



The Virtual Gardener—What’s in a Name?

The system of classifying plants introduced by the Swedish naturalist Carolus Linnaeus in 1735 is the essence of scientific precision and efficiency...or is it?

Linnaeus, whose real name was **Carl von Linné**, introduced the concept of naming plants and animals with two names, a sort of family name—the genus—and a given name—the species—which replaced the cumbersome system of descriptive names that had been used by naturalists for centuries. Over the years, Linnaeus’ naming system was further elaborated by botanists and zoologists who created the full seven-category system of taxonomy we use today—kingdom, phylum, class, order, family, genus, and species (**Wikipedia—Binomial Nomenclature**). The rules for naming plants are encoded in the **International Code of Botanical Nomenclature** developed by the International Association for Plant Taxonomy. Although the rules for naming newly discovered plants are complicated, basically the plant is named by the botanist who first described it and published its description. Once published, the name, classification,

and description are fair game for other botanists and taxonomists to dispute. And disputes frequently occur.

When Linnaeus began his work, he was the only botanist using the binomial naming system and the number of plants he had access to was fairly small. The 10th edition of his famous treatise, *Systema Naturae*, published in 1758, listed only 7,700 species of plants. As his system caught on, more and more botanists began using it and the number of plants named became enormous. That created a problem—how to insure the same plant is not described more than once and given more than one scientific name?

For the past three years the **Royal Botanic Gardens at Kew** in the United Kingdom and the **Missouri Botanical Gardens** in the United States have begun looking at the problem of duplicate plant names. They found that many plants and their varieties had two or three scientific names or even more. For example, there are 790 different names for varieties of tomatoes and 600 for oak trees.

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Multiple names create problems for researchers and others who want to find information about a particular plant. According to an article in [The Guardian](#), researchers would miss 80% of information available on six most-used species of *Plectranthus*, a relative of the basil plant. If they looked under only the most commonly used name they would find only 150 of 500 nutritionally important plant species using the names cited in current literature.

Redundant names also create problems for ecologists and environmentalists who are interested in inventorying, tracking, and protecting plant species. We are all aware of the potentially severe economic consequences of protecting endangered species of plants. Construction projects can be halted; grazing stopped; and once open land sequestered. What if the endangered plant is really not unique and endangered after all? What if the same "endangered" specie is quite plentiful when it is known by a different name? That could lead to an expensive error.

The work of ferreting out redundant names, which began three years ago, is made

possible by the power of the internet and computer databases—interestingly, one of the databases being used was set up using £250 left in the will of Charles Darwin.

According to *The Guardian* article, out of more than a million plant names, the researchers have found 301,000 they accept as definitive species names so far, have eliminated 480,000 redundant names, and still have 240,000 names left to assess. The final list is expected to be published on the Web sometime next year.

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flies and other insects and it can be purchased from:

[Bioquip.com](#).

He and his wife live in Glendale, California and for the last 20 years he has visited Southern Arizona to collect and photograph insects.

* *What's in My Water?* is the title of the **FREE Saturday, October 2** Water Wise presentation at the UAS Public Meeting Room from 9:00—11:00 a.m. If you depend on a residential well for water, this workshop is for you. Topics include: how groundwater works, water quality testing and understanding the results, water treatment systems, well protection, and basic well maintenance presented by Channah Rock, UA Water Quality Specialist. For information call 458-8278, Ext. 2141.

* Thanks to the four homeowners who opened their gardens to the public for the September 5 Water Wise/Master Gardener Xeriscape Garden Tour and the Master Gardener Docents who shared their knowledge with the many appreciative people who visited the gardens!

High on the Desert

The **18th High Desert Gardening & Landscaping Conference** is in the planning stages and will be held **February 17 & 18, 2011** at the Windemere Hotel & Conference Center in Sierra Vista. Be sure to mark your calendars and plan to attend!

Cuttings 'N' Clippings

* The next CCMGA meeting is 5:00 p.m. Thursday, **October 7** in the Public Meeting Room at the University of Arizona South. Doug Copeland will be the speaker for the meeting. He will discuss his book, *Insects of the Southwest*. The book has 1,055 pictures of insects including pictures of 140 butterflies, 224 moths, 593 beetles, 33 dragon-

Robert E. Call

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Last month's puzzle answer . . .

Planning ahead is key to a good design

Powdery Mildew and Milk: Maybe . . . Maybe Not

Last month, I wrote about my attempt to eliminate powdery mildew with a spray consisting of one part milk and nine parts water. I'd just begun using the milk spray when the article was written, so here's an update.

First of all, this is what I did. Once a week, I sprayed my squash and melon plants with the milk solution. I sprayed both the tops and bottoms of the leaves and mainly sprayed affected leaves only. Three days after each milk spraying, I sprayed the plants with a neem solution mixed per the instructions on the neem concentrate bottle. I did this for about four weeks total, until I could harvest the squash and melons. It rained quite a bit during that period, so some days the solution was only on the plants for a short while before rain washed it away.

The results were mixed. The plants survived to produce very tasty and large melons (both watermelon and muskmelon). The butternut and buttercup squash, both very tasty, were quite sizable, a number of the butternuts weighed in the five pound range (last year, they were maybe a couple of pounds). Also, the spread of powdery mildew seemed slower than last year, when it was a very bad infestation that I detected too late. This year, though, in the end, most plants did continue to exhibit the characteristic silvery-white sheen; the two sprays clearly did not halt the fungus in its tracks and by the time of harvest, the patch of vines was once again a pretty sad sight.

Clearly, the two sprays are not miracle cures. My best guess is that they did slow the disease

down. Since I used two different sprays, I have no way of knowing if one was more effective than the other. Who knows, maybe they even counteracted each other? Also, I probably should have sprayed unaffected leaves, too, in hopes of further slowing the spread of the fungus. The frequent rains also compound the difficulty of assessing effectiveness. Nonetheless, I am impressed enough, when compared to last year's disaster, to try the same regimen again next year. Maybe I'll even try using a standard commercial fungicide in half of the garden for another comparison and I will definitely plant some varieties that are claimed to have resistance to powdery mildew. Waltham Butternut squashes are very tasty, and very productive, but they just don't resist powdery mildew.

The whole experience leads me to a larger observation: don't be too quick to jump to conclusions about the reasons that things happen in your garden. To paraphrase Forrest Gump, stuff happens. Maybe this year was just a tougher year for the spread of mildew and the sprays did nothing at all. On the other hand, perhaps the mildew would have been even worse than last year had I not sprayed. Who knows? By way of example, when I first started gardening in Sierra Vista a couple of years ago, a neighbor advised me not to grow sweet potatoes or tomatillos, claiming neither did well here. Being stubborn, I have planted both; the sweet potatoes for the last two summers and the tomatillos for all three summers. Other than quail nibbling the new plants at the beginning of this season

(problem solved with chicken wire cages!), I've had outstanding success with sweet potatoes. My biggest problem has been inadvertently cutting the potatoes in two when I shovel them out of the ground. As for tomatillos, they've been heavily attacked each year by striped cucumber beetles and a similar insect, *Lema trabeata* (it apparently has no common name), but I've managed to control them both well enough with insecticidal soap to have gotten good yields and made some tasty salsa verde to boot. I'm certainly no better gardener than my neighbor; likely he just had some unknown something(s) happen the year he tried to grow the two crops. Was it some mistake he made, or the weather, or something in--or not in--the soil? Maybe he bad-mouthed the garden gods. Again, who knows? Hey, maybe I've just been lucky and I'll never again raise a decent tomatillo.

Anyway, next year at this time, I may have some new and exciting powdery mildew eradication results to report. Then again, maybe not.

Bill Schulze, Master Gardener



October Reminders

- ☼ Be ready for the first frost
- ☼ Thin the seedlings
- ☼ Overseed lawns
- ☼ Plant spring bulbs
- ☼ Plant cool season veggies
- ☼ Divide perennials
- ☼ Don't let weeds go to seed

Try Xeriscaping!

Getting off a plane in Phoenix, Arizona almost two decades ago, I was amazed at how different the land looked from “back East.” Gone were the green lawns, magnolia trees, and azaleas. I didn’t have to travel far however, to feel almost home. All around me were acres of lush green grass thriving from the thousands and thousands of gallons of water needed to irrigate the numerous golf courses!

I imagine that’s why so many people associate the word Xeriscape with images of cacti, tumbleweed, rock and yards barren of plants where there once was a lawn. A well planned Xeriscaped yard does not mean changing your lifestyle, but instead creating attractive landscapes without excess water usage. The word Xeriscape, coined by the Denver Water Board in the early eighties, combines the words “Xeros,” Greek for dry, with “scape,” meaning a kind of view or scene. In most of the Western United States, over fifty percent of residential water use is applied to landscaping and lawns, but a Xeriscaped yard can reduce landscape water use by sixty percent or more, while also providing native habitats for hummingbirds, bees, and butterflies.

Xeriscaping may vary from region to region, but there are seven sure-fire principles that comprise the practice of Xeriscaping. These include planning and design, soil analysis, limiting turf areas, appropriate plant selection, efficient irrigation, use of mulches and maintenance.



Planning and design includes grouping plants together with similar water needs in zones. Group plants that require more water use close to the house or structure, transitioning to lower water use further out, and no-water or drought resistant plants towards the furthest areas of your property.

When considering appropriate plant selection, purchase plants native to Cochise County and avoid the use of exotic plant species that can be invasive and spread into our ecosystems. Use drip irrigation whenever possible, but if it’s not an option for your property, water wisely in the mornings. In the hot afternoon, the water is more likely to evaporate quickly. Keep an eye on where you are watering. Surprisingly, concrete does not need water to survive!

In addition to zoning areas of similar water use plants, are you catching rainwater from your roof or using greywater from your bathroom sinks, showers, and washing machine? Although the concept of harvesting rainwater seems to be the current trend for “being green and sustainable,” man has been

using techniques for saving water from rainfall for later use for thousands of years. There is evidence of water harvesting dating back as early as 4500 BC in Southern Mesopotamia, an ancient region of Southwest Asia between the Tigris and Euphrates Rivers in modern-day Iraq, and 506 BC in Ethiopia. Harvesting rainwater is growing in usage once more due to our growing population and our diminishing resources. A quick Internet search will show you how many different containers there are today to capture our precious rainwater.

From lush tall grasses to abundantly flowering native plants and wildflowers, Xeriscaping is an excellent solution to minimize total water consumption and additionally, you may find an increase in your property value as well!

Michelle Goodman
Associate Master Gardener

Water Wise Report

I hope you have heard about our RainScape Challenge Contest—where 5 lucky winners receive landscape make-overs to RainScapes—established landscapes that rely entirely on rain and stormwater for all their water needs. We want you to watch the RainScape installations, which are starting September 24. To find out who won, where the sites are (all in the Sierra Vista area), the timeline and details on the winning RainScapes, visit

<http://cals.arizona.edu/cochise/waterwise/rainscapechallenge.html>

Cado Daily
Program Coordinator, Water Wise

The Agent's Observations

Q We have about 450 pistachio trees. About 50% of the nuts have been infected by some type of fungus. The fungus appears usually on the end of the nut and causes the tissue to be soft and the nut meat does not mature. What is causing this and is there a cure for this problem?

A After examination of several nuts it was determined a fungal infection was a secondary problem.

The real problem is the feeding of stink bugs, plant bugs, and leaf-footed plant bugs. All of these true bugs have a small, triangular-shaped marking on their backs. These insects are true bugs and have a "beak" they poke through the outer husk and nut shell to feed on the young forming nut meat. This damage is known as "epicarp lesion." Once the shell hardens the bugs beaks can't penetrate through the hard shell and get to the nut meat. The husk is fleshy and moist and a great substrate for fungal growth.



Leaf footed plant bug

Sometimes a pistachio nut meat will have dark spots on it caused by this type of feeding. If pistachio trees are near agricultural fields that are growing alfalfa, when the field is cut, insects like *Lygus*, a plant bug, may migrate to the pistachio nuts causing damage before the nut shell hardens normally during May. Many of these bugs overwinter on weeds like Russian thistle and/or London rocket mustard, so a clean orchard helps reduce their numbers. They also overwinter in wood piles, orchard litter, and buildings.

Control: Controlling weeds is a first step to decrease bug populations. Spraying the nuts with an insecticide containing a synthetic pyrethroid will control these insects. These materials will contain "thrin" at end of the common name of the active ingredient. These insecticides are short lived in the environment because they are broken down by the sun. When processing the harvested nuts, those with damage and small or no nut meat will float in water and can be collected and thrown away. Fully formed nuts will sink in water.

Source: University of California, Davis, Integrated Pest Control Website Plant bugs:

<http://www.ipm.ucdavis.edu/PMG/r605300211.html>

Stink bugs:

<http://www.ipm.ucdavis.edu/PMG/r605300411.html>

Leaf footed plant bug:

<http://www.ipm.ucdavis.edu/PMG/r605300311.html>

Q Please identify this insect that I found in my bedroom. I do not want anything in bed with me!



Ortholomus species

A A sample of the insect was brought to the Extension Office. It was placed in the freezer for several hours to freeze it.

Using a dissecting scope to enlarge the specimen it was determined to be a true bug in the Order Hemiptera. This name means "half-winged," or that the upper half of the wings, closest to the head, are hard and the

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What happened to my agave?

1. Agave snout-nose borer
2. Nothing—natural color
3. Agave yellow spot virus
4. None of the above

[Click here for answer.](#)

(Continued from page 5)

lower wing halves are soft. True bugs have piercing sucking mouths held under their bodies. This insect had that type of mouth. Using a key it was determined to be a seed bug, *Ortholomus scolopax*. They are 5-6 mm in length, dull grey-brown with a corium (the elongated middle portion of the forewing) that is dull red with short silvery or gray hairs on the body. This bug is found in most of the U.S. and southern Canada. Seed bugs feed on mature seeds, typically injecting saliva and sucking out the dissolved contents of seeds. They do not bother humans or animals and will probably not intentionally get in bed with you!

Source: *How to Know the Insects*, 3rd Edition. Roger G. Bland & H. E. Jaques. 1978. Wm. C. Brown Company, Dubuque, Iowa. Pages 133-138, 150-151.



Rainfall Factoids

At our home located in central Sierra Vista, we have recorded the following rainfall totals — interesting!

Year	Monsoon	YTD (as of 30 Sep)
2010	12.02	17.42
2009	5.38	6.85
2008	12.76	13.62
2007	10.91	13.73
2006	11.26	11.98

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