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Course: BIO 102  
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In 1883, A. W. Eichler gave a system of classification for the whole kingdom. It is a traditional system as well as a phylogenetic system of classification of plants.

Eichler classified the plant kingdom into two sub-kingdoms. They are Cryptogamae and Phanerogamae.

### 1) CRYPTOGRAMAE (Gk. Kryptos = concealed; gamos = marriage)

The cryptogams are flowerless and seedless plants. They are simple plants like algae, mosses and ferns which do not produce flowers, fruits and seeds. Cryptogams are considered as lower plants.

(a) Algae: examples of Algae: ~~Chlorella~~, Chlamydomonas, Volvox, Cladophora, Zygnema, Sargassum, Gelidium, Polysiphonia, Spiulina, Laminaria.

(b) Bryophytes: Are the simplest land plants with undifferentiated plant body. They are adapted to grow in water and on land. The more advanced forms only on land. Vascular tissues are absent. Bryophyta is divided into three classes:

- \* Hepaticae - Liverworts eg: Riccia, Marchantia etc.
- \* Anthocerotae - Horn worts eg: Anthoceros
- \* Musci: Mosses eg: Funaria.

(c) Pteridophyta: Are most advanced cryptogams. Vascular tissues are present in the plant body. Therefore pteridophytes are also called vascular cryptogams. The plant body is differentiated into roots, stem and leaves. The ferns are a large group included under pteridophytes. Pteridophyta is divided into four classes. They are the following

- \* Psilopsida - eg: Psilotum
- \* Lycopsidea - eg: Lycopodium, Selaginella etc
- \* Sphenopsida - eg: Equisetum
- \* Pteridopsida - eg: Nephrolepis, Pteris, Dryopteris etc

## PHANEROGAMAE

Phanerogams are seed bearing plants. So they are also known as Spermatophytes (Gk. Spema = seed, phyton = plant). They are higher plants. The plant body is differentiated into roots, stem, and leaves with well developed vascular system.

(a) Gymnosperms (Gk. gymno = naked; sperma = seed) are naked-seeded plants. The seeds are not enclosed in fruits. They do not produce flowers and they are regarded as primitive seed plants. They include mostly evergreen trees like conifers and cycads. Gymnosperms are divided into three different classes. They are the following:

- \* Cycadopsida - eg: Cycas
- \* Coniferopsida - eg: Pinus, Cedrus etc
- \* Gnetopsida - eg: Gnetum

## (b) Angiospermoe

Angiosperms (Gk. angion = hidden; sperma = seed) are flowering and seed bearing plants. The seeds are enclosed in fruits. They form the dominant vegetation of the earth at present. They enrich the earth with unmatchable beauty, colour and scent. Angiosperm is divided into two classes:

- \* Dicotyledons - eg: Pear, Sunflower, Mango tree, Rauwolfia, Lotus etc
- \* Monocotyledons - eg: Maize, Paddy, Musa, Coconut, Orchid, Plantain etc

## Q 1. Food for sea animals and fishes:

The marine algae are rich in iodine and several other important minerals.

### 2. Mineral contents:

High mineral content, upto five percent of the wet material, in which all the mineral elements important in human and animal physiology are found, makes sea weeds a unique supplement for a well balanced diet.

### 3. As a source of vitamins:

The marine algae are the richest source of vitamins. The vitamins A, B and E are found abundantly in sea weeds.

### 4. manufacture of iodine:

The world's iodine supply is fulfilled from the sea weeds.

### 5. As a fodder for hens and milk cattle:

By feeding the milk cattle and hens with sea weeds, iodine quantity of milk and eggs may sufficiently be increased.

### 3. Unicellular of Algae

Unicellular forms of algae are also called acellular algae as they function as complete living organisms. Unicellular forms are common in all the groups of algae except Rhodophyceae, Phaeophyceae and Charophyceae. The unicells may be motile or non-motile.

- (a) The motile unicells are either rhizopodial or flagellated. ~~eg~~
- (b) The non-motile cells may be spiral filament as found in Spirulina.

4. Algae regenerate by sexual reproduction or asexual.

### 5. Volvox

- 1. They are free floating, fresh water green algae.
- 2. It grows as planktons on the surface of the water.
- 3. It is a multicellular colonial alga.
- 4. They produce both sexually and asexually.

### ~~Synura~~ Chrysophyta

- 1. They are both in marine and fresh water.
- 2. They are non-motile.
- 3. It is unicellular.
- 4. They produce sexually.

6. Seaweeds are the largest and most complex marine algae. ~~are called~~ They grow along sea shores. Seaweeds often form dense growths on rocky shores or accumulations in shallow water. Brown alga (class Phaeophyceae) commonly found as weeds include Kelps and Fucus.