RIVULARIA

Desribe the occurrence, structure and reproduction of Rivularia?

Systematic Position →

Class - Cyanophyceae
Sub class - Hormogoneae
Order - Rivulariales
Family - Rivulariaceae
Genus - Rivularia

Occurrence & Structure of the Thallus

Rivularia grows in fresh water or aquatic situa usually attached with submerged object such a stones, rocks, stems & leaf of hydrophitic plant etc. Rivularia is a colonial form which may eithe be free floating or submerged. Rivularia aquati is an endophitic algae. Which grow on nitel (Ghose 1919). R. bulatta found on demp soil n river side or in marine habitat. About 6 spe are reported from India.

Each thallus of Rivularia is unbranched & are wholly or partially surrou by gelatinous sheath. Which formed a definat shape of the trichomes. The trichomes have ba heterocyst and akinetes are absent, rare -calary heterocyst are also produced. Each colonial form of Rivularia is either spheric in shape or irregular lobed and yellowish g or brown in colour. Which may be solid or hollow. Each colony bears heavy depotition c calcium carbonate. The several trichomes embe in mucilage sheath are arranged more l less in a row. They are abundant towards

periphery then the center. Where they are loosely arranged. The radially arranged trichomes are straight or slightly curve. So clear distingtion between the base (Heterocyst) and apex (hairy). The apex is very much pointed and usually ends in a long colourless septed hair. which is found in intercalary meristematic zone. Basal heterocys have only one polar nodules. The mucilage sheath can be recognized individually base but at the apex one another facing the distal end. The radiat arrangment of trichome is brought about by repetate productio of Pseudobranches in the basal partion of the trichomes. The filaments are immediatly displace to occupy a radial position are most parallel parents filaments. The trichomes grow in length due to triothallic meristent form in the basal region of the trichomes. Internal cell structure are the same as Nostoc cell.

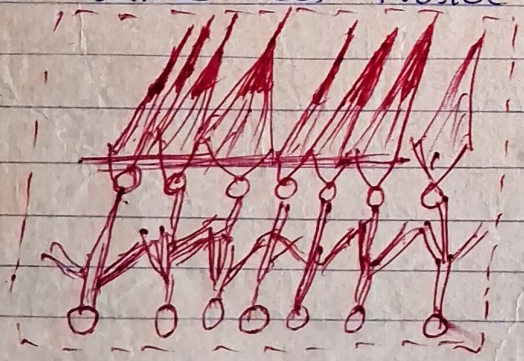
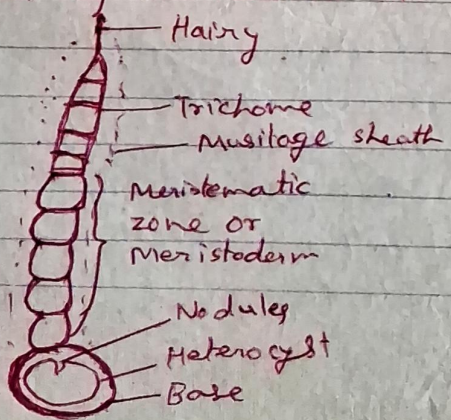


Fig - Thallus of Rivularia in Colony



Reproduction → It reproduces by means of Har-mogonia and Heterocyst method.

Ⓐ By Harmogonia → The trichomes initialy casts off its hair and start Harmogon formation at the meristematic regio and progressing gradually towards base. The Harmogon are delimited due to formation of concave separation disc being physiologically dead. On germination each Harmogon produc a new trichomes and each trichom produce Heterocyst at the basal end and while the terminal end and produce a tapper hair like structure.

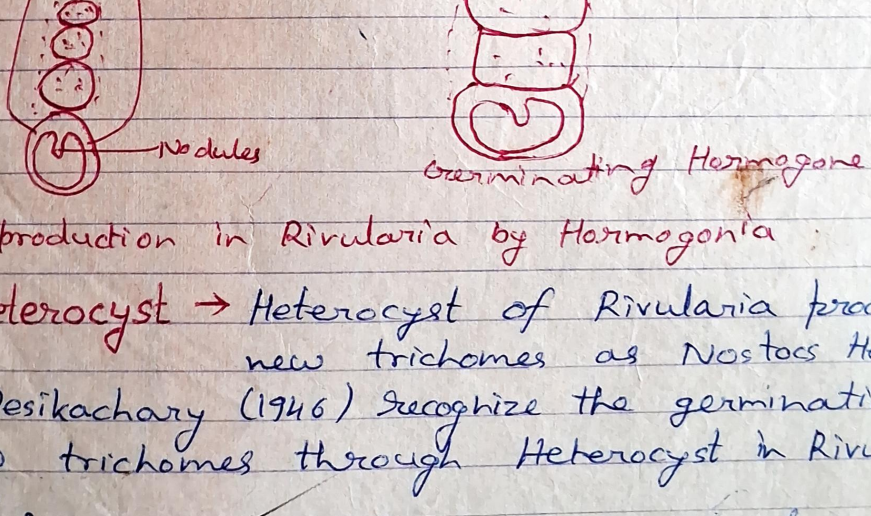


Fig – Reproduction in Rivularia by Harmogonia

Ⓑ By Heterocyst → Heterocyst of Rivularia produ new trichomes as Nostoc Het-cyst. Desikachary (1946) recognize the germinatio of new trichomes through Heterocyst in Rivul mangini.

The heterocyst become functional and germin to form a new trichomes. At first heterocyst divid transversely and form 2 cells. Later on its agai divide ones and forms four cell. That four cell filamentous structure is known as germling. The germling escapes either by the rupture of Heterocyst wall at the apical region or by gradual dissolution of cell wall and each germling divides by Amito method and form a new trichomes of Rivu

© By Akinetes → Out of hormogon and heterocyst in some species reproduction occures through Akinetes also. The cell wall of akinetes is thick and elongated which contains food materials and on the return of suitable condition each akinetes germinates and forms a new trichomes of Rivularia.