

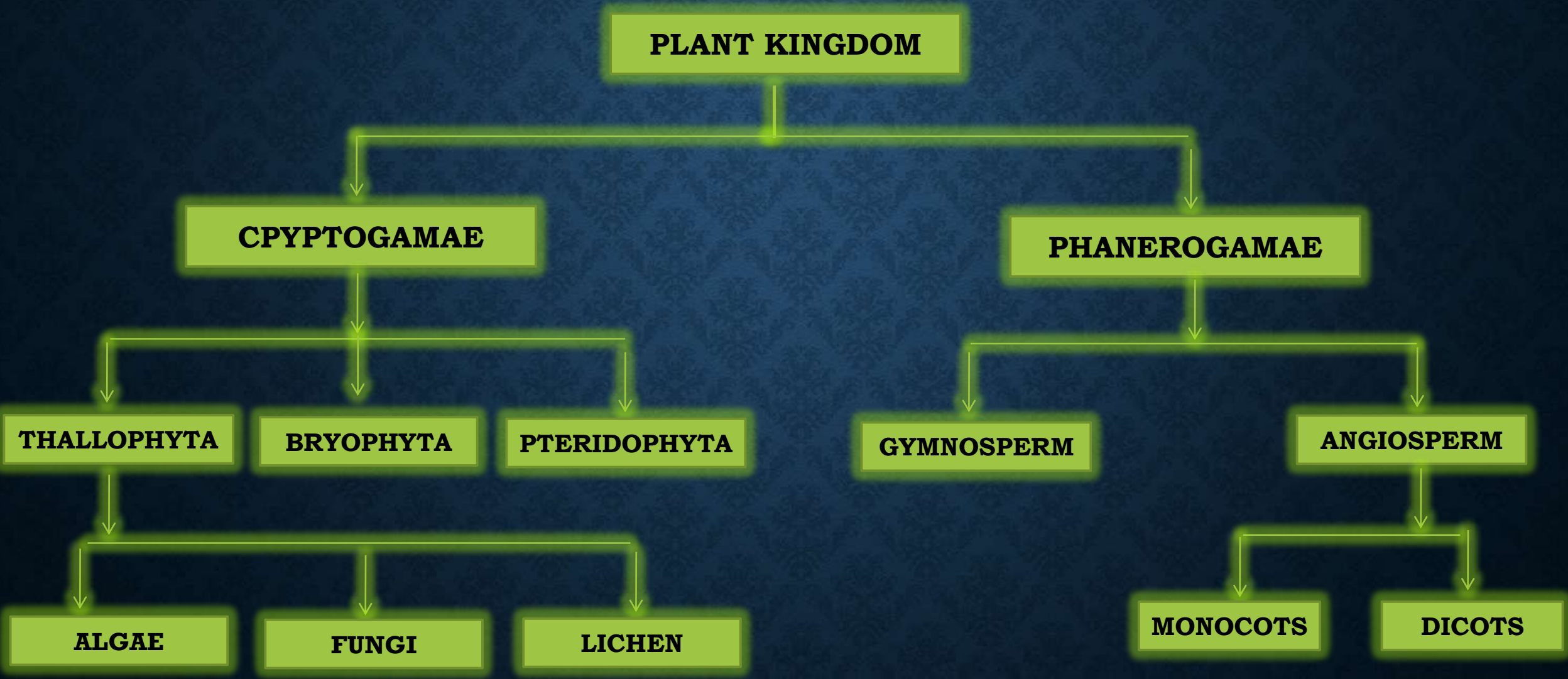
THALLUS ORGANIZATION IN ALGAE

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PATNA WOMEN'S COLLEGE**

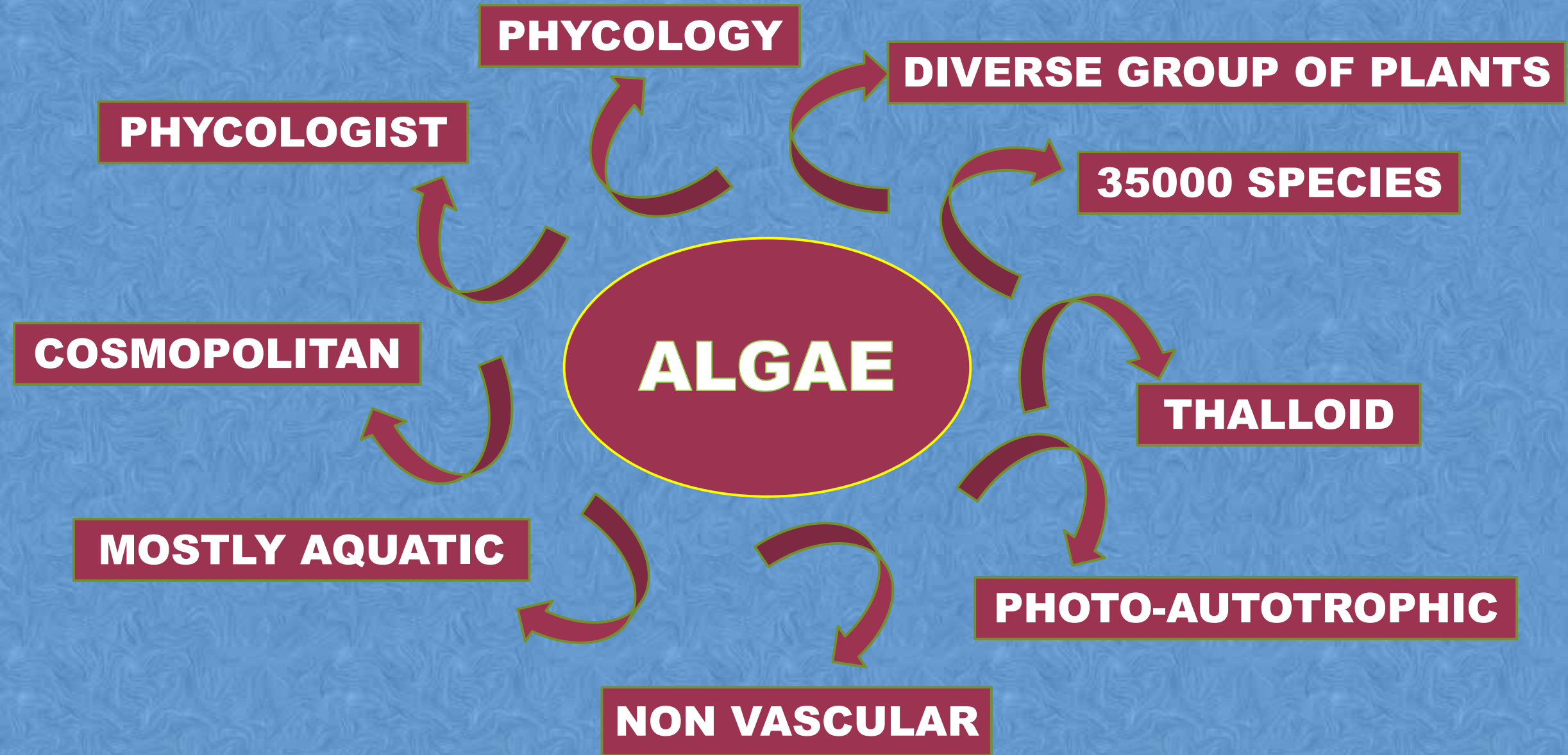
THALLUS ORGANIZATION IN ALGAE

POSITION OF ALGAE IN PLANT KINGDOM

EICHLER (1886)



KEY POINTS ASSOCIATED WITH ALGAE



THALLUS ORGANIZATION IN ALGAE



UNICELLULAR

MULTICELLULAR

UNICELLULAR ALGAE

- 1. RHIZOPODIAL UNICELLS:** eg *Chrysamoeba*
- 2. FLAGELLATED UNICELLS:** eg *Euglena, Chlamydomonas*
- 3. NON MOTILE UNICELLS:** eg. *Chlorella*
- 4. SPIRAL UNICELLS:** eg. *Spirulina*

UNICELLULAR FORMS OF ALGAE

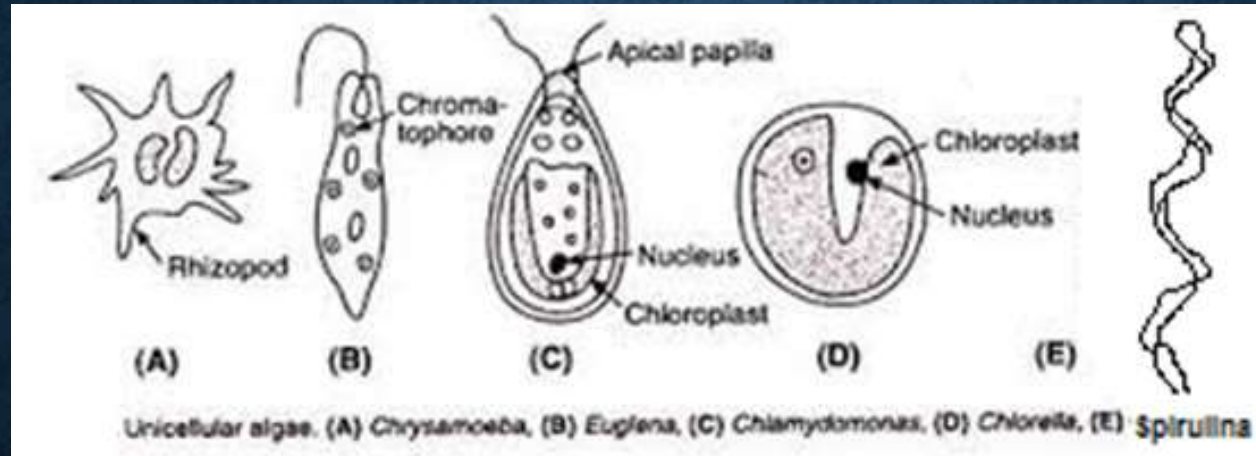
1. RHIZOPODIAL UNICELLS:

- ▶ Lack rigid cell wall
- ▶ Amoeboid movement by cytoplasmic projection
- ▶ eg. *Chrysamoeba*

MOTILE FORMS

2. FLAGELLATED UNICELLS:

- ▶ Possess flagella for locomotion
- ▶ May be periplastic i.e. without cell wall (eg. *Euglena*) or with cell wall (eg. *Chlamydomonas*)



3. NON MOTILE UNICELLS:

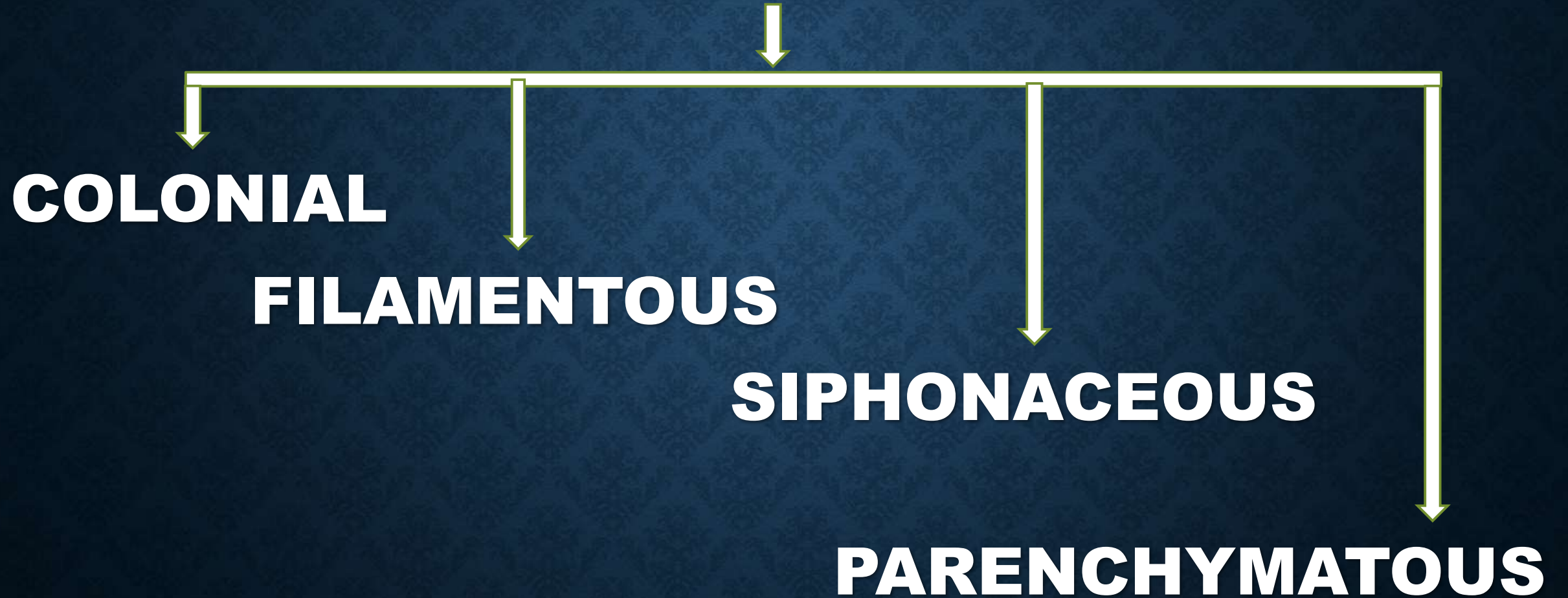
- ▶ Non motile
- ▶ Flagella absent
- ▶ eg. *Chlorella*

NON MOTILE FORMS

4. SPIRAL FILAMENTOUS UNICELLS:

- ▶ Unicellular filamentous
- ▶ eg. *Spirulina*

MULTICELLULAR ALGAE



MULTICELLULAR ALGAE

1. **COENOBBIUM:** eg *Volvox* (motile), *Hydrodictyon* (non motile)
2. **PALMELLOID:** eg *Tetraspora*
3. **DENDROID:** eg. *Chrysodendron*
4. **Rhizopodial colony:** eg. *Chrysidiastrum*

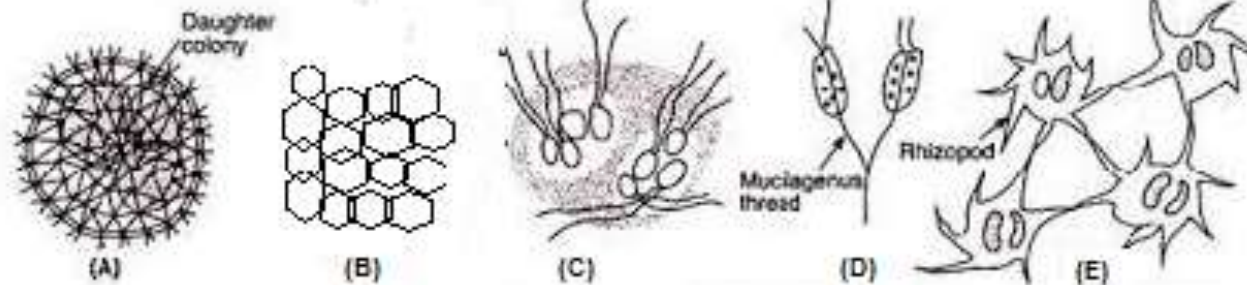
MULTICELLULAR COLONIAL FORMS OF ALGAE

1. COENOBIUM:

- ▶ No. of cells definite
- ▶ Arrangement of cells definite
- ▶ May be motile (eg *Volvox*) or non motile (eg. *Hydrodictyon*)

2. PALMELLOID:

- ▶ No. of cells not definite
- ▶ Arrangement of cells not definite
- ▶ Generalized production of mucilagenous mass
- ▶ eg. *Tetraspora*, *Palmella*



colonial alga: (A) Motile Coenobium colony (*Volvox*) (B) Non motile Coenobium colony (*Hydrodictyon*) (C) Palmelloid colony (*Tetraspora*) (D) Dendroid colony (*Chrysodendron*) (E) Rhizopodial colony (*Chrysidiastrum*)

3. DENDROID:


- ▶ No. and arrangement of cells not definite
- ▶ Cells united in branching manner by localized production of mucilagenous mass at the base of each cell
- ▶ eg. *Chrysodendron*

4. RHIZOPODIAL COLONY:

- ▶ Cells united through rhizopodia
- ▶ eg. *Chrysidiastrum*

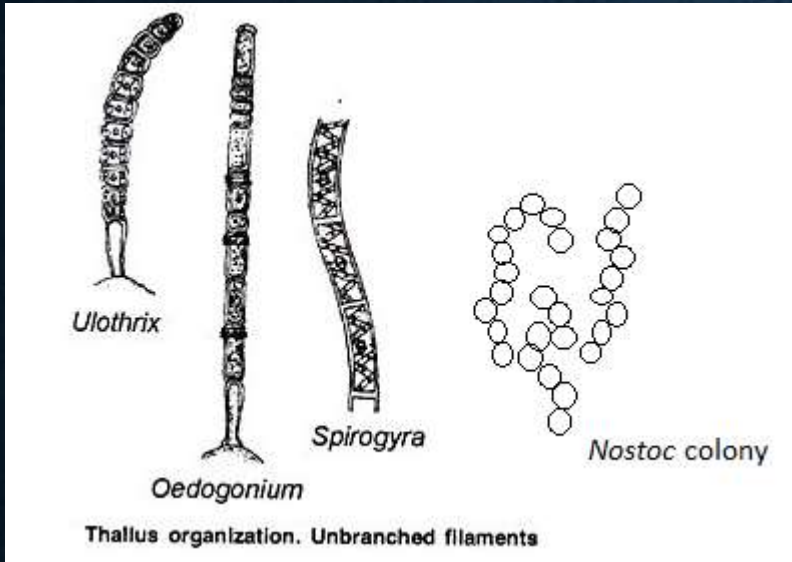
MULTICELLULAR FILAMENTOUS FORMS ARE OF TWO TYPES :

1. UNBRANCHED:
 - (i) Free floating eg *Spirogyra*
 - (ii) Attached to some substratum eg. *Ulothrix*
 - (iii) Colonial eg. *Nostoc*

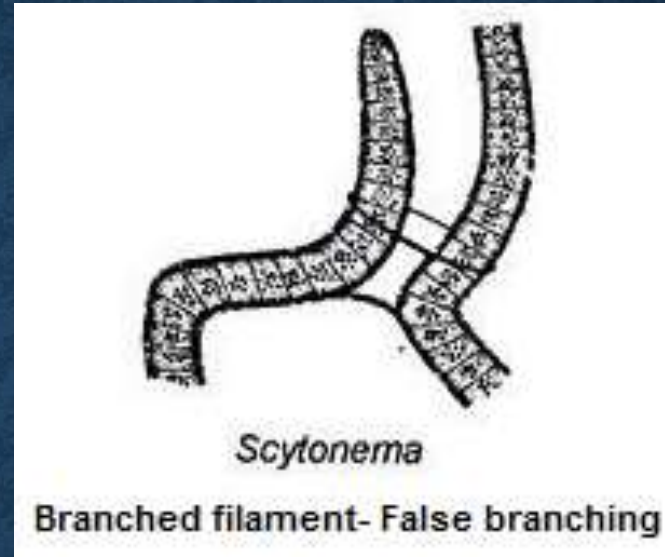
2. BRANCHED:
 - (i) False eg. *Scytonema*
 - (ii) True:
 - (a) Simple eg. *Cladophora*
 - (b) Heterotrichous


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graph TD; A["(b) Heterotrichous"] --> B["eg Ectocarpus"]; A --> C["eg. Coleochaete"]
```
 - (iii) Pseudoparenchymatous:
 - (a) Uniaxial eg. *Batrachospermum*
 - (b) Multiaxial eg. *Polysiphonia*

MULTICELLULAR FILAMENTOUS FORMS OF ALGAE



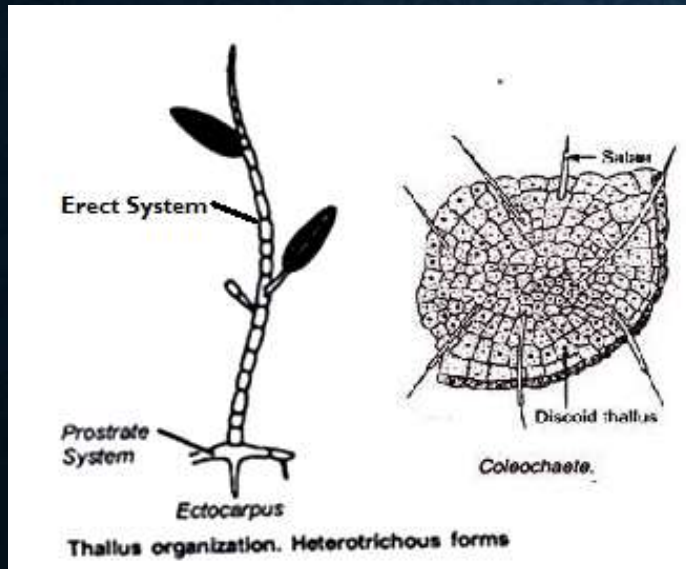
UNBRANCHED



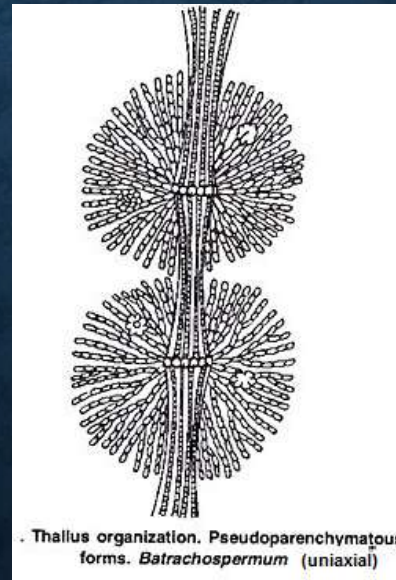
FALSE BRANCHING



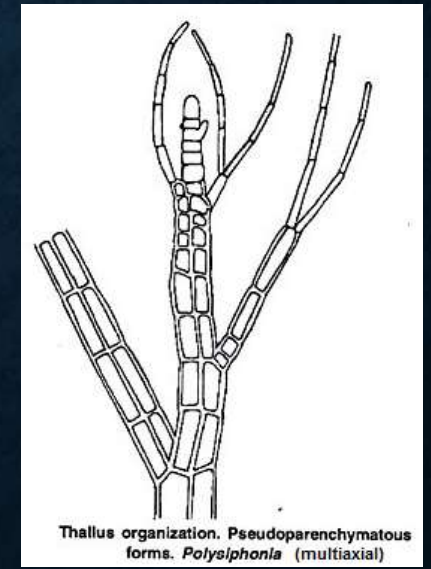
TRUE SIMPLE BRANCHING



HETEROTRICHOUS



PSEUDOPARENCHYMATOUS (UNIAXIAL)

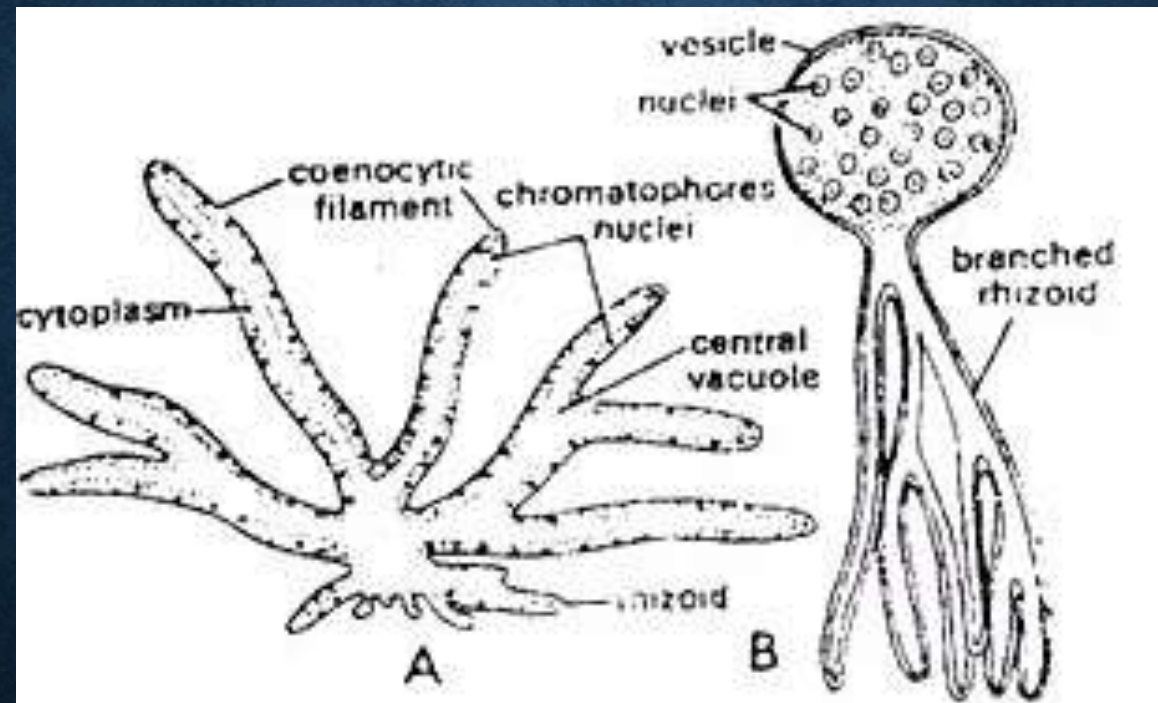


PSEUDOPARENCHYMATOUS (MULTIAXIAL)

SIPHONACEOUS FORMS OF ALGAE

MULTINUCLEATE THALLUS WITHOUT SEPTATION EXCEPT DURING FORMATION OF REPRODUCTIVE ORGAN

eg. *Vaucheria*, *Botrydium*

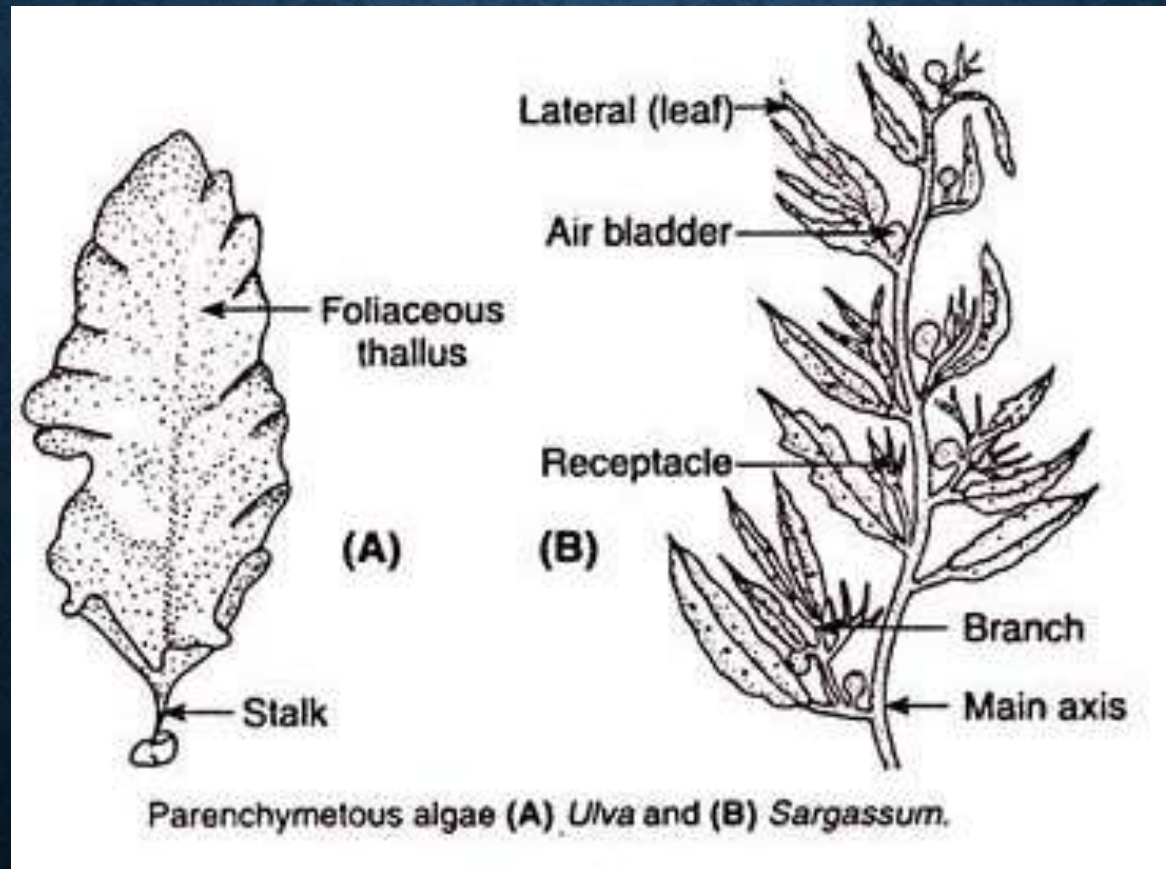


Thallus organization. Siphonaceous forms. (A) *Vaucheria*, (B) *Botrydium*.

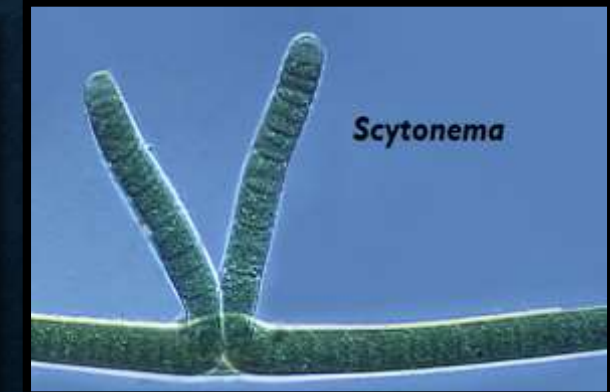
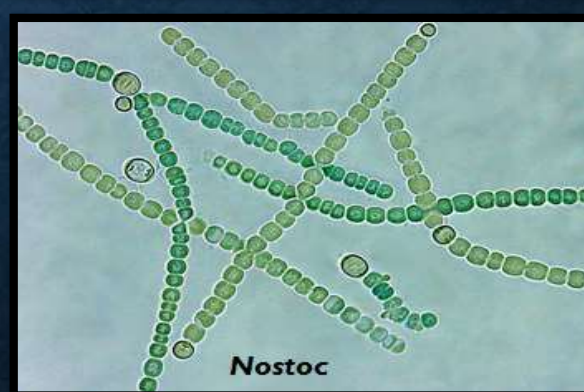
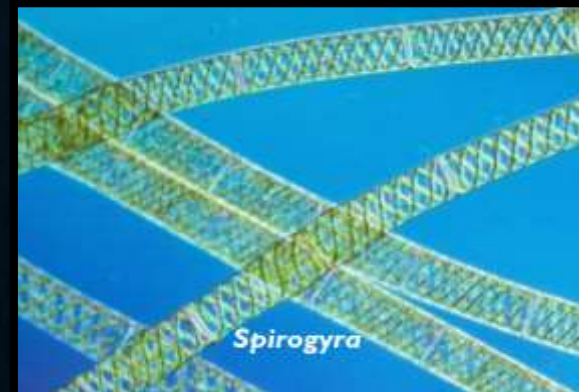
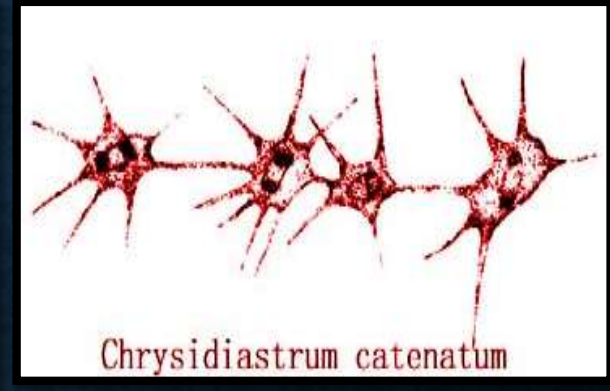
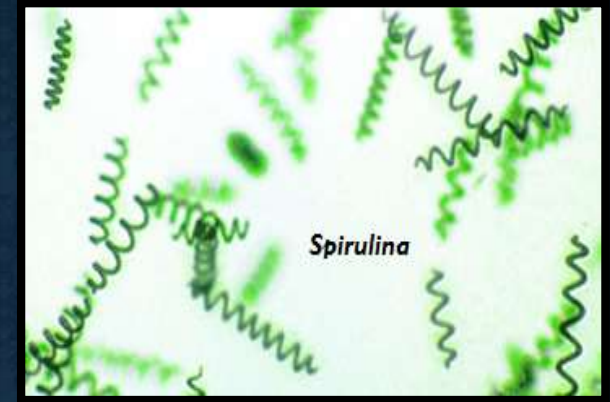
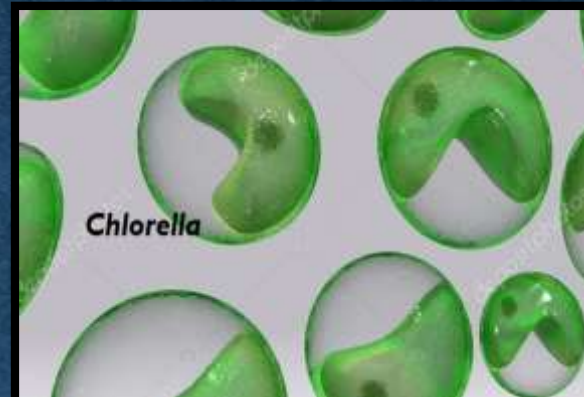
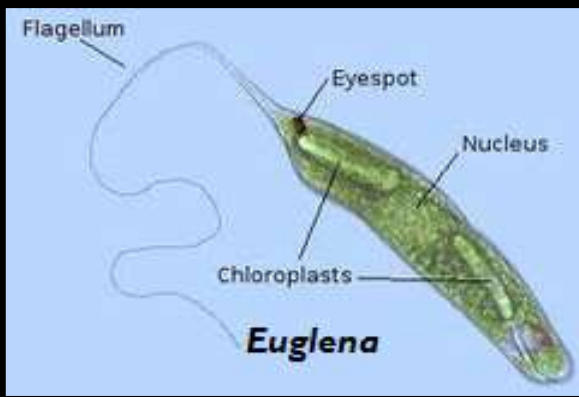
PARENCHYMATOUS FORMS OF ALGAE

VEGETATIVE CELLS DIVIDE IN TWO OR MORE PLANES AND THE PRODUCTS DO NOT SEPARATE RESULTING IN THE FORMATION OF PARENCHYMATOUS THALLUS OF VARIOUS SHAPES

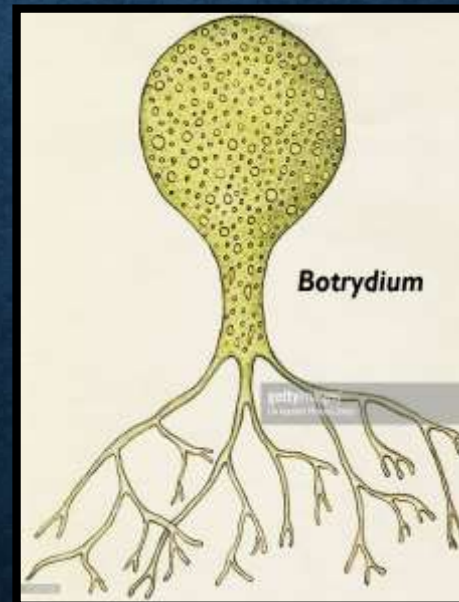
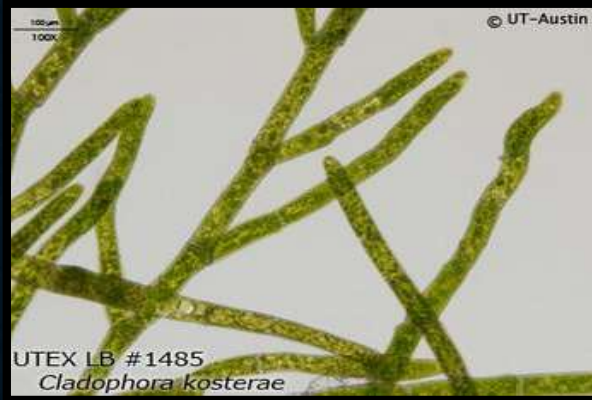
Eg. *Ulva*, *Sargassum*



IMAGES OF ALGAE



IMAGES OF ALGAE



THANK YOU