

# LICHENS

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Our reindeer moss (*Cladonia Rangiferina*) is not as one would think a moss, but belongs to the Genus Lichenes. A Lichen on microscopic examination shows us some thing very interesting in the fact that it is not a single species but an intense cohabitation of two species, a certain alga and a certain



Vertical cut of  
*Cladonia*  
A. Algae cells  
B. Fungi fibres



Single algae cell  
A. Algae cell  
B. Fungus fibre  
C. Fungus cells

fungus. The latter belonging mostly to the Ascomyceten. Sometimes the Basidiomyceten but never the Phycomyceten. The alga, on the other hand, belongs either to the Schizophyta or Chlorophyta of unicellular of fibre form.

The substantive form of alga and fungus is based on an exchange of nutritious matter. The alga, which incidentally, can be of a green or yellow colour, provides the fungus with organic nutrition, while in return the fungus provides the alga with water and mineral saline particles. By low magnification it seems that the alga is merely established among the fungus fibres, but a higher magnification shows us that most of the time the alga forms a certain distinct layer in this fibre tissue, while the fungus forms a

distinctive epidermis. This cohabitation of alga-fungus denies each other its natural living, for we know that fungi are light shunning species. In presence of the alga, however, the fungus grows towards light and well over a large area. The alga, which forms the largest part of the organic substance of a lichen, is responsible for the species as a whole. In this cohabitation, the **alga cells** fulfill the same function as the **chlorophyl** in higher plants, assimilating carbonic acid out the air and giving the obtained matter to the whole organism. For this they need light and so we will find a variety of forms by Lichens which enables this important receiving of light. Some of the Lichen algae are fully able to live separate from the fungus, the Lichen fungi, however depend on these algae. Within the Lichen the alga propagates itself by asexual means of cell separation, the fungi is able to propagate itself by means of ascospores or basidiospores. The propagation of a Lichen as a whole is by means of numerous small round objects, each consisting of a few algae cells and closely surrounded by fungus fibres. Wind assists in transporting these small objects and where ever they may land, a new Lichen is established.

The habitat of Lichens is, generally speaking, poor soil, rock formation or on tree bark. Here we will find another amazing fact of this cohabitation of alga and fungus, it enables a Lichen to exist under very dry condition. Fungi and algae need adequate moisture for existence, united, however, within a Lichen, they help each other in obtaining organic and mineral nutrition, which enables certain Lichens to grow on these rock surfaces.

So we might see these marvelous Lichens improve the soil by slow decomposing of rock, paving the way for other plants to take root. There are more than 15,000 known species of Lichens scattered throughout the temperate zone and high mountains in the tropics.