NOSTOC

Ques. Describe the life history of Nostoc:

Ans- CLASSIFICATION :→

According to Fritch

Class— Myxophyceae

Order → Nostocales

Family → Nostocaceae

Genus — Nostoc

Species → about 23

The ~~plant~~ name was first used by Paracelsus. It is also known as stargelly ~~w~~hiches butter etc.

The plant is commonly found in fresh water pond, pools etc. But it is also found in rice field ~~wet~~ wet rocks, bark (छाल) of tree and endophytic. The plants are found in the form of pear head colony. ~~The filament~~ Each colony consisting large number of twisted (ऐंठा हुआ) tricome. The tricomes are covered by gelatenous sheath. The tricome is made up by large number of cells arranged in beaded manner. The tricome is usually unbranch and surrounded by sheath. All the vegetative cell of tric

are similar in structure which may be spherical or, barrel shaped. In filaments at interval there present some larg colourless empty barrel shaped cells called hetrocyst. They are thicker and larger than the vegetative cells. Hetrocyst may be intercallery or, turminal. Two polar nodules are present in intercallory hetrocyst but single pollar nodules are present in turminal hetrocyst. The hetrocyst found singly or, present in chain.

CELL STRUCTURE :→ The vegatative cells of tricomes are procaryotic in nature consisting following structures :—

① Sheath and cell wall
The cells are surrounded by extracellular mucilage layar external to the cell-wall. Cell wall is made up by cellulose, consisting four layar. Inside the cell wall cell membrane is present

Photosynthetic apparatous :- The protoplast is differenciated in outer pigmented chromoplasm and inner centroplasm there is chl A, B carotein, c phycocyanin and c phycoerethrine is present.

3) NUCLEUS :→ The nucleus is present in the form of incipient. where nuclear membrane and nucleolus is absent.

4) GRANULES :→ Different type of granules as ribosomes, α granules, β granules etc. are present. Beside this vacuoles are absent. But pseudo vacoules are present.

REPRODUCTION :→ In this Plant only vegetative and asexual reproduction is found. where as sexual reproduction is totaly absent the most common methode of reproduction is as follow :—

(1) BY FRAGMENTATION :→ In this process the colony break into two to many fragment b

any. methods. Then each fragments developed into new colony.

2) HARMOGONIA :→ It is most common methods of reproductions the sort segments of living cells is called harmogonia. Each developed by breaks when filaments break into multicellular segments or, from the point of the tetrocyst The harmogonia comes out from the mucilage and developed into new colony.

3) AKINITS :→ This is resting spores which developed by vegetative cells. when the condition is unfavourable these cells surrounded by thick wall and stored resurb food material jenerally in between two tetro-cyst the vegetative cells change into akinits.

4) HETEROCYST :→ These are specialise cells which have thick wall

and homogenous content Sometimes it becomes functionals and during germination the contents divided into two cell then four cell structure, which is called germiling. The parent cell wall ruptured and the germiling developed into new colony.

3-] ENDOSPORES :→ In some species endospores are developed. which germinate into new plant.

Lazaraff (1962) reported two phase in life cycle as thetrocystous phase and sporogenous phase

In the thetrocystous phase the tricome break up at heterocyst to form motyle harmogonid. The terminal cells change into thetero cyst but intercallary cells divide into group of undifferenciated cells which found in chain. Each chain change into new trichome in the presence of lite. In

In sporogenous phase the chain of undifferenciated cell developed into long trichome without heterocyst. But trichome break into fragment and end cells change into heterocyst from the intercallary cells. Spore is developed which change into new trichome.

Fig :→