



The Virtual Gardener—Mystery Revealed

In last month's newsletter I showed this picture of an "artifact" that was exposed by a friend while digging in his garden in Tucson and asked readers to submit their guesses as to what it might be. I received many responses, most of which correctly identified the object as the chrysalis or pupal case of a sphinx moth. The long "stem" of the chili-pepper shaped object is the long proboscis of the adult moth. One of the responses went even further and suggested it was probably either a White lined sphinx moth (*Hyles lineata*) or a tomato horn worm (*Manduca quinquemaculata*), which are common in Arizona. One, unwilling to commit to a specific ID, just said it was a chrysalis.



Hawk moths, sphinx moths, and hornworms belong to a family of insects called the *Sphingidae* that includes hundreds of species. This family name is derived from the Greek

word ($\Sigma\phi\iota\gamma\zeta$) for the Sphinx—a monster in Greek mythology with the head of a woman, the wings of a bird, the body of a lion, and the tail of a snake who ate those who could not answer her riddle. Presumably the shape of these moths suggested the name to the French entomologist who coined it, Pierre Andre Latreille.

If you'll excuse a short digression, I read an interesting story about Latreille in a Wikipedia [article](#) that explains how a beetle saved his life. It seems that he originally trained to become a priest but chose a very bad time to do so. The French Revolution had just overthrown the monarchy and the new government required all priests to swear allegiance to the state or face imprisonment and death. Latreille refused and was imprisoned. While in prison he correctly identified a rare beetle found in the dungeon. The beetle was sent to a local naturalist who knew Latreille's work and got him sprung. So

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it pays to know your bugs!

There are more members of the *Sphingidae* family in Arizona than you probably ever imagined. An entomologist, Bill Oehlke, who is interested in this family has compiled a list of them that you can find on [this webpage](#). In addition to extensive descriptions of each of the species, there are lots of pictures of them in all states of development, many contributed by local naturalist/photographer/author Bob Behrstock. Bob's web site is:

<http://www.naturewideimages.com/>



Photo by Karen LeMay

Hyles lineata, the White lined sphinx moth is a large, swift flying, and aerobatic moth that feeds on nectar through a long proboscis. Because of its feeding habits and ability to hover in flight, it is often mistaken for a hummingbird. It will usually be seen from dusk to dawn but may be seen during the day as well. The fore-wings and body are colored in shades of cream, tan, and brown but the hind wings have a distinctive band of pink. The caterpillars are usually a bright green decorated with orange and black stripes or spots.

Manduca quinquemaculatus (AKA Five-spotted hawkmoth) is better known to gardeners in its caterpillar form. It is the dreaded tomato hornworm. This caterpillar

is a large, green critter with a distinctive black "horn" at its tail end. It has a big appetite and can strip a tomato plant to bare stems in a short period of time. Adults are large, rather indistinctive moths in shades of grey. Their most distinctive markings are five orange spots along each side of the abdomen.

So, our mystery has been solved.

We're always on the lookout for more mysteries, so if you find something puzzling in your garden, snap a picture of it and send it to me. We'll see if my readers can correctly identify it.

Until next time, happy surfing!

Gary Gruenhagen, Master Gardener
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back to the ground to make the plant look tidy. One of my favorite *Euphorbia* or Spurge is a new hybrid called *E. graminea* 'Diamond Frost'. This plant is not frost hardy and needs to spend the winter in a greenhouse or in the house in a bright window. This plant looks nothing like the other plants that I have described. It has a very airy look with tender stems, small leaves, and its spray of tiny white flowers. It tends to bloom all year long. In the big box stores it seems to be sold planted together with the Christmas poinsettia.

Another one of my favorites is *E. antisiphilitica* or Candelilla, a shrubby mound of blue-green clusters of leafless, pencil-like stems. During the rainy season these stems get small clusters of tiny white flowers.



In a Desert Garden

Euphorbia or Spurges

The *Euphorbia* is a large family of plants that are very different in looks and appearance, but they are all succulents. The most well known *Euphorbia* is *E. pulcherrima*, the Christmas poinsettia. A smaller but very similar cousin is *P. cyanophora*, also called Mexican Fire plant or Painted Spurge. This plant is native to Southern Arizona and Mexico. I have it growing all over my garden. It is a tender plant that only in sheltered areas survives the winters, but it self-seeds itself and never dies out. Another one I grow in my garden is *E. rigida* or Gopher plant, I think this common name is not right as it does not repel gophers, but it is a very attractive plant that can grow into a small shrub. In spring the long gray-green arms grow charreuse flower clusters. After blooming is finished these need to be cut

E. tirucalli, pencil plant is another plant I grow and like. It has a tree-like way of growing, but has to be taken inside as well during our winters. *E. trigona* or African Milk Plant is an easy to grow plant that is suited to the house. It can grow quite tall—to six feet—and is impressive. When there is moisture in the air the tree-like branches with spines will grow small leaves.

There are many more varieties of *Euphorbia*. Some look like cactus such as *E. serelformis* or Milk Barrel Spurge, *E. obesa* or Baseball Plant, and *E. esculenta* or Medusa's Head. All of the Spurges are drought tolerant and can be killed by overwatering.

Angel Rutherford, Master Gardener
Photographer

Improve Your Garden, Think Small

Have you ever wished you could get a better look at that tiny insect that seems to be devouring your lettuce? Ever wonder what a spider mite, beet leafhopper, or an aphid look like close-up and personal? What about those tiny lesions on the leaf of your tomato plant? What are they—bacterial speck, blight, or septoria leaf spot? Did the shrub you lost suffer an attack of Texas Root Rot (which you'd inexplicably call "Cotton Root Rot" if you were from Texas)? Well, if you had a microscope, you'd be able to get a much better view of these tiny things afflicting your plants. But microscopes are hard to use and expensive. Right? Wrong!

It just so happens that there is a nifty tool to help you diagnose plant diseases, identify insects, and generally peer into the world of the tiny—the digital microscope. These are clever, and most importantly, inexpensive devices that connect to your computer, typically via a USB cable. They allow the object being viewed to be seen right on the computer screen. Most, if not all, also allow you to snap a photo of the object or even take a video clip of it. If you can't identify what you are looking at, with photo in hand, you can take your picture to your local bug ID expert or even e-mail it to your local County Extension Office for assistance. How cool is that?

Prices for one of these gadgets range from under \$50 to perhaps \$200, and although you can purchase professional quality devices for a lot more, the less expensive models are more than adequate for the home gardener. Magnification ranges on 'scopes in the \$50 range typically run from

around 25X to perhaps 125X. Spending more money results in a greater range of magnification, though I think most of us can easily get by with an upper end magnification around 100X to 125X. Based on my experience, I often find a low double-digit magnification to be optimum anyway. I don't envision myself needing to identify viruses or tweak DNA strands at insanely high magnification levels.

Digital microscopes are available from major online retailers and some brick-and-mortar stores. Interestingly, one good place to find them is a well stocked toy store. There are many brand names, among them are Carson Z-Pix, Celestron, OMAX, Learning Resources, and AmScope. Some digital microscopes resemble the classic microscope from your high school biology days, but many are simply a cylinder about an inch or two in diameter and four or five inches long. They usually have a built-in light source at the viewing end. The one I own doesn't even offer the option of viewing through an old fashioned lens; the object being studied shows up only on the computer screen, very large and very easy to see.

Digital microscopes are easy and fun to use. What is that tiny insect on your tomato plant? Get a jar, catch the bug (I know that can be easier said than done), and throw it under the microscope for a good view. Of course, many insects aren't willing to just sit there while you look at them, so here's an easy way to get them to comply. Just place the jar containing the insect in the freezer for half an hour or so. That will slow them down quite nicely.

There are many other technologies that can be quite useful in the

garden. One of the sessions at the upcoming 21st annual High Desert Gardening & Landscaping Conference (March 13 and 14 in the Student Union Building of Cochise College in Sierra Vista) will feature Cochise County Master Gardener Gary Gruenhagen (AKA the Virtual Gardener) speaking about ways to employ a number of technologies in your garden. It'll be one of many good talks at the Conference! I hope you can attend. Here's a link to the information about the Conference:

<http://ag.arizona.edu/cochise/mg/HighDesertConf/ConfHomePage.html>

So, hard on the heels of Christmas, maybe you were lucky enough to have received a gift card to a major retailer. Or maybe you've just got fifty bucks burning a hole in your wallet and you need a new toy. What better way to spend it than on a new digital microscope that'll fascinate you AND help in the garden. Heck, it'll even educate and entertain your kids or grandkids. Such a deal!

Happy Gardening!

Bill Schulze, Master Gardener
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- ◆ Winter prune
- ◆ Remove old mulch & replace
- ◆ Dig tree holes
- ◆ Prepare soil for spring
- ◆ Water periodically
- ◆ Stratify seeds
- ◆ Fertilize asparagus
- ◆ General garden clean-up

At a Glance Box

It's a Bloomin' Cochise County Native Plant of the Month

Plant: Manzanita, *Arctostaphylos pungens*

Description: A woody, evergreen shrub

Blooms: Winter, early spring

Use: Specimen evergreen shrub, wildlife food plant

Culture: Semi-xeric, mountain habitat

Learn more: Cochise County Herbarium, www.cochisecountyherbarium.org

For an in-depth article, see below.

Cado Daily

Water Resources Coordinator, Water Wise Program

University of Arizona Cochise County Cooperative Extension



Manzanita

Many southwest gardeners have tried to grow blueberries. Let's give them an "A" for effort but "F" for success. Why? Because they were trying the wrong kind of blueberry! Here in the southwest, we have our own native "blueberries." They are *Arctostaphylos pungens* (pronounced arc-toe-STAFF-ih-los PUN-gens), commonly called "manzanita" or "little apple." What is the connection between these two shrubby plants? Have you ever looked at the flowers of the manzanita? They are almost exactly like the delicate bell-shaped blueberry flowers! Additionally, the evergreen leaves are similar to the blueberry. However, it is the flower that puts both plants in the Heather family, *Ericaceae*.

The manzanita is a spectacular 3 to 6 foot shrub with very smooth, sinuous, mahogany-colored bark suggesting an underlying muscle structure to the trunk. The berries, of the same rich color, droop in clusters from the ends of the twigs. The berries are sweet and dry, with the same consistency as jujube fruit, and have a hard seed. The manzanita fruits are devoured by ringtail cats, coatimundis, skunks, foxes, coyotes, javelinas, and my blind dog. On walks up our Mule Mountain canyon, my blind dog "Tuerto" used to snuffle around the base of manzanas and amazingly find the pea-sized berries buried in

the duff. Pretty good nose, I thought.

Animal scat is full of the seeds scarified by digestive juices preparing them for germination. While hiking in the mountains, the natural habitat of the manzanita, keep your eye out for scat with the same mahogany color as the berries. You can gather some up and try starting your own plant.

A much easier propagation method is to find a very small manzanita close to its mother plant. The plant is most likely growing from a branch that has touched the ground and rooted. I was very successful in transplanting a manzanita using the following method. Find a candidate plant. Dig down to see if it is rooted from a branch from the mother plant. If so, dig underneath the roots enough to bury a 1-gallon nursery pot. Fill the pot with the surrounding soil and cover the manzanita roots. Over the next few months, slowly cut away the mother plant. When done, dig out the pot and take your new plant home for transplant in your yard.

(Note: Please be aware of state and federal laws regulating the collection and transportation of plant materials. A permit may be required for collecting plants. To learn more visit the Arizona Department of Agriculture's website at: <http://www.azda.gov/esd/NativePlants.aspx>)

Try to mimic the environment

where you found your new plant to give it good growing conditions. Bill Cook, with Cochise County Cooperative Extension, after a lot of trial and error has successfully transplanted mature plants. For more information on his method, email him at

duncanite853@yahoo.com

(Note: Bill Cook will be speaking at the CCMGA meeting on January 9—see Page 6 for info.)

Because of manzanita's ability to root from branch nodes in the wild, manzanas grow in clusters. In your yard, you can control how much the plant grows. It would be great if you have room for a thicket, but one plant is plenty too! Keep in mind that they are flammable, so keep plants 30 feet away from structures and flammable items.

Although drought tolerant, in cultivation manzanas would benefit from some passive water harvesting (you can tell when the plant is water stressed when their leaves move into a vertical position to reduce transpiration). Several years ago, when we had three consecutive dry winters, many manzanas died leaving their gray skeletons to haunt the hillsides.

Manzanas are naturally found growing in oak-woodlands indicating that a slightly acidic soil may be preferable, yet I see them growing on rocky Pinal schist and limestone in the Mules. To mimic mountain temperatures, they would benefit from a cooler location in your yard.

Although not juicy like the blueberry, the berries can be used as food and made into a drink as was done by Native Americans. The berries also make yummy jelly.

We know 'westerners' are different from 'easterners' so why covet the blueberry? Ever tried manzanita pie?


Ms. Cado Daily, M.A.

Water Resources Coordinator

High on the Desert

The Cochise County Master Gardeners Association (CCMGA) will be hosting its 21st Annual High Desert Gardening & Landscaping Conference on March 13 and 14, 2014 at Cochise Community College in Sierra Vista. This two-day conference is the longest running gardening and landscaping conference of its kind in Arizona and regularly attracts attendees from high desert regions all across the southwestern United States.

There will be many interesting and informative sessions. A Continental breakfast and lunch are included in the registration fee of \$65.00 for one day and on both days for \$100.00. Pre-registration for the conference will begin early in January and close on March 8 on a space available basis.

Each year up to three scholarships are awarded by CCMGA to cover the two-day registration to the High Desert Conference. See details here 

High Desert Gardening & Landscaping Conference Scholarship Application

The Cochise County Master Gardeners Association (CCMGA) is awarding up to three full scholarships to the 2014 High Desert Gardening & Landscaping Conference to be held at Cochise Community College, Sierra Vista, AZ, March 13 and 14, 2014.

Applicants are invited to submit an essay on one of the following topics:

Gardening for food production
Landscaping with native plants
Environmental stewardship

Essays must meet the following criteria:

1. 750 to 1,000 words in length.
2. Represent original scholarship and be suitable for publication. All references and authorities cited must be properly attributed.
3. Please submit as an attachment (plain text format) to an e-mail to: ccmgasecretary@gmail.com
Subject: Conference Scholarship
4. Entries must be received no later than close of business on February 10, 2014.

Entries will be judged by a committee of Master Gardeners appointed by the President of CCMGA. The awardees will be notified no later than February 25, 2014.

By submitting your entry you understand that it becomes the sole property of Cochise County Master Gardeners Association and may be published in the Cochise County Master Gardener Newsletter*.

*The Cochise County Master Gardener Newsletter is a publication of the University of Arizona Cooperative Extension.

Ask a Master Gardener

Cochise County Master Gardeners are available to answer your gardening questions either by telephone call to the Cooperative Extension Office or on-line on our web site at: <http://ag.arizona.edu/cochise/mg/question.htm>

The following comes from our web site's Frequently Asked Questions:

Question: Should I fertilize and water my house plants during the win-

ter?

Answer: Houseplants are generally tropical in origin and survive best in warm humid environments. Houseplants need to be watered because of the limited soil volume they are confined to. House temperatures are warm and allow plants to continue to grow. The best way to determine soil moisture is to stick a finger in the soil one to two inches. If the soil feels dry, water; if soil feels moist, don't water.

Fertilizing houseplants during in the

winter months is not encouraged because of reduced light from the sun. However, if you are "spoon feeding" your plants, that is giving a little fertilizer at each watering, cut back on the fertilizer by giving 1/3 to 1/2 the normal amount.

Many house plants need high humidity to be "happy." This is especially true with ferns. With forced air heating in many homes,

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house humidity can be lower during the winter than during the hot summer because of swamp cooler use. Humidity can be created by placing the potted plant on top of a pebble filled shallow dish. Fill the dish with water as needed, maintaining the water level near the top. The dish should have a diameter nearly as large as the plant diameter. The pebbles are important so that the potted plant is not sitting in water which will cause soil saturation, and thus root rot. As the water evaporates a humid environment is created in which a tropical plant will grow and thrive. This is much better than using a squirt bottle three times a day to try and humidify



Cuttings 'N' Clippings

✿ CCMGA will hold it's next meeting on **Thursday, January 9**, in the Public Meeting Room in Groth Hall at UASV, from **5:00—7:00 p.m.** This first get together for 2014 will be a special two-hour workshop dedicated to **Seed Propagation**. Bill Cook, Program Coordinator, with the UA Cooperative Extension for Cochise County, is the scheduled workshop guide. The public is welcome to join us in this highly educational and fun event.

✿ The next Water Wise talk will be **Artful and Eco-friendly Arizona Gardens**, presented by Greg Corman of Gardening Insights, Tucson on **Saturday, January 4 from 9—10:30 a.m.** in the PMR, Groth Hall, at UASV, 1140 N. Colombo Ave. Greg will share ways to create beautiful and easy-care gardens that incorporate art, wildlife habitat, and native plants. Na-

tive bee houses by Greg will be for sale after the talk. For information call (520) 458-8278, Ext 2141, or contact Joyce at:

[jwilliam@ag.arizona.edu/](mailto:jwilliam@ag.arizona.edu)

You can visit Water Wise at:

waterwise.arizona.edu

✿ Sierra Vista will be recycling Christmas trees with their Wednesday yard waste pick-ups. You may schedule by calling 520-458-7530. This is a free service for Sierra Vista residents. Both Cochise County and city residents can drop off Christmas trees for free at the city's compost facility at mile marker 325 on Hwy 90 near the Cochise County Refuse Transfer Station.

- Sierra Vista Herald

Cochise County Master
Gardener Newsletter Editor
Carolyn Gruenhagen

HAPPY New Year!

2014

As we begin the 25th year of the Cochise County Master Gardener Newsletter, I want to thank the Cochise County Extension Agents who have made it possible. Thanks to the many contributors over the years, providing the public with valuable information. A special thank you to Angel Rutherford, Bill Schulze, and the Virtual Gardener, my husband, Gary, (also the Master Gardener webmaster) for their years of dedicated writing for the newsletter every month. We look forward to bringing you many interesting and informative articles in the new year! Also, thanks to you—thanks for reading!

Carolyn Gruenhagen, Editor