

Bug of the Month by Jim Revell

"Insect Hideouts: Galls"

This month's topic came about from an article I recently read written by Helen Hendrickson published in *Back Home – Your Hands-on Guide to Sustainable Living*. As most of you know, anything to do with insects spurs my interest! Ms. Hendrickson's article was informative and fun to read. It also got my curiosity up, and I've been scouting to see if I could find any galls on my trees or shrubs. Regrettably, to date, I haven't found any. In my study on galls, however, I have found some interesting notes on those caused by insects. *But, what is a gall you might ask?*

It is an abnormal swelling or growth of plant tissue caused by powerful growth-regulating chemicals reacting with plant hormones. These abnormal growths are induced by insects and other organisms. Several species of insects (there are more than 2,000 gall-causing insects in the U.S.), mites, nematodes, fungi, bacteria and viruses are known to cause gall formation.

Galls are usually found on leaves and stems, but may occur on flowers, fruits, twigs, branches, trunks and roots. The relationship between the gall-making organism and host plant is usually quite specific. This, then, produces galls of specific size, shape and color, which leads to useful identification of the culprit.

Some terms used to reflect the appearance of galls are blister, bud, bullet, pouch, roly-poly, and rosette, along with flower, fruit, leaf, leaf spots, oak apples, root, stem and twig galls.

Insect galls develop in three phases:

- (1) Initial irritation where plant reacts to specific stimuli (colonization, egg-laying or feeding) by the gall maker.
- (2) Once stimulated, the plant begins producing tissue to surround the cause (egg or immature insect or mite). As the insect/mite and gall grow, they use nutrients from the host plant. Inside the gall, it may be individual chambers or a communal affair, depending on species of insect.
- (3) At maturity, the gall ceases to use nutrients from the host, providing protection for the insects or mites while allowing a ready food source.

Gall-making insects are generally not thought of as pests. Their handiwork is even considered attractive, artistic, and used in crafts and flower arrangements.

Listed below are some galls you may see in our area:

HOST PLANT	TYPES OF GALLS	INSECT / MITE
Apple	Gall on roots and twigs	Woolly Apple Aphid
Elm	Bladder or finger-type leaf gall	Midge
Grape	Galls on roots	Grape phylloxera
	Blister, nipple, petiole, bud gall and others	Pachypsylla spp.
Hickory	Leaves, petioles, twigs	Phylloxera spp.
Dogwood	Small twigs	Midge
Norway Spruce/		
Colorado Blue	Base of new shoots	Adelgid
Maples	Bladder galls	Mites
Walnut	Blister galls	Mites
Oaks	Oak button gall	Wasp
	Oak Spangles gall	"
	Horned oak gall	"
	Gouty oak gall	"
Witchhazel	Leaf gall	Aphid
Poplar	Pocket galls	Aphid



Woolly Apple Aphid galls on root system
wsu.edu



Gall caused by spruce gall midge
msu.edu



Leaf galls caused by Grape phylloxera
extension.org



Eastern spruce gall adelgid
uwex.edu



Mature horned oak galls caused by gall wasps
ufl.edu



Dogwood club-gall midge
Clemson.edu

References:

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Back Home – Your Hands-on Guide to Sustainable Living, Jan/Feb 2014; www.BackHomeMagazine.com

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Read more of his articles on the “Jims Bugs” page @ www.BedfordMasterGardeners.org