

Master Gardener  
University of California



# The Curious Gardener

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## ***Phytophthora tentaculata*: A New Exotic and Invasive Disease**

by Laura Sims, UC Berkeley; Igor Lacan, UCCE San Francisco and San Mateo counties; Steven Swain, UCCE Marin County; and Matteo Garbelotto

A new plant pathogen in the genus *Phytophthora* (pronounced Fie-TOF-ther-uh) has recently been found in several California native plant nurseries and habitat restoration sites. The pathogen, *Phytophthora tentaculata*, poses a risk of disease in wildlands, gardens and landscapes that use susceptible California native and non-native plants. Once introduced in these areas, the pathogen can generate disease for years to come, potentially causing lasting environmental and economic impacts. Because both native and non-native California plants from nurseries can carry new pathogens and other pests, it is important to remember that only healthy plant material should be used for planting.

### **What is *Phytophthora*?**

Phytophthoras are microscopic, fungus-like organisms called water molds that produce spores and hyphae. Many are soilborne, attack plant roots and stems, and can be spread by the movement of infested soil, including soil stuck to tools, containers, or shoes. The genus *Phytophthora* is large, with over 100 described species, including the sudden oak death pathogen and other destructive pathogens of agricultural, ornamental, and forest plants.

Similar to other members of the *Phytophthora* genus, *P. tentaculata* releases swimming spores that move through water and are attracted to plant root exudates. Once infected, the pathogen can cause disease in susceptible plant roots. If susceptible stems are contacted, infection can occur there following water movement or splash, and stem disease can also result from the pathogen growing into the stem from the roots. *Phytophthora tentaculata* cannot be seen with the naked eye unless grown in a laboratory. However, it usually produces visible symptoms – stem cankers and root rots – on host plants.

### **Hosts, Symptoms and Detection**

The pathogen was first described in 1993 from a nursery in Germany. In the United States, it was first found in 2012 in a nursery in Monterey County, and to date, is present only in central California. Currently, 17 plant species and two

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additional genera worldwide are thought to be susceptible to *P. tentaculata*, but the list may expand as we learn more. In California, eight native plant species and one additional genus have been found infected, all common in the native plant nursery trade and in wildlands. These include *Artemisia douglasiana* (mugwort), *A. dracunculus* (tarragon), *A. californica* (California sagebrush), *Salvia* species (sage), *Ceanothus cuneatus* (buck brush), *Frangula californica* (syn. *Rhamnus californica*; California coffeeberry), *Monardella villosa* (coyote-mint), and *Heteromeles arbutifolia* (toyon).

In California, *P. tentaculata* was first isolated from *Diplacus aurantiacus* (syn. *Mimulus aurantiacus*; orange bush monkeyflower, sticky monkeyflower) where it was observed causing above-ground symptoms that included stunted growth, sparse and chlorotic foliage (Figure 1a), stem collar lesions (Fig. 1b) and plant death. Root system symptoms included necrotic, sunken lesions, and few roots (Fig. 1c). Soon after, *P. tentaculata* was detected in the nursery trade in the U. S., the pathogen was recovered in central California wildlands, presumably having been released into the landscape via contaminated nursery plants used in restoration plantings. It has now been found in Alameda, Butte, Monterey, Placer, and Santa Cruz counties.

Germany, Italy, Spain, and China have reported disease from *P. tentaculata* on several plant species including *Apium graveolens* (celery), *Aucklandia costus* (costus root), *Cichorium inybus* (chicory), *Chrysanthemum* species (including marguerite and oxeye daisy), *Delphinium ajacis* (rocket larkspur), *Gerbera jamesonii* (Barberton daisy), *Origanum vulgare* (oregano), *Santolina chamaecyparissus* (lavender cotton), and *Verbena* species (vervain) hybrids. Many of the above species are grown in California and should be considered at risk of disease.

### Prevention and Management

**Prevention:** By far, prevention is the best possible method for dealing with any *Phytophthora* pathogen. Consider planting from seed as *Phytophthora* in general is rarely transmitted this way. If buying container stock of any of the above plant species, find out if the nursery is following best management practices for preventing *Phytophthora* (for example: [tinyurl.com/zvmjyt3](http://tinyurl.com/zvmjyt3)). Purchase plant material that has been grown in pasteurized soil and under proper sanitation procedure. Do not use/buy plants or material that has been in the nursery for an extended time, these can become contaminated with *Phytophthora* and other pathogens.

**Avoidance:** Avoid buying known host-plant container stock and do not purchase plants that appear unhealthy or otherwise potentially contaminated. At more advanced stages of disease, plants may exhibit symptoms as outlined above, but nearby plants may still look healthy even though they have been contaminated through soil or water movement. If a number of plants in the nursery block show symptoms of infection, do not buy those plants or their neighbors.

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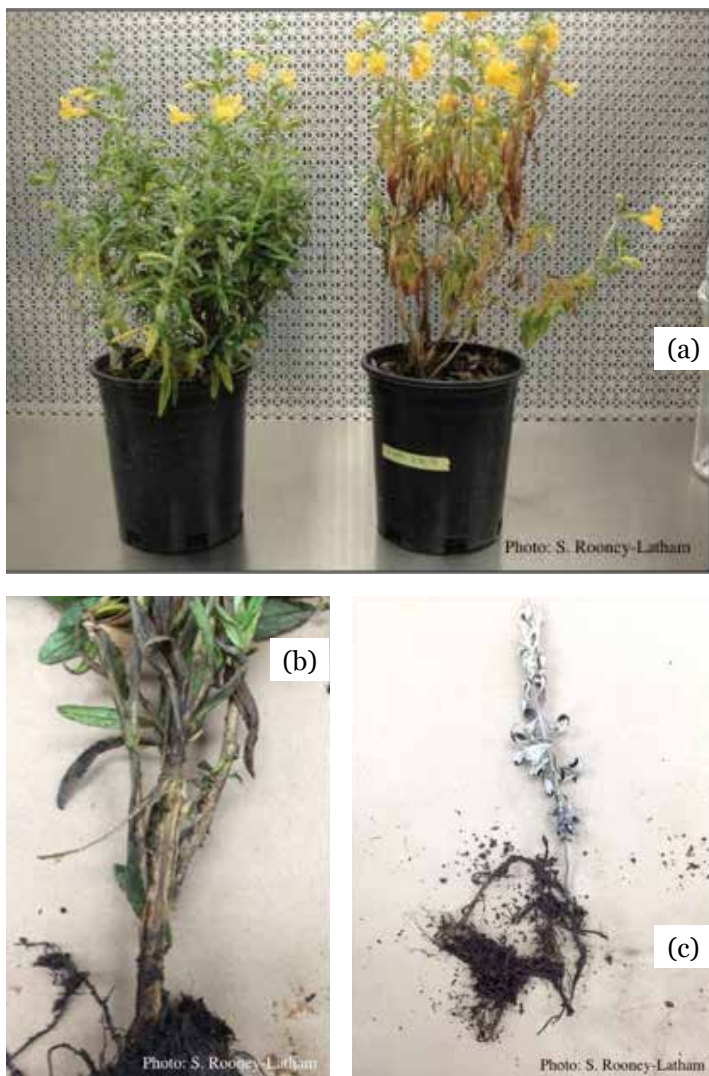


Figure 1. (a) A healthy *Diplacus aurantiacus* (orange bush monkeyflower plant, left) compared to a *Phytophthora tentaculata* infected *D. aurantiacus* plant (right). The infected plant has chlorotic (yellowing and browning) foliage, and relatively sparse foliage. (b) The inner stem and root crown of a diseased *D. aurantiacus* plant. (c) *Artemisia douglasiana* (mugwort) plant infected with *P. tentaculata* has sparse roots as a result of severe root rot. All photos by S. Rooney-Latham

# Hotline FAQs

Do you have  
gardening questions?  
Call the Master Gardener  
Hotline in your county  
Nevada Co. 530-273-0919  
Placer Co. 530-889-7388



## My daffodils haven't bloomed for the past few years – how do I get them to bloom again?

by Pauline Kuklis, Placer County Master Gardener

There are numerous things that can impact the blooming ability of daffodils, including:

- Too little sun – daffodils require at least ½ day of full sun. Have trees and plants near your bulbs grown to a point where the bulbs are getting too much shade?
- Too much nitrogen – high nitrogen fertilizers can cause bulbs to focus their energy on leaf production, at the expense of the flowers. Could you have over fertilized?
- Overcrowding – when bulbs multiply and become overcrowded, they can stop flowering. Be sure to dig up, split and replant bulbs once they get to this point.
- Cutting back green leaves – bulbs take nutrients from their leaves after they have finished flowering. Remove spent flowers, but let the greens completely die back before removing.

Refer to the following article for a more comprehensive look at what can inhibit daffodils from flowering: <http://daffodilusa.org/growing-daffodils/non-blooming-daffodils/>

If your bulbs are planted in a good location and are getting proper care, then you likely have bulbs with weak genetics. Such bulbs can bloom nicely for several years, then run out of steam and simply produce greens each year thereafter. If this is your problem, the only solution is to remove and replace them with new bulbs!

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The host species list is a work in progress; be aware that other, unlisted species may also be susceptible.

**Quarantine:** If you purchase host plants (or closely related species), consider setting them aside before planting. Give the plants time (4 - 6 weeks) to develop symptoms before planting them in your yard, and be sure soil and excess water from these plants does not flow into your garden soil. If symptoms develop, dispose of the plant, soil, and container according to disposal guidelines for your area. Do not home-compost this pathogen, as it may not be killed.

**Remediation:** If plants are already in the ground and exhibiting symptoms such as stunted growth and/or chlorotic foliage, check the root collar and stem for necrotic sunken lesions and/or stem rots. If possible, check root systems for abnormally large numbers of dead and dying roots, few healthy new roots, and necrotic spotting on roots that are still living. If the roots appear to be infected, do not move soil from the garden bed and nearby infected plants to other parts of the garden.

Change irrigation practices to reduce the potential for *Phytophthora* growth, as outlined in the UC IPM Pest Note: *Phytophthora Root and Crown Rot in the Garden* at [ipm.ucanr.edu/PMG/PESTNOTES/pn74133.html](http://ipm.ucanr.edu/PMG/PESTNOTES/pn74133.html). Clean your tools and boots before working another area of your garden. You may wish to contact your local Agricultural Commissioner or UC Cooperative Extension office to see if they can offer updates or further advice.

For more information, including references to original research and related articles, see the pages covering this pathogen at [www.suddenoakdeath.org/diagnosis-and-management/nursery-information/phytophthora-tentaculata/](http://www.suddenoakdeath.org/diagnosis-and-management/nursery-information/phytophthora-tentaculata/).



## Butterfly Trivia

by Bonnie Bradt, Nevada County  
Master Gardener/entomologist

- 1) Will you kill a butterfly by touching its wings?
- 2) What color is a butterfly's blood?
- 3) What do adult butterflies eat?  
How do they obtain their food? (Yep, I know, that's actually two questions).
- 4) How big is the largest butterfly?
- 5) True or False - Butterflies can taste things with their feet!
- 6) Why do some butterflies fly fast and others more slowly?

See answers on page 9

# From Lawn to Water-Smart Landscape

Part 1 in a Series

by Placer County Master Gardeners

Though this winter's rainfall totals may have temporarily removed the pressure to conserve water, people are choosing to convert their thirsty lawns to water-wise landscapes for other reasons, including creating a healthier, more beautiful habitat for themselves and wildlife.

Placer County master gardener Julie Long and her husband David decided to make the switch over a year ago. Last fall, they were named grand prize winners in the #RethinkYourYard photo contest sponsored by the Regional Water Authority (RWA) and local water providers. You may have seen their photo on area billboards. To the right is what Julie wrote about their new landscape for her contest entry. Below are photos of her yard before and after the makeover.

Future issues of *The Curious Gardener* will take a closer look at some of the techniques Julie and David used in their landscape makeover: sheet mulching, choosing pollinator-friendly plants, and keeping water on site with swales and dry river beds.

For resources to do your own landscape makeover, see <http://bewatersmart.info/rethink-your-yard/>



## Creating a Low-Water Pollinator Paradise

*By Julie Long, Placer County Master Gardener*

Over the last few years we have become acutely aware of the need to conserve water in this Mediterranean climate in which we live. In addition to water savings, the desire to create a healthy habitat for pollinators, and also incorporate features that are “River-Friendly” into our landscape, helped shape the plan for replacing our front lawn. Most pollinators, such as bees, birds and butterflies, are attracted to flowers with long necks or flowers with flat heads, such as those in the daisy family.

River-Friendly landscaping is a practice designed to conserve water, reduce yard waste and prevent pollution of our air and local rivers. In November 2015, we sheet-mulched our front lawn. The process included mowing the lawn as low as possible, watering it well, and layering compost, cardboard and mulch to smother the grass. The winter rains helped break down the cardboard and grass underneath, which created a rich soil base that was ready for planting.

We then created an angled dry creek bed across the yard. It not only serves as a focal point, but catches the rain water which allows it to percolate back into our soil to help maintain our water table.

Our plant choices were based on hours of research and past experience. All are drought tolerant, and many are Californian Natives. Our choices included lavender, lantana, California fuchsia, coyote mint, blue eyed grass, yarrow, salvia, pine muhly, pink crystal grass, alyssum, alum root, cone flower, cat nip, Santa Barbara daisy, coreopsis, basil and oregano. The fountain nearby is a major attraction for dozens of birds, and provides us with constant entertainment.

After planting, we mulched heavily with a medium-fine bark, which helps prevent weed germination and also provides an insulating layer that retains moisture and saves water. Our irrigation is in-line drip, which provides slow, steady moisture to the root zone of each plant. We use no chemicals in our landscape, and only occasional slow-release organic fertilizer. We have found that maintaining a healthy soil reduces the need to fertilize. Compost harvested from our compost bin is amended into the soil, or sprinkled around plants to give them a healthy boost of nutrients.

Final thought: Find a comfortable spot in your garden to just sit and watch the constant activity of the birds, bees, butterflies and other creatures. It is the best way to appreciate the quiet wonder and rhythm of nature.



## ***Ceanothus maritimus* 'Valley Violet' California Lilac**

*by Lynora Sisk,  
Placer County Master Gardener*

I'm sure many of you have noticed the large purple/blue bushes that bloom heavily in the spring as in the picture below. But did you know that this is a California native? *Ceanothus*, or California lilac, has 50 to 60 different varieties, ranging from a low growing ground cover to a very tall (6 to 12 foot) shrub. The UC Davis Arboretum All Stars feature four varieties of ceanothus including *Ceanothus maritimus* 'Valley Violet', *C.* 'Concha', *C.* 'Ray Hartman' and *C. x pallidus* 'Marie Simon'.

This particular variety, 'Valley Violet', is recommended by the UC Davis Arboretum as the "best small ceanothus for Central Valley gardens". It blooms in spring, attracting many beneficial insects including bees. In fact, ceanothus was the UC Davis Bee Garden Plant of the Month in March 2014. <http://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=13022>

'Valley Violet' is very easy to grow, needing little to no pruning. Watering needs are also very low, making this my kind of plant: low maintenance! This native can tolerate a variety of soils and can grow in part shade to full sun.

The UC Davis Arboretum Teaching Nursery has done a YouTube video on several varieties of ceanothus growing at the Arboretum, including our feature 'Valley Violet'. This [video](#) will give you a snapshot of the wide variety of ceanothus available.

You might also like to make a trip to the UC Davis Arboretum in April to view blooming ceanothus and take part in the Teaching Nursery Spring Public Plant sale. The dates for the sale are April 8 and 29 from 9:00 am to 1:00 pm at the Arboretum Teaching Nursery.

Plant ceanothus to support our bee population and bring beauty to your garden!



• *Arboretum All-Stars*. UC Davis Arboretum. n.d. [http://arboretum.ucdavis.edu/allstars\\_detail\\_57.aspx](http://arboretum.ucdavis.edu/allstars_detail_57.aspx)



UCCE  
Master Gardeners  
of Placer County

## *32nd Annual Mother's Day Garden Tour*

**Sunday, May 14, 2017**

**10:00 am to 4:00 pm**

RAIN or SHINE

Tickets \$20.00 each  
Children under 12 free

**6 colorful gardens in  
Roseville, Rocklin & Loomis**

Tickets with maps  
will be available starting  
Saturday April 29 through  
the tour day at:

Eisleys Nursery  
380 Nevada St., Auburn  
(530) 885-5163

Green Acres Nursery & Supply  
5436 Crossings Dr., Rocklin  
(916) 824-1310

Green Acres Nursery & Supply  
901 Galleria Blvd., Roseville  
(916) 782-2273

agri-cola, ae *m* tiller of the field, farmer, husbandman  
caulis, is *m* stalk, stem of a plant; cabbage  
colo, colui, cultum 3 to care for; a) to till, cultivate  
farm; b) to tend; *adj.* cultus 3 cultivated, tilled  
ta, orum *n/pl* tilled land, gardens, plantations  
cresco, crevi, (cretum) 3 to grow  
cultus *m* cultivation, labor, tilling; a) to till, cultivate  
b) care, training, education; c) to grow  
florens, tis blooming, flowering  
floreo, ui 2 to bloom, blossom  
flos, oris *m* flower, blossom  
fodio, fossom 3 to dig, dig up  
folium, i *n* leaf; foliage  
herba, ae *f* grass, herb  
hortus, i *m* garden  
radix *f* root; rootstock  
viridis, e *adj.* green  
vita, ae *f* life  
xylen *m* wood  
zen *m* seed

Corner

# BotLat

## Find Out What Those Weird Plant Names Mean



*Dudleya hendrixii*

by Peggy Beltramo, Placer County Master Gardener

Each issue, the BotLat column looks at plant names—the confusing ones that we call “Botanical Latin.” Actually, these names are “Latinized” words, mostly from Greek and Latin, but also from many different languages. In the 1700’s, Swedish botanist Carl Linnaeus decided that the way plants were named at that time was too cumbersome. A plant name was often a long, “Latinized” description such as, *Plantago foliis ovato-lanceolatis pubescentibus, spica cylindrica, scapo tereti* (meaning “plantain with pubescent ovate-lanceolate leaves, a cylindrical spike and a terete flower stalk”)—8 words, no less. Imagine asking for that at the local nursery!

Linnaeus classified all the known plants of the time with a two word system of naming and published his book, *Species Plantarum*, in 1753. This system had been proposed earlier, but Linnaeus is considered the “father of modern taxonomy,” because he used binomials consistently, for every plant known, at the time. Linnaeus named many plants for people he knew, honoring people he admired and naming weeds for his enemies.

Many of California’s native plants bear the names of naturalist explorers who visited the west. Do you buy a Douglas-fir in December? Its common name is in honor of David Douglas, who introduced this tree into cultivation. Its binomial is actually, *Pseudotsuga* (false cypress) *menziesii*, commemorating Archibald Menzies who first documented the tree. *Eschscholzia californica*, the California poppy, was named for Johann Eschscholtz, a Russian physician and naturalist.

This practice of naming plants for people continues to this day. In December, 2016, a new species was recognized in the genus *Dudleya* (named to honor William Russell Dudley.) This new species is *Dudleya hendrixii* and the epithet (second word) honors Jimi Hendrix. Supposedly, the plant geek who discovered this plant was listening to his iPod at the time he found it.

There are many stories of early explorers who documented new plants and collected specimens and seeds to send home. So, although plant names honoring people won’t tell you about cultural characteristics of your plant, you can learn more about the people who searched the world to find and name the plants you love.

See References on page 11

## Master Gardeners of Nevada County Host Spring Plant Sale

This is the time of year Nevada County Master Gardeners are busy planning, propagating and caring for a multitude of young plants for the upcoming annual spring plant sale. This year’s sale is scheduled for Saturday, May 13th from 9:00 am to noon at the Demonstration Garden on the grounds of the Nevada Irrigation District, 1036 West Main Street in Grass Valley.

Just in time for Mother’s Day, the Nevada County Master Gardeners will be offering a huge variety of vegetable starts, from arugula to bok choy, cucumber to melon. Over 50 varieties of tomatoes will be offered, including some new hybrids and heirlooms. Several types of herbs will be available, as well as a multitude of peppers including the very popular padron and piquillo peppers. Also available this year will be a larger variety of ornamentals, annuals and perennials. For added garden fun, the Nevada County Master Gardeners will also offer some nice crafty surprises, and this will be a wonderful opportunity to tour our demonstration garden - so plan to attend early for the best selection! A list of plants we are planning to offer for sale is available on the Nevada county Master Gardener website: <http://ncmg.ucanr.org>.

For questions or for more information about any of the Master Gardener events contact us at our Hotline, (530) 273-0919



# Play Jeopardy! with The Frugal Gardener

by Barbara Kermeen, Nevada County Master Gardener

## They:

- Are inexpensive, efficient, and maintenance free
- Are fun and easy to use
- Create high germination and early blooming of your seedlings
- Reduce the use of plastics
- Prevent root shock
- Were used by the ancient Aztecs and Chinese

Holy Coyote!

And the question is:



## What is a Soil Blocker?

A soil blocker is a metal, mechanical device that creates blocks of soil from a special planting mix. The blocks are deposited on a tray or on a flat in preparation for the planting of a seed in each block. Essentially, they are a homemade “pot without a pot” or a “pot without walls.”

## Why?

Over 4% of the world’s oil production goes into creating plastic and a further 3% to manufacture it into things like beverage containers and plant pots. And I believe that everyone has heard of the islands of floating plastic waste in our oceans. We can help reduce our global waste by using gardening tools such as the soil blocker. So let’s explore the “pot without a pot!”

## Background

In 1976, renowned gardener and author, Eliot Coleman, discovered soil blockers while traveling through Europe. What Coleman wanted first was a 3/4" cube; that’s about the size of a sugar cube. He convinced the British manufacturer to make more sizes.

Soil blockers come in a number of sizes, from four rows of five tiny blocks to two rows of two large blocks. You may choose to use a small, 3/4" blocker for tiny seeds, such as lettuce. And you may choose to start with a blocker larger than 1-1/2" for large seeds that quickly grow large plants, such as squash and cucumbers.

Each block contains a nipple or dibble which makes an indentation in the surface of each block, in which to place the seed. They are easily removable if you don’t want to use them.

## Special Soil Mix

I quickly found at least 15 recipes for a soil block planting medium on the internet. Garden soil is normally much too heavy for seeds and seedlings.

You can experiment with several different mixtures, to combine them, or to make up your own mixture, using the ingredients from a number of recipes. You can also modify one recipe by varying the proportions of the ingredients. Try everything and keep good notes on which mixtures work the best for which seeds.

Barbara's Favorite Recipe (in decreasing order of volume)

Potting Soil  
Compost  
Vermiculite or Perlite  
Peat Moss

Sieve everything through a 1/4" screen or strainer. This removes the lumps and aerates the mixture. Mix the ingredients without pressing them down. They need to maintain the air that you mixed in when you sieved the elements together. When the medium is mixed, in a big plastic bucket (think Homer), add water and gently mix, to the consistency of thick oatmeal. Cover and let sit over night.

## How To Use The Soil Blocker

Many gardeners recommend flats or newspaper-lined daisy trays. But the Frugal Gardener has a secret: Many grocery store bakeries sell nine muffins in black plastic trays, with elevated transparent plastic lids. The bottoms make a great holder for soil blocks and their lids turn the whole thing into a mini-greenhouse, holding four rows of five 1-1/2" soil blocks, i.e., 20 blocks. Every morning I remove the lids, spray the blocks with water, and replace the lids diagonally, so that the blocks have exposure to air.

If you don’t use the “mini-greenhouse” idea, cover the blocks with plastic wrap until they sprout, being careful to remove the plastic for a while each day to allow for air circulation.

Press the soil blocker into the pail of medium. Some gardeners like to use a large flat pan instead of a bucket. I prefer the bucket because it’s easier to cover when the day’s planting is done. Rock the blocker from side to side several times, then toward you and away from you several times. When this is done, tilt it toward you at a 45° angle, so that the medium will not fall out when the blocker is pulled out. Scrape the bottom of the blocker across the edge of the soil container or use a putty knife to smooth off the bottom.

Now, place the filled soil blocker on the tray you have chosen and let it sit for a moment, until you see a bit of water seeping out. Now push the handle down as you lift the blocker off the surface.

*Continued on next page*

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Rinse the blocker in a bucket between each use. Space each row at least a quarter inch from the adjacent row, to facilitate air circulation.

If one of the blocks is not perfect, remove it and replace it with one from a row that you keep on your potting table.

### Plant The Seed

Drop a seed into the depression in each block. I keep a jar of finely sifted soil so that I can deposit a little in each hole to cover the seed. I use the finest tea strainer to create this fine soil. Now hit the blocks with a very fine spray of water from a hose or from a hand spray bottle. Use just enough water to wet the blocks thoroughly without any runoff. A tiny bit of runoff should be quickly absorbed by the bottoms of the blocks.

Sprinkling a little finely screened sphagnum peat moss over the surface of each block serves as extra protection from damping off fungus that can kill emerging seedlings.

### Transplanting the Soil-Blocked Seedlings

After the plant sprouts, you have several choices. Depending on the variety of plant and on the ambient conditions, you may be able to set the plant directly in the garden.

The blocks should be well-watered before setting out in the garden and then watered in well after planting. Be sure that the block makes good contact with the garden soil on the bottom and on all sides. Then cover the top of the block with garden soil. This will encourage the plant to extend its roots into the garden soil.

Small soil blocks can be “potted up” into larger soil blocks. Different sizes of dibbles are available so that a larger soil block can be made with a depression that is correctly made to accommodate smaller soil blocks

If it is not possible to plant the seedling in the garden, you may wish to transplant it into a pot, as a last resort however. Planting in pots tends to make the plant’s roots grow in a circular fashion, following the contour of the pot

Planting and/or replanting in graduated sized soil blocks allows the seedlings to air prune, preventing “pot shock,” readying them for immediate contact with the garden soil.

## References:

- Coleman, Eliot. *The New Organic Grower* revised and expanded second edition. Chelsea Green Publishing. 1995.
- Patterson, Pat. *Creating Soil Blocks*. n.d. [http://extension.oregonstate.edu/marion/sites/default/files/creating\\_soil\\_blocks.pdf](http://extension.oregonstate.edu/marion/sites/default/files/creating_soil_blocks.pdf)
- Pittenger, Dennis R., ed. *California Master Gardener Handbook*. UCANR Publication 3382. 2015. pp 116-117.

## Try Growing Something New



### Tillandsia a Low Maintenance Epiphyte

by Annette Wyrick, Placer County Master Gardener

Visiting the nursery gift shop, you are sure to find a unique display of small, spiky indoor plants. The *Tillandsia* genus plants are commonly called air plants because they obtain nutrients from the air and do not have a soil requirement. The display reminds me of a farmer’s market in which the loose plants are grouped by type in bowls or creatively attached to an object. There are over 500 species of *Tillandsia* to allow for some artistic combinations of color, texture, and size. While most plants are gray, they can also be green. *Tillandsia* plants can have pink highlights, fuzzy or smooth surfaces, and some occasionally bloom. If your plant does bloom, be prepared for it to die and new plants to grow from it.

*Tillandsia* plants are epiphytes. This means they attach to another plant or surface with their roots, but they don’t take moisture or nutrients from it. They have scales on their “leaves that increase the surface area of the leaf and harvest moisture directly from the air” (Klingaman). Care should be taken when handling the plants, so damage to the scales is limited.

*Tillandsia* plant popularity may be due to their low care requirement. The plants like indirect bright light in typical home temperatures. They need to be soaked in water for 30 minutes every 1-2 weeks. If the plant is located in a very dry environment, it will like to be misted in between waterings. If the plant’s leaves curl, it is a sign that it needs more water. They also need good air circulation and to dry completely after watering. They shouldn’t be attached to an object that will hold moisture at their base, such as moss. *Tillandsia* plants are a low maintenance plant that will add an artistic flair to your home.

See Works Cited on page 11





UC Master Gardeners of Placer County  
2nd Annual  
**Garden Faire**

Saturday, March 25, 2017 • 10 a.m. to 3 p.m.  
Gold Country Fairgrounds, Auburn

Come for the day or just for a while  
and enjoy all things gardening!

### Guest Speakers

10:15-11:15 a.m. **Dr. Richard Blatchford**  
Assistant Cooperative Extension Specialist, Poultry  
Department of Animal Science, UC Davis  
“Backyard Chickens”

12:15-1:15 p.m. **John Whittlesey**  
Owner of Canyon Creek Nursery and Design  
“Bees as Pollinators”

1:30-2:30 p.m. **Roberta Walker**  
Owner of Roberta Walker Landscape Design  
“Drought Tolerant Plants in Your Landscape  
Design”

### Activities for the whole family

- Kid’s Corner with gourd painting, coloring pages and a fun gardening Q&A with prizes.
- Master gardeners to answer questions and provide information about composting, trees, raised beds, watering systems and other gardening topics.
- Informational and vendor displays hosted by regional agencies and local businesses.
- Unique planted containers for sale, door prizes and more!

Tickets: \$5 at the door (12 and under free but must be accompanied by an adult )

## Butterfly Trivia Answers

by *Bonnie Bradt*,  
*Nevada County Master Gardener/entomologist*

1) The general answer is no. If you handle a butterfly gently and hold them with their wings folded together with your fingers on the undersides, and don’t allow them to struggle and injure themselves, your touch alone should not injure them. Remember, if it is monarchs you are handling, they have surface parasites that can be transmitted from one to another so you might consider disposable gloves. Training in this type of handling is available.

2) A butterfly has the same type of “blood” as other insects, which is called hemolymph. It is a colorless fluid, sometimes “milky” looking. Since an insect’s blood does not carry gases through the body, it has no need of the hemoglobin molecules that carry oxygen throughout our bodies. Hemoglobin protein is made up of heme groups which give our blood and our red blood cells the red color.

3) Adult butterflies do not “eat” but they drink nectar from flowers. Sometimes they supplement their diet by juices from pieces of fruit, or moisture from damp soil containing minerals and salts required by the butterfly. They eat using their long coiled mouthparts, called a proboscis. They usually keep it coiled up under their head, like a garden hose.

4) The planet’s largest living butterfly is the female of the species called the Queen Alexandra Birdwing (*Ornithoptera alexandrae*). The wingspan of this creature is often close to one foot across, with the males being slightly smaller. One of the rarest butterflies in the world, it is only found in the rain forests of New Guinea. Apparently, Queen Alexandra was the queen of Denmark in 1907 when this butterfly was named for her by an original collector. It is said, believe it or not, that the first specimen was actually collected by the use of a small shotgun. That has got to be the most insane collecting methodology I’ve EVER heard of. SHOTGUN? For a BUTTERFLY??? One reason the species is so rare dates to the destruction of much of their territory in the 1950’s by the eruption of a nearby volcano.

5) TRUE. Some butterflies have taste receptors on their feet, as well as their antennae and sometimes their bodies. They can land on a plant and, with the aid of tiny sharp spines on their feet, rip tiny slits in the leaves to allow them to “smell” the plant more efficiently.

6) Butterflies who are commonly preyed upon by birds will often fly fast and erratically, so they can’t be caught as easily. Butterflies who are toxic or taste bad to predators and are generally left alone, can meander more slowly across the countryside.



# Events Calendar

## Nevada County Demo Garden

1036 W. Main St., Grass Valley (on NID Grounds)

## Placer County Demo Garden

11477 E. Ave., Auburn (Senior Garden, DeWitt Center)

Nevada County events in **green**; Placer County events in **yellow**

All events are free unless noted otherwise

## March

### March 11

10:00 am - noon

#### **The Art of Container Gardening**

Grass Valley Elk's Lodge

109 S. School St. (Lower Level)

### March 11

10:00 am - noon

#### **Vermiculture– Worm Superheroes**

Roseville Utility Exploration Center

1501 Pleasant Grove Blvd., Roseville

Small fee; register at 916-746-1550

### March 18

9:00-10:00 am

#### **Basic Composting and Composting with Worms**

10:00 - 11:00 am

#### **Starting Your Summer Garden**

Placer County Demo Garden

### March 18

10:00 am - noon

#### **Totally Tomatoes: Seed to Seed**

Grass Valley Elk's Lodge

109 S. School St. (Lower Level)

### March 22

11:00 am - 1:00 pm

#### **Open Garden Day**

Placer County Demo Garden

### March 25

10:00am - 3:00 pm

#### **2nd Annual Garden Faire**

\$5, no registration required

Gold Country Fairgrounds, Auburn

### March 25

10:00 am - noon

#### **Monarchs and Milkweed: How Can We Help Them?**

Grass Valley Elk's Lodge

109 S. School St. (Lower Level)

## April

### April 1

10:00 am - noon

#### **Vegetable Gardening for Beginners**

Grass Valley Elk's Lodge

109 S. School St. (Lower Level)

### April 8

10:00 am - noon

#### **Compost: A Gardener's Best Friend**

Demonstration Garden, NID Grounds

1036 W. Main St., Grass Valley

### April 8

10:00 am - noon

#### **Basic Composting**

Roseville Utility Exploration Center

1501 Pleasant Grove Blvd., Roseville

Small fee; register at 916-746-1550

### April 15

10:00 am - noon

#### **The Art of Building Raised Beds**

Demonstration Garden, NID Grounds

1036 W. Main St., Grass Valley

### April 22

10:00 am - 4:00 pm

#### **The Union Home & Garden Show**

Nevada County Fairgrounds

11228 McCourtney Rd. Grass Valley

### April 22

9:00 - 10:00 am

#### **What's The Buzz? Attracting and protecting our winged visitors.**

10:00-11:00 am

#### **There's Always Room for a Garden**

Placer County Demo Garden

### April 26

11:00 am - 1:00 pm

#### **Open Garden Day**

Placer County Demo Garden

### April 29

10:00 am-noon

#### **Effective Irrigation**

Demonstration Garden, NID Grounds

## May

### May 6

10:00 am - noon

#### **Practical Composting**

Demonstration Garden, NID Grounds

### May 13

9:00 am-noon

#### **Spring Plant Sale**

Demonstration Garden, NID Grounds

### May 14

10:00 am-4:00 pm

#### **32nd Annual Mother's Day Garden Tour**

### May 20-22

#### **Visit Placer County Master Gardeners at the Spring Home Show**

Gold Country Fairgrounds, Auburn

### May 20

9:00 - 10:00 am

#### **Good Bug? Bad Bug?**

10:00 - 11:00 am

#### **Living with Our Native Oaks**

Placer County Demo Garden

## Visit Master Gardeners at Local Farmers' Markets

8:00 am to noon Mid May–Mid Sept. at the Saturday Growers Market, North Star House, **Grass Valley**

8:30 am to 1:00 pm every Tuesday, starting May 2, near Whole Foods at the Fountains, **Roseville**

8:00 am to noon 1st & 3rd Saturdays, starting May 7, Old Town Courthouse parking lot in **Auburn**

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