

# Likin' Lichens

**D**id you know that West Virginia has about 275 species of lichens? Don Flenniken, a specialist who studies lichens, wrote a book under the Wildlife Diversity Program's Research and Cooperative Projects Grants Program in which he compiled a list of lichen species known from the Mountain State.

Lichens are special for several reasons including their life history and importance in ecology. Even though we talk about different "species" of lichens, each species is really a combination of two different organisms, one a fungus and the other an alga. In the lab, scientists can separate the lichen into the fungal and algal components, and grow them independently for at least a short time. In the wild, however, if the fungal part of the lichen does not find the proper alga to partially parasitize, it will die. For many years, no one could combine the fungal component with the algal component in a laboratory and induce them to grow into a lichen. Then, by chance, a lab technician left a heat lamp on over a long weekend, and upon return discovered that the fungal

component had parasitized the algal component in the dry environment and produced a lichen!

Lichens are among the first species to colonize a new area. They can grow directly on bare rock without any soil. Lichens can actually begin to make soil by secreting acids that break down rock. They also trap dust which helps form more soil and allows other species like mosses to move in.

In West Virginia, they may often be the only species seen in some of the harshest sites, such as exposed rocks on mountain summits. One species, called rock tripe, is a lichen common to these areas. Rock tripe is an edible, but not necessary palatable, lichen. It's basically tasteless and gritty! You should be



Mountain lichen (*Dimelaena oriena*)

Gary Fleming



Rock tripe (*Umbilicaria muhlenbergii*)

Craig Stihler



Lung lichen (*Lobaria pulmonaria*)

Brian Streets



Shield lichens on quartzitic rock on Panther Knob

Brian Streets

careful about eating it. There are three different species of this genus of lichen, and there are two other genera that look similar. It's always best to know exactly what species you attempt to eat.

If you want to identify lichens you'll need a book and, unfortunately, most books are not designed for amateur naturalists. The definitions of the lichen structures in these books make most of us pull our hair out in frustration. So how do you start learning the lichens? First start a collection, noting where you found each specimen and on what surface it was growing. The most notable substrates will be rock, wood, or just on the ground. Once you have a small collection, look at how each may be different. Flenniken's book has details about successful collecting.

In the north, reindeer and caribou survive by eating lichens. Humans eat lichens, too. Iceland moss, a lichen, is considered a delicacy. Lichens are also used for dyeing materials like wool, used in creating the famous "Harris tweeds," and one species serves as the source of the dye for litmus paper. This paper, when dipped in a liquid, allows people to quickly tell whether that liquid is acidic or basic.

Lichens are important as indicators of air pollution. Many lichens are



Star reindeer lichen (*Cladina stellaris*)

Craig Stihler



British soldier lichen (*Cladonia cristatella*)

DNR photo

very sensitive to air pollution and die out in areas of high concentration of sulphur dioxide or heavy metal pollutants. California alone has lost almost half of the crustose lichen species that were observed in the state 100 years ago. Because so few people in West Virginia have collected and identified lichens, we may never know what we have lost already, but we can at least learn what 'species' of lichens are part of the Mountain State's natural heritage.

Reprinted with minor revisions from *West Virginia Nongame Wildlife & Natural Heritage NEWS* by Dean Walton. Edited by P. J. Harmon



Cup lichen (*Cladonia chlorophaea*)

Craig Stihler