

Those Likable Lichens



- ✿ Three major types:
 - **crustose**..... flat, crust-like, looks like paint
 - **foliose**..... flaky, leaf-like
 - **fruticose**..... branched, stalk-like (Old Man's Beard)
- ✿ composed of algae and fungus in symbiotic relationship; fungus provides base/structure and algae brings in nutrients for both; a new organism not identifiable in separate parts; algae cannot live independently of fungi
- ✿ 20,000 known species, many more subspecies
- ✿ can't tell most species within a type apart without examining them under a microscope
- ✿ dominant vegetation on 8% of earth's surface
- ✿ fungus plays dominant role in appearance
- ✿ can go dormant for 2-3 years when lack of moisture
- ✿ grow slowly because only photosynthesize at 40-60% of their dry weight
- ✿ 50% of all lichen species have antibiotic properties
- ✿ break down rock and help build soil
- ✿ useful bioindicators of air pollution because sensitive to sulfur dioxide and chlorine
- ✿ produce 500 unique compounds that control light exposure, repel herbivores (also beneficial for host plant), kill microbes, discourage competition from plants
- ✿ traditionally (and presently) used in breads, jellies, as tea, soup, dye for cloth, medicines

LICHEN REPRODUCTION

Lichens have asexual reproductive structures

- ✿ foliose (flake-like) and fruticose (stalky) lichens have tiny cylindrical outgrowths on their outer surfaces that contain symbionts (algal and fungal) which are readily detached and dispersed by wind to new sites
- ✿ crustose (crust-like) lichens have discrete flat structures consisting of a few algal cells surrounded by fungal hyphae (often appear as small green powdery masses and feel like powder on the lichen surface) that are dispersed into the air by splashing of rain drops on the surface

A story to remember...

Alice Algae and Freddie Fungus were both young and out on their own for the first time, but both were finding that living by themselves was quite a task and left them little time for enjoyment or relaxation.

So Alice Algae suggested that they try being roommates for a while and sharing duties to see if that would give each of them a little more free time.

Freddie Fungus liked the idea and agreed. He said he'd take care of providing the house and maintaining it so they'd have a safe place to stay.

Alice Algae said that if Freddie would do that, she'd take care of getting food and making sure that they were well-fed and didn't lack any nutrients.

And that arrangement worked so well that they got to **lichen** each other!

