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((Invertebrates))

2 stage

Lecture three

Phylum Protozoa

By

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General Characterization of Protozoa

- 1 – Protozoa unicellular eukaryotic organisms .
- 2 – Around 65000 species .
- 3 – They have many organelles like in higher animals .
- 4 – Some of them have mouth and intestinal tract .
- 5 - Many of them live as parasite and other free living .
- 6 - Most of them have stages in their life cycle some of these stages are infective to human or animals .

There are 4 Classes :

1 – Mastigophora or Flagellated Class .

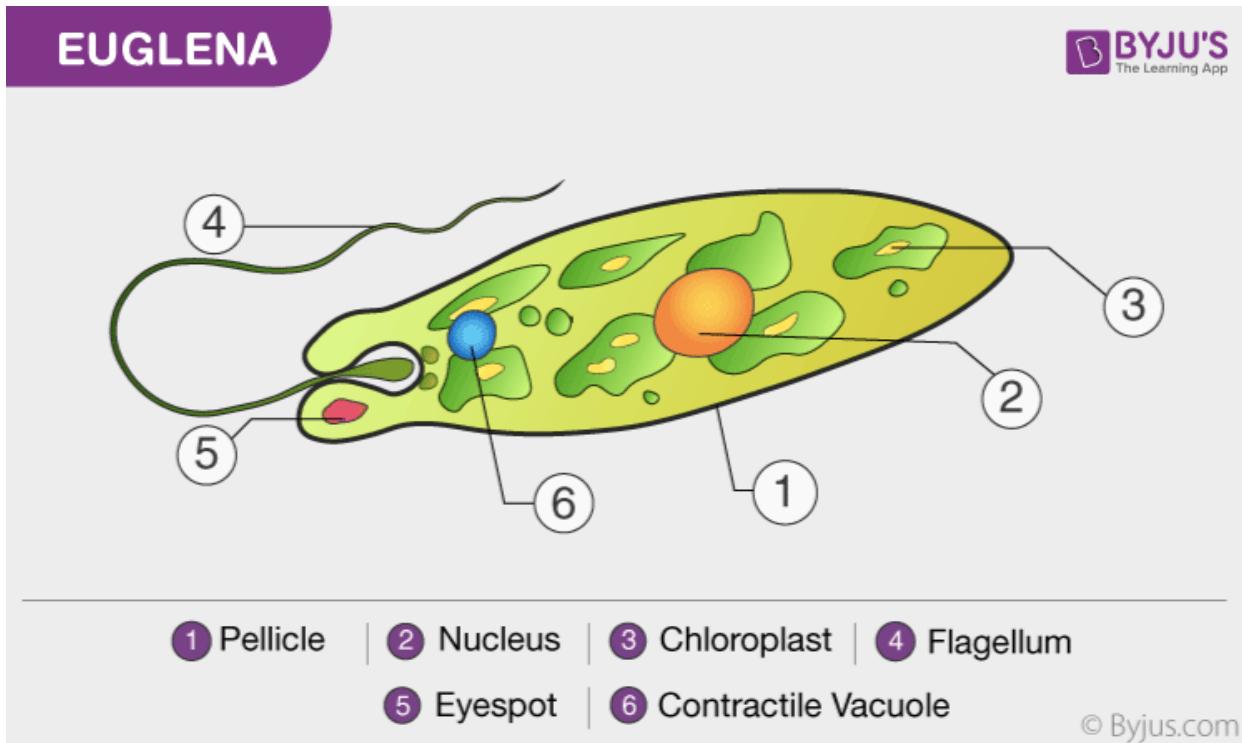
Such as *Trypanosoma* , *Leishmania* , *Giardia* , *Euglena*

Euglena :

- 1 - It is unicellular microorganism , live in fresh water , salt water in marshes and moist soil .
- 2 – Possess features of plants and animals (have plastids or chloroplast to perform photosynthesis in light) .
- 3 - Move around have flexible body using flagellum searching for food .
- 4 – There are 1000 species of *Euglena* .

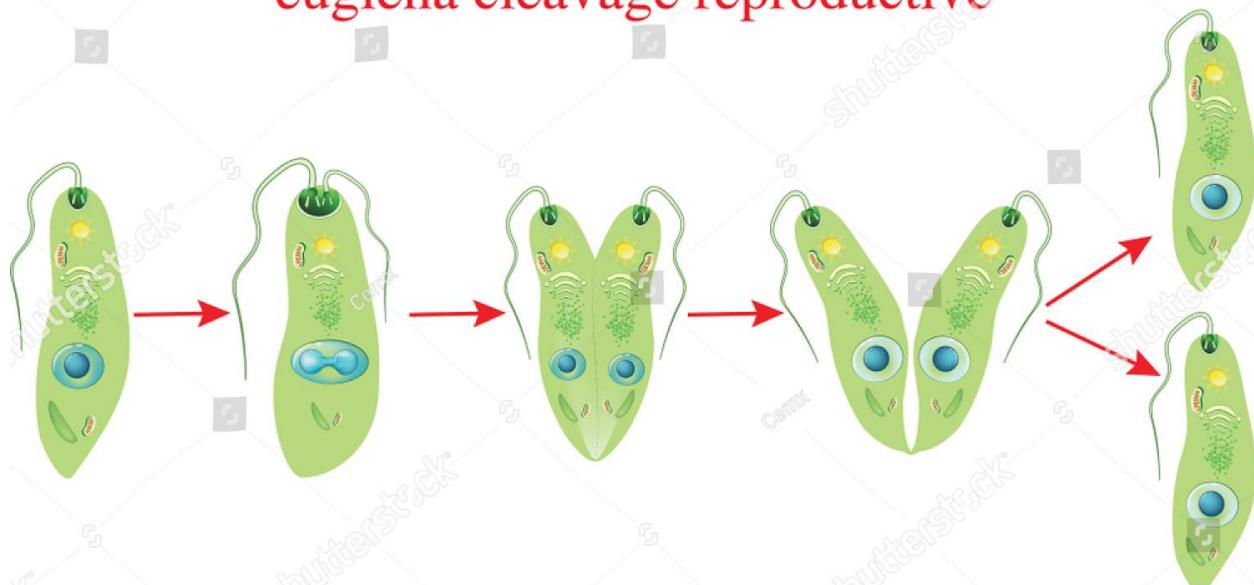
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5 - Eukaryotic cell have Golgi complex , mitochondria , endoplasmic reticulum .



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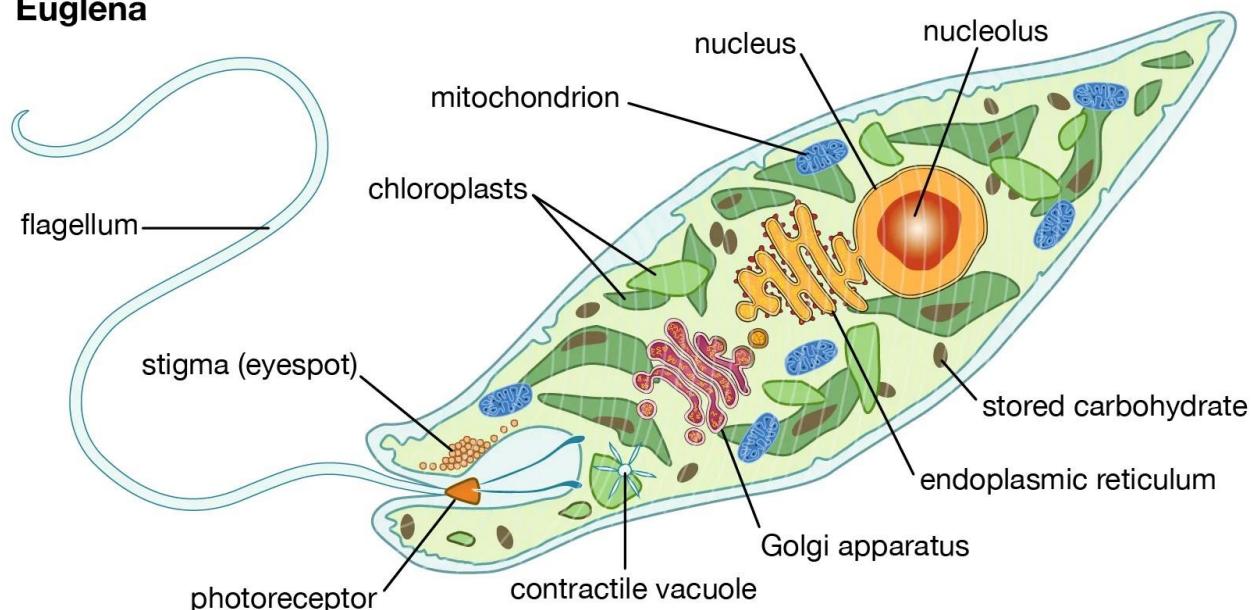
euglena cleavage reproductive



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Euglena



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2 – Sporozoa class ; general characterizations

A – Large class No free living , all are parasites cause diseases.

B – Gliding motality

C – Have complex life cycle (Sexual by Gametes and Asexual by spores) intracellular in infection .

D – Have Apical organelle for invasion stage .



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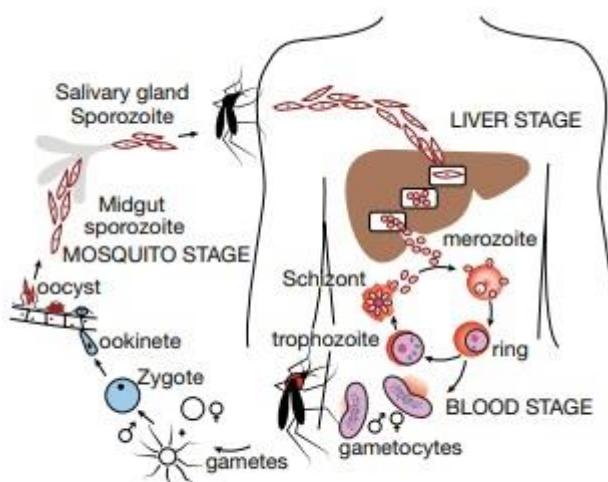
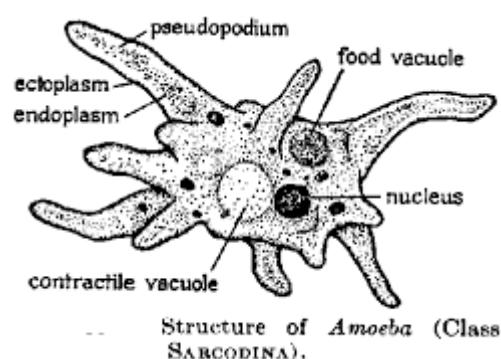
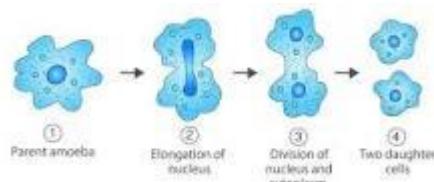


Figure 8.12: Lifecycle of Plasmodium spp

3 - Sarcodina class ;



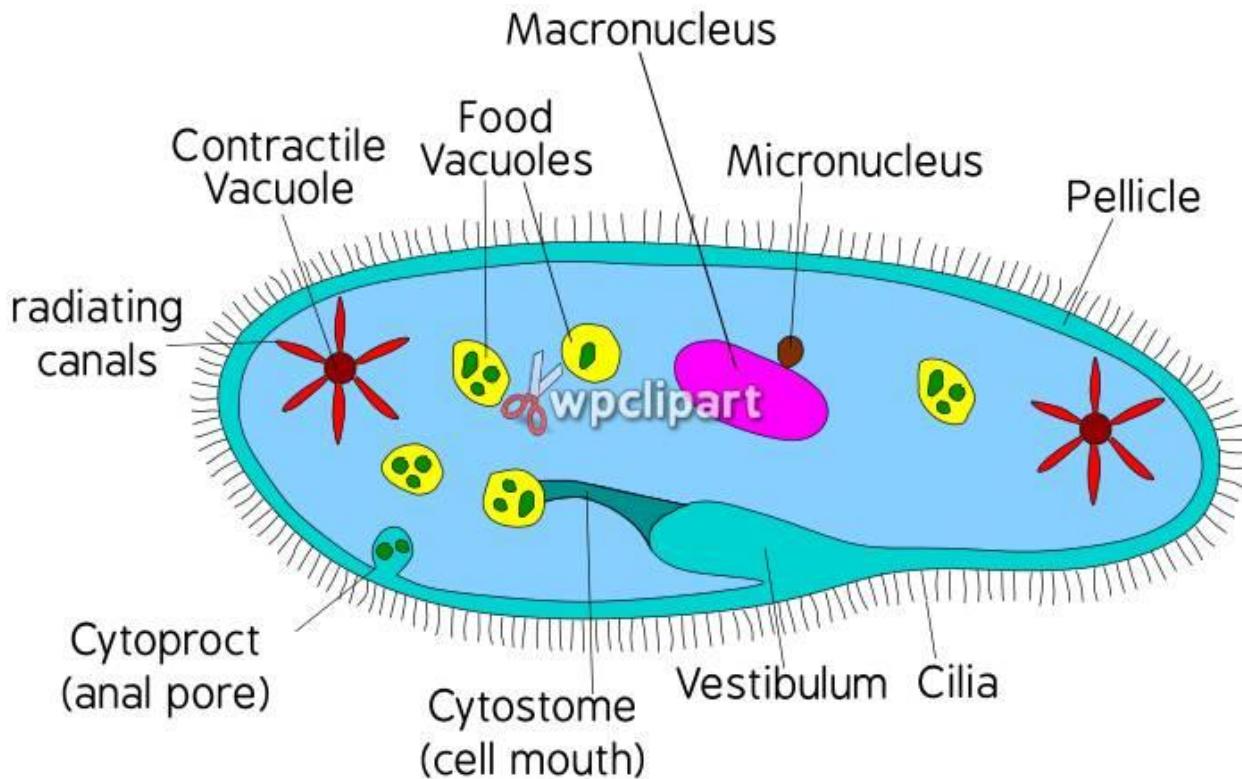
Amoeba proteus ; Large species , move by pseudopodia (temporary cytoplasm extension. Free living , unicellular

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organism , live in fresh water , have food vacuoles and contractile vacuoles .

4 – Ciliophora class :

Main genus ; **Paramecium / Balantidium**



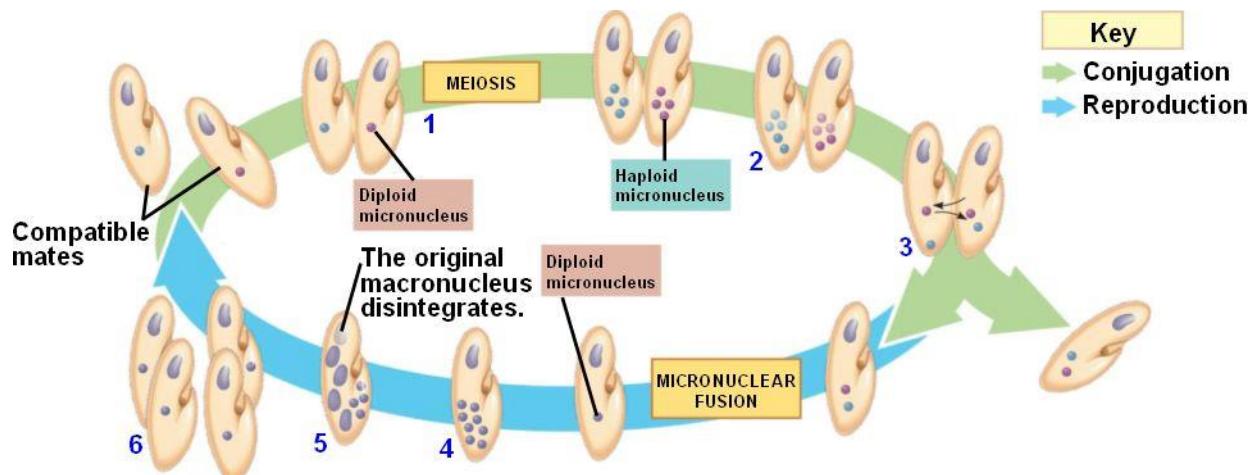
Paramecium : There are three species ,

1 – *P. caudatum* 2 – *P. aurelia* 3 – *P. bursaria*

- Paramecium ciliated organism , cilia cover all the body , Unicellular , Eukaryotic cell live in fresh water (marine environmental , Slipper shaped .

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- Reproduction by binary fission (longitudinal fission) .
- Also reproduce by Conjugation (asexual phenomena) mating type forming bridge between them .
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Home work of Lecture one

Species percents

1 – Insect 73% . 2 – Crustacia 3% 3 – Arachnida 8%
 4 – Mollusca 6% 5 - Other invertebrates 5 %
 6 – Vertebrates Chordata 5 % .

Quiz : Draw *Euglena* , *Amoeba*, *Paramecium* ,
Toxoplasma gondi .