

**NAME:** AMROPHE CHRISTABEL EFE

**COURSE:** BIOLOGY 102

**DEPARTMENT:** NURSING

**MATRIC NO.:** 19/MHS02/023

1). Sub-kingdom Cryptogamae:

Characteristics of the sub-kingdom cryptogamae are:

- If present, the embryos are naked and are called spores.
- They are lower plants and do not bear flowers or seeds. Hence, they are called non-flowering and seedless plants.
- They include three divisions: thallophyta, bryophyte and pteridophyta.
- Their reproductive organs are inconspicuous.

Division Thallophyta:

- The plants are common called algae.
- They are aquatic, freshwater or marine.
- Plants belonging to this group do not have well differentiated body design.
- Examples are: spirogyra, cladophora, and chara.

Sub-division Algae:

- They are autotrophs.
- They have variable forms and sizes.
- Their bodies are simple and not well differentiated.
- They are different classes such as red, green and brown algae. The red and brown colours are due to the presence of accessory photosynthetic pigment.

Division Bryophyta:

- It has an embryo.
- They are amphibians of the plant kingdom because they grow in moist surfaces.
- Roots are not present but a small root-like structure is present called rhizoids.
- The plant body is commonly differentiated to form a stem and leaf-like structures.
- Examples are: moss and marchantia.

#### Division Pteridophyta:

- The plant body is sporophyte and can be differentiated into roots, stems and leaves.
- Their tissues are specialized for water conduction and other substances from one part of the body to another.
- They are called vascular cryptogams.
- Seeds are absent.
- They bear sporangia which produces spores.
- Examples are: ferns, pteris, selaginella, marsilea, etc.

#### Sub-kingdom Phanerogamae:

- They bear flowers and seeds.
- They are called spermatophytes.
- The plant body is well differentiated into stems, roots and leaves.
- They are classified into gymnosperm (naked seed) and angiosperm (enclosed seed).

#### Sub-division Gymnospermae:

- It includes medium sized trees and shrubs.
- Sporangia are formed over a leaf-like structure called sporophyllis.
- The plants bear naked seeds are usually perennial, evergreen and woody.
- Examples are: cycas, picea (Christmas tree), thuja (morpankhi).

#### Sub-division Angiosperm:

- They are flowering plants.
- They are highly evolved groups of plants.

- The seeds first grow inside an organ which the morphs into a fruit.
- Their reproductive organs are aggregated into flowers.
- They have embryos in seed structures called cotyledons.
- They are divided into monocots and dicots.

2). Importance Of Algae to Man:

i. A Source of Vitamins: Marine algae are said to be rich in vitamins. The vitamin A, B and E are found commonly on sea weeds. Vitamin B essentially is required for the development of human anatomy. It is found in all phaeophyceae.

ii. Mineral Contents: They have high mineral content, up to 5% of the wet material where all the nutrients beneficial for animals and humans are found.

iii. Food For Sea Animals and Fishes: The algae serves as a direct source of food for various animals. Marine algae for example are rich in iodine. This makes it a fundamental source of food for all marine animals.

3). A Unicellular Form of Algae: They are plant-like autotrophs that contain chlorophyll. They have both unicellular and multicellular species. Diatoms, unicellular algae that have siliceous cell walls. They are the most important algae although they can be found in fresh water as well.

4). Reproduction: Reproduction could be sexual or asexual. Asexual results in daughter cells while sexual involves mating and pairing is isogamous because gametes are identical.

5) Difference Between Two Colonial Forms of Algae:

Volvox	Pandorina
<ul style="list-style-type: none"> <li>• Sexual reproduction is oogamous.</li> </ul>	<ul style="list-style-type: none"> <li>• Sexual reproduction is anisogamous.</li> </ul>
<ul style="list-style-type: none"> <li>• It has a multicellular motile thallus.</li> </ul>	<ul style="list-style-type: none"> <li>• It has a unicellular motile thallus.</li> </ul>
<ul style="list-style-type: none"> <li>• Its complex form is pandorina.</li> </ul>	<ul style="list-style-type: none"> <li>• It is a genus of green algae.</li> </ul>

6). A Complex Form of Algae:

FUCUS: It is a genus of the brown algae found in rocks of sea horses. The body of the plant is a flattened, dichotomously branched thallus with a mid-rib. The body has air bladders which aids the plants to float. It varies from a few centimetres to about two metres in length.