



Lecture No.: 24

Date: 29th April, 2020

CORE CONCEPT OF
Group C - Microbiology

HONOUR'S PART 1
Paper - 1

GENERAL ACCOUNT OF CYANOBACTERIA

GENERAL ACCOUNT :

1. This includes a group of highly specialized prokaryotic forms distributed predominantly in freshwater although a few of them are also marine.
2. One of the species namely *Trichodesmium erythraeum* containing red pigment imparts red colour to the water of the red sea.
3. Some can grow in snow and some in hot springs where temperature is as high as 85°C.
4. The genus *Phormidium* can tolerate the freezing temperature.
5. Some of these forms grow symbiotically in the roots of cycads as well as in the thallus of *Anthoceros*.



6. Anabaena azollae is associated with cavities of the Fronds of Azolla.

7. Some of them are however associated with the fungi in the formation of Lichens.

CHARACTERISTIC FEATURES :

1. Typically photosynthetic producing molecular O₂ as by-product.

2. Possess two pigment system P.S.I and P.S.II. No membrane bound chromatophores.

3. Photosynthetic pigments include chlorophyll-a, phycobilioproteins and carotenoids. Phycobiliproteins include Phycocyanin (PC), Allophycocyanin(AP), Allophycocyanin B (APB) and Phycoerythrin (PE).

4. Electron source is water.

5. Respiration is aerobic, when growing photosynthetically. Many of the members not all enzymatically fix and N₂.



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6. Some of the members possess the capacity to move over solid surface by **gliding**.
 7. Presence of **gelatinous sheath** around cell wall.
 8. capacity to change the colour in relation to different wavelengths of light called **Gaidukov phenomenon**.
 9. Many of the filamentous forms possess specialized cells called **heterocysts**.
 10. Sexual reproduction completely absent.

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