

**Subject- Botany**

**By Dr. Deepti Sharma**

**Class-Bsc-I**

**Paper-II(Diversity of Algae, Lichen and Bryophytes)**

## **Topic-Classification of Lichen**

### **Classification of Lichens**

The systematic position of lichens is a controversial matter because it is a combination of two different members of two different groups.

**Lichens are divided into following categories on the basis of their habitat:**

- 1 . Saxicolous.** Grow on stones or rocks e.g., Dermatocarpon, Xanthoria, Verrucaria, etc.
- 2. Corticolous.** Grow on bark of trees e.g., Grpahis, Usnea, Parmelia etc.
- 3. Terricolous.** Grow on soil (terrestrial) e.g., Cladonia florekeana, Lecidea, Collema etc.
- 4. Lignicolous.** Grow directly on wood e.g., Calicicum etc.
- 5. Marine.** Grow on siliceous rocky shores of sea e.g., Caloplaca, Verrucaria etc.
- 6. Freshwater.** Grow on hard siliceous rocks in freshwater e.g., Epheba, Hymenelia etc.

**Zahlbruckner (1907, 1926) divided the lichens into following 3 sub-classes on the basis of their fungal partner:**

**(A) Ascolichens.** Fungus belongs to Ascomycetes

**It is further divided into two series depending on the fruiting body:**

**Series 1. Gymnocarpeae.** Fruiting body is an apothecium i.e., in the form of a more or less open disc, e.g., Parmelia.

**Series 2. Pyrenocarpeae.** Fruiting body is perithecium i.e., a closed structure e.g., Dermatocarpon.

**(B) Basidiolichens.** Fungus belongs to Basidiomycetes.

There are only 3 genera which belong to Basidiolichens. These are: Cora, Corella, Dictyonema .

**(C) Hymenolichens.** Fungus belongs to Deuteromycetes lichens are also known as imperfect lichens.

**On the basis of growth forms, and nature of attachment to the substratum lichens are divided into following three types:**

**(1) Crustose lichens (encrusting lichens)**

These lichens occur as thin or thick crust over rocks, soil or tree barks. It is very difficult to separate them from substratum. The thalli may be wholly or partially embedded so that only fruiting bodies are visible above the surface of the substratum e.g., Lecanora, Graphis, Rhizocarpon, Ochrolechia etc.

**(2) Foliose lichens (leafy lichens)**

These lichens are variously lobed, leafy structures attached to the substratum by rhizoid like outgrowth called the rhizines e.g., Xanthoria, Parmelia, Physcia, Anaptychia etc.

**(3) Fruticose lichens (Shrubby lichens)**

These are the upright or hanging lichens (pendant forms) attached only at the base by a flat disc. These are cylindrical, flat or ribbon like, well branched and resemble with little shrubs e.g., Cladonia, Usnea, Alectoria etc.

A fourth type of lichen called leprose has also been differentiated. It has some fungal hyphae surrounding one or more algal cells. A distinct fungal layer envelops the algal cells all over. It appears as a powdery mass over the substratum e.g., *Leparia incana* .

**On the basis of internal structure the lichens are divided into two groups:**

(A) Heteromerous lichens

(B) Homoimerous lichens.