

Name: Adesiyan Adedamola Oseghale

Department: Medicine And Surgery

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Course: BIO 102

1. Eichler's Grouping of 1883

<u>DIVISION</u>	<u>CLASS</u>
Thallophyta	1. Phycotinae_ (Algae) 2. Mycotinae_ (Fungi)
Bryophyta	1. Hepaticae (Liverworts) 2. Musci (Mosses)
Pteridophyta	1. Psilotinate_ (Psilotum) 2. Lycopodinae (Lycopodium, Selaginella) 3. Equisetinae (Horsetails) 4. Filicinae (Ferns)
Spermatophyta	1. Gymnospermae (Gymnosperms) 2. Angiospermae (Angiosperms)

2.Importance of Algae to man

- ❑ It serves as food for people and livestock especially fishes.
- ❑ The red algae provide agar and carrageen used for the preparation of various gels used for scientific research

- ☐ It contains high iodine content which prevents goitre
- ☐ It serves as thickening agents in ice cream and shampoo
- ☐ Agar is used in food industry to stabilize pie fillings and preserve canned meat and fish
- ☐ Certain algae are used in Asian countries to cure and prevent illnesses

3. Unicellular form of Algae

Chlamydomonas represents the unicellular and module forms of green algae.

It's found in stagnant water.

Its cell is bounded by a cellulose cell wall which contains other organelles e.g. chloroplasts, pyramid etc.

The nucleus carries the genetic information of the cell

The stigma is for photoreception

Manufactured sugar is processed into starch on to the pyrenoid

4. Reproduction in Chlamydomonas

Reproduction can either be vegetative (asexual) or sexual

Vegetative results in the production of daughter cells in which the amount and quality of genetic material in the nucleus of the mother cell is maintained in the daughter cells. The amount of genetic material in the mother cell nucleus of n , the daughter cells also have n quantity of genetic material. The mitotic division maintains the quality and quantity of genetic material. It is responsible for an increase in number and size of the daughter cells

Sexual reproduction: It involves union of sex cell, aggregation of cells in a colony. This usually occurs under favourable conditions. These cells pair by their posterior end. This pairing is said to be isogamous because the pairing cells (gametes) are morphologically identical .

5. The colonial forms in Algae

Pandorina

Volvox

Pandorina	Volvox
Sexual reproduction is anisogamous (pairing is by the flagella ends)	Sexual reproduction is oogamous (the male gamete is motile while the female is not)
Unicellular motile thallus	Multicellular motile thallus
It is a green colonial form of algae	It shows more complexity than pandorina

6. Complex form in the Algae

Fucus

It is a genus of the brown algae whose species are found on rocks in the intertidal zones of the sea shores. The body of the plant is flattened, dichotomously-branched thallus with a mid rib, a vegetative apex and a multicellular disk with which plant is attached to rock surface. The body has air bladders which is believed to aid the plant to float on the water. It varies in size from a few centimeters to about 2 meters in length.

Sexual reproduction is oogamous, sex cells are produced in conceptacles which have openings (ostioles) on the surface of the thallus.