

# Nature Week at Heritage Village - July 12th

## Attacks on leaves

Spots and growths on our maple leaves mar their beauty but apparently not their health. The leaves are just providing housing for tiny creatures that share our world. Mites and flies have been gnawing on the cells of these leaves. They inject hormones with their saliva causing the abnormal growth. The plant responds by producing oddly shaped cells containing a housing chamber for the chewer in which it lives, eats, and lays its eggs. These growths are called galls. They protect the animal from predators, provide a source of food, and provide a shelter from the elements.

### Crimson velvet erineum gall

This attractive red-velvet gall is produced by a microscopic mite. The mite is tiny and worm-like. To understand how tiny, think of the width of two hairs together, that is how long this mite is. These yellowish mites are the size and shape of eyebrow mites, the mites that live at the base of our eyebrow hairs.



*Mites are more closely related to spiders and ticks than insects. They are the most common organisms in nature.*

Even though these mites are poor crawlers they do get around. They are so small that they are dispersed by wind or hitch rides on insects or humans.

Maple spindle gall and maple bladder gall are caused by different species of mites whose saliva contains different hormones resulting in different growth patterns on the leaves.

Female mites overwinter in the maple tree bark. In the spring they move to a new leaf bud where they bite the underside of the developing leaf. As the leaf grows it develops a pustule-like chamber containing red fluid under which the mite lives and reproduces during the summer. Some adult females emerge in mid-July and search for their next overwintering site. The remaining offspring mate and reproduce as long as they can find new emerging leaves to bite.



Maple bladder gall

*Scientists only know generalities about these mites. Mites are also responsible for the lumps and bumps on leaves of other tree species.*

### A fly did it - maple eye-spot gall

This gall is caused by a small fly that lays its eggs in the under-surface of leaves. The maggot that hatches from the egg attaches itself to the leaf with its mouth-parts and develops quickly, producing a growth regulating-hormone which causes the development of bright red and yellow rings around the gall, usually in June. The 1/4" diameter area later turns brown, like the leaves I found. The maggot inside the gall completes its development in about 10 days. It then drops to the ground to pupate in the soil. In the spring it transforms into the adult.



*An under-leaf puncture hole verifies that this is fly damage and not fungal growth, which can look similar.*



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