

## Will Lichens Kill My Trees?

By Susan Camp

During a recent home visit to inspect some declining shrubs, a homeowner showed me some frilly, pale-green growths on the trunk and limbs of a dwarf Japanese maple. “Is this some kind of fungus I should spray?” the homeowner asked. The answer to that question was easy, as was the identification of the pretty growths. No, they should not be sprayed; they are not fungi, but unusual organisms called lichens.

I find lichens beautiful, the intricate whorls, the crispy edges, the soft blue-gray-green color of many species, but what are lichens? Are they parasites? Will they kill trees and shrubs? Do they have a purpose or a message for us?

Lichens are complex structures. Each lichen is composed of two living organisms, a fungus and a green alga or cyanobacterium sometimes referred to as blue-green alga. The two organisms survive in a symbiotic relationship in which each one contributes to and derives benefits from existing with the other. The fungus provides the physical structure of the lichen, but lacks chlorophyll and cannot create energy from sunlight to make food through the process of photosynthesis. The alga or cyanobacterium component of the relationship can photosynthesize and provide food for the fungus, and in turn, the fungus can retain water and help prevent the alga from drying out.

People sometimes confuse lichens with mosses. Mosses are primitive green plants frequently found growing in the same areas as lichens. They are not part of the fungus-alga relationship, but do contribute to the lichen life-cycle because of their ability to retain water.

At least 3600 species of lichens have been identified, although thousands more exist worldwide. Found on trees, rocks, and wooden structures like barns and fences, lichens vary in shape, color, and composition. Some are breathtakingly beautiful and provide arresting subjects for nature photographers. Lichen colors range from ghostly white to pale blue-green to bright yellow and orange-red.

Lichens themselves are harmless to trees, shrubs, and rocks, but some property owners find their appearance alarming or aesthetically unattractive. Most lichens are found on the trunks and

branches of mature, slow-growing trees like oaks. They are also found on trees in decline from some other cause or combination of causes: too much or too little water, poor drainage, lack of nutrients, weather or mechanical damage, soil compaction, disease, or insect infestation. Since the dominant components of lichens are fungi, the development of lichens on wood siding and fences can be an indication of wood rot.

If you discover fungal fruiting bodies or mushrooms on the trunk of a tree, it is an indication of rot and you should notify a certified arborist for treatment or removal.

Lichens are sensitive to air pollutants and absorb toxic chemicals like carbon, sulfur, and heavy metals from the atmosphere. Scientists can extract the toxins in order to identify specific pollutants in a geographical region. The presence of lichens in an area is considered an indicator of good air quality.

Deer, birds, and insects consume lichens. Some insects camouflage themselves in lichen structures, and birds gather bits of lichen material for their nests. Lichens are a source of natural dyes and are gathered and processed by craftsmen and artisans to create attractive colors. Some species of lichens are used in the manufacture of medications and cosmetic products.

Find detailed information in the University of Maryland Extension publication “Lichen, Algae, and Moss on Trees”; the University of Georgia Extension publication “Lichens and What They Mean for Your Trees”; and Clemson University Extension HGIC entry “Gardening Myths: Lichens Kill Trees.” Read the USDA Forest Service article “Lichens” at <http://www.fs.fed.us/wildflowers/beauty/lichens/> for facts about these interesting life forms. The attached Photo Gallery contains stunning pictures of many species of lichens.

It isn't necessary to identify lichens or learn their scientific names. Enjoy the beauty of their varied shapes, textures, and colors, and recognize their presence as sentinels that can inform you of the health of your trees and improve the air quality in your region.

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