ARJUNA NEET BATCH

Biological Classification

Lecture - 08

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Today's goal

Euglena
Slime moulds
Protozoa
Features of fungi

EUGLENOIDS

•Includes chlorophyllous and nonchlorophyllous members

↓.	↓
Photosynthetic (autotrophic)	Non photosynthetic (Heterotrophic)
↓.	↓
Euglena	Paranema, (holozoic) Rhabdomonas (saprophytic)

Euglena

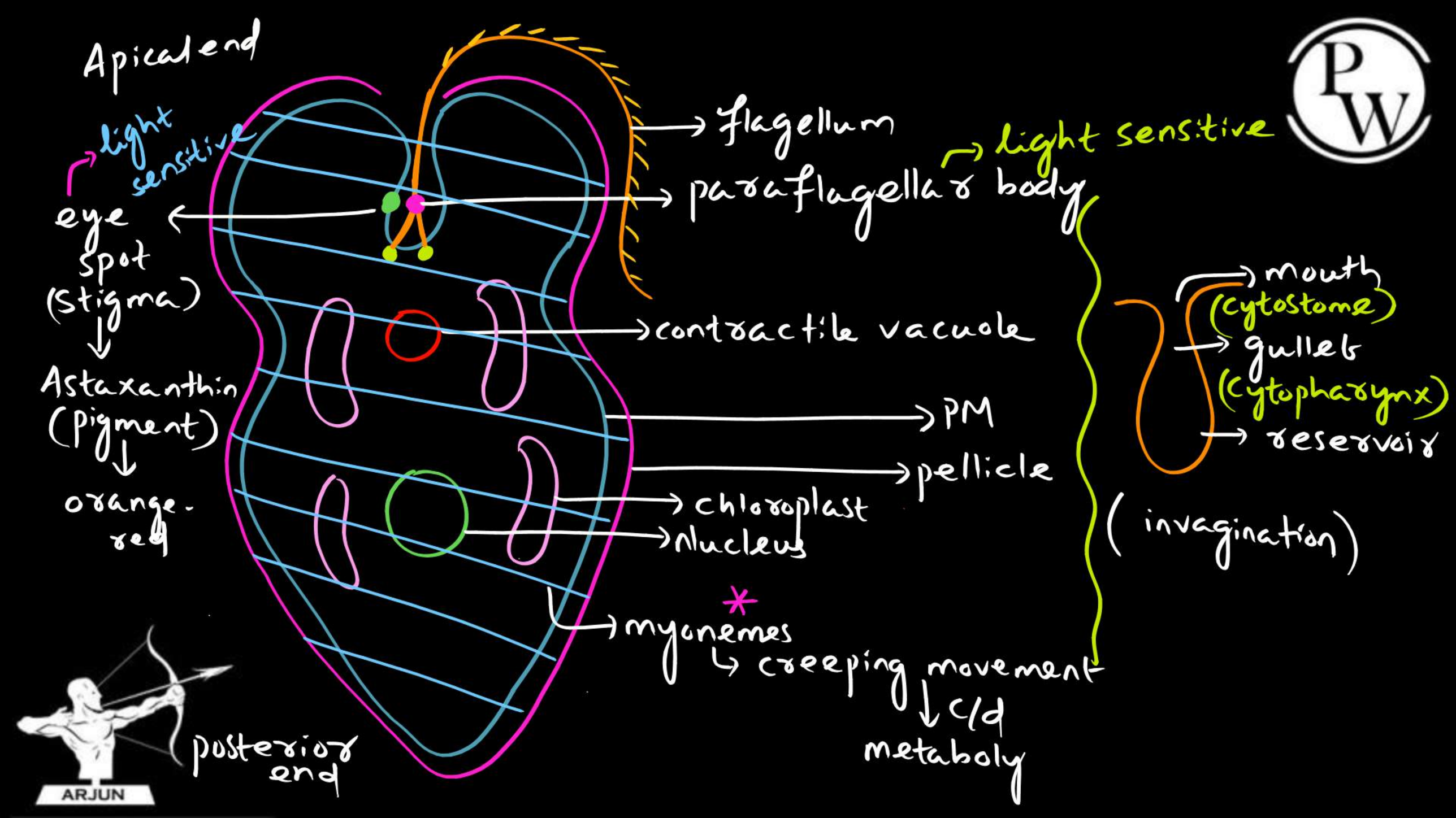
•Major genus of Euglenoids

•Called spindle organism

•Has two ends

a.Apical (anterior) end→ blunt

b.Posterior end → pointed


Apical end
light sensitive
eye spot (Stigma)
Astaxanthin (Pigment)
orange-red
flagellum
paraflagellar body
light sensitive
contractile vacuole
PM
pellicle
chloroplast
nucleus
myonemes
creeping movement
cld
metaboly
mouth (cytostome)
gullet (cytopharynx)
reservoir
(invagination)
posterior end
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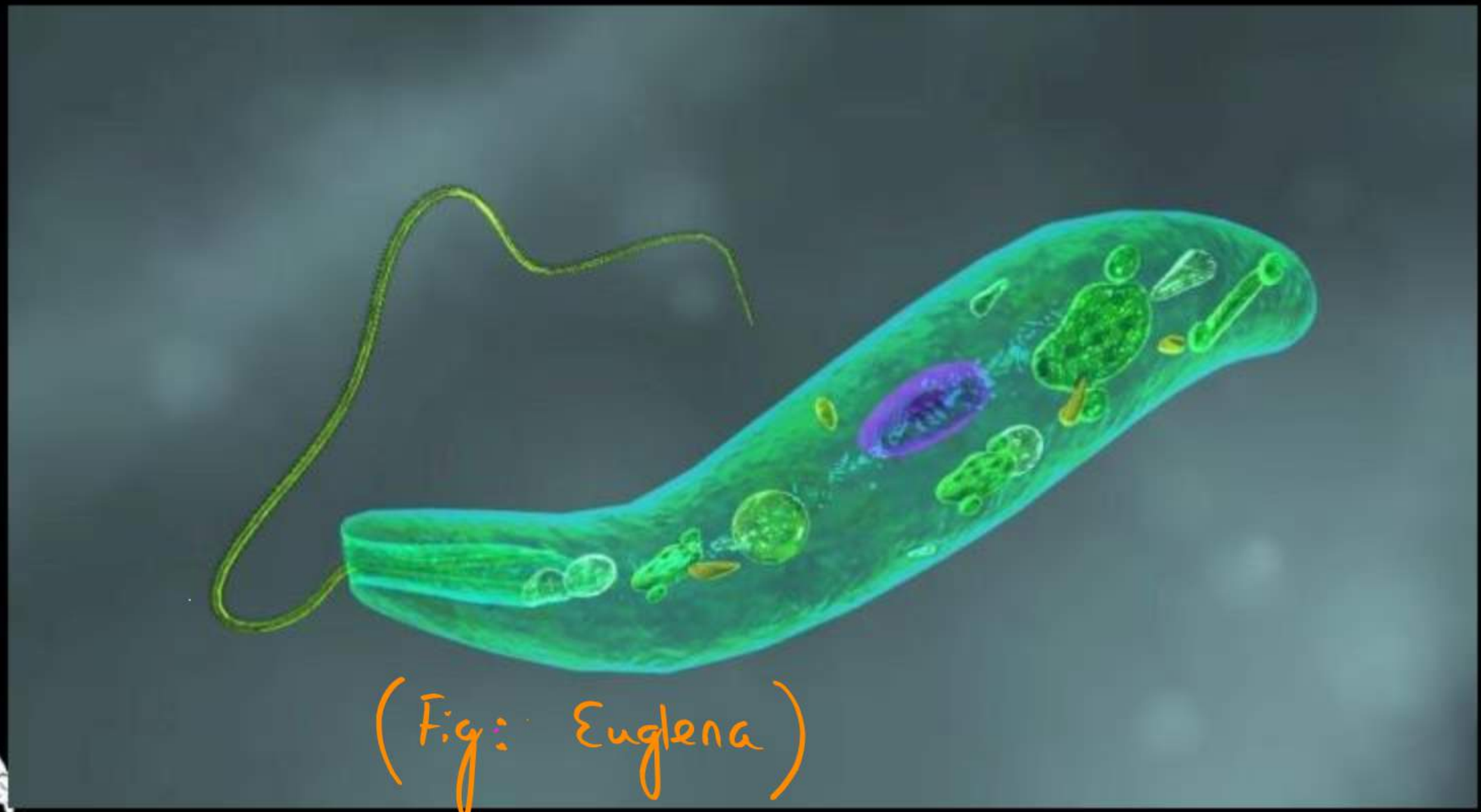

(Fig: Euglena)

Flagella

- Two in number
- One short flagellum and another long flagellum

↓. ↓

Smooth /whiplash type. Tinsel (stichonematic)type

- Two flagella are united the reason of reservoir

Cell wall

- Absent instead pellicle is present

↓

Protein rich

Makes the body flexible

Invagination at apical end

•Has three parts like

a.Mouth (cytostome)- outer part

b.Gullet (cytopharynx)- middle part

c.Reservoir- lower part

Myonemes

•Oblique and parallel

•Called creeping movement call metaboly

Basal granule

•Two in number

•Give rise to flagella

•Bound to reservoir membrane at its lower end

Stigma (eyespot)

- Bound to reserver membrane
- Has astaxathin pigment (Red orange)
- Photosensitive

Paraflagellar body

- Present within reservoir where two flagella unite
- Photosensitive

Contractile vacuole

- Present below reservoir
- One in number

Reproduction in Euglena

1.Sexual - absent

2.Asexual-

a.Longitudinal binary fission- favourable condition

b.Cyst formation -unfavourable condition

c.Palmela stage - unfavourable condition

Nutrition in euglena

A.When sunlight is available

•Photosynthetic (autotrophic)

B.When sunlight is not available

•*Predation on other small organisms*

•*Heterotrophic*

Euglena- mixotrophic

SLIME MOULDS

- Saprophytic protists
- Move along decaying fallen leaves and twigs by engulfing organic matter
- Has features of

1. Plants- presence of cell wall in spore (reproductive phase)
2. Animals- absence of cell wall in plasmodium (vegetative phase)
3. Fungi- formation of fruiting body

*

Slime moulds

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Under favorable condition

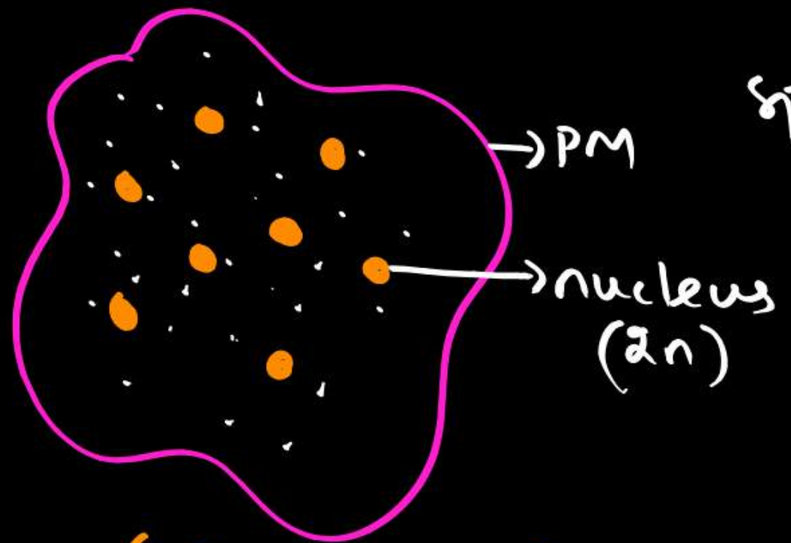
Slime moulds

↓

Plasmodium

↓

- Can grow over several feet
- Diploid (↳2n) and multinucleated
- Move by pseudopodia



(plasmodium)

Under unfavorable condition

Plasmodium

↓ differentiate

Fruiting body

↓ called

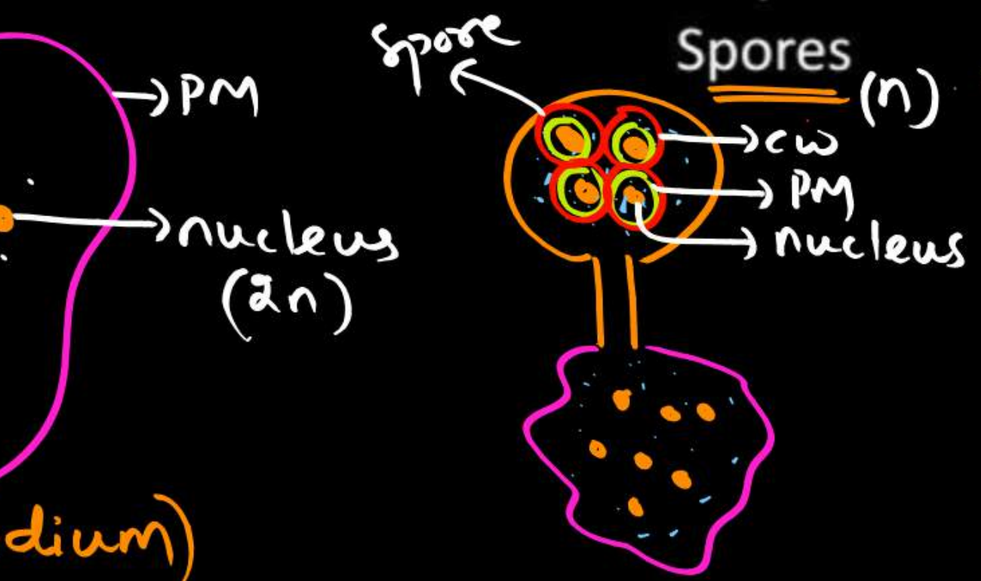
Sporocarp

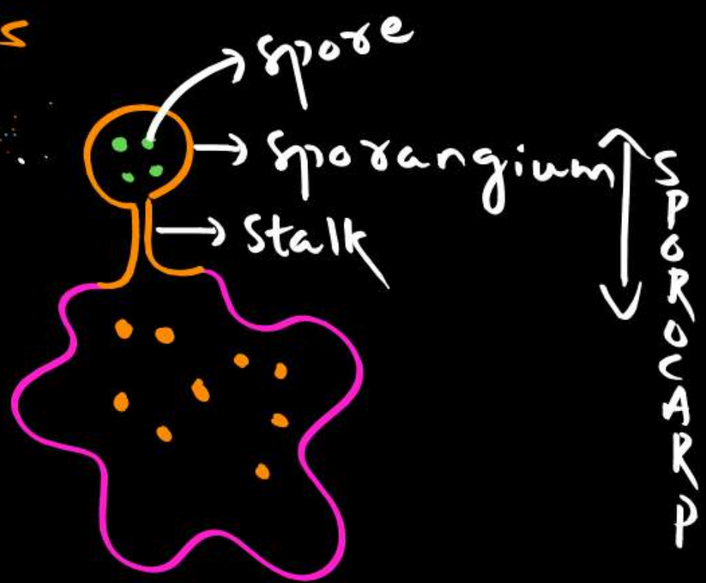
↓ has

(2n) Sporangium and stalk

↓ meiosis

Spores (n)





Spores of Slime moulds

- Highly resistant and can survive for many years
- Have true wall (cellulosic)
- Carried by air

true wall ↓ cell wall with cellulose

Acellular Slime moulds

- Fuligo, Physarum,. Physerella, Lycogala

Cellular Slime moulds

- Polysphondilum, Dictyostelium
- *Some slime moulds have anthracene pigment (Non photosynthetic)*

Note

imp.

- *Red sea- Trichodesmium erythraeum (BGA)*
- *Red tide- Gonyaulax (dinoflagellate/ protist)*
- *Red snow- chlamydomonas (green algae)*

PROTOZOAN PROTISTS

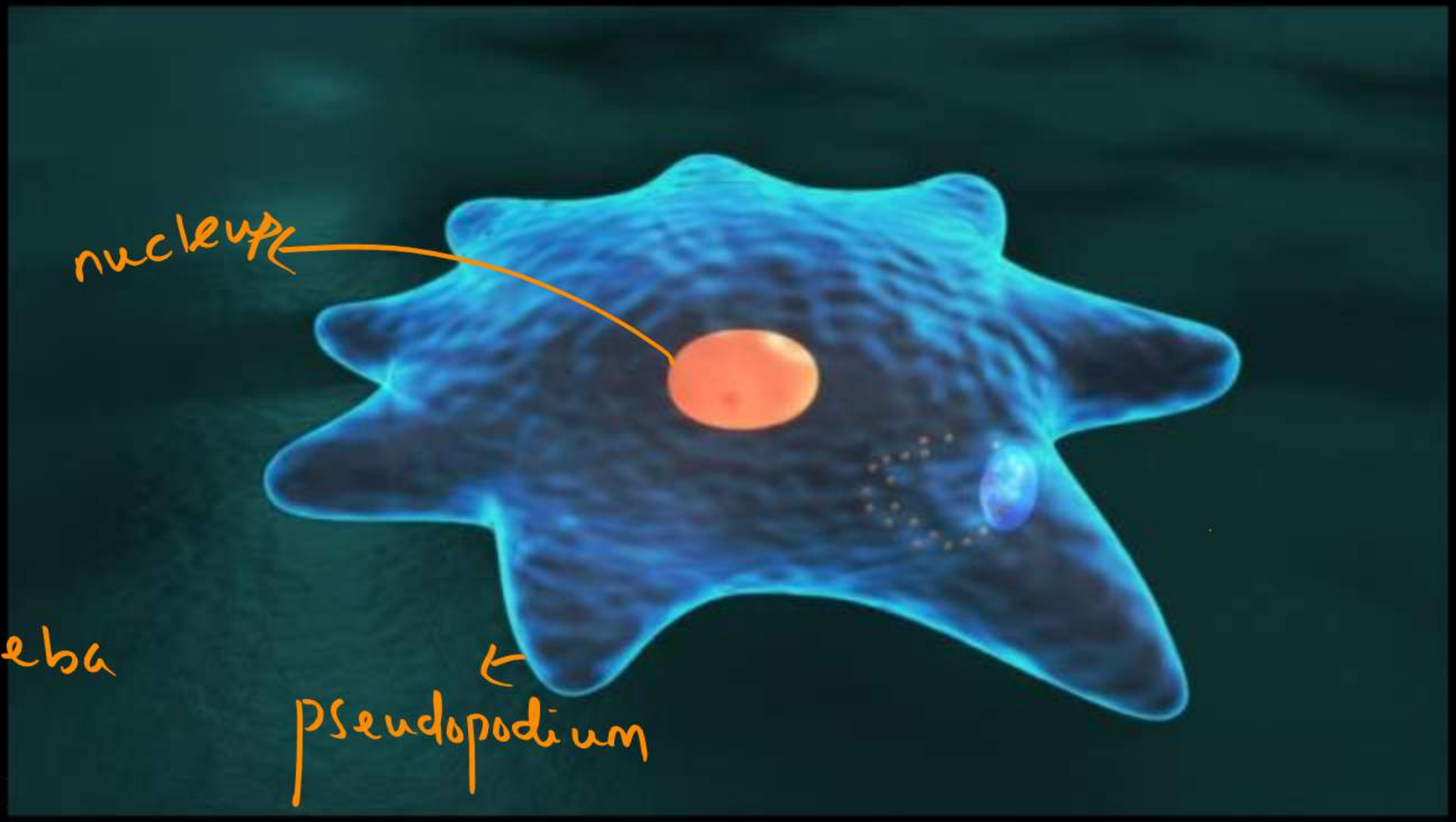
- Primitive ancestor of animals
- Heterotrophic (parasitic or predators)
- Cell wall -ve (pellicle +ve)
- Classified on the basis of locomotory structures as follow

1.Amoeboid → free living

- Habitat- aquatic, moist soil, parasitic
  - aquatic → Fresh water, Marine
  - parasitic → Few
    - Entamoeba- dysentery

- Pseudopodia -
  a.False feet
  b.Food capture, locomotion
- Special feature- some Marine forms have silica shell

Examples- Amoeba, Entamoeba



Amoeba

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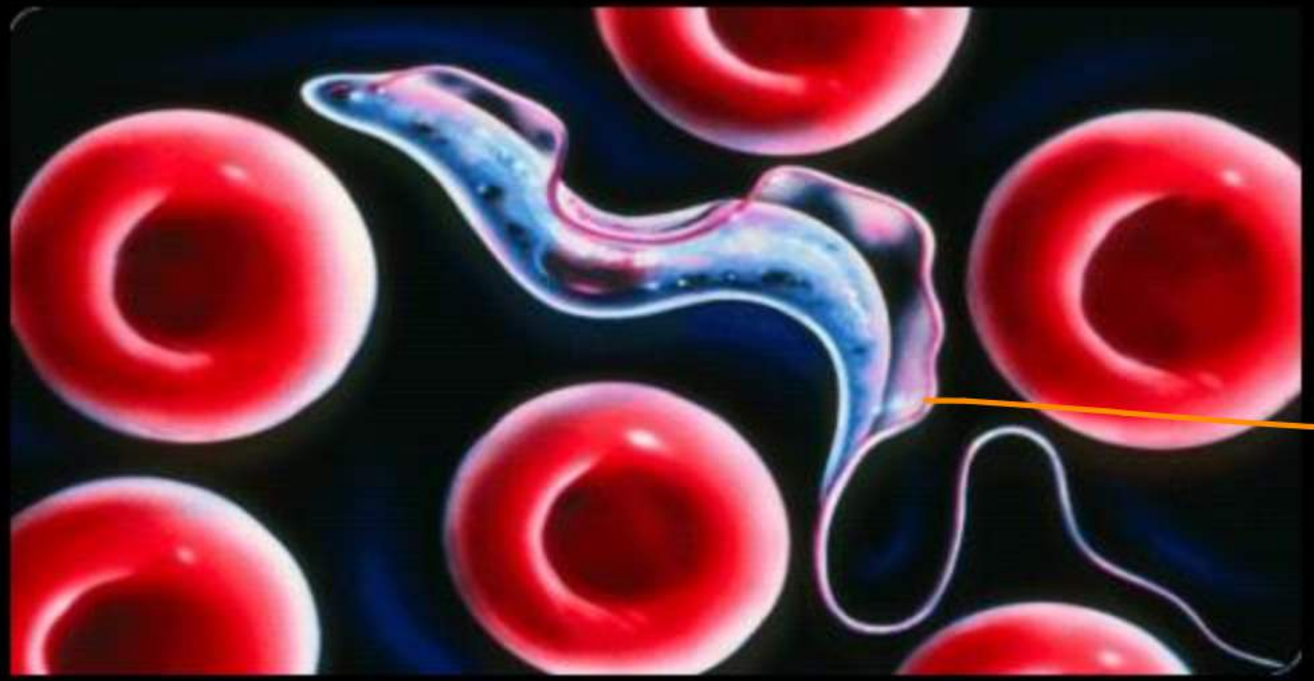
2.Flagellated

- Habitat- aquatic, parasitic
  - Free living
  - parasitic
    - few
    - Trypanosoma, Leishmania
      - Trypanosoma → Sleeping sickness
      - Leishmania → Kala azar

- Special features-

a.Sexual reproduction is rare

b.Show various associations like commensalism, parasitism, symbiosis



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3. Ciliated

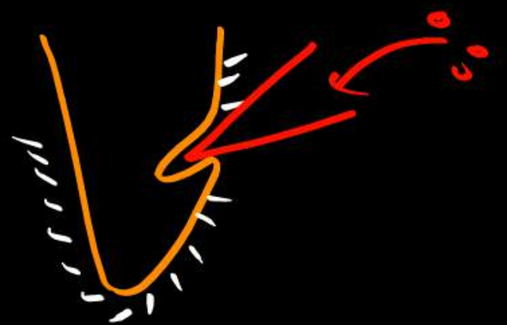
- Aquatic, parasitic (Free living) (Few)
- Cilia-
  - a. Thousands in number
  - b. Active movement
  - c. Coordinated movement → uptake of food from water
- Special features
  - a. Presence of gullet
    - i. Open outside body
    - ii. Egestion and ingestion
  - b. Nuclear dimorphism
    - i. Meganucleus/ macronucleus
    - Amitosis
    - Polyploidy
    - Vegetative nucleus

mega → Amitosis

micro → mitosis

dimorphism

imp

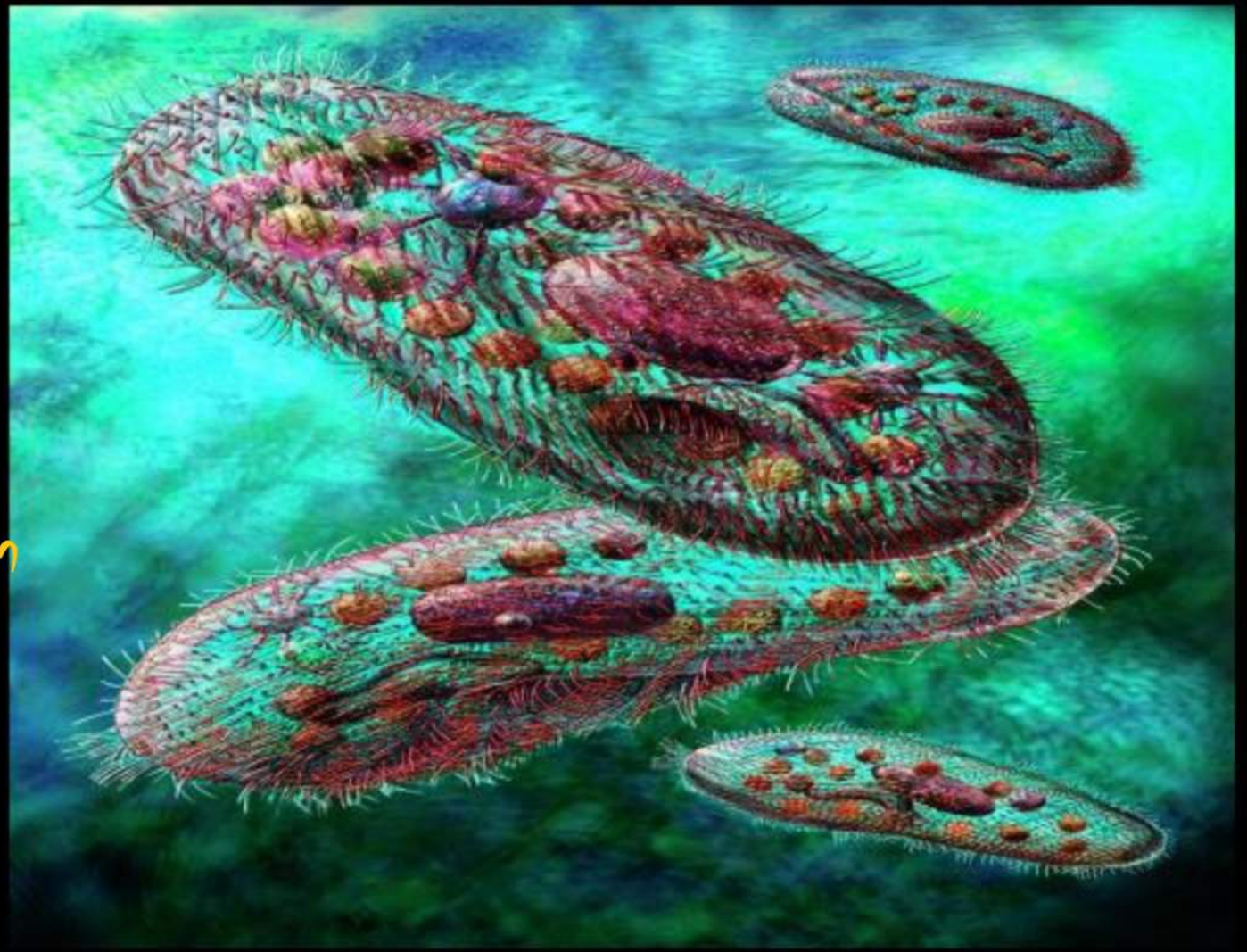


ii.Micronucleus

- Mitosis
- 2n
- Reproductive nucleus

Example- *Paramecium* (slipper animalcule)

Paramecium



4.Sporozoan

- No locomotory structure
- Infectious spore
- All are endoparasitic
- Example

  Plasmodium- malaria

  most notorious

  staggering effect on human

FUNGI

- Unique Kingdom of heterotrophic organisms
- Study-mycology
- Habitat:
- Cosmopolitan (they are found almost everywhere like air, soil, water on plants and animals)
- Mostly terrestrial
- Prefer humid and warm condition
- Lichen= fungus + algae
- Mycorrhiza= fungus + roots of higher plants
- Coprophilous- cow dung
- Keratinophilous- keratin
- Xylophilus- burnt wood
- Epixylic- wood
- Corticolous- Bark

parasitic or symbiotic

parasitic

gymnosperm / angiosperm

Pinus

orchid

Note:

Foodstuffs are kept in refrigerator to prevent their spoilage

↓reason

At low temperature bacteria and fungi become inactivated

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thanks
for watching

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