

All About Galls

By Sally Cureton

Have you ever looked at a leaf or twig and wondered what that little bump was on it? It is called a gall. A gall is an abnormal growth on the plant produced in reaction to an invasion of the plant tissue by another organism. There are 5 major gall-causers: bacteria, fungi, nematoda, acarina and insects. The gall-causers do not destroy the plant, but slowly use its nutrients - as a parasite. The gall is made up entirely of the host plant's tissues. It is reacting to the parasite by increasing the number of plant cells or enlarging the cell's size. These gall tissues form a bubble around the gall-causer to separate the parasite from the rest of the plant. So the gall is the plant's way of protecting itself from an intruder. Galls can occur on leaves, bark, flowers, buds, acorns or roots. Generally the most noticeable ones are on leaves and twigs.

Once the gall is created the gall-causers have a home with food, shelter and a place to breed. They can live in a microclimate protected from wind, storms, temperature extremes and pesticides. The inner wall of the gall is protein rich providing plenty of food. Unfortunately the plants do not benefit in an equal manner - but in most cases they are not harmed either. If too many gall-causers were to infect one plant, it would suffer. In addition, if there are too many galls on one plant, research has shown that the number of parasitic offspring is decreased. So it benefits both parasite and plant to have a limited number on each plant. Scientists have found that after a certain number of galls occur on a plant, it is very unusual to see more galls being created.

With an amazing variety of galls, it is often easier to identify an insect by the gall it has formed, than to find the insect itself. One of the many that are found in this area is a grape-size gall found on a Black Oak leaf. It is called a Roly Poly Gall (love that name), and is a hollow gall caused by a wasp. Another one found locally is the Poplar Petiole gall found on Cottonwood trees. It is caused by an aphid. The aphids over winter as eggs on the leafless twigs. When they hatch in the spring the nymphs feed on the leaves. Galls form and the aphids move inside. After two weeks the females bear live young that mature into winged females. These females leave the tree to find plants in the mustard family. In the fall additional winged forms appear on the mustards. These then fly back to the cottonwoods where more eggs are laid and the life cycle begins all over the next spring.

Here we also have a Dogwood Club gall at the end of a twig of Flowering Dogwood. These galls are created by a gnat called a Dogwood Club gall midge which is about one-sixteenth of an inch long. Additionally there is

the Horned Oak gall found on a Black Oak tree caused by the horned oak gall wasp, and the Wool-Sower gall, a fuzzy ball on a White Oak twig caused by a cynipid wasp. There are many such innovative structures in nature that are difficult to see at first glance. Sometimes a slow walk in the woods is the best kind. If you take one today, you won't be disappointed.