

# OBSERVATIONS FROM NATURE

MAY, 2012, PART 1

PHOTOGRAPHS BY  
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The Passionflowers (*Passiflora incarnata*) are in full bloom along our driveway. This one has a handsomely-colored wasp visiting. I think it is some kind of Scoliid wasp, but I am not sure of the species.



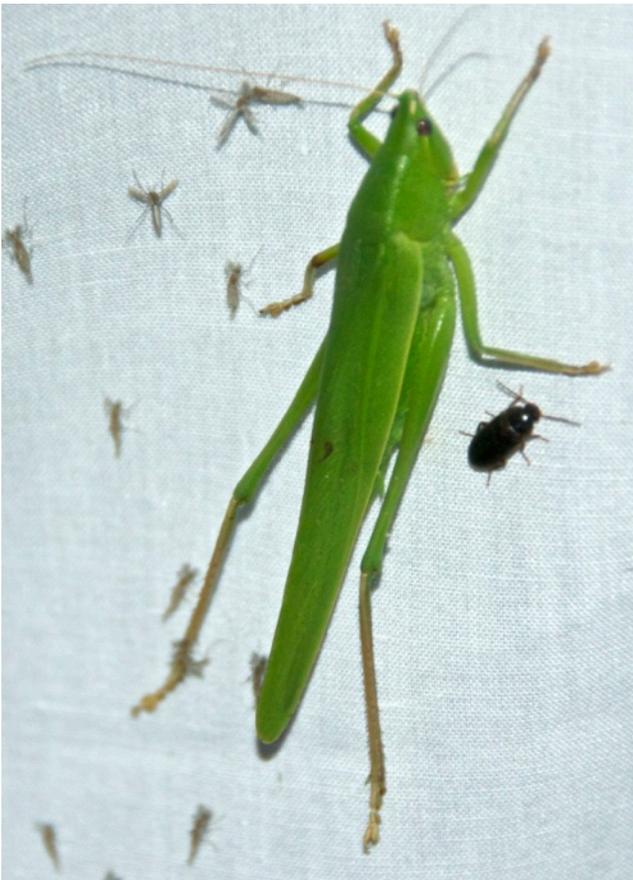
A Variegated Fritillary is shown above. These have been fluttering around the Passionflower vines, which are their main larval food plant. Fritillary comes from the Latin *fritillus*, which means dice-box. Apparently Roman dice boxes were decorated with spots, and thus some spotted flowers (of the genus *Fritillaria*) and some butterflies are called “Fritillaries”.

The photographs to the right and below show a Question Mark Butterfly (*Polygonia interrogationis*). The underwing shows the silver crescent and adjacent dot that form the “question mark”. If this were the closely-related Comma Butterfly, only the crescent would be present (see a Comma Butterfly in the March Notes).





To attract moths and other nighttime insects, we set up an old sheet and a light. In this case the light is a “bug zapper” that was designed to attract and kill insects when they contacted wires inside the device. My granddaughter helped me disarm the device with a few cuts from a wire-cutter. The insects are attracted to the light and perch on the sheet or around the light itself. All sorts of insects are attracted. Seen below is a species of Coneheaded Katydid (*Neoconocephalus sp.*). Also present in the left photograph are a beetle and several midges. Tens of thousands of these chironomid midges periodically emerge from the lake near our house. They do not bite, but can be so numerous near our moth attractor set-up that it is difficult to breathe without inhaling several.

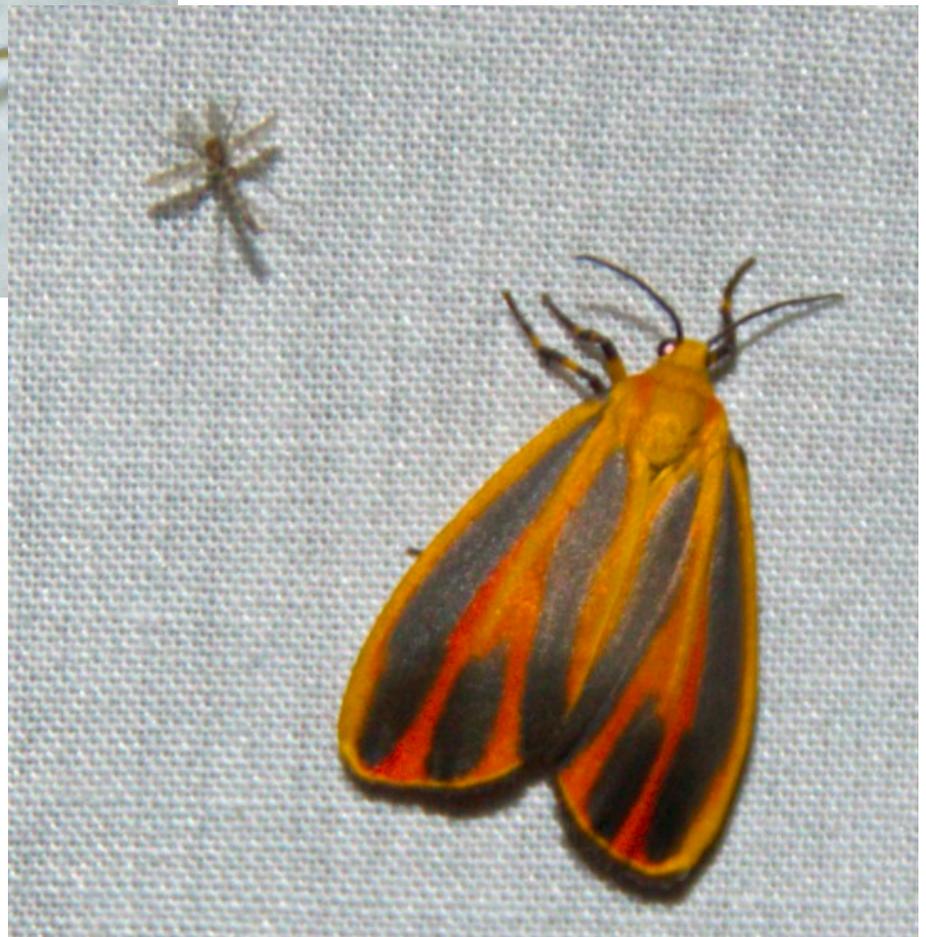




To the left is a smaller Katydid with accompanying beetle and midges. I think this one is a type of Meadow Katydid (*Orchelimum sp.*). Notice that it does not have a cone-shaped head like the previous example. Katydids can be separated from Grasshoppers by their antennae. Grasshoppers have short antennae, less than the length of their body, whereas Katydid antennae are longer than their bodies.

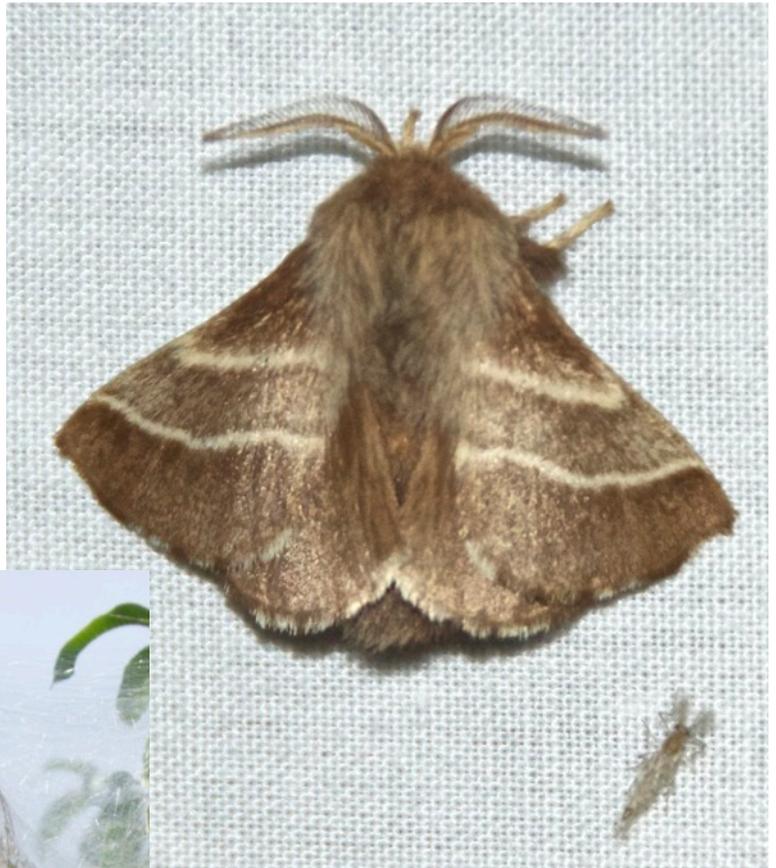
The colorful little moth to the right is a Painted Lichen Moth (*Hypoprepia fucosa*). Lichen moths get their name because their larvae feed on tree lichens (as well as mosses and algae).

The midge in the upper left shows the bushy antennae characteristic of its type.



Eastern Tent Caterpillars (*Malacosoma americana*) are familiar because of the silken shelters (below) that their larvae spin in trees. The shelter gives them protection from weather and predators during the day. Lots of larvae can be seen in the “tent” shown below. At night the larvae march out and feed on adjacent foliage.

The wingspan of this moth is about 1.5 inches.

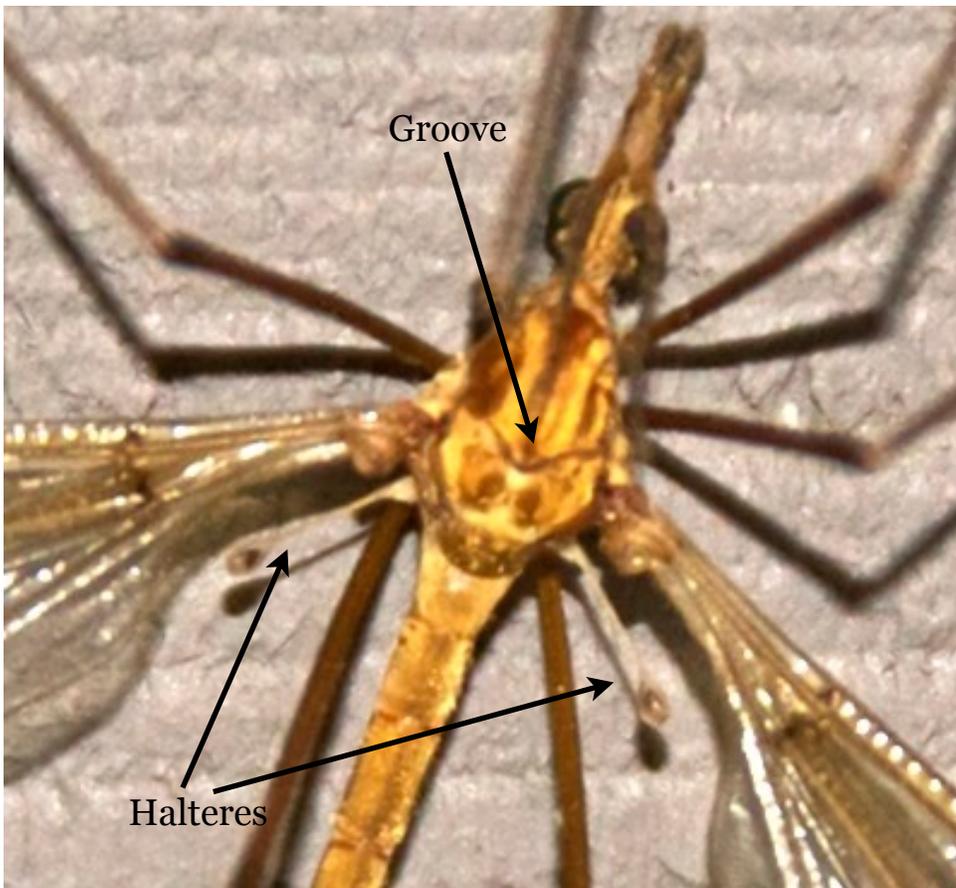


An Oblique-banded Leafroller (*Choristoneura rosaceana*) is shown to the right. Preferred larval food plant is members of the rose family, but many woody hosts can be used. This species is not regarded as a serious economic pest.





Crane Flies are attracted to the porch lights or to our moth attractor at night. They have very long, fragile legs and look something like a mosquito. However, they do not bite humans, and, in fact, feed on nectar or do not eat at all as adults. There are about 4,000 species of Crane Flies. Identification of species is a job for experts.



Most insects have two pairs of wings. However, Crane Flies are true flies (order Diptera), and they have only one pair of wings. The rear pair of wings have been modified to become structures called halteres or “balancers” (seen in the photograph on the left as stalked knobs attached to the back of the thorax). The halteres flap rapidly when the insect is in flight and seem to act as a sort of gyroscope.

To tell a Crane Fly from a Mosquito, look for the V-shaped groove on the upper surface of the thorax. Crane Flies have this groove, Mosquitoes don't.



Here is a large Mayfly that was attracted to our light. It is probably a species of *Hexagenia*, but I have not taken the time to study Mayflies yet. Mayflies spend nearly all their life as aquatic nymphs on the bottom of lakes or streams. When mature, the nymphs rise to the surface and molt into a winged stage called a “dun” by fishermen. The dun flies away, then molts one more time into a “spinner” which mates and lays eggs. Often the adults mate and die in a single day.



The creature at the right with the very long antennae is a Longhorned Caddisfly, There are about 1800 species in this family (Leptoceridae), and they are found world-wide.

Caddisflies have aquatic larvae as do the Mayflies. The larvae of many species make special cases of silk decorated with bits of rock, sand, twigs or other material. Caddisflies are closely related to butterflies and moths. They pupate in a silk cocoon, and their wings are similar. However, Caddisflies do not have scales on their wings, as do the moths and butterflies.



Early in May, many of the local crop fields were awash with the yellow flowers of Canola. This plant is grown mainly for the oil produced from its seeds. Canola cultivars were developed from Rapeseed (*Brassica napus*) or *B. campestris*, Field Mustard. Rapeseed has been grown since ancient times, and the oil from the seeds was used as a fuel for lamps. During the Industrial Revolution, it was discovered that Rapeseed oil was a superior lubricant for the moving parts of steam engines. Demand for the oil as a lubricant was high during World War II, but fell off after the war.



Use of Rapeseed oil in cooking was limited because of its high content of bitter compounds and of erucic acid, which was deemed to be a health concern. Livestock were also reluctant to eat feed derived from Canola meal. These problems were solved by plant breeders, predominantly in Canada, who derived cultivars with low levels of the bitter compounds and erucic acid. The name “Canola” came from **Canadian Oil Low Acid**.

Canola is now grown world-wide for its oil and byproducts. The seeds contain about 40% oil, and the meal left over after extraction of the oil is valuable for the production of animal food. Canola oil is believed to be a superior cooking oil because of its low concentration of saturated fat and a favorable omega-3 fatty acid profile. The oil is also widely used for lubricants, lipstick, biofuels, candles and many other products.



Later in the month, the flowers of Canola have nearly all disappeared, and the seed pods have developed. If one of the seed pods is opened at this stage, the small immature seeds can be seen.





Late in the month, the seed pods have matured, and the fields are a uniform light brown. The mature, small black seeds are shown in the photograph below. It seems that harvesting such small seeds would not yield very much, but yields of oil can be more than 100 gallons per acre (as compared to about 50 for soybeans). The seeds also contain about 35% protein, and the meal left over after oil extraction is valuable animal feed.



May 3 - I discovered this nest of a paper wasp under the eave of our house. This is a species of *Polistes*, possibly *P. metricus*. These nests are started in the Spring by a “foundress” who has overwintered in some sheltered spot. The wasp on the nest here is apparently the foundress. She mated last Fall and is able to lay fertilized eggs, because she can store sperm from her one mating and use them over a long period of time.

The foundress’s first job in the spring is to construct a paper nest from masticated wood. As the cells of the nest are constructed, she lays an egg in each one. The egg hatches into a larva, or grub. The foundress must then hunt food to feed the grubs. Caterpillars are the main prey item for paper wasps. After the grubs mature, they wall themselves up in their cell and become a pupa.



In this nest it is possible to see several of the stages of development. The large silvery cells in the center of the nest were the first constructed, hence the oldest. They contain pupae that will emerge as adults. Three large grubs can be seen occupying the cells just above the silvery pupae. At the very top of the nest is an egg or a very small grub. The nest has 14 cells and 3 pupae.

The adult wasps that will emerge from the pupal cells will be workers. They will assist the foundress in constructing additional cells for the nest and in hunting food for the developing grubs. All the early progeny of the nest are virgin females, and only the foundress will lay eggs in new nest cells.



May 7 - The nest now has 16 cells and 5 pupae. The foundress is still the only adult present.

A closer view of two grubs, a very small one on the left and a larger one on the right.





May 14 - Now 19 cells and 7 pupae are present in the nest. The foundress is still the only adult.

May 22 - Finally some help! One adult worker has emerged from the cell marked with an arrow. The newly emerged workers are very similar to the foundress in morphology.





May 24 - Three empty pupal cells indicate that 3 workers have emerged. Total colony population is 4 adults (One is apparently away hunting).



I was beside a country road taking pictures of insects on thistle flowers, when a local resident stopped to chat. When he found I was photographing insects, he asked me to come and see if I could identify the caterpillars that were defoliating one of his yard shrubs. The individual pictured above was collected from his shrub. This handsome little inch-long caterpillar is a middle-stage larva of the moth *Morrisonia confusa*, the Confused Woodgrain. Woodgrain refers to the appearance of the adult moth, which looks enough like wood to hide on tree trunks in the daytime. I am not sure why the “confused” epithet was used.

Dr. James Adams, of Dalton State University, was kind enough to confirm my identification.



May is the month when *Catalpa* trees (*Catalpa speciosa*) are in bloom. Their showy white flowers will give rise to long, thin fruit pods. These give the tree its other common name “cigar-tree”. Two species of *Catalpa* are native to the U.S., but their original narrow ranges have been greatly expanded by planting for ornamental purposes. These trees are sometimes attacked by caterpillars of the Catalpa Sphinx Moth (*Ceratomia catalpae*). The larvae are excellent fish bait, and *Catalpa* trees are sometimes planted just for a source of these “Catalpa worms”.





The Cabbage White Butterfly (*Pieris rapae*) shown above was accidentally introduced from Europe in the 19th Century. It is a pest whose larvae eat cabbage, nasturtiums, and other members of the mustard family. It is found in great numbers around fields of Canola in our area.

Another member of the “White” group of butterflies is the Checkered White (*Pieris protodice*) shown in the photograph to the right. Their larvae also eat many members of the mustard family of plants.

