Rajan Choudhary

(ALGAE - 10)

# POLYSIPHONIA

Q. Describe the occurrence, structure and reproduction in POLYSIPHONIA ?

Ans :- Systematic Position →

Class - Rhodophyceae
Sub class - Florideae
Order - Cermiales
Family - Rhodomelaceae
Genus - Polysiphonia

## Occurrence and structure of the thallus →

Polysiphonia is a marine red algae which prefers stele water. But some species are epiphyte also like

(A) P. urelate is epiphyte on laminaria
(B) P. varegate is epiphyte on Mangroves root
(C) P. fastigate is semi-parasite on the brown algae

The thallus is brownish red to dark purple red in colour. The plant body is beautiful, delicate, feathry, filamentous branched and is attached with the substratum by holdfast. They are few c.m to several in height. Thallus are of both hetero-trichous and non heterotrichous.

## Study of Heterotrichous thallus →

It consist of two parts →

1. The basal prostrate filament which are creeping over the substratum its peripheral cells which face to the substratum give

rise thick wall, unicellular, elongated rhizoid. Distal end of the rhizoids are flat and irregularly lobed and act as attaching disc which is ~~hard~~ perennial in structure.
2. Up right filament arising from the creeping filaments which bears trichoblast and is found in P. wrecolate, P. nigresons.

## Study of Non heterotrichous species

It consist of upright axis only bearing rhizoids from basal lower cell which functions as holdfast. In other words we can say that the non heterotrichous is a modification of heterotrichous one whose creeping system has been lost as in P. elongata, P. violarea etc.

**Main filament →** The main filaments consist of a system of a parallel filament which vering in number from 4 to 24. These filaments are called "Siphons".

• There is one central siphon and axial siphon surrounded by a number of peripheral siphons. Each cell of the siphons are arranged in a tier and, and to axial central siphons cell may be larger than the peripheral siphons cells. The apex of the filament consist of only central cells.

In P. ~~siphon~~ spiralis it consists of 4 pericentral siphons which run parallel to

the central siphon but they are spirally arranged around it. In some species pericentral cells divides anticlinaly and periclinaly forming several, larger, thick parenchymatous tissue around the central siphons. These tissue are known as pseudocortex cells.

Branching → There are two types of branches arises from the thallus-

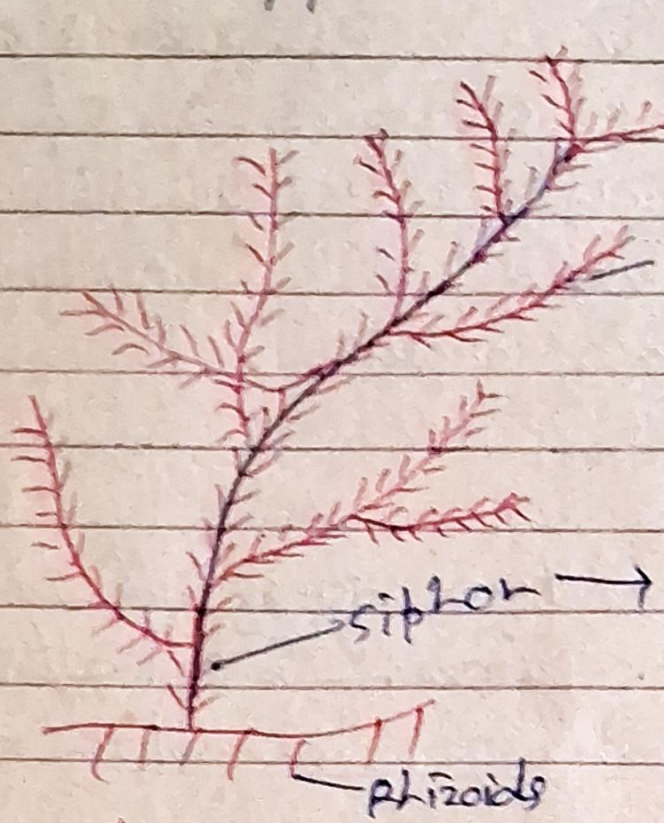
1. Branches of Limited growth or Trichoblast →

It develops from the cells bellow the apical cells which is called trichoblast. Trichoblast is monosiphonous either it consist a single row of cells. After sometimes it forked and give rise dichotomous appearence. It is gradually toppering towards it apex and pit connection are present between its cells. Cells are uninucleate and consist leucoplaste they are spirally arranged around the main axis. They are decidous because they are shed during spring season. They bears sex organs.

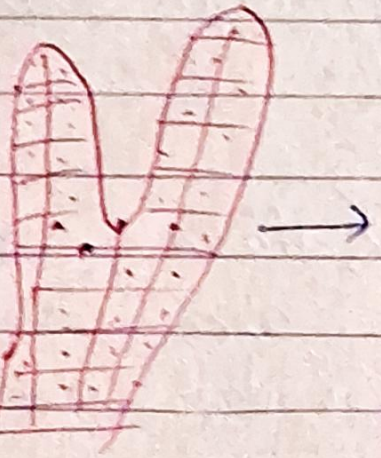
2. Branches of unlimited growth →

They arises from the basal cell of trichoblast. They resembles as main axis in structure but they

appears in the axil of trichoblast.




Habit sketch of Polysiphonia.



Structure of siphon