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SUBJECT; BIOLOGY

CLASSIFICATION OF PLANTS ACCORDING TO EICHLER’S GROUPING IN 1883

In 1883 Eichler divided the kingdom plantae into two sub kingdom crytogamae and phanerogamae.

sub-kingdom crytogamae

characteristics of sub-kingdom crytogamae.

1. They are low plants and they do not bear flower or seed. Hence, they are called non-flowering and seedless plants.
2. Their productivity organs are inconspicuous [not clearly visible].
3. The embryo if present is naked and called spores
4. They include three divisions; thallophyte, bryophyte, and pteridophta.

Division thallophyte

1. Plants belonging to this group do not have well differentiated body design but have same body design.
2. The plant in this group are commonly called algae.
3. They are predominantly aquatic. Fresh water or marine.
4. Examples are; spirogyra, ulothrix, cladophora and chara.

Sub-division algae.

1. They are autotrophs.
2. Their body is simple and not well differentiated.
3. Their forms and sizes are variable.
4. Algae are further classified as green algae, red algae and brown algae. The red and brown are due to the presence of accessory photosynthetic pigment.

Division bryophyta.

1. The plant body is commonly differentiated to form a stem and leaf like structures.
2. Roots are not present but a small root -like structure is present called the rhizoids.
3. They are called amphibians of the animal kingdom because they grow in most areas.
4. It has an embryo in its development process.
5. Examples are: moss(funaria) and marchantia (liver wort).

DIVISION PTERIDOPHYTA

1. In pteridophyte the plant body is sporophyte and can be differentiated into roots, stem and leaves. It is the highest group among the cryptogams.
2. They have specialized tissues for the conduction of water and other substances from one part of the plant body to another. They are also called vascular cryptogams.
3. Seeds are absent they produce naked embryo called spores.
4. They bear sporangia which produce spores.
5. Examples are: ferns, marsilea, pteris, selaginellaetc.

SUB-KINGDOM PHANEROGAMhe

1. They bear flowers and seeds they are called the spermatophytes.
2. The plant body is well differentiated into stem, leaves and roots.
3. Seeds are the result of sexual reproductive process
4. They are further classified into gymnosperm (naked seed) and angiosperm( enclosed seed).

SUB – DIVISION GYMNOSPERMAE

1. The plants of the seeds are usually perennial, evergreen and woody.
2. It includes medium sized trees and shrubs.
3. Sporangia are formed over leaf- like structures called sporohylis.
4. Examples are: cycas, picea (Christmas tree), thuja (morpankhi).

SUB- DIVISION ANGIOSPERMAE

1. These are flowering plants.
2. Their seeds develop into an organ which is modified into becoming a fruit.
3. These are the highly evolved group of plants.
4. Their reproductive are aggregarted into a flowers. The male sex organs are stamen and the female sex organs are called pistil.
5. They have plant embryo is seed structures called cotyledons.
6. They are divided into two groups monocots (plants that have one cotyledon) example (maize, rice, wheat) and dicots (plants that have two cotyledon) example (garden pea).

2) IMPORTANCE OF ALGAE TO MAN

1. Food For Sea Animals and Fishes: The algae serves as direct source of food for sea animals . The marine algae are vicu in iodine and several other important materials. This makes the fundamental source of food for all marine animals and in this respect sea is the richest food producing area.

2. Mineral Content: High mineral content up to five percent of the wet material, in which all 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 richest source of vitamins. The vitamins A, B, and F are formed abundantly in sea weeds. The B essentially for the development of the human body is found in great abundance in almost all phaeophyceae.

4. A Unicellular form of Algae: Unicellular algae are plant like autotrophs and contain chlorophyll. They include group that has both multicellular and unicellular species. Diatoms, unicellular algae that has siliceoys cell wall. They are the most abundant form of algae in the ocean, although they can be found in fresh water as well. We also have Chlamydomonas which represents the unicellular and module form of green algae.

5. Reproduction: Reproduction can be either vegetative (asexual) or sexual. The vegetative reproduction results in daughter cells because the genetic materials contained in the mother cells are maintained in the daughter cells. While sexual reproduction involves the mating thispairing is isogamous because the gametes are morphologically identical.

Difference between the two Colonical Form of Algae

1. Volvox: Its sexual reproduction is ogamus.

ii. It has amulticellular motile thallus

iii. Its complex form is Pandorina.

1. Pandorina: Its sexual reproduction is anisogamus

ii. It has a unicellular motile thallus.

iii. It’s a genus of green algae.

6) A complex form of algae:

1. Fucus: Its genus of the brown algae which are found in rocks of the sea shores. The body of the plant is flattened, dichotomously branched thallus with amid rib. The body has air bladders which aids the plant to float. It varies in size from a few centimetres to about 2metres in length.