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CYANOPHYACAE A PRIMITIVE LINKAGE OF THE ALGAE

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ABSTRACT

Algae are the plant of the very simple body organization; they are the first photosynthetic plant group in the evolution which marks the life in the evolution. Algae are much diversified, they are divided on the basis of the several parameters, and some of them were on the basis of the pigmentations, reserve food material and types of the reproductive body, types of the life cycles (artificial classifications). Here we are presenting some of the aspects of the algal class termed as the cyanophyacae, the members of the algae are termed as the blue green algae. they are ubiquitous in the distribution. They are prokaryotic in organization, they reproduce by means of the vegetative and the asexual mode of the reproductions, Fossil evidences of the stromatolites and the calcareous bounds represent the rich ecosystem of the blue green algae and the billions of year of the empire during the course of evolution, now a day's algae habitat and the aquatic ecosystem are disappearing due to many kinds of the adverse anthropogenic activity, so these ecosystem are needs to be conserve for the maintenance of the biodiversity and genotypes of the algae on the planet.

KEYWORDS: cyanophyacae, biodiversity, fossils, stromatolites, life cycles, pigmentations.

INTRODUCTION

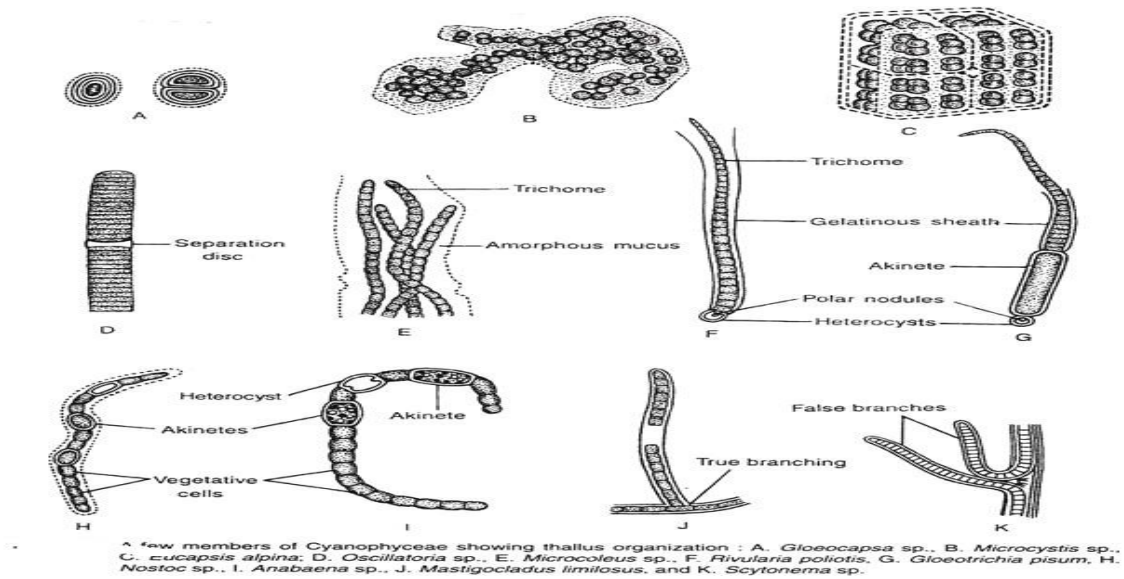
Algae are the heterogeneous assemblage of the various kinds' of the groups, they are the first photosynthetic organisms with the evolution of the oxygen in the environment, they contribute the abundant amount of the oxygen and other gases in to the environment and forms the biogeochemical cycles and gaseous budgets in to the globes.[1] They are simple structure organisms and the plant body is in the forms of the thallus, generally they are the aquatic in origin and found in the places which have the large amount of the water or the moisture in the habitat or in the places.[6] Initially former algologist classify the algae on the basis of the several features, some of them were the morphological, and the reproductive and

the on the basis of the variations in the life cycles patterns. However after the 1970 and the 1980 phylogenetic approaches were taken in to the consideration.[2]

Cyanophyacae is the class which is always in the disputed position in terms of the phylogenetics and the classification as well as on the basis of the other features.[1][2][3] This terminology has been used for the members of the blue green algae, on the basis of the pigments c-phycoerytheirn and the c-phycocannin, some time these accessory pigments marks and covers the green pigments of the chlorophylls. The name cyanophyaceae was proposed by the Eeichler in 1886.[1][2][3][6] He added the class with the other classes like the chlorophyaceae, Phaeophyaceae, Rhodophyceae, However later on other phycologists places them in separate positions on the basis of the other and several parameters which is based on the advanced characters and the phylogeny.[1][3][6] The Smith, Fritsch, (1945), Prescott, Round (1973), Papanfuss (1946) were pioneers in that area of the research.[1][2][3]

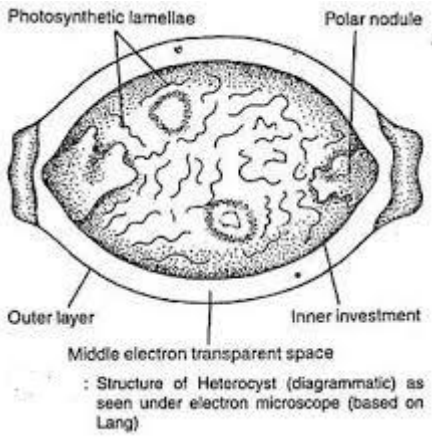
Some of the characters of the cyanophyacae are follows as.

1) Cyanobacteria are the named which is sued for the blue green algae, for the photosynthetic pigments founds in the cells and the majority of the Accessory pigments which covers the basic green colours of the algae.
2) They are the typical prokaryotic in nature.
3) All kinds of the cell organelles are absent in the cell and they have the membrane like structures n the cell to harbours the pigments on the body.
4) Majority of the members of the cyanophyacae performs the oxygenic photosynthesis process.
5) Cyanobacteria occurs in the Varity of the body forms. form single cell to the more complex forms that display the evolution of the body forms according to the environments.[6]
6) Some of the species are the unicells, in some of the species glue like mucilage appears which forms the colonies.[1][3]



A few members of Cyanophyceae showing thallus organization : A. *Gloeocapsa* sp., B. *Microcystis* sp., C. *Eucapsis alpina*; D. *Oscillatoria* sp., E. *Microcoleus* sp., F. *Rivularia poliotis*, G. *Gloeotrichia pisum*, H. *Nostoc* sp., I. *Anabaena* sp., J. *Mastigocladus limilosus*, and K. *Scytonema* sp.

Fig 1: Different kind of the members of the cyanophyaceae (sources biology discussion.



: Structure of Heterocyst (diagrammatic) as seen under electron microscope (based on Lang)

Fig: 2 Heterocyst (sources biology discussions).

7) Cell joined end to end to forms the filaments, which forms the tricome.
8) Tiny kinds of the plasmodestameta connects the one filaments to the another and facilities transport of water and nutrient from one filament to the another.
9) Many filamentous caynophyacae produces the specialised cell known as the heterocyst's that function in nitrogen fixation.
10) Cyanobacteia that produces the heterocyst's also produces the akinetes, the methods of the perennation of the cells.
11) The cell wall of them embers are made up of the peptidoglycan. Cell wall of this chemical is much bigger than that of the other gram negative bacteria cell wall.

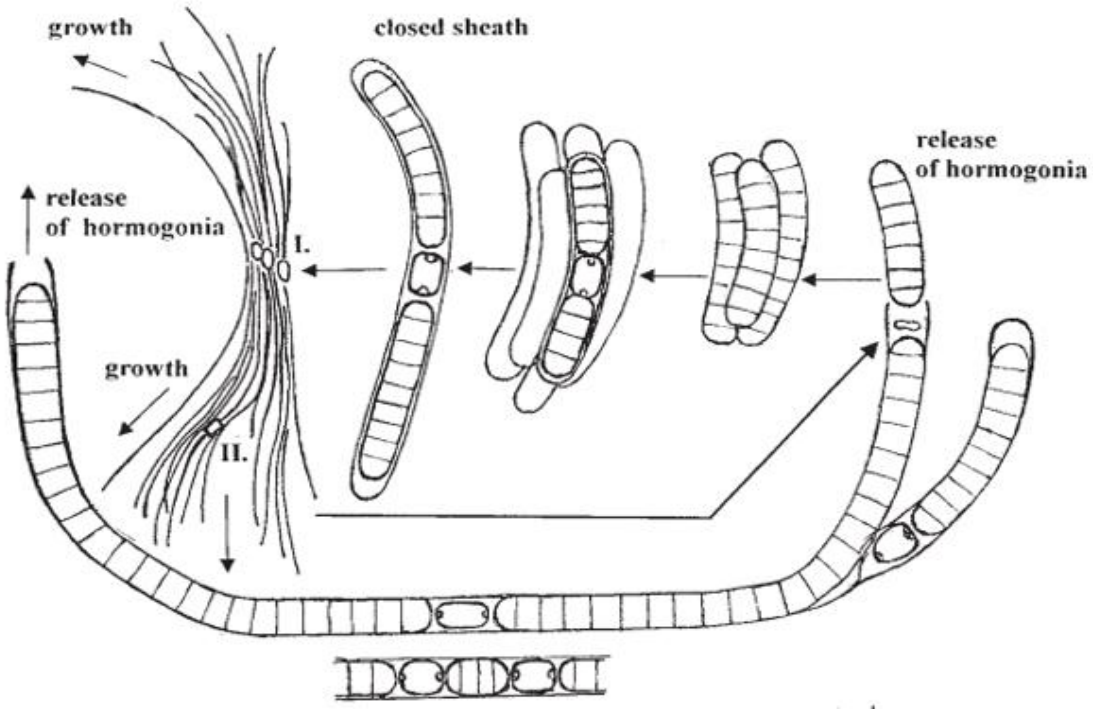


Fig. 3: Formation of the Hormogonia in the camptylmopesis(sources biology discussion).

12) Photosynthetic pigments in the cyanohpyacae are the chlorophylls, caretonoids, phycobilinas, phycoerythirins; some of them perform the anoxygenic photosynthesis. Oxygenic photosynthesis is like the other eukaryotic plants and the higher groups having the same c-3 cycle and the carbon fixations.
13) Sexual reproduction is absent in whole of the group the process of the sexual reproduction like the gametic fusion and the formation of the oospores are also absent in whole of the group, however in majority of the cases reproduction occurs by the asexual means and the vegetative modes of the reproduction, these are the by the binary fission, akinetes, hormogonia.
14) Cyanobacteria are capable of the fixation of the global nitrogen by means of the nitrogen fixation in the heterocysts. They fix the nitrogen into the ammonia and then the ammonia are transported in to the amino acids and the other proteins structures. Heterocyst provides the anaerobic environment for the nitrogen fixation.[1][2][3][6]
15) Cyanobacteria have the long and very rich fossil history, the oceanic stromatolites and the calcareous bounds are the indications of the fabulous kinds of the evolution of these groups.

Some of the common examples of the cyanophyacae are as follows.

Synechococcus, Prochloron, Prochlorococcus

Chroccous. Gleocapsa, Apahnocapsa

Aphanothece, Microcystis. ocillatoria.

CONCLUSION

wells this is the short review articles of the generals aspects of the cyanophyaceae, general features of the classes as well as some of the members are presenting here, this class has a long evolutionary history and they have major contribution in to the nature in the form of the biogeochemical cycles and the nitrogen fixation, biofertlizers are also the another significant uses of the cyanophyacae uses members. In addition to that the cynophyaceae have many kinds of the significant uses which forms them the gems of the algal world.

REFERENCES

1. What are Cyanobacteria and What are its Types?.
2. Webserver for Cyanobacteria Research.
3. Cyano Base.
4. Growth Model for the Blue-Green Alga *Anabaena catenula Wolfram Demonstrations Project*—requires CDF player (free).
5. Diving an Antarctic Time Capsule Filled With Primordial Life.
6. Bga Genomics DB.
7. e Gillian Cribbs (1997), *Nature's Superfood: the Blue-Green Algae Revolution*, Newleaf, ISBN 0-7522-0569-2.
8. Marshall Savage (1992, 1994), The Millennial Project: Colonizing the Galaxy in Eight Easy Steps, Little, Brown, ISBN 0-316-77163-5.
9. Fogg, G.E., Stewart, W.D.P., Fay, P. and Walsby, A.E. (1973), *The Blue-green Algae*, Academic Press, London and New York, ISBN 0-12-261650-2.
10. "Architects of the earth's atmosphere", Introduction to the Cyanobacteria, University of California, Berkeley, 3 February 2006.
11. Whitton, B. A., Phylum Cyanophyta (Cyanobacteria), in *The Freshwater Algal Flora of the British Isles*, Cambridge, Cambridge University Press, ISBN 0-521-77051-3.
12. *Pentecost A., Franke U.; Franke (2010). "Photosynthesis and calcification of the stromatolitic freshwater cyanobacterium Rivularia". Eur. J. Phycol, **45**(4): 345–353. doi:10.1080/09670262.2010.492914.*

13. Whitton, B. A. and Potts, M. (Eds) (2000), *The Ecology of Cyanobacteria: their Diversity in Time and Space*, Springer, ISBN 0-7923-4735-8.
14. Whitton, B. A. (Ed) (2012) *Ecology of Cyanobacteria II: Their Diversity in Space and Time* Springer Science & Business Media. ISBN 9789400738553.
15. "From Micro-Algae to Blue Oil", ParisTech Review, December 201-cyanobacterium.org.