

Fungi and Lichens

Parmeliaceae



Agaricus disseminatus



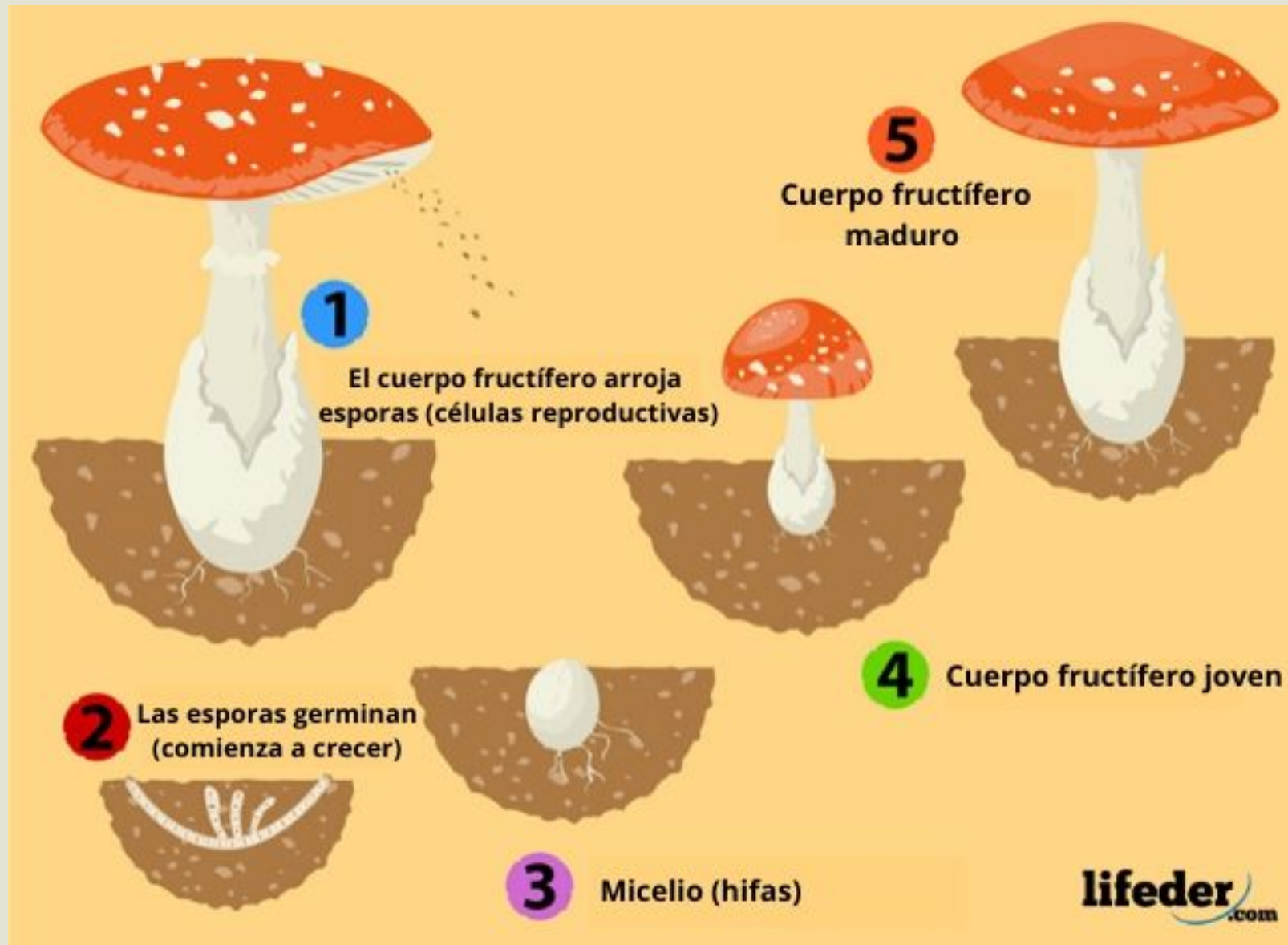
General characteristics of fungi

KINGDOM FUNGI

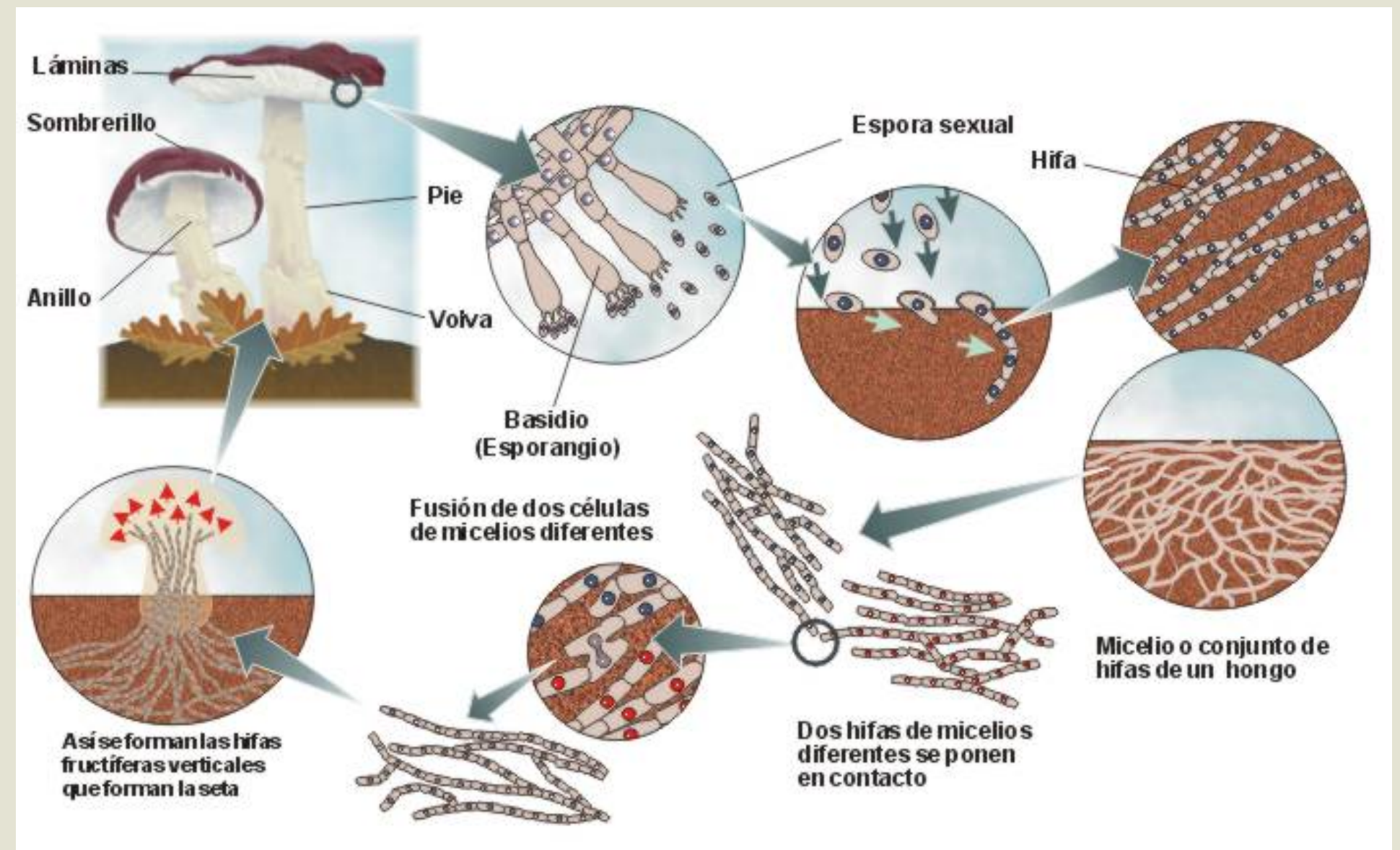
Unicellular and multicellular organisms

- Composed of a body (mycelium) interwoven by thread-like filaments (hyphae).
- Chitin
- Fruiting body = mushrooms.
- They get their nutrients from other organisms,
- Spread by spores.
- Sexual and asexual reproduction.
 - Asexually. Spore is deposited in a favorable place and clones identical to the original mycelium will be produced.
 - Sexually (under conditions of stress or environmental change). When a filament of one mycelium comes into contact with a filament of another mycelium.

Asexual reproduction



Sexual reproduction



In some fungi, such as bread mold, asexual reproduction alternates with sexual reproduction. This is called alternate play..

Main 5 groups

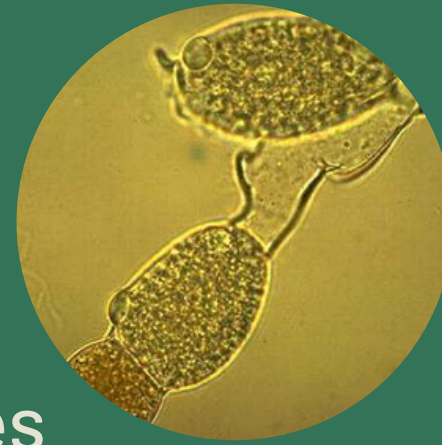
Glomeromycota (glomeromycetes)

- Associated with plant roots, hyphae form structures within the cell (mycorrhizae).
- They offer benefits to plants.
- Asexual reproduction = produce spores by mitosis at the tips of hyphae outside the plant host cell, and when germinated, the hyphae grow into the surrounding soil, but only survive if they reach a root.



Chytridiomycota (chytrids)

- They live in the water.
- They produce swimming spores (which are propelled in the water with a flagellum).
- They feed on dead aquatic plants or debris.
- Some are parasites.



Zygomycota (zigomycetes)

- They live in soil, in degrading plant or animal material.



Agaricus dissminatus



Main 5 groups

Basidiomycota

(basidiomycetes or fungi with club-shaped basidia)

- They produce club-shaped reproductive structures.
- sexual reproduction
- fruiting bodies
- Mushrooms
- Basidiospores are dispersed by wind and water.

Ascomycota

(ascomycetes or sac fungi)

- Sexual and asexual reproduction
- Fruiting bodies called morels
- Molds that attack stored food



Coenogonium sp.

General characteristics of lichens

What are lichens?

Lichens can be defined as the association of a fungus and an algae, but recent studies have shown that there are more associated organisms:

main fungus + green algae and/or cyanobacteria + yeast + bacteria + lichen-like fungi (specialized fungi to associate with lichens).

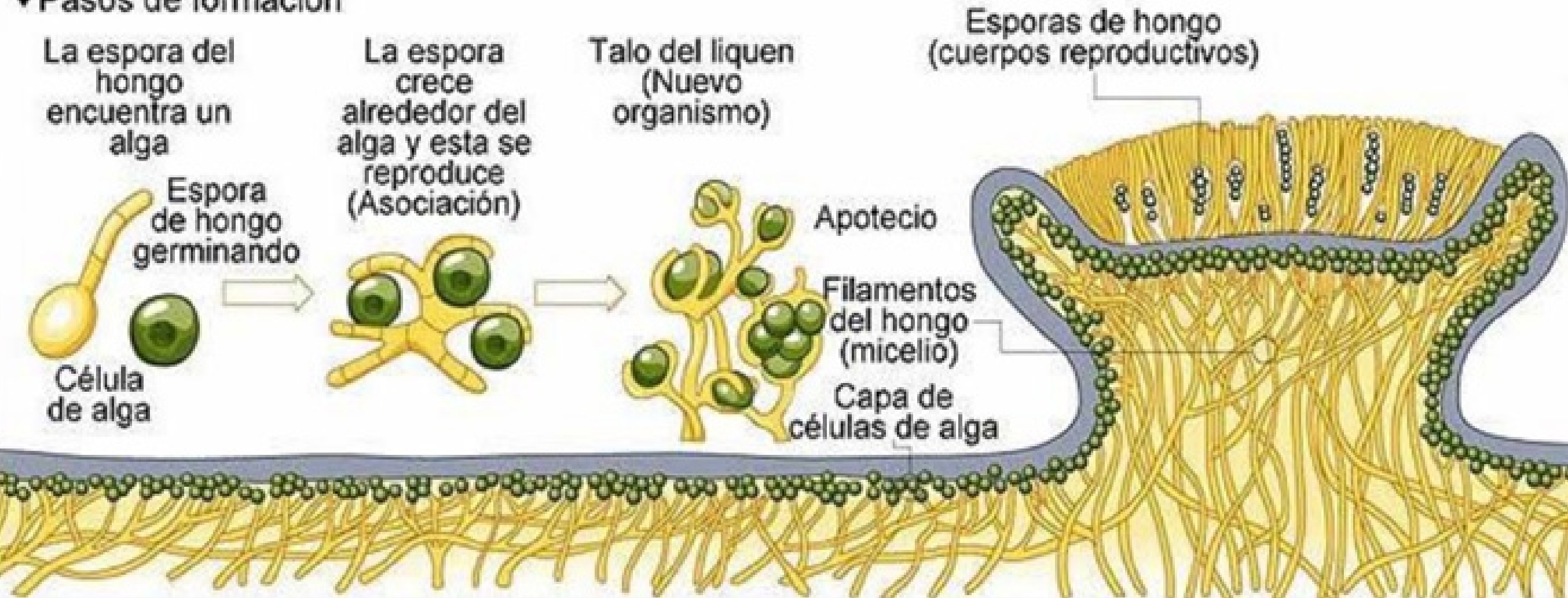
Lichen = scab.

- They attach themselves to a surface (they are not parasites) and absorb their nutrients from the air. They can be indicators of air quality.
- They lack a permeable membrane, facilitating the absorption of water (they can enter dormant states).
- They cover 8% of the earth's surface and inhabit all types of substrates (natural and artificial).
- They are slow growing between 3mm to 5-7cm per year.

Partes de un líquen

Cuando un hongo y un alga se asocian forman el talo de un líquen. Las esporas se generan en los receptáculos, que cuando tienen forma de copa se llaman Apotecios

▼ Pasos de formación



Clasificación

- There are between 18,000 and 20,000 species
- They are taxonomically classified within the fungi. The Ascomycetes are the most common and within these the following genera: Parmelia, Parmotrema, Parmelina, Cladonia, Usnea, among others. The most common algae are from the genera Trentepohlia, Trebouxia and Nostoc, while the genera Gloeocapsa and Calothrix are cyanobacteria.

Due to its morphology:

- Crustaceans
- Foliaceous
- Aquamulous
- fruitful
- Filamentous
- Gelatinous
- Mixed.

Substrate in which they grow:

- Corticultural (on tree bark)
- Folícolas (on leaves)
- Muscícolas (on bryophytes)
- Saxicolae (on rocks)
- Earthlings (above ground).

Ecosystem services

- They serve as food for other species.
- They reintegrate nutrients into the soil.
- They fix CO₂ (algae carry out photosynthesis).
- Indicators of air quality and ecosystem continuity (due to its slow growth)



Herpothallon rubrocinctum

THANKS FOR YOUR ATTENTION