



The Virtual Gardener—The Invaders from Below

Why is it emergencies always seem to happen at the most inopportune times? On Christmas morning our shower stopped draining and became a bathtub. All the usual DIY tricks to get it to drain failed and the water was still there the next day. Fortunately, we were gone all day! It was time to bite the bullet and call for professional help.

The problem, as I had suspected, turned out to be roots in the sewer line. Besides being expensive to fix, the problem was also instructive. Here are some of the lessons I took away from the experience, some of which I had already known but failed to appreciate.

According to many experts, the parts of trees we see above the ground represent only about half their total mass. The parts we don't see, the roots, represent the other half. Roots secure trees to the ground to keep them from falling over, extract water and nutrients from the soil to provide the raw materials required to sustain life, and store food for the tree.

It's often said that roots "seek" water. That is false. Roots spread randomly around the tree, growing more rapidly where conditions are most favorable and

more slowly where conditions are unfavorable. When they find moisture, they will follow it, leading to the common misperception that they seek water.

If buried pipes carrying liquids leak any moisture into the soil within the root zone of a tree, the roots will find it, follow it to its source, and invade the pipe at the points where it leaks. In a previous era, sewage lines were made of short sections of clay pipe, and moisture often seeped out where the sections were joined. Today, we use long runs of plastic pipe which have fewer joints but may over time develop tiny stress fractures that allow moisture to escape. Once they have found this moisture, the roots will penetrate the pipe through the fractures and begin growing inside. Sewer pipes are especially inviting to tree roots because they are generally warmer than the surrounding soil and not only carry water but a rich supply of nutrients.

Tiny roots growing inside a pipe often create a veil-like meshwork that acts as a filter for liquids flowing through the pipe. Any solids being carried in the stream will be strained out and can build up to form a

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blockage. Initial symptoms of this buildup will be slowed drainage. If ignored, drainage will become progressively slower and will finally stop altogether. Then water will back up into the lowest points in the system, often the basin around a shower drain.

The solution to clearing the blocked pipe is to clean it with a cutting machine. These machines use a long, flexible shaft with a rotating cutting head to cut away the roots inside the pipe. This will solve the immediate problem but only temporarily. Over time the roots will grow back and cause further damage to the pipe.

There are two strategies to deal with invasive roots. You can permanently solve the problem by removing the offending tree (or trees!), or you can manage the problem by periodically cleaning the pipes.

Removing a mature tree is not only physically but often emotionally difficult. A tree may be a key element in a landscape and removing it will leave an ugly gap—like a missing front tooth. If the tree is very large and located close to the house, removing it may require the services of a professional arborist. The only good news is that removing the tree and killing the roots will permanently solve the invasive root problem. Roots can survive for long periods, however, even after a tree is cut to the ground as evidenced by resprouting from the stumps of cut trees. To be effective in killing the roots, the stumps should be mechanically removed or treated with an herbicide.

Managing the problem can be expensive over the long run and may only postpone the development of serious damage to the sewer line. One management approach is to have the sewer line periodically professionally cleaned with a cutting machine. This can be

expensive and result in damage to the landscape as the cutting machine is hauled in and out of the yard. In addition, it may only become evident that cleaning is required when a drainage problem develops (maybe on Christmas Day!).

A second management approach involves periodically killing the roots inside the pipe with chemicals. Chemicals used for this purpose will kill offending roots but will have no or negligible effects on trees.

Copper sulfate (CuSO_4) has been used for this purpose for many years. It is available in many hardware and garden supply stores and is relatively inexpensive. The product should be flushed down the toilet and not poured down drains since it will corrode metal pipes. A disadvantage of using copper sulfate for root control is that it is only effective against roots growing along the bottom of the pipe since it is carried in solution and the liquids flowing through the pipe only flow along the bottom. Most root intrusions originate along the top or sides of the pipe.

A second, and more effective method of root control is using a root-killing chemical suspended in a foam. These products expand into a foam that completely fills the pipe and kills the roots growing from the top and sides. There are several brands of root killers that use this technique, and they also can be widely found in hardware and garden supply stores but are more expensive than copper sulfate.

There are many discussions of how to solve invasive root problems. Here are a couple I have found most informative:

[*When trees attack!*](#) by The Garden Professors

[*Sewer Line Root Control*](#)—from the University of California

Gary Gruenhagen, Master Gardener
virtualgardener@cox.net

Cuttings 'N' Clippings

✿ Follow the Cochise County Master Gardeners at:

<http://cals.arizona.edu/cochise/mg/>

For more information contact Valerie at:

valeriedavidson@email.arizona.edu

You can also follow them on Facebook at: www.Facebook.com/CochiseCountyMasterGardeners

✿ The Master Gardeners are at the Sierra Vista Farmers Market on the **first Thursday of each month** to answer questions and offer resources for common garden and landscape problems.

✿ Check out the Water Wise web site to see what's happening in 2016 at: <http://waterwise.arizona.edu/>

✿ The Cochise Chapter of the Arizona Native Plant Society holds monthly programs in the Cochise County Community Development Office Conference Room, 4001 Foothills Dr. (corner of Highway 92 and Foothills), Sierra Vista at 5:00 PM. On February 19 the speaker will be Mimi Camp, Naturalist, Artist, and Photographer. Mimi has resided in Southern Arizona for over thirty years where she has become an authority on the native Arizona flora. Her many interests include herbal medicine, botanical illustration, and photography. Her presentation will be *The Mule Mountains – Endangered and Otherwise Noteworthy and Intriguing Plant Species*.

Mule Mountains, Cochise County



Cochise County Master
Gardener Newsletter Editor
Carolyn Gruenhagen

Ready, Set... Grow!

I hope you enjoyed the first of the “New Varieties Coming in 2016” article last month. Its primary focus was on **perennials** that would be conducive to grow in our areas. For this second series of new varieties the focus will be on some extraordinary **annuals**.

We are well aware of the added richness and texture coleus (*Plectranthus*) can add to a container or border. The first is from Terra Nova Nurseries, <http://www.terranovanurseries.com/>, *P. lamiaceae* ‘Electric Slide’. This coleus has canary-yellow leaves



‘Electric Slide’ -
waysidegardens.com

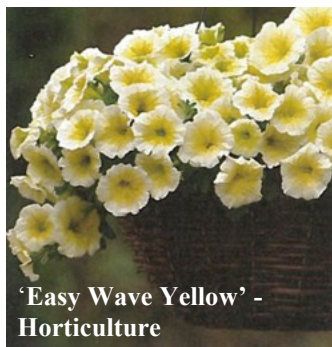
with striking red veins and ruffled leaf margins. This makes a large addition, as the growing habit is 3 feet tall by 2 feet wide. Here is another coleus from Burpee Home Gardens, <http://www.burpeehomegardens.com/>, *P. scutellarioides* named Marquee ‘Special Effects’. It grows to 24 inches tall with an 18 inch spread, takes moderate water but has these unique pointed leaf margins and kaleidoscope of color, which make it striking. Also, from Burpee Home Gardens is a *Zinnia marylandica* named ‘UpTown Frosted Strawberry’. These zinnias stand up strong against heat with minimal water, but the frosted color is eye catching with deep pink blooms

that fade to white at the edge.

Here’s a heat tolerant plant! *Hibiscus acetosella* ‘Little Zin’ from Ball Floraplant, <http://www.ballfloraplant.com/>. This hibiscus is a burgundy color, heat-loving, and long-lasting for our area. It is a compact hibiscus with dimensions of 18—24 inches around and therefore would play well with others in containers. This would be perfect contrast foliage to flowering petunias or dense planting with the lime green sweet potato vine (*Ipomoea*).

Since I mentioned petunias, there is a new one coming from Danziger – “Dan” Flower Farm, <http://www.danziger.co.il/>, from their Cascadias series named ‘Pitaya’ (*Petunia hybrida* ‘Pitaya’). This one had to be mentioned here because of its season long blooming habit (keep them dead-headed), but most importantly its vibrant pink with lime green rimmed petals. It takes a moderate amount of water. But, can you picture this with the ‘Little Zin’ burgundy hibiscus?

And yet another new petunia from Wave, <http://www.wave-rave.com/>, *Petunia x hybrida* ‘Easy Wave Yellow’. This is a spreading petunia be-



‘Easy Wave Yellow’ -
Horticulture

cause of its strong rooting and increased branching habit creating a mound 12 inches high by 39 inches wide, with prolific soft creamy yellow blossoms.

Cannot forget about the salvia! From Green Fuse Botanicals, <http://www.green-fuse.com/>, comes a new

series called Grandstand. These *Salvia splendens* flower early and keep their color longer. *Horticulture* magazine states, “...they produce more and more flowers as they grow.” With a growing habit of 12—18 inches tall, they come in colors of red, lavender, and purple taking full sun with moderate water. Depending on the temperature extremes in winter this one could have potential to overwinter in some of our parts.

Last, but not least, I want to showcase two new varieties from Proven Winners Annuals, <https://www.provenwinners.com/>, a *Calibrachoa* and a *Verbena*. The ‘Holy Moly!’ Superbells, (*Calibrachoa*) has



‘Holy Moly’ -
Provenwinners.com

petunia-like blossoms since they are closely related with bicolored petals that are yellow hues paint-brush splattered with a deep rose pink. This one is vigorous, promises lots of flowers and doesn’t require dead-heading to do the job. It’s growing habit is 6—10 inches tall by 12—18 inches wide, full sun and moderate watering. Now, the *Verbena bonariensis* ‘Meteor Shower’ from Proven Winners! I think this one is a keeper, especially for us out here in Arizona. They have helped this verbena become more dense and vigorous but without the seed so that it doesn’t overtake your garden. ‘Meteor Shower’ is heat, drought, and deer tolerant (the deer won’t touch it). It contains profuse lavender color flowers, grows to about 3 feet tall and 12 – 16 inch spread that handles full sun. Perfect!

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A special "Thank You" goes out to the team at *Horticulture* (hortmag.com) and especially Caroline McKee for the development of compiling an extensive list of the upcoming new varieties for 2016.

Joshua Sherman, M.S., Commercial Horticulture Area Agent

Note: Mention of commercial products or trade names is made with the understanding that no endorsement is implied and no discrimination is intended by UA Cooperative Extension.

High Desert Gardening & Landscaping Conference Ready for Registration!

The agenda is complete and the registration site is open for our 23rd annual High Desert Gardening & Landscaping Conference 2016! Our 2-day conference will be Thursday-Friday, March 10 & 11 on the Cochise College campus right next door to the U of A Sierra Vista campus. The conference is presented by the Cochise County Master Gardeners Association in conjunction with Cochise County Cooperative Extension University of Arizona Sierra Vista.

We have some wonderful speakers and topics lined up for this year. Margaret West, president of Margaret West Designs, will open the conference with her talk on High Desert Landscaping. Several breakout sessions and workshops will follow on topics such as Water Gardening, Diagnosing Plant Problems, Straw Bale Gardening, Making Hypertufa Containers, Creating Vertical Gardens, The Gringo Gourmet, Cactus Propagation, Confidence in Canning, Backyard Grapes, Roses in the High Desert, Raised Bed Gardens, Small Space Tomatoes & Corn, Insect & Disease Management, Fruit Trees,

Finding Your Botanical Name, and Garden Birdwatching. Friday's sessions opens with a fascinating talk on How Plants Think. You can see there's something for everyone's gardening curiosity.

Wednesday evening offers a pre-conference event at the Patterson Observatory on the U of A Sierra Vista campus at 7:00 PM, where you may view our beautiful high desert skies through the 20-inch telescope with the guidance of Sierra Vista's very knowledgeable astronomers!

Saturday morning's post-conference event, 9:00 AM to 11:30 AM, features Certified Arborist & Cochise County Master Gardener, De Lewis, presenting his session on *Make the Right Cut: Pruning Maintenance of Woody Plants*. No one does this better than De! He will begin the session in Groth Hall, Public Meeting Room, on the U of A Sierra Vista campus and then venture outdoors.

You may register for the full 2-day conference, or just one day. Registration includes full breakfast & lunch each day and the hands-on workshop of your choice. There is no extra fee for the hands-on workshop as in the past. There is also no extra charge for the pre and post-conference events. You'll find lots of vendor exhibits and door prizes both days.

Please go to the Cochise County Master Gardener website:

cals.arizona.edu/cochise/mg and scroll down just a bit and click on High Desert Gardening and Landscaping Conference. Then click on Conference Agenda to view the program and on Conference Registration to get signed up or call our Cooperative Extension Office for assistance at 458-8278, ext. 2141. See you at the Conference!

Scholarships Available

If you'd like to attend the 23rd Annual High Desert Gardening & Landscape Conference on a full scholarship with all expenses paid, then here's a great opportunity!

The Cochise County Master Gardeners Association is awarding up to three full scholarships to the conference to be held Thursday and Friday, March 10 & 11.

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

- 1) Gardening for food production,
- 2) Landscaping with native plants, or
- 3) Environmental stewardship.

Essays must be 750 to 1,000 words in length and be suitable for publication.

All references and authorities cited must be properly attributed. Essays should be submitted as an attachment (plain text format) in an email addressed to

ccmgasecretary@gmail.com

Subject: Conference Scholarship

Entries must be received by close of business on February 11, 2016. Entries will then be judged by a committee of Master Gardeners appointed by the President of CCMGA. The awardees will be notified by February 20, 2016. Your essay could even be published in the Cochise County Master Gardener Newsletter.

Jan Groth, Master Gardener Program Coordinator



February Reminders

- ◆ Winter prune
- ◆ Prune roses
- ◆ Cold-moist stratify seeds
- ◆ Plant bare-root trees
- ◆ Prepare spring planting beds
- ◆ Clean and repair drip irrigation systems
- ◆ Finalize spring garden plans
- ◆ Keep watering!

At a Glance Box

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

Plant: Arizona madrone, *Arbutus arizonica*

Description: Evergreen tree

Blooms: Small, urn-shaped cream to pink flowers

Water Need: Larger with some supplemental water

Use: Specimen tree

Culture: Pine-oak forests. Well-draining acidic soils, full sun, part shade, 4,000-8,000' elevation

Learn more: Cochise County Herbarium

www.cochisecountyherbarium.org

For an in-depth article, see below.

Cado Daily

Water Resources Coordinator, Water Wise Program – Retired!

University of Arizona Cochise County Cooperative Extension

Arizona madrone, *Arbutus arizonica*

It was another one of those “shoot!” moments. Literally! I had a great opportunity for a photo shoot but didn't have my camera. I did have a witness though. Mimi Kamp (one of our Bloomin' article authors) and I were at the Amerind Foundation Museum, January 16, leading a plant walk for 2016 Wings over Willcox, and we saw a madrone tree in bloom. The tree was just outside the entrance to the museum in a protected courtyard and right in front of our eyes was a cluster of those pretty cream urn-



shaped flowers that look like they belong to a blueberry plant.

I remark that the plant was in bloom to make this a bona fide February “It's a Bloomin' Cochise County Native Plant.” I'm rather proud to have found something blooming in the middle of winter. I am also pointing it out because, like some other members of the Heath Family (as is the blueberry), they don't always bloom when the books say.

A more familiar Heath Family plant native to our locale is the manzanita bush. If there is much rhyme or reason to when it blooms, I haven't a clue as it seems to bloom in the middle of winter or in spring. Botany books say the Arizona Madrone, *Arbutus arizonica*, also known as Madrono, blooms April-June, but we know the madrone at the Amerind Museum, located in foothills of the Dragoon mountains, is getting a head start by blooming in January.

If you aren't familiar with the ma-

drone, it is easy to miss. From a distance it looks like an oak but has a slightly reddish aura about it. It can be a large tree, reaching heights of 50' and broad in diameter, but it is smaller in drier habitats reaching about 19' high. It is evergreen, like our live oaks, and its bark is also fissured and gray. But look a little more closely. The smaller branches look like manzanita branches! They are mahogany in color, some smooth but many peeling like sun-burned skin.



The leaves, however, are a dead give-away. They resemble large, leathery, dark-green rhododendron leaves (another plant in the Heath Family). Putting all of the parts together, the madrone is like one of those silly pictures where you can put different body parts from completely unrelated bodies together. The madrone trunk and large branches look like an oak, the small branches look like a manzanita, the

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(Spurges continued from page 5)

leaves look like a rhododendron and the flowers look like a blueberry plant.

The madrone is a slow-growing tree naturally found in an oak - pine forest and prefers acidic soil. Although not abundant, its range is widespread from southeast Arizona and New Mexico south into Mexico, and more commonly found at elevations 4,000 to 8,000 feet (Kearny and Peebles, *Arizona Flora*). Madrones can be found in the Mule mountains (there is one next to the pull-out just before Hwy 80 splits into two lanes on the way into Bisbee), and other mountain ranges in Cochise, Pima and Graham counties. In Mexico, madrones can be found as far south as the state of Jalisco.

According to U.S. Forest Service literature resources, the madrone has a multitude of uses: the

brittle, yet soft close-grained wood was made into charcoal with subsequent charcoal powder, a component of gunpowder; ecologically, although having narcotic properties, the persistent wart-like red berries are an important food source for animals especially for the elegant trogon, a beautiful mountain bird; and medicinally, the bark can be used as an astringent.

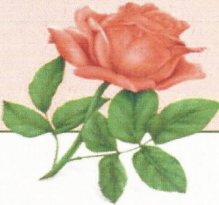
Next time you take a stroll in the pine-oak forests of our southeast Arizona sky islands, keep your eye out for this unusual tree. If you find one, take a few minutes to pause under its shade and appreciate this overgrown version of the blueberry plant, but unlike the blueberry, leave these berries for the birds!

Cado Daily
 Water Resources Coordinator,
 Water Wise Program – Retired!
 University of Arizona Cochise County
 Cooperative Extension

“What is that Plant?”

This ID service is available to the public by Herbarium volunteers. If you are wondering what that naturally growing or naturalized plant is, getting an identification is easy. All you need to do is visit the Cochise County Herbarium website: www.cochisecountyherbarium.org and click on the Plant IDs tab to learn how!





GROWING ROSES IN THE HIGH DESERT

Hands-On Workshop


Presenter

Lauren Kettenbach
 Certified Rosarian
 Pima County Demonstration Gardens

Saturday February 6th

- 9:30 Registration & Coffee
- 10:00 Lecture in Room 503
- 15 minute coffee break & snacks
- 11:00 Hands-On Workshop in UA Rose Garden

UA Sierra Vista
 1140 N Colombo Ave
 Register & Lecture
 in Room 503
 Workshop in the UA Rose Garden



Presented by
Cochise County Master Gardeners

Sponsored by
U of A South Foundation

For more information, contact
Valerie at (520) 458-8278 ext 2141

During the Workshop:


- Learn to plant bare root & potted roses
- Learn to prune roses in the UA Rose Garden (please bring your own garden shears)

Bonus!

- Learn to sharpen & sterilize your Rose Garden shears!

Cost is only \$10* per person or \$15* per couple!
Payable on day of workshop

*All donations benefit the UA Rose Garden. Additional donations gratefully accepted.



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