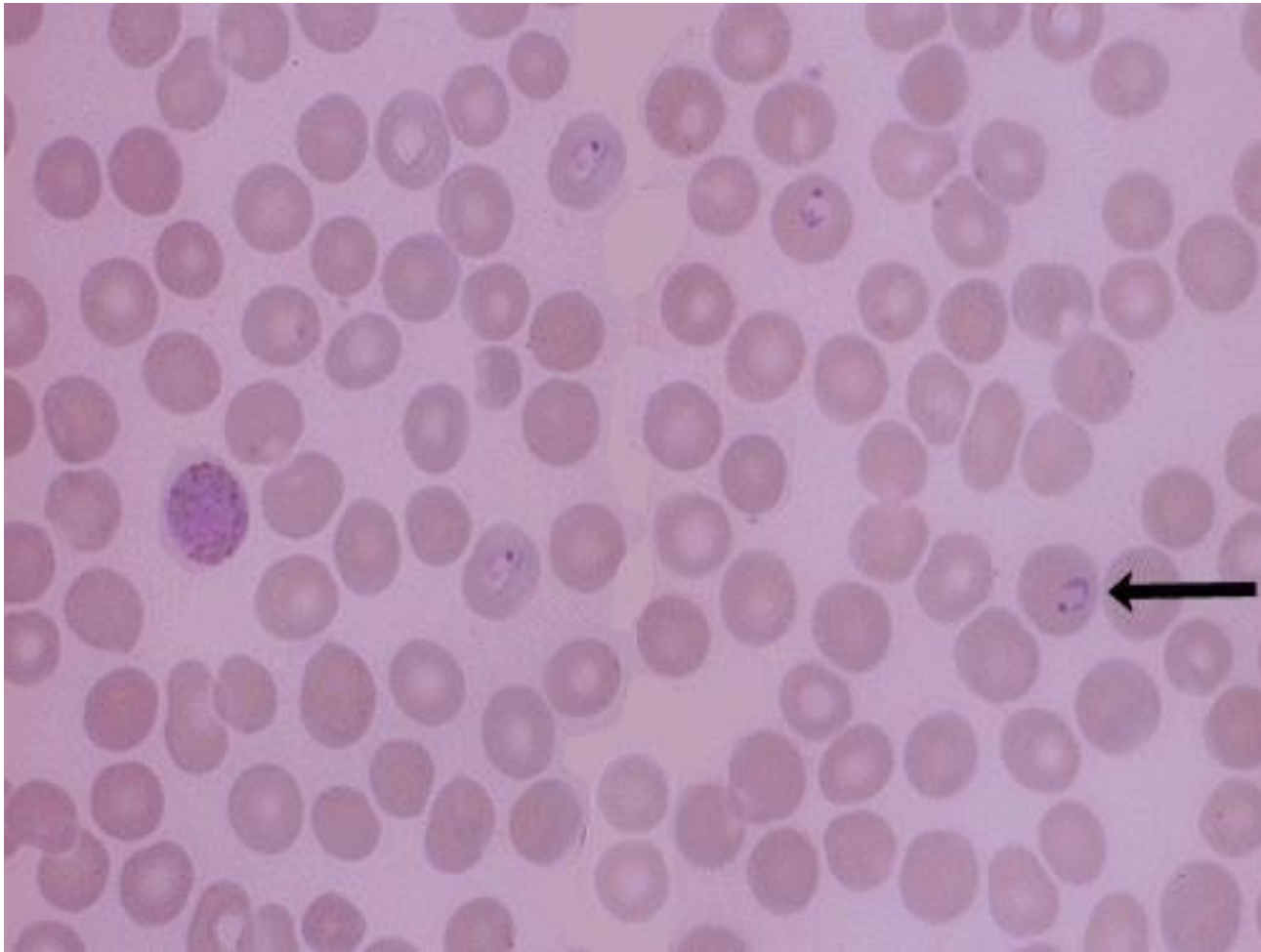


Paramecium



Protozoa

- Sporozoans – Phylum sporozoa
Parasites
- Some cause disease as malaria

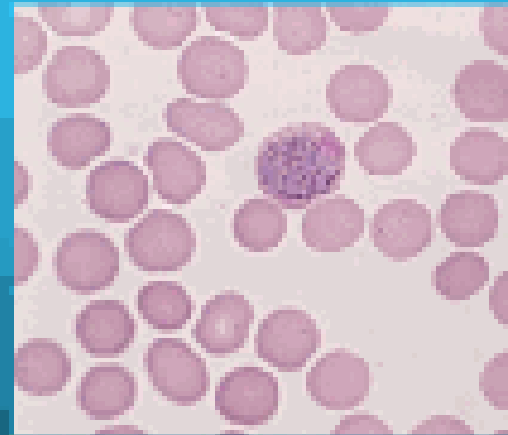


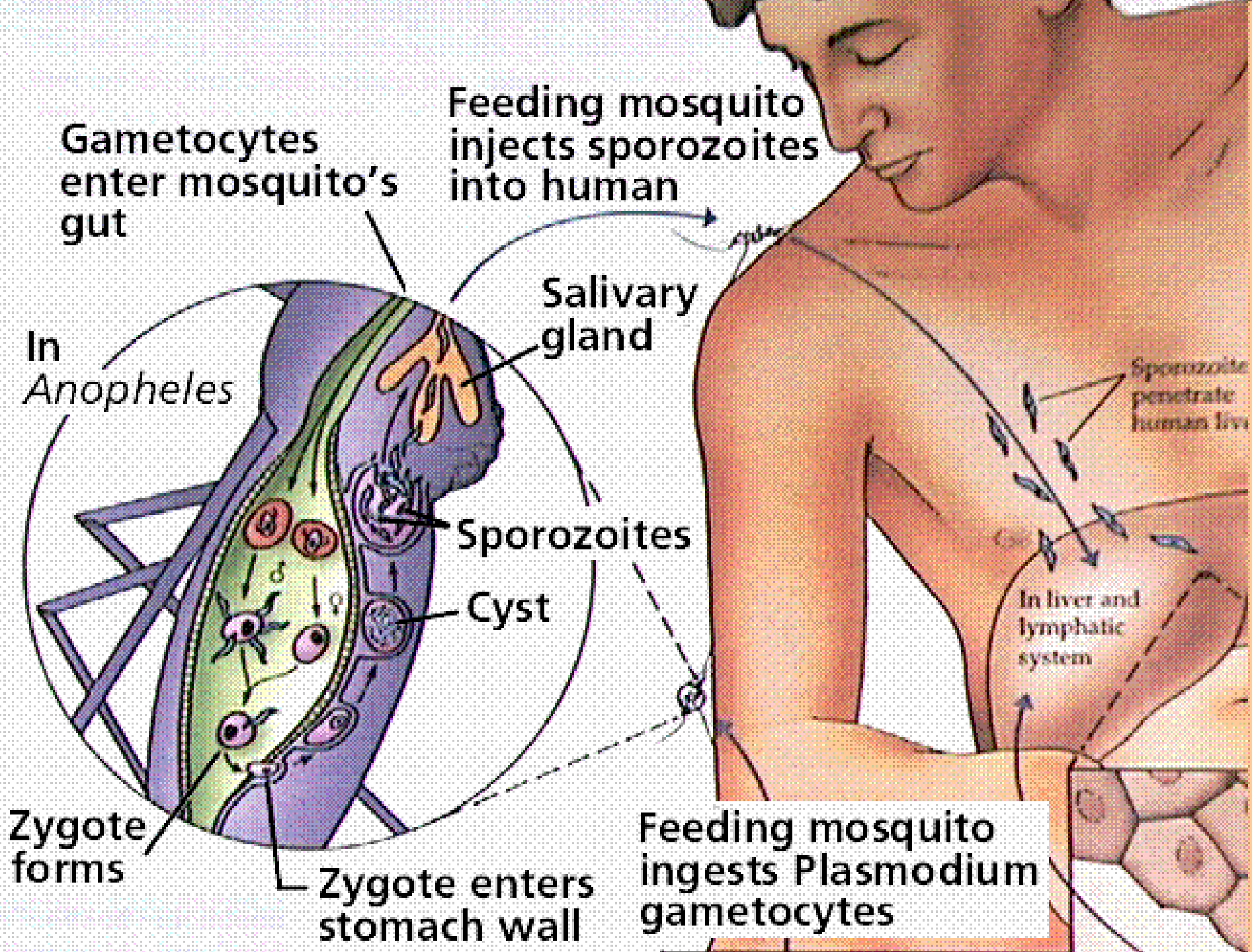
5TH PHYLA OF PROTOZOANS: SPOROZOANS

- Lack any means of movement.
- Often form spores: asexual reproductive cells.
- Most are internal parasites.
- Many cause disease.

Example: *Plasmodium*

- Is parasitic.
- Lives in the blood and liver of humans.
- Causes malaria.
- Carried by mosquitos.

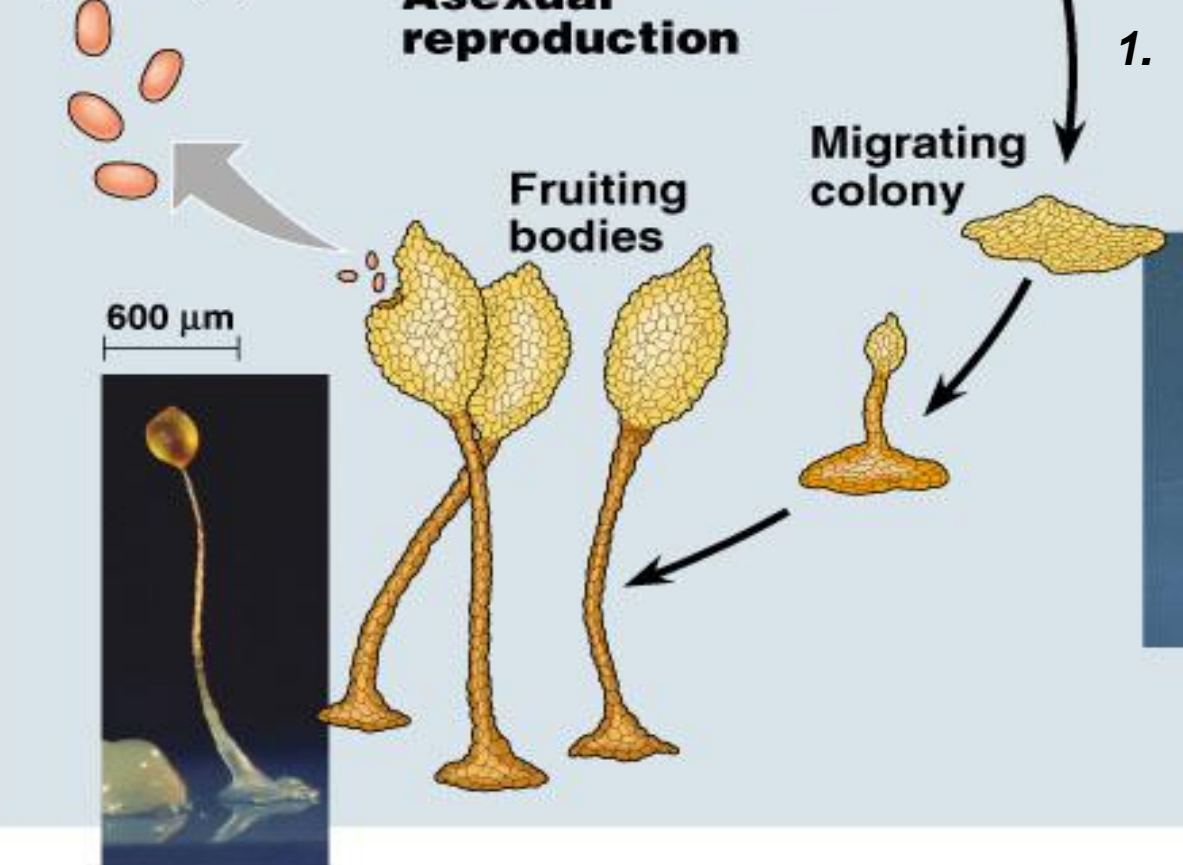
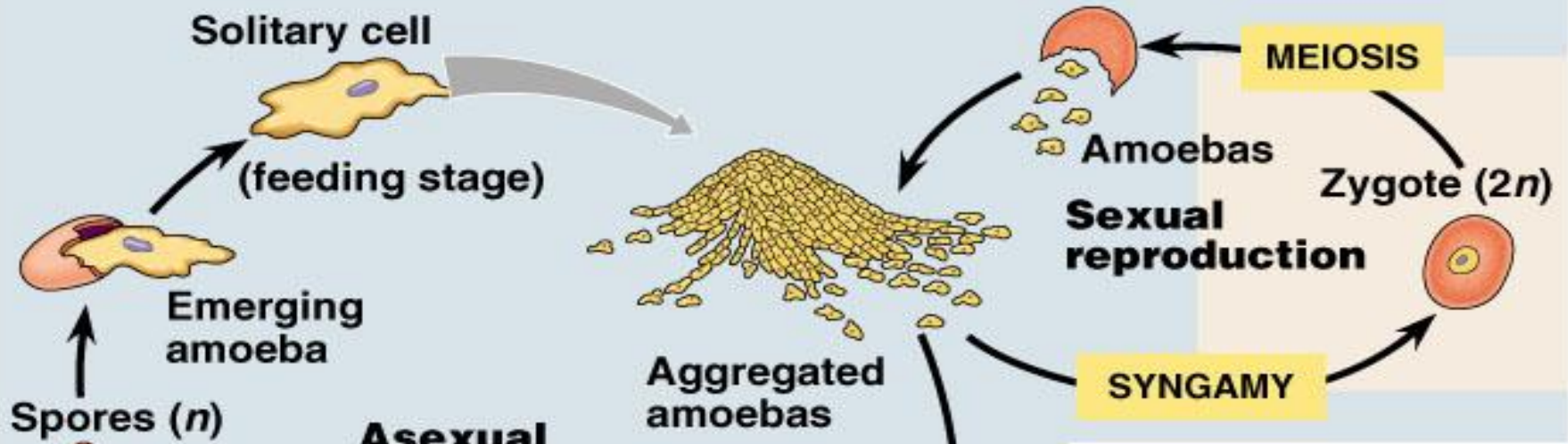




Fungus like protists -

- **Have features of both fungi and protista***
 - **Slime molds**
 - **Two parts of life cycle**
 - **Move like amoebas**
 - **Fruiting bodies that produce spores like molds**
 - **Water molds & downy mildews**





1. *Why are fungus like protists put in the protists group and not the fungus group?**



Legend:
 Light blue square: Haploid (n)
 Light orange square: Diploid ($2n$)

Kingdom Fungi

Eukaryote that gets its nutrients from another organism, dead or living

Characteristics of kingdom fungi

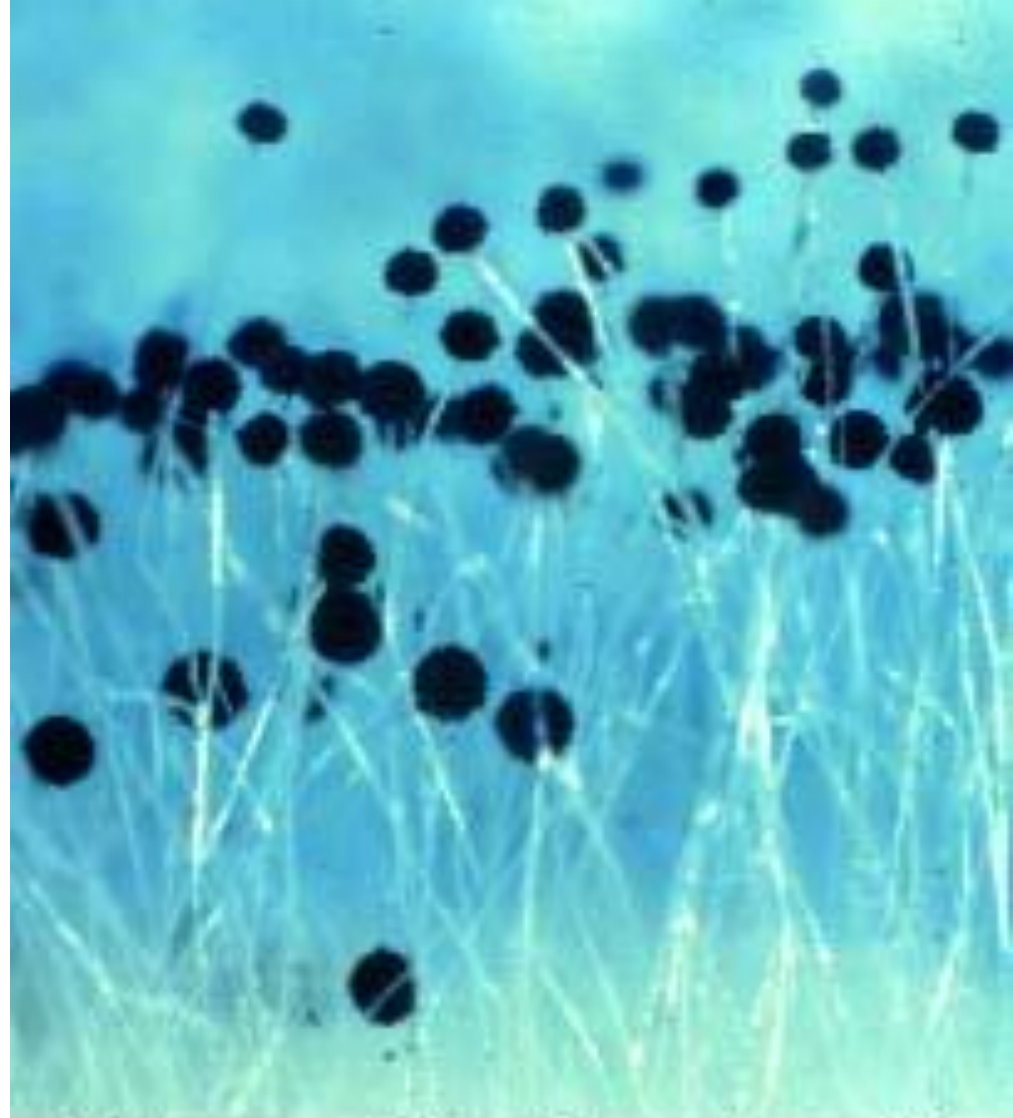
- Get food from another source (most are saprophytes)
- No roots stems or leaves
- Body of organism made up of thread like hyphae
- Produce spores for reproduction
- Name after their spore producing structure*
- Myc means fungus*

*How are fungi classified?**

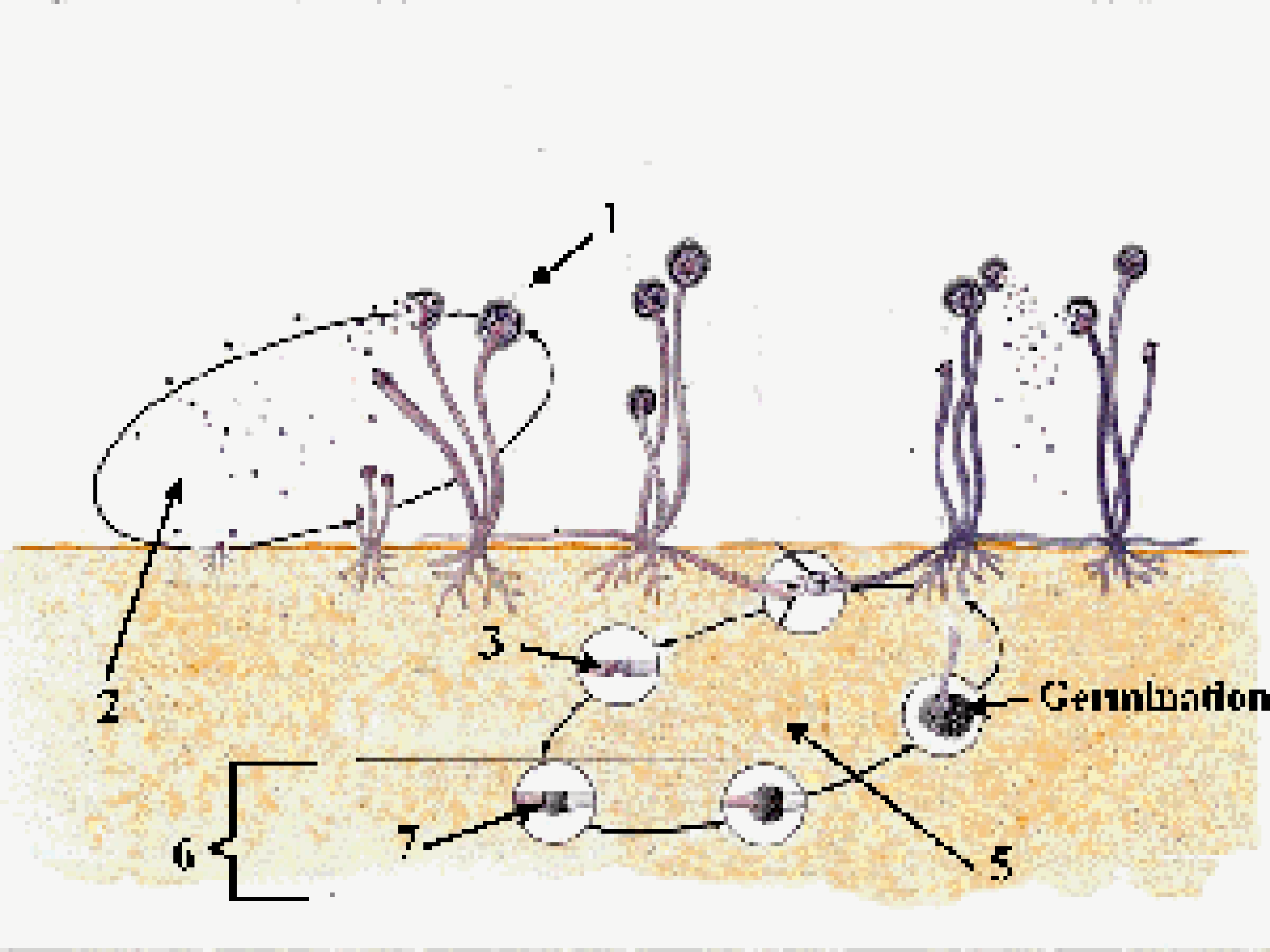
*What does the root myc mean?**

Fungi

- **Zygote fungus**
Phylum -
Zygomycota
Produce spores in
sporangia
 - **Often seen as black**
fuzzy bread mold



Rhizopus -black bread mold



Fungi

- **Sac Fungi Phylum Ascomycota**
 - Produce spores in a sac called the ascus
 - Include yeasts that is used in baking*
 - Yeasts also reproduce by budding*
 - Cause elm disease, apple scab, rye disease



*What fungi are used in baking?**

Apple Scab



DGA1436074

Morels (Sac Fungi)



Fungi Club fungi

- **Phylum
Basidiomycota**
- **Produce spores in a club shaped structure called a basidium**
- **This group includes:
Rusts, smuts,
mushrooms*,
toadstools**

*To what group of fungi do
the mushrooms belong?**



Imperfect Fungi

- **Phylum Deuteromycota**
 - **Has characteristics of the other three phyla**
 - **Includes: penicillium, ringworm, and athlete's foot.**

How are fungi beneficial to man?

How are fungi important to the environment?*

Know which fungi fit into which group?

Lichens

- An organism that is a combination of two organisms*
 - Fungus*
 - Green algae or a cyanobacteria*
- Have a mutualistic* relationship
 - relationship where both organisms benefit
 - The algae gets a moist warm protected place to live
 - The fungus then feeds off the algae
- They grow on rocks and trees
- Help make soil better



What two organisms make up a lichen?

Lichen



Quiz

Name _____

1. What does the root word phyte mean?
2. How are protozoa classified?
3. What does the root word zoa mean?
4. What is the purpose of cilia of ciliates?
5. How are fungi classified?
6. What does the root myc mean?
7. What are lichen?
8. What is amoeboid movement?
9. Why are fungus like protists put in the protists group and not the fungus group?