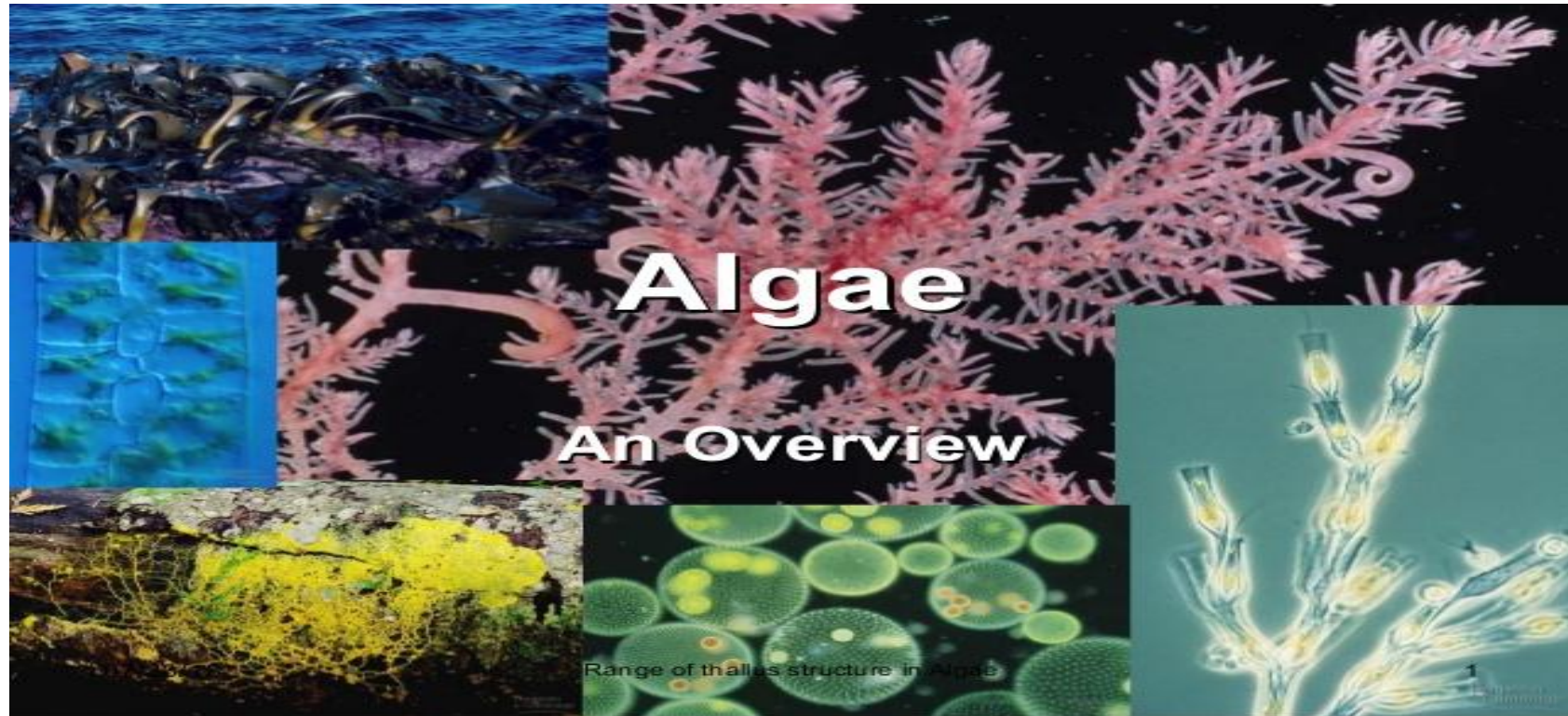




Bhagalpur National College, Bhagalpur

(A Constituent unit of Tilka Manjhi Bhagalpur University, Bhagalpur)

PPT Presentation for B.Sc. I- Algae : Range of Thallus Organization



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Characteristics

- Range in size from microscopic to single celled organisms to large seaweed
- Autotrophic
- Form the reproductive structures – **gametangia** or gamete chambers
- Aquatic and have flagella at some point in life
- Often contain **pyrenoids**, organelles that synthesis and store starch

07/23/18



STRUCTURE

- Thallus (haploid)
- Types of algae
 - Unicellular[motile and non-motile]
 - Colonial[flagellated & non-flagellated]
 - Filamentous[07/23/18 branched & unbranched]



-
- Heterotrichous
[different; trichomes or branches]
 - Siphonous forms
 - Uni axial forms
 - Multi axial forms
 - Parenchymatous forms



Forms of Green Algae

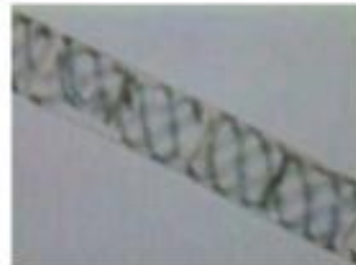
Unicellular

Filamentous

Colonial



Chlamydomonas ^{07/23/18}



Spirogyra



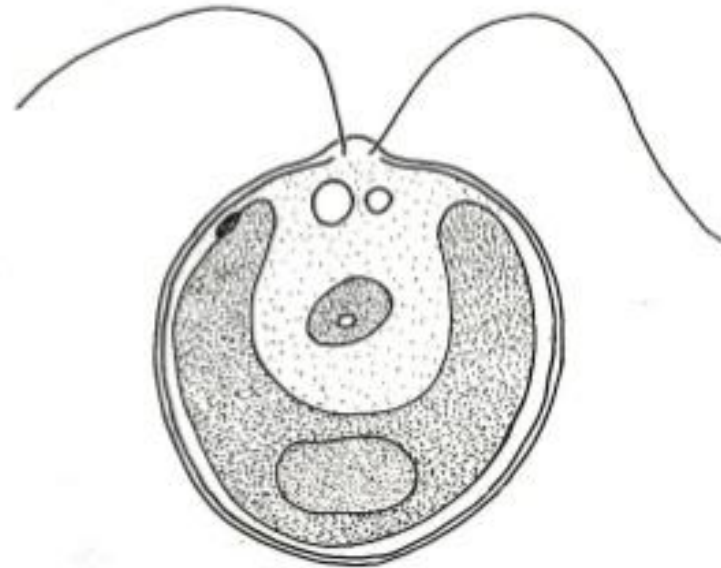
Volvox



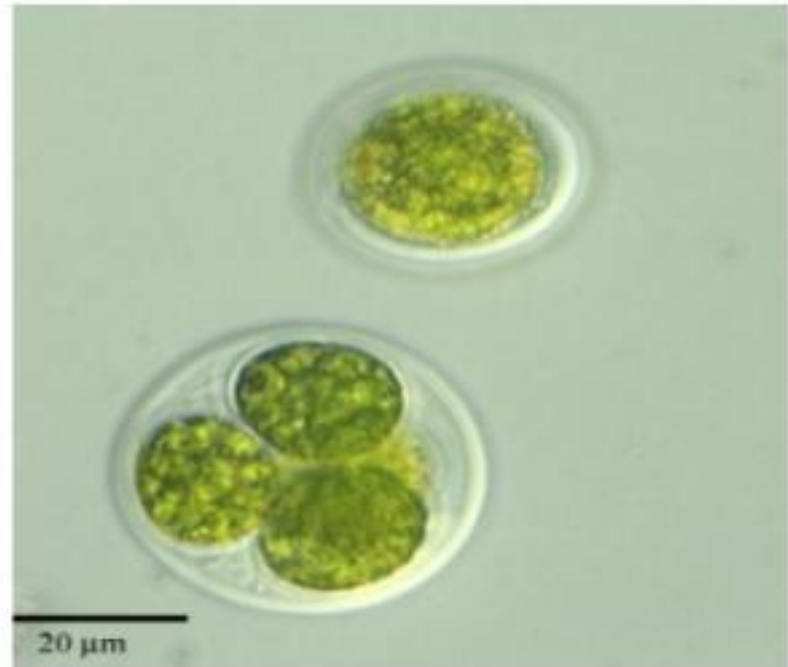
Cladophora



Unicellular motile type: The simplest unicellular plant body having rounded, pear shaped bearing two flagella.
Example: *Chlamydomonas*

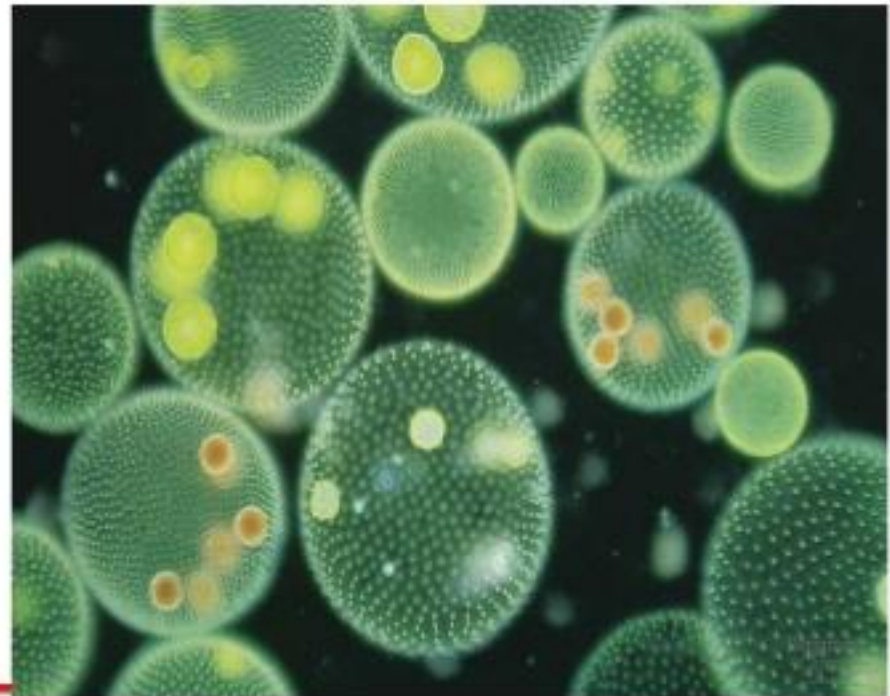
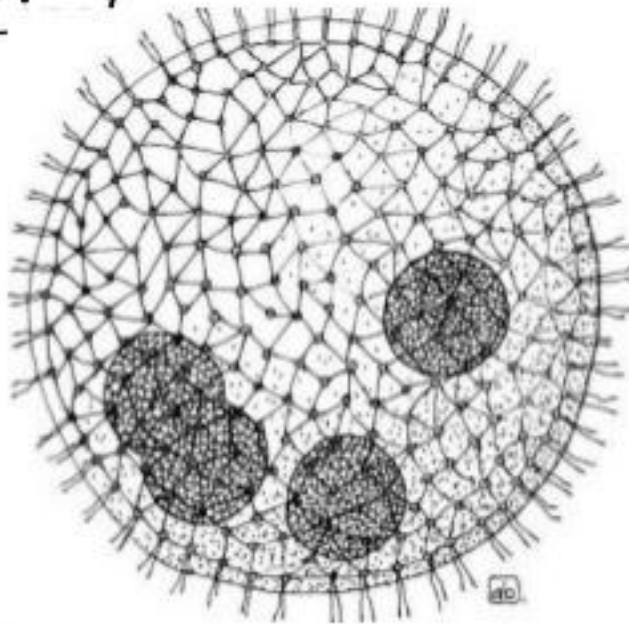


Unicellular non-motile or coccoid type: Unicellular small more or less spherical, non-flagellate and non-motile. Example: *Chlorella*



Motile coenobial type: In this type unicellular cells with their flagella protruded out is embedded together in a gelatinous sheath to form a more or less rounded motile colony or coenobium. Example: *Volvox* [Evolution in the Volvocine

L' ... ']

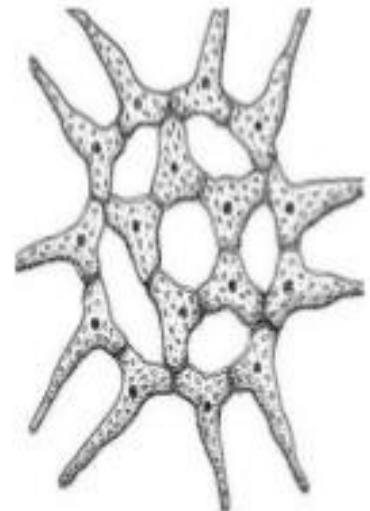
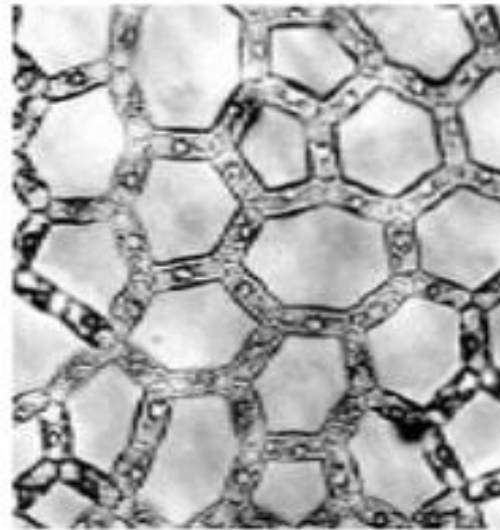
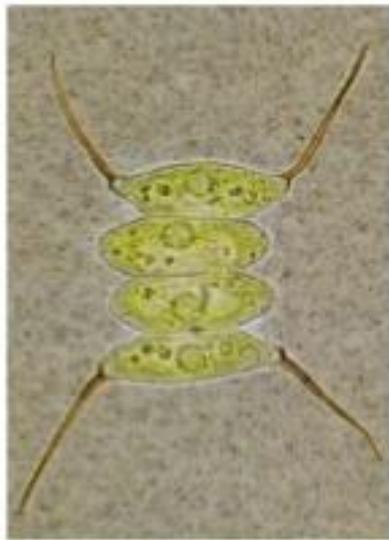


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Range of thallus structure in Algae

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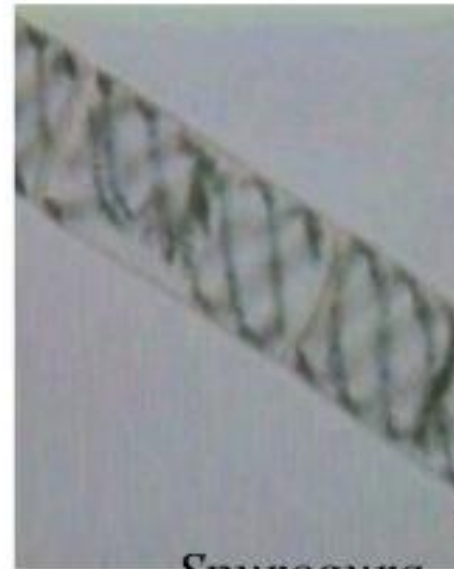
Non motile coenobial type: In this type the colony or coenobium is composed of non-motile cells arranged in a single layer along the long axis, e.g. *Scenedesmus* [Fig. a] or cells are arranged end to end forming a pentagonal or hexagonal meshes of net, e.g. *Hydrodictyon* [Fig. b] and *Pediastrum* [Fig. c]



Filamentous type: In these types the cells are arranged one upon the other to make the plant body filamentous which may be branched, e.g. *Cladophora* or unbranched, e.g. *Spirogyra*.



Cladophora



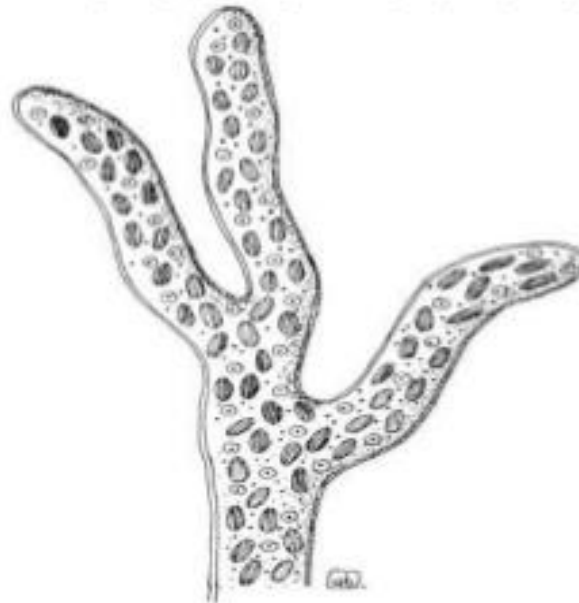
Spirogyra



Thalloid type: In this type the plant body is parenchymatous thallus like due to repeated cell division in more than one plane, e.g. *Ulva*.



Siphonaceous type: In this type the thallus is made up of long hollow tube-like structure called coenocyte. The coenocytic filament without partition or cell wall contains many nuclei and is branched, e.g. *Vaucheria*



Heterotrichous type: In this type plant body is differentiated into a prostrate system of branched filaments growing on the substrate and erect system away from the substrate, e.g. *Batrachospermum*, *Stigeoclonium*.

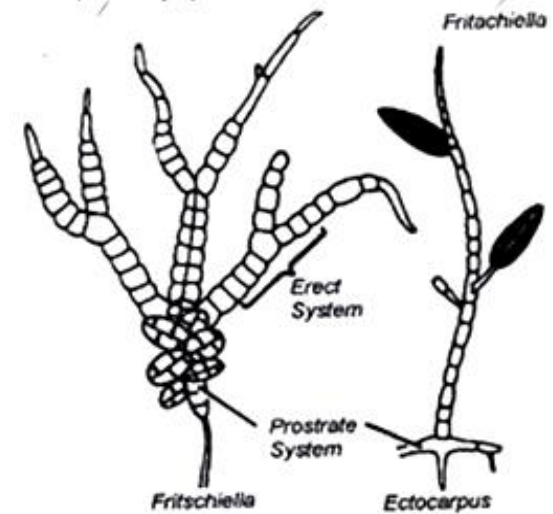
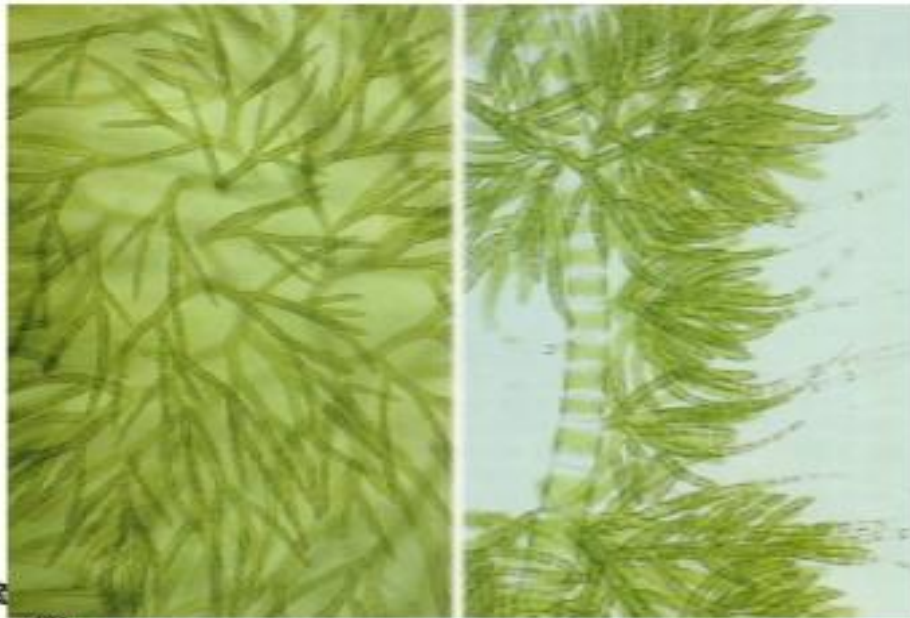


Fig. 11. Thallos organization. Heterotrichous



Special or complex type: The complex type of thallus structures is shown by species of *Chara*, *Fucus*, *Laminaria*, *Polysiphonia* etc.

