

## Structure of Lichen

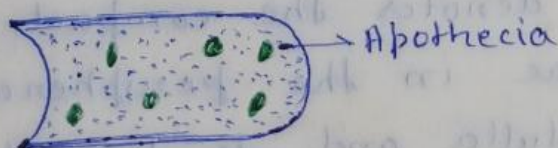
The plant body of a Lichen is thallus having a composite structure consisting of two dissimilar organism - a fungus and an alga - associated in a symbiotic union. Some sps. of lichens are grey or greyish green where as some are yellow, orange, brown or red. The thalli are usually of irregular shape on the basis of external morphology of thalli the lichens are classified into three types.

Crustose or crustaceous :- They form thin crust over the rock, tree bark etc. eg. Graphis, Lecanora, Lecidea, Haematomma etc.

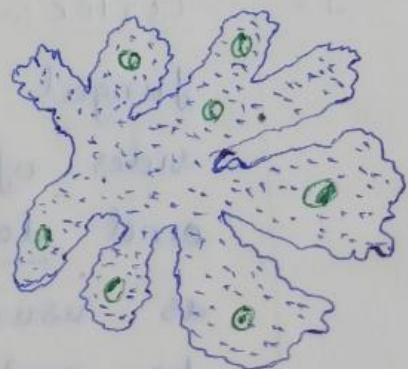
Foliose or foliaceous :- They are dorsiventrally flat leaf like attached to the rocky substrates etc by means of rhizinae on the lower surface eg. Physcia, Parmelia, Xanthoria etc.

Fruticose or filamentous form :-

The thallus of this form, being cylindrical or ribbon like is capiously branched and brush like. It may either be erect (eg. Cladonia, Evernia etc) or pendulous or hanging from tree trunks or leaves eg- Usnea etc.

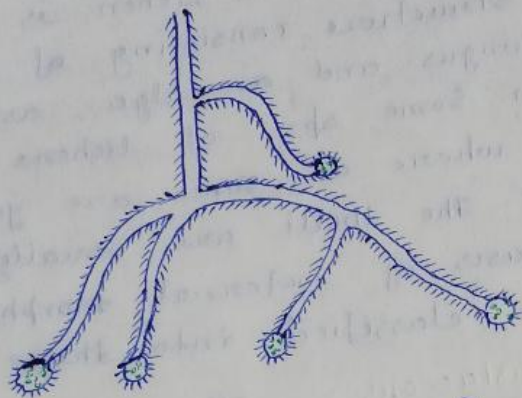


Crustose lichen



Foliose lichen

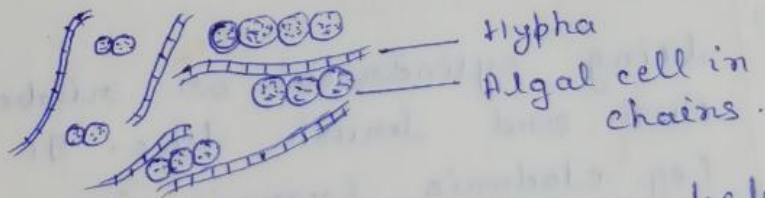




Fruticose lichen.

Internal Structure :- On the basis of internal structure of the thallus the lichens are divided into two groups homiomeric and heteromeric lichens.

Homiomeric :- In the gelatinous lichen thalli e.g. Collema, Leptogium, the thallus shows the simple structure with little differentiation. It consists of a loosely interwoven mass of fungal hyphae with algal cells - blue green alga equally distributed through out.



Heteromeric :- Most of the lichens belong to this category. It shows the following characters -

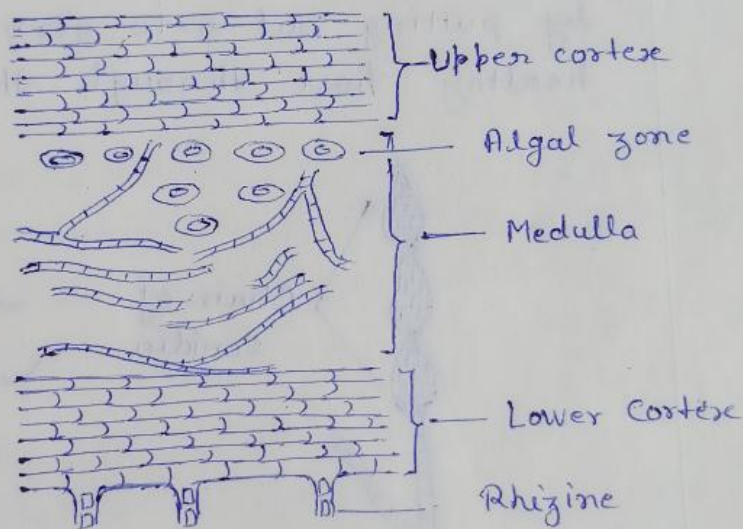
Cortex :- It denotes the compact or interwoven fungal hyphae in the peripheral region on both sides of medulla and is termed upper cortex and lower cortex. The surface of upper cortex is usually 10-15  $\mu$  thick and may or may not be externally covered with epidermis. From the lower cortex arise rhizinae which attaches the



Thallus with substratum.

Algal layer: - It is present just below the upper cortex forming photosynthetic zone of the thallus. This layer is also called gonidial layer. It consists of a tangled network of loosely interwoven hyphae with green or blue green alga.

Medulla: - It occurs nearly in the middle of the thallus beneath the algal zone. It is less compact and consists loosely interwoven hyphae.



### Internal Structure of Lichen

Conidia of Alternaria: - Conidia is the only means of reproduction in Alternaria - a member of Deuteromycetes because it lacks perfect stage or sexual reproduction.

The conidia are produced exogenously at the tips of the ordinary hyphae which are comparatively short and dark coloured. Conidiophore is not recognizable.

The conidia are large, dark, coloured 8-14 or more celled, beaked, measuring

130-300  $\mu$  in length and 10-20  $\mu$  in width. The conidia are <sup>(sterile)</sup> dictyospores because of transverse and vertical partition of the conidia. Usually they are borne end to end in chains of two or three. Occasionally they may occur singly at the tip of hypha. The conidia are dispersed by wind. In case of saprophytic sps, the conidia germinate in the soil and on a land plant in case of parasite. The conidia germinate readily in the presence of moisture and suitable temperatures by putting out 5-10 germ tubes which infect healthy host through the stomata.

