

Kingdom Protoctista

Specific objectives

1. State characteristic of Protoctista.
2. Describe the structure of protozoa
3. Outline the role of protozoa and algae in environment.
4. Name common disease cause by protozoa
5. Outline methods of preventing spread of diseases caused by protoctists.

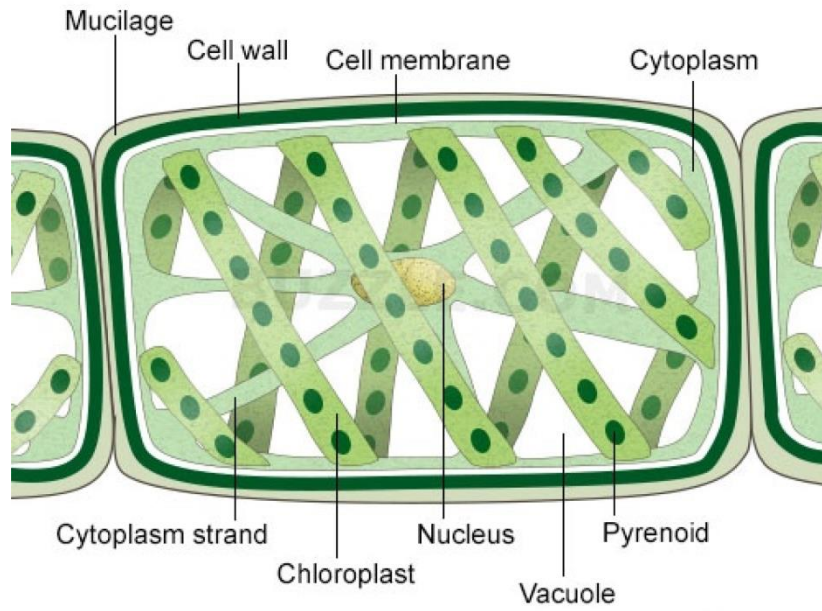
The kingdom Protoctista consists of eukaryotic organisms which are assemblages of similar cells. It includes algae, all protozoa and slime moulds.

Characteristics

1. Have no stems, roots or leaves
2. No sclerenchyma
3. No vascular tissue
4. No archegonia
5. Have other photosynthetic pigments in addition to chlorophyll a.

Phylum: Chlorophyta (green algae)	Phylum Phaeophyta (brown algae)
Chlorophyll a and b present	Chlorophyll a and c
Food reserve is starch	Food reserve include mannitol and laminarin
Cellulose cell wall	Cell wall include alginic acid.
Unicellular, filamentous or thalloid	No unicellular form
Mostly fresh water	Almost all marine
e.g. Spirogyra	e.g. Fucus

Structure of Spirogyra



Reproduction

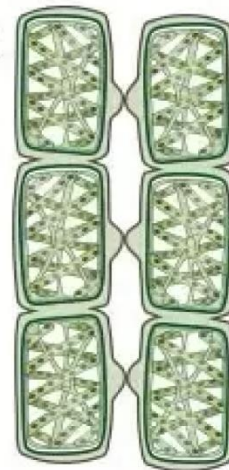
Asexual reproduction by fragmentation

Sexual reproduction by conjugation

Stages of conjugation in spirogyra

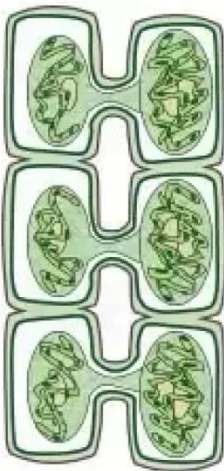


1
Two filaments
come side by side

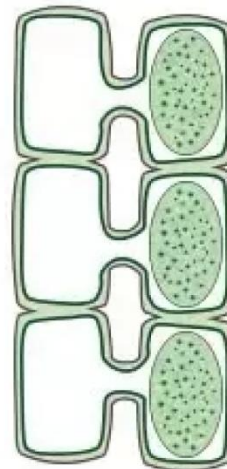


2
Conjugation
tubes develop

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3
Conjugation
canals form



4
Male gametes
fuse with female
gametes to form
zygotes

Economic advantage of algae

1. Primary producer
2. Food
3. Provide oxygen in water through photosynthesis.
4. Alginic acid derivatives are used as thickener in food, cosmetic and drug industry.
5. Algal bloom cause water to smell and may lead to depletion of oxygen and death of fish.