

Parasite



**Giardia
intestinalis**



**Trichomonas
vaginalis**



**Trypanosoma
gambiense**



Leishmania sp.

- **Parasitology:** the study of parasites.
- **Parasite:** it is an organism living in or on other organism.

Parasites can be divided to:

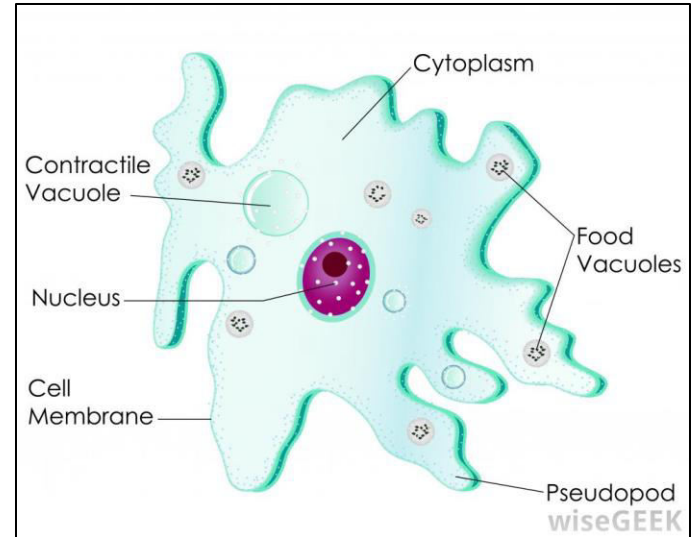
- Protozoa.
- Helminthes (worms)
- Arthropods (insects)

Protozoa

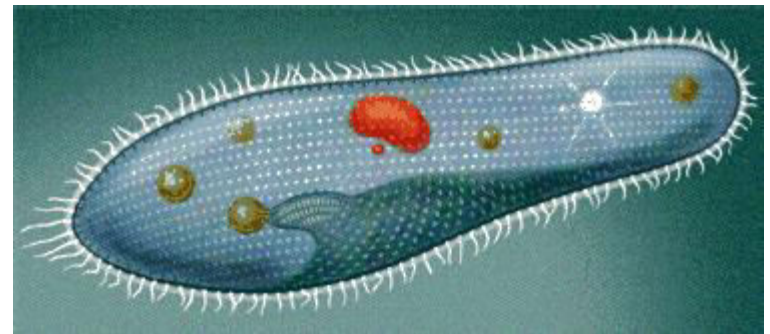
- Single cell (unicellular) eukaryotes.
- They can live as free organisms or as parasites.
- They transmitted by:
 - Insect bites (blood sucking)
 - Fecal-oral rout (contaminated food)
 - Blood transfusion

Protozoa are classified into four classes according to their motility:

1. Amoebas: move by pseudo pods, ex: *Entamoeba histolotica*



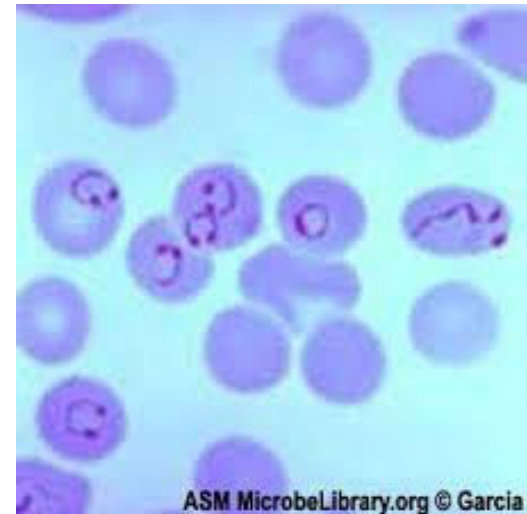
2. Ciliates: move by cilia, ex: *Balantidium coli*



3. Flagellates: move by flagella, ex :*Trypanosoma*



4. Sporozoa: intracellular parasite, doesn't move it transmit through the blood, ex:*Plasmodium* (Blood parasite)



Protozoa have two stages:

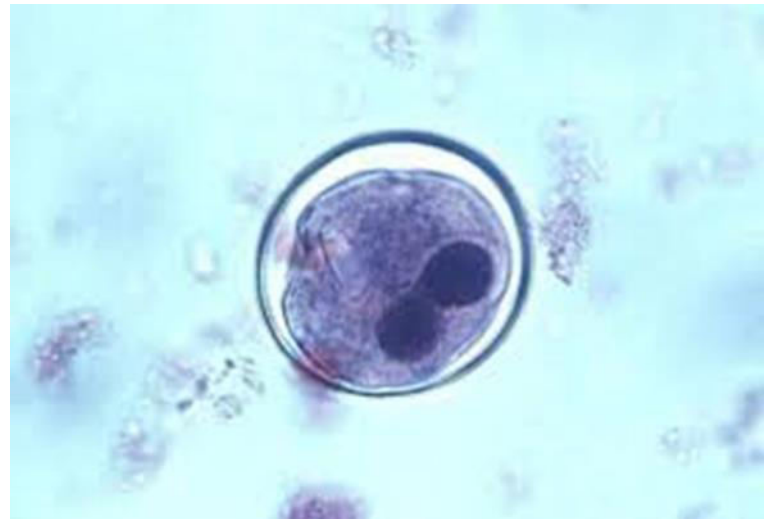
Cyst: dormant stage outside the body.

Trophozoite: active stage inside the body.

Entamoeba histolotica
(Trophozoite)



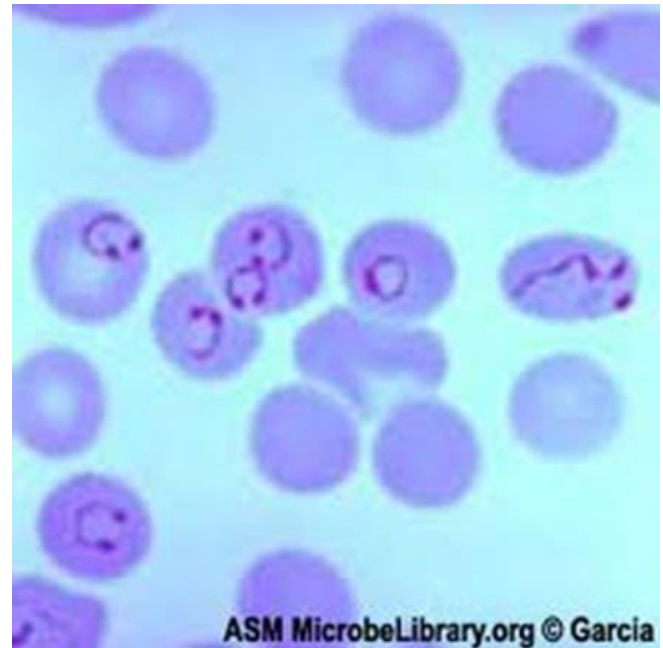
Balantidium coli (Cyst)



Trypanosoma (Trophozoite)



Sporozoa inside the RBC
(Ring form)



Helminthes (worms)

- Multicellular eukaryotic organisms.

Helminthes have two stages:

- **Larval stage (egg):** measure 100-200 Mm.
- **Adult worms:** measure from cm to meters.

They can be classified into:

- Nematode, ex: Ascaris.
- Trematode, ex: Schistosoma.
- Cestode, ex: Taenia.

Ascaris

Egg



Adult



Tenia

Adult

Egg



Schistosoma

Egg



Arthropods (insects)

Ex: mosquitoes, bee, flea and flies.

Harmful effects of arthropods:

- Food poisoning.
- Discomfort.
- Cause diseases and transmit diseases.
- Damage of crops.

Benefit of arthropods:

- Bees produce honey.
- Fertilization of plants and flowers.