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1. In 1833, A.W. Eichler gave a system of classification for the whole plant kingdom. It is an traditional system as well as a phylogenetic system of classification of plants.

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

   a. Cryptogamea (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.

      UNDER THE CRYPTOGAMEA THERE ARE OTHER PLANTS LIKE;

      i. Algea. Exampls are; chlorella, chlamydomonas, volvox, sargassum e.t.c.

      ii. Bryophytes.

         There are three classes of bryophytes;

         Hepaticae Liverworts e.g Riccia, Marchantia, e.c.t.

         Anthocerotea- Horn worts e.g Anthoceros

         Musci: Mosses e.g funaria.

      iii. Pteidophyta

         There are four classes of pteidophyta

         Psilopsida e.g Psilotum

         Lycopsida e.g Lycopodium

         Sphenosida e.g Equisetum

         Pteridopsida e.g Pteris

   b. Phanerogamea (G.K. Sperma= seed; Phyton= Plants)

      These are seed bearing plants also known as SPERMATOPHYTES. They are higher plants. The body is differentiated into roots, stems and leaves with well developed vascular system.

      i. Gymnospermes

These are naked-seeded plants. They consists of three classes namely;

Cycadopsida e.g Cycas

Coniferopsida e.g Pinus

Gneptosida e.g Gnetum

ii. Angiospermes

These are flowering and seed bearing plants. Theses seeds are enclosed in fruits. There are two classes of angiosperm;

Monocotyledon e.g Beans

Dicotyledon e.g Pea

2. IMPORTANCE OF ALGEA TO MAN

   i. Contain mineral content

   ii. Serve as source of vitamin

   iii. Serve as source of agar

   iv. Serve as medicine

   v. Used in the manufacturing of iodine

   vi. Serves production of soap and alum

   vii. Serve as fodder for hen and milk cattle

   viii. Used in the manufacturing of potash

   ix. Used as fertilizer

   x. Used in the construction of light weight buildings

   xi. Serve as ornaments

   xii. Helps in the utilization of chlorella

3. Unicellular algea are plant-like autotrophs and contain chlorophyll. For instance; Diatoms, unicellular algea thst hsve siliceous cell wall. They are the most abundant forms of algea in the ocean, although they czn be found in fresh water as well.

4. REPRODUCTION IN UNICELLULAR ALGEA.

   Asexual reproduction is the production of progeny without the union of cells or nuclear material. Many small algae reproduce asexually by ordinary cell division or by fragmentation, whereas larger algae reproduce by spores. Some red algae produce monospores (walled, nonflagellate, spherical cells) that are carried by water currents and upon germination produce a new organism. Some green algae produce nonmotile spores called aplanospores, while others produce zoospores, which lack true cell walls

and bear one or more flagella. These flagella allow zoospores to swim to a favourable environment, whereas monospores and aplanospores have to rely on passive transport by water currents.

5.

SYNURA	SCENEDESMUS
They have two consisting cells	They could have 2, 4 or 8 cells
They have longitudinally divided cells	They have enlongated cells
They bear flagella	They bear spines
They are found in moving water bodies	They are found in stagnant water bodies

6. The largest and most complex marine algae are called seaweeds, while the most complex freshwater forms are the Charophyta, a division of green algae which includes, for example, Spirogyra and stoneworts.

   No definition of algae is generally accepted. One definition is that algae "have chlorophyll as their primary photosynthetic pigment and lack a sterile covering of cells around their reproductive cells".[2] Although cyanobacteria are often referred to as "blue-green algae", most authorities exclude all prokaryotes from the definition of algae.[3][4]Algae constitute a polyphyletic group[3] since they do not include a common ancestor, and although their plastids seem to have a single origin, from cyanobacteria,[5] they were acquired in different ways. Green algae are examples of algae that have primary chloroplasts derived from endosymbiotic cyanobacteria. Diatoms and brown algae are examples of algae with secondary chloroplasts derived from an endosymbiotic red alga.[6] Algae exhibit a wide range of reproductive strategies, from simple asexual cell division to complex forms of sexual reproduction.[7]

   Algae lack the various structures that characterize land plants, such as the phyllids (leaf-like structures) of bryophytes, rhizoids in nonvascular plants, and the roots, leaves, and other organs found in tracheophytes (vascular plants). Most are phototrophic, although some are mixotrophic, deriving energy both from photosynthesis and uptake of organic carbon either by osmotrophy, myzotrophy, or phagotrophy. Some unicellular species of green algae, many golden algae, euglenids, dinoflagellates, and other algae have become heterotrophs (also called colorless or apochlorotic algae), sometimes parasitic, relying entirely on external energy sources and have limited or no photosynthetic apparatus.[8][9][10] Some other heterotrophic organisms, such as the apicomplexans, are also derived from cells whose ancestors possessed plastids, but are not traditionally considered as algae. Algae have photosynthetic machinery ultimately derived from cyanobacteria that produce oxygen as a by-product of photosynthesis, unlike other

photosynthetic bacteria such as purple and green sulfur bacteria. Fossilized filamentous algae from the Vindhya basin have been dated back to 1.6 to 1.7 billion years ago.[11]