

**B.N.Bandodkar College of Science, Thane
F.Y.B.Sc - Course I**

PHYLUM PROTOZOA

(Unicellular and most primitive animals)

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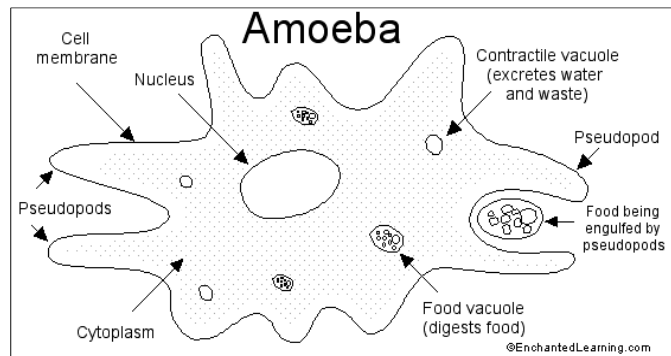
1. These are the most primitive organisms (Protos = first; zoon = animal).
2. These are aquatic, microscopic, unicellular organisms.

Class- Rhizopoda/ Sarcodina (bearing pseudopodia locomotory organelle.)

1. Locomotory organelles are pseudopodia which may be rhizome like called rhizopodium. Nucleus is single spherical or disc like.
2. The typical example of Class – Rhizopoda is Amoeba.

Amoeba:

- i. Amoeba is fresh water form found in ponds and lakes.
 - ii. They are asymmetric in shape.
 - iii. Amoeba has pseudopodia for locomotion and feeding.
 - iv. Body consists of a single biconvex nucleus, ectoplasm, endoplasm, contractile vacuole and food vacuole.
- V.** Reproduction is performed by binary fission, multiple fission and sporulation.



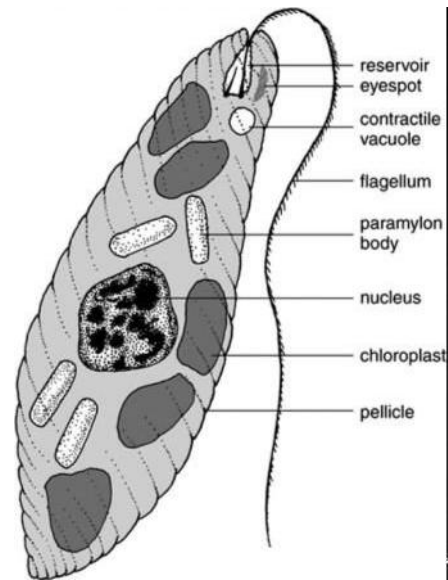
Amoeba

Class- Flagellata/ Mastigophora (bearing flagella as locomotory organelles.)

1. Locomotory organelles are long and ribbon like flagella which is used for locomotion and feeding
2. Most of them are colonial or solitary and free living and few are parasitic.
3. Nucleus is single and spherical; cytoplasm contains brown, yellow or green photosynthetic pigments. Fresh water forms have contractile vacuoles for osmoregulation.
4. The typical example of Class – Flagellata is Euglena.

Euglena:

- i. It is free living fresh water form found in ponds and lakes.
- ii. Body is spindle shaped due to pellicle.
- iii. Has single ribbon like flagellum performing feeding and locomotion.
- iv. Has single spherical nucleus, and cytoplasm consists of ectoplasm, endoplasm, contractile vacuole, food vacuole and chloroplasts for photosynthesis.



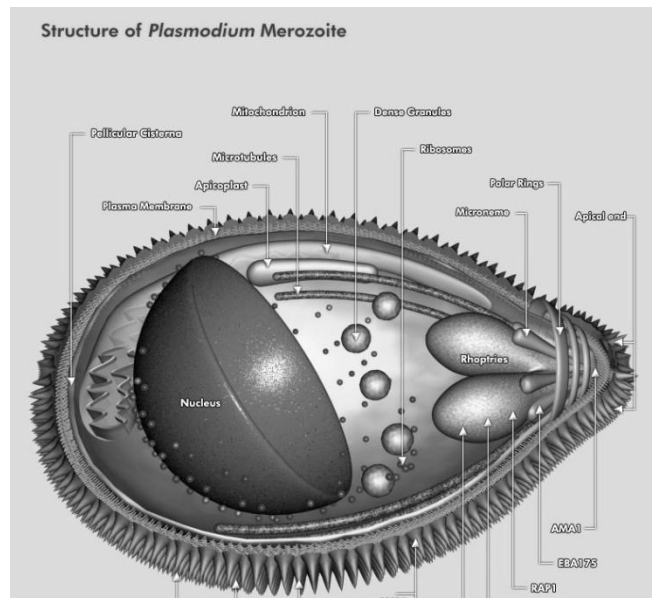
Euglena

Class- Sporozoa (bearing no locomotory organelle.)

1. Locomotory organelles are absent in these animals as they are endoparasitic. They have a protective covering called cuticle around their body to protect against hazardous chemicals of their hosts.
2. Nutrition is saprophytic. Food is absorbed directly through body surface.
3. The typical example of Class – Sporozoa is Plasmodium.

Plasmodium:

- i. It is parasitic found in man as primary host and female anopheles as intermediate host.
- ii. Body spherical with a nucleus, cytoplasm containing food and gas vacuoles. Contractile vacuole is absent.



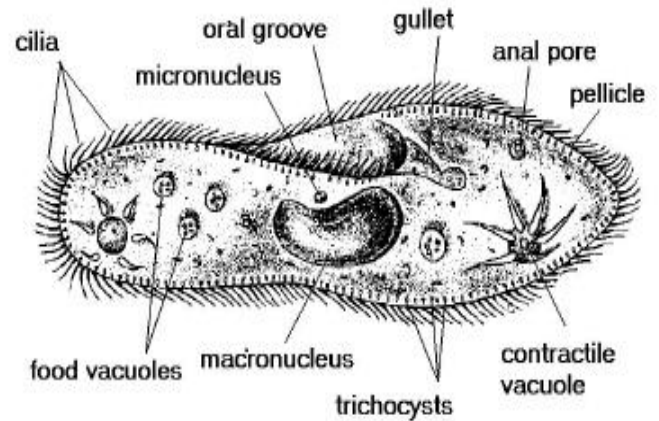
Plasmodium

Class- Ciliophora/ Ciliata (bearing cilia as locomotory organelle.)

1. Locomotory organelles are several hair-like cilia covering throughout the body; used for locomotion and feeding
2. Two nuclei; bigger kidney or horseshoe shaped called as meganucleus and a small micronucleus. Meganucleus controls all physiological activities whereas micronucleus performs reproductive activity. Fresh water forms have contractile vacuoles for osmoregulation.
3. The typical example of Class – Ciliata is **Paramecium**.

Paramecium:

- i. It is free living fresh water form found in ponds or lakes.
- ii. Body is slipper like due to presence of pellicle hence called as slipper cell animalcule.
- iii. Ingests food through cytostome and cytopharynx whereas egests the undigested material through cytopyge.
- iv. Body has two rosette shaped contractile vacuoles; one on each anterior and posterior ends. There are two nuclei; one kidney shaped and big meganucleus and another small micronucleus.
- v. Reproduction is carried by **conjugation**.



Paramecium