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Pharmacy

BIO 102 Assignment

19/MHS11/115

1. A system of plant taxonomy, the eichler system was first phylogenetic or evolutionary system, the system was based on dividing the plant kingdom into those plants with concealed reproductive organs (non-floral), the cryptogame. And those with visible reproductive organs (floral), the phanerogame.

CRYPTOGAME

Cryptogame is a plant that reproduces by spores, without flowers or seeds. Cryptogame means hidden reproduction, referring to the fact that no seed is produced. They are simple and flowerless plants like algae, mosses and ferns which do not produce flowers, fruits and seeds. Cryptogames are considered as lower plants.

PHANEROGAME

The spermatophytes also known as phanerogame comprises of those plants that produce seeds, hence the alternative name is "seed plants". They are a subset of embryophytes or land plants.

2. Algae are of many importance to man, some of them include;
 1. Algae have been in use as human food for centuries in various parts of the world
 2. The large brown and red algae are used as organic fertilizers, especially on land close to sea.
 3. Algae is used as a source of agar in production of jellies
 4. Algae is used in production of minerals
 5. Algae is used in production of medicines
 6. Algae is used in manufacturing iodine
3. Unicellular form of algae are also called unicellular algae as they function as complete living organisms. Unicellular algae are plants like autotrophs and contain chlorophyll. They include groups that have both multicellular and unicellular species. They consist of a single cell. They are eukaryotes.
4. The sexual reproductive processes of three representative freshwater green algae are reviewed. The *Chlamydomonas reinhardtii* is a heterothallic species having two mating types: mating type plus

and mating type minus, which are controlled by a single complex mating type locus (MT+ and MT-). The differentiation of respective gametes is triggered by nitrogen starvation. The sexual adhesion between the gametes is mediated by sex-specific agglutinin molecules on their flagella membranes. Then, the intracellular cAMP level is elevated, triggering dramatic alterations in the cell. Cell fusion is initiated by adhesive interaction between the mt+ and mt- mating structures, followed by localized membrane fusion. Two proteins (FUS1 and GC1/HAP2) are known to be essential for the membrane fusion reaction. The volvox carteri is a dioecious species and is composed of only two cell types, 2000-4000 agellate chlamydomonas is initiated by a mutation-like switch, which leads to the formation of the first sexual male colony.

5. In colonial form of algae we have volvox and synura. Difference between volvox and synura
 - A. Reproduction is both sexual and asexual
 - B. Spherical colonies of up to 50,000 cells.
 - C. Few cells in colonies
6. Spirogyra is a filamentous charophyte green algae of the order of Zygnematales, of the genus. It is commonly found in fresh water habitats, and there are more than 40 species of Spirogyra in the world.