

LICHENISED BASIDIOMYCETES (Basidiolichens or Mushroom Lichens)

Lichens may be considered to be stable, self-sustaining organisms formed from the symbiotic association of a fungus, (the mycobiont), and an alga, (the photobiont). In a small number of lichens, a third organism, a cyanobacterium, that is a prokaryotic bacterium, is present that contains chlorophyll and fixes carbon and may also fix nitrogen in transparent large cells called heterocysts.

The majority of mycobionts (about 13 500) are Ascomycetes, while only a few Dueteromycetes or Fungi Imperfecti are lichenised. Very few of the lichenised fungi have been found as free-living forms; most appear to be unable to survive and reproduce in the absence of the symbiotic partner, that is, they are obligate symbionts.

Only a small number of the Basidiomycetes are lichenised, that is, they have a basidiomycete as the mycobiont and produce fruiting bodies similar to other mushrooms but develop from mats of algae that appear to be granule-like or small scales. Common and widespread, always associated with algae, especially on damp, acidic soil, heathland and beside bogs, on soil, rotting wood, among mosses or other lichens. It has been estimated that there are about 50 basidiolichens and their distribution is world-wide. The gilled fruiting bodies of the basidiolichens *Omphalina umbellifera* (syn. *Lichenomphalia umbellifera*) and *O. chromacea* are commonly found in the moist shady habitats of the cooler southern areas of Australia. Basidiolichen *Multiclavula mucinda* and *M. vernalis* have been reported from Tasmania.



Omphalina umbellifera (syn. *Lichenomphalia umbellifera*).

Denmark, West. Aust. 2003

Mallacoota N.S.W 2006

Photos: - J.A. Gover

Omphalina spp. incorporates cells of a green alga within their tissues. These cells are found throughout the fruiting body but are concentrated in the cortical region of the sterile base, though not in sufficient numbers to give the fruiting body a greenish tinge.



Tasmanian basidiolichens

Multiclavula vernalis

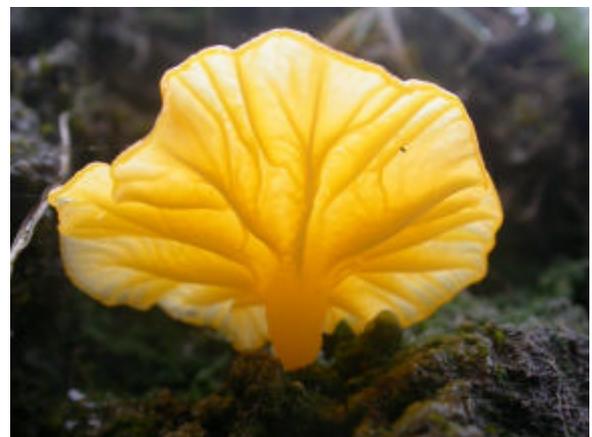
Multiclavula mucinda

Dictyonema glabratum (also known as *Cora pavonica*) is a lichen that is relatively common in the neotropics. Found at higher altitudes on the mossy branches of shrubs growing in nutrient-poor soils.



Dictyonema glabratum

The top surface of *D.glabratum* may be very green in fresh and young specimens, but the colour fades with age.



European Basidiolichen
Lichenomphalia alpina