Insect Nurseries
By Judy White

When hiking in the canyon in the fall and winter, you may not give thought to the fact that there are insect nurseries around you quietly waiting for spring. You likely know to look for butterfly chrysalises which might be attached to twigs. Other kinds of insects protect their eggs and larvae over the winter, leaving them less vulnerable, until they are ready to hatch and brave the dangers awaiting them as new adults.

Some insect larvae burrow into the soil to wait for the right conditions next spring to emerge in their adult form. That makes them hard to observe. But other insects choose more obvious sites for their eggs or larvae to overwinter, in ways that still protect them and even nourish their larvae.

Those holes you see in some trees may not be woodpecker acorn sites. A female beetle deposits eggs into a crack or small hole in the dead part of a tree. They prefer dead wood because it doesn't have the sticky sap or chemicals of live wood which might repel or kill the larvae. The eggs hatch a few weeks after being deposited, and the larvae, depending on the species, chew away at the dead cellulose for months or even years, before becoming an adult and chewing a larger hole through which to escape their cozy home.

Female Twig Girdler beetles actually create dead wood for their grubs to eat. Look for a gnawed band around a twig where a beetle has "girdled" it, cutting off nutrients to the outer end of the twig, which causes it to die. Eggs are laid in the end that will die, and when grubs hatch from the eggs, the twig will have died (and likely fallen off the tree or bush), providing tasty sustenance until the larvae turn into adults in the spring. Look for the girdled twigs on mesquite in the lower canyon.

Ever notice the odd swollen sections of twigs on plants and trees, or the small lumps attached to oak leaves? These are galls, small homes that tiny gall wasps "hijack" a plant into making for their eggs. Females, using their ovipositor, pierce a leaf or twig and deposit an egg, at the same time depositing a secretion with chemicals that cause the plant to react and create an abnormal growth around the egg. The egg hatches inside and the larva continues secreting compounds from its saliva, causing the plant to continue creating a very nice home for the larva that is also packed with nutrients. After transforming into an adult wasp, it chews a tiny hole through the wall and exits, leaving the gall behind. Galls come in lots of forms and sizes, making it fun to be on the lookout for them on bushes and trees.

Praying Mantis egg cases may be familiar to many people. While they provide protection for the eggs, the case doesn't provide nourishment. Mantises are carnivores, and when the tiny nymphs are ready to face the world, they emerge and start looking for small insects like aphids or tiny flies to eat. They may even turn to cannibalism against their own siblings if they don't find enough other prey!

And finally, an unusual place to look for an example of insect nurseries in Madera Canyon would be on the back side of some benches on the Proctor Loop - old boards with holes made by Carpenter Bees. When the Friends replaced weathered boards on the benches, some old boards were saved, partly for the bees, and partly for Docents to show and talk about them to

visitors. A female bee chews a deep hole in dead wood, and then gathers nectar and pollen to create a ball of nutrients (sometimes called "bee bread") into which she lays a single egg. After partitioning off that pollen ball with a chewed sawdust wall, the process is repeated for as many as the hole will accommodate. The larvae that hatch from the eggs eat the "bee bread" while they grow until time to pupate and become an adult bee. The holes on the Canyon benches have likely been abandoned, however.

These are just some of the more obvious "nurseries" to look for. Everywhere during the fall and winter throughout the Canyon there are myriad immature insects tucked away, waiting for temperature, rainfall and other climatic conditions to give them the signal that it's time to emerge as adults.



Long Horn Beetle Holes



Bee Board



Cut bark from a Twig Girdler beetle



Praying Mantis egg case



Examples of Oak Tree Galls