

[D] Cryptophytes: They are found on ice & snow even in the polar regions & high altitude of mountains causing green ~~the~~ snow, red snow, violet snow and yellowish green snow.

In arctic regions Chlamydomonas sps., Ankistrodesmus sps. and Mesotaenium sps. cause Green snow.
Chlamydomonas sps., Gloecapsa sps., Scotiella sps. and diatoms are cause of red snow.

[E] Fluviatile: These are found in rapidly flowing water streams e.g. In fall of mountains Ulothrix sps. may be found.
 In the hilly tracts of including Dehradun we may found Batrachospermum sps. and Stigeochlorium sps.

[F] Symbionts: They are growing in association of other ones. e.g. Lichens where algae are growing in association of fungi benefitting ~~to~~ one another. e.g. Coccomyxa sps., Chroococcus sps., Palmella sps. and Procoocus sps. of Chlorophyceae
Chroococcus sps., Gloecapsa sps., Microcystis sps., Nostoc sps., Rivularia sps., Scytonema sps. etc. of Myxophyceae.

[G] Endophytophytes or Endophytes: These are found inside the other plants e.g.
Anabaena azollae in the leaves of a Pteridophyte Azolla sps.
Anabaena cycadae inside the roots of a Gymnosperm Cycas sps.
Ceratophyllum sps., Lemna sps. and, Ceratophyllum sps. and some other mosses possess Clostridium inside their cells and tissues.
 Leaves of Sphagnum sps. contain Nostoc sps. inside them.

[H] Endozoophytes: These are found in the animal bodies e.g. In ^{fresh water} Sponges - Zooxanthella sps.
Hydra sps. - Zoochlorella.
 Various vertebrates may possess about fourteen (14) species of Oscillatoria sps. inside their digestive and respiratory tracts.

[I] Parasites: They are found parasitic on some other plants e.g. Apheluros virescens on the leaves of tea causing red rust of tea.

Conclusion: Algae are mainly aquatic as both fresh water and marine but they are found in various habitats also.

Nutrition

Algae are autotrophic mostly phototrophic, some primitive members are reported to be chemotrophic.

The phototrophic ones have chlorophyll in all of them.

In case of Phaeophyceae a yellow pigment Fucoxanthin is dominant over chlorophyll.

In case of Rhodophyceae a reddish pigment Phycocyanin is dominant.

In case of Myxophyceae a blue-green pigment Phycocyanin is dominant.

Algae synthesize oil and proteins from carbohydrates. ^{Some of them} They may synthesize nitrogenous compounds also.

Some of algae are also ~~heterotrophic~~ heterotrophic. Among these very few are phototrophic also e.g. Oscillatoria sps.

Cellular Organisation in Algae.

9

Cellular organisation in algae are mainly eukaryotic plant ones, but in primitive cases there are prokaryotic also.

(i) Prokaryotic: There are no true nucleus. The Genetic material is DNA dispersed throughout the cell. They lack membrane bound organelles like Endoplasmic reticulum, Golgi apparatus, mitochondria, chloroplast etc. They possess free plastids in cytoplasm. They possess cell wall like Bacteria hence named as Cyanobacteria also. e.g. Nostoc sps.

(ii) Eukaryotic: Found nucleic material DNA in a well organised nucleus similar to higher plants. They possess plastids in membrane bound chloroplast. Chloroplast is massive and may be variable in shape e.g. ribbon like, collar shaped, cup shaped, star like, net-like, bar like helping in identification of their genus. The plastids possess specialized organs known as Pyrenoids which may be centres of enzymes transforming glucose to starch. Beside these they may possess membrane bound organelles like mitochondria, golgi bodies, endoplasmic reticulum, vacuoles and stigma, flagella in certain cases for motility.