High on the Desert Cochise County Master Gardener Newsletter

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The University of Arizona and U.S. Department of Agriculture Cooperating

Water Gardening in the Desert—Water Wise

Water gardening is fun and it is a growing trend. Water features are popping up in backyards all over the country. People want their little piece of the natural world right in their backyards and nothing provides that more than a water feature. Running water of a waterfall or fountain is very soothing and blocks out the noises of our surroundings. As we live in the desert and water is scarce, we need to not be wasteful. Because we can afford to pay for the water doesn't mean we can use as much as we want. Keep in mind, "Waste not, want not."

I recently met someone who has a beautiful waterfall and small pond and is cleaning it out on a weekly basis, running about 500 gallons into the landscape. That is certainly not the way to do it, and there is no need to go to all that work. A water feature is supposed to be fun, entertaining, environmentally correct, and definitely not wasteful. A well put together water feature can be maintained water wise and shouldn't need more water than a landscaped yard and certainly not as much as a lawn.

Of course there will be evaporation on very hot days, which will have to be topped up. A monthly water exchange of 10 to 20% is also necessary. I do that when my trees need to be deep watered. At the moment the rains are doing that for me. To avoid a lot of evaporation the surface of the water feature should be covered at least 60% with leaves. My pond has a coverage of 70 to 80%, but I am using aeration devices to help with the gas exchange. This is very important to keep the fish happy. The heavy coverage also helps with the algae. Algae cannot grow without light. The bottom of the pond should be planted with at least 40% Elodea or a similar plant. These plants are the work horses in the pond. They oxygenate the water, filter it and take the nutrients away from the algae as they feed through their leaves. They also provide food and hiding places for fish, tadpoles, and dragonfly larvae.

A pond that contains fish should also have a filter. It just makes maintenance

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easier. When your pond has achieved a natural balance there is no need to drain it and start new. My pond is now five-years old and has never been drained. I think about it, but then as the season goes on it always looks clean. My plants are doing their work.

If there is a waterfall you have to be on the lookout for water losses through run offs and channeling. That's why I advise against a float valve that automatically fills up the water level. It might be handy, but it doesn't make you aware of a problem. Waterfalls should always be lined with a liner that overhangs into the pond. Never overstock your pond as that will lead to maintenance problems and fish losses. The overall guide line is 1 koi for 125 gallons, not starting in a pond with less than 1,000 gallons. You can have 4 goldfish in 125 gallons, even if they start small they will grow very quickly and then what?

Fountains are beautiful but very wasteful. On a windy day they should be turned off.

Angel Rutherford, Master Gardener

Robert E. Call
Extension Agent, Horticulture

Carolyn Gruenhagen
Editor

Cuttings 'N' Clippings

❄ The next meetings of Cochise County Master Gardeners Association (CCMGA) are 5:00 p.m. September 3, 2003 (Room 102 followed by a tour of a local garden) and October 1 at the University of Arizona South campus. The room number of the October meeting will be available at a later date.

❄ Saturday, September 6 from 8:00—9:30 a.m. a free *Water Wise* Workshop will be held at the University of Arizona South called ***How Do I Plant?*** with De Lewis, ISA Certified Arborist and Master Gardener.

❄ The fall xeriscape tour sponsored by *Water Wise* and the Cochise County Master Gardeners will also be held on September 6 from 9:00 a.m. to 1:00 p.m. Maps will be available at the *Water Wise* workshop.

❄ The October 4 free *Water Wise* Workshop held at the University of Arizona South from 9:00–10:30 a.m. is called *Septic Care and Greywater Reuse.*

❄ Carr House is holding Sunday programs at the Carr House Visitor Information Center located approximately 2 3/4 miles up Carr Canyon Road (from Hwy 92 South of Sierra Vista turn right on Carr Canyon Road at the Mesquite Tree Restaurant). The September 14 program is *A Late Summer's Night Dream-Milky Way Gazing* with Doug Snyder, amateur astronomer and comet hunter, founder of "Friends of the Milky Way." This will be a special evening program beginning at 7:00 pm. You are asked to bring flashlights and lawn chairs. September 21 De Lewis, Certified Arborist and Cochise County Master Gardener, will present a program on Plant Health Care called *Preventing and Managing Environmental Stresses and Pests in Woody Ornamentals.* The September 28 program is *Arizona Animals—Past, Present and Future* with Mark Fredlake, wildlife biologist with the BLM. For more information on these programs contact the USDA Forest Service at (520)378-0311.

❄ The Bisbee Farmer's Market in Vista Park in the Warren Section of Bisbee continues on Saturdays from 8:00 a.m. to noon. Items available at the market include farm products, plants, home crafts, nature crafts, food products, yard and garden art. For more information or if you would like to be a vendor call the Market Manager, Valerie McCaffrey at 432-7066 or e-mail:
vallimac@ivwnet.com

Quick Tip

? Line a clay or plastic flowerpot with a coffee filter before filling the pot with potting soil. The filter prevents the soil from going through the drainage holes.

Woman's Day Magazine
June 2, 1998

Host Plant—Southwest Sennas

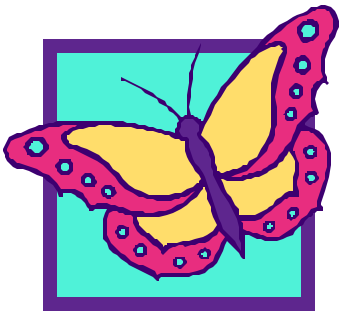
Gardening in the desert has a host of challenges—poor soils, drought, and searing heat. A plant that laughs at all these challenges in the garden are the sennas. Belonging to the legume family, they fix their own nitrogen, are buzz-pollinated by bumblebees and carpenter bees, provide seed for birds, and make great butterfly host plants.

Senna *wislizeni* (Shrubby Senna) grows up to eight feet high and it may lose its leaves during drought and cold weather. Small dark green leaflets and masses of butter yellow flowers are triggered by summer rains. The Cloudless Sulphur butterfly lays her eggs on the flower buds and the caterpillars eat only the flowers.

Senna lindheimerana (Velvet Senna) is a herbaceous plant that stands three feet high. The dark green oval leaves are velvety, inviting the gardener to "pet" its leaves, on which the Sleepy Orange Butterfly lays her eggs. Clusters of yellow flowers occur at the ends of the branches, and like the leaves the flower pods are soft to the touch.

Senna Leptocarpa (Long-pod Senna) can be found along the roadsides after the summer rains. The seed pods can measure up to four to six inches long and the bright yellow flowers are stunning. This is the favorite plant of the Cloudless Sulphur, Orange-barred Sulphur, Boisduval's Yellow and the Sleepy Orange.

Senna letadenia is a low growing plant that can be found on our property after a few weeks of good



summer rains and is the host plant for the Tailed Orange butterfly. This plant is not available in the nursery trade and illustrates the importance for desert gardeners to identify those 'weeds' that appear in the garden. Remember - that 'weed' could be an important food plant for an insect!

When shopping for sennas seek out the native ones – as fellow Southeast Arizona Butterfly Assn. member Karen Hillson pointed out in the Spring 2001 issue of *Butterfly Gardener—"*caterpillars will not eat the non-native sennas, also known as cassias, that are commonly found throughout many neighborhoods. It has been found that the Australian cassias have a chemical very similar to native sennas thus confusing butterflies into laying eggs onto them. The result is that the caterpillars then die from eating the 'poisonous' non-native plants."

Happy Caterpillar Gardening!

Cheri Melton, Master Gardener

Cheri Melton is an avid wildlife habitat gardener and has attracted 57 species of butterflies to her garden.

Cochise County Fair

September 25— September 28

Patrick Call, Chairman and District 1 Supervisor, writes in the fair book available at the Cooperative Extension offices, "This year we will be celebrating our 79th Anniversary and the theme to mark this grand event is 'Little Money—Lotta Fun.' Traditionally, County Fairs are a time for accomplishments and a time of sharing common interests. Whether you are a participant or a spectator, the Cochise County Fair is sure to have an event or exhibit that will please you, and we are sure you will enjoy the friendly competition, good fellowship, and many interesting exhibits."

Why not join the fun at the fair grounds located in Douglas, AZ!

Water Wise/ Master Gardener Xeriscape Garden Tour Saturday, Sept. 3

The Virtual Gardener—Cochineal

If you have any prickly pears in your yard (especially Santa Ritas) take a close look at them. I'll bet you'll find at least one small glob of a white sticky substance on a pad. Poke the glob with a stick and get a surprise. The glob will suddenly be stained a beautiful crimson red.

The red stain is produced when you smash a female scale insect (*Dactylopius confusus*) and release the red dye within her body. The sticky white substance is a protective cover secreted by the insect for protection against the environment and predators. When I scraped up a glob of the white stuff and examined it under a microscope, I found that it was not a foamy liquid like a spittlebug produces but rather a mass of web-like white sticky fibers. Probing around in the fibers, I found several tiny spherical red bags—female scale insects. When the bags were ruptured, the crimson fluid was released. I also found a tiny white grub inside wiggling around in the fibers. At first I thought this was another form of the *Dactylopius*, but now believe it was probably the caterpillar stage of a moth (*Laetilia coccidivora)*, one of the few predators of the *Dactylopius*.

All of these interesting sights under the microscope piqued my interest so I turned to the Web to find out more. My first concern was for the prickly pear. I wondered if this insect would kill the plant and how to get rid of it.

The good news is that cochineal insects do not normally threaten the life of the plant. Although the cochineal insect pierces the skin of the cactus and sucks on its juices, it takes a lot of them to kill a cactus pad and the cactus can rapidly produce new pads to replace the dead ones. The biggest problem is an aesthetic one. The cactus looks terrible when it is covered with white globs.

The other good news is that the globs are easily removed from the plant with a strong stream of water from the hose. Because the cochineal insects disperse from cactus to cactus on the wind and perhaps on the feet of birds, you should examine your prickly pears every couple of weeks and wash off the insects if you want to keep the cacti relatively free of cochineal.

The crimson red fluid inside the female insect is called carminic acid ($C_{22}H_{20}O_{13}$) and is an effective deterrent against most potential predators. The caterpillar of the *Laetilia coccidivora* actually eats and stores the acid as protection against its own predators. In addition to its utility to the cochineal insect, carminic acid has been used for centuries as a dye.

The Aztecs in Mexico cultivated cochineal insects to extract the red pigment to dye cloth. The color was so superior to anything in Europe at that time that after the conquest the Spaniards made a fortune exporting cochineal. Their 250 year monopoly on the cochineal trade was finally broken in 1777 when a Frenchman smuggled some infected cactus pads to Haiti. The cultivation of cochineal has now spread around the globe.

Cochineal is not only used as a fabric dye, but also as a food coloring and pigment for lipstick. For a while it was replaced in this use by synthetic dyes, but those have now been shown to be carcinogenic.

If you want to find out more about cochineal, do a Web search for "Dactylopius coccus," "Dactylopius confusus," "cochineal," or "Laetilia coccidivora."

Until next time, happy surfing!

Gary A. Gruenhagen, Master Gardener
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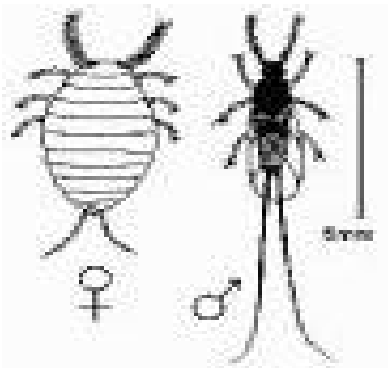
September Reminders

- Keep on watering!
- You can always plant something—try cool-season veggies
- Start shopping for bulbs (*Bulbs for Southern Arizona* bulletin is available from the Cooperative Extension offices)



Cochineal insects (male & female)

The Agent's Observations

Q I was golfing the other day and found small mounds of sand/soil on the putting greens. My perfect putt was re-directed as the ball crossed over these mounds and I missed the cup! This looks like night-crawler activity. Is this the case?

A I'm sorry but I can not help with your golf game. Samples were collected in the early morning when mounding activity is greatest. The cause of these mounds is from rove beetle (*Osorius planifrons*) activity. These elongated beetles are diggers and are well documented from golf courses around Arizona. They get into the greens and cause poor golfers all kinds of putting headaches. They leave little soil turrets from their activity. Greens keepers can just whip or mow in the morning and knock the turrets down. This is a maintenance problem that is not normally solved by using pesticides. Rove beetles comprise a large family (*Staphylinidae*) of beetles with over 26,000 species worldwide, and about 2,900 species in North America. Adult rove beetles are generally less than 3/4 inch long. They are easily recognized by their slender, usually black or brown body. Rove beetles have shortened front wing covers (elytra) that may look like pads on the abdomen. They have the behavior of curling the tip of their abdomen upwards over their body when disturbed or running. Adults are usually strong fliers. They are predators and scavengers frequenting carrion, dung, fungi, and decomposing plant material. A few are parasites of other insects. They are often found in agricultural soils and home gardens. Some species live in bird and animal nests while others are guests or predators in ant and termite colonies. Some even live in tide pools along coast lines.

Rove beetle

Source: *How to Know the Insects*. Roger G. Bland and H. E. Jaques. 1978. Wm. C. Brown Co. Publishers, Dubuque, IA. pp.194-95.

Q I have sappy, oozy stuff coming out of my willow tree where limbs branch out from the truck. What is happening and will it kill my tree? The same stuff is on some rosemary and shrubby junipers. What can I do to save my plants from this slime?

A The willow tree has slim flux, also know as wet wood. The slimy stuff is the by-products of fermentation caused by yeast and bacteria that are under the bark. If this material is bothersome wash it off with water from a garden hose. Research has shown that the best treatment is to leave the tree alone and let it heal itself. Keep it well watered for healthy growth to aid in overcoming this infection.

The other material you see is not slime flux but rather caused by an insect. If you probe in to the slime you will find spittlebug nymphs (young), also know as frog-hoppers. One of the more

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Spittlebug nymphs

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(The Agent's Observations continued from page 5)

common North American species is *Philaenus spumarius* (Linn.). The name is derived from the inactive nymphs that surround themselves with a conspicuous mass of white spittle-like froth which provides a moist habitat and perhaps protection from predators. Use a hard stream of water from a hose and spray them off of the plants. This will have to be done several times because they will reappear. They do little if any damage to the plants so they can be left alone if the appearance is not bothersome. They will disappear during cold weather.

Source: *How to Know the Insects.* Roger G. Bland and H. E. Jaques. 1978. Wm. C. Brown Co. Publishers, Dubuque, IA. p.162.

Keep Insects at Bay With Non-toxic Methods

- Wipe up ants with a wet sponge when you see them. They rely on one another for direction.
- To keep ants out, sprinkle powdered red chili pepper, paprika, or dried peppermint where ants are coming in.
- Use the botanical approach: plant mint around the outside of your home. Ants really do not like the smell of mint.
- If flies are pestering you, scrape a lemon or orange and allow the citrus oil to permeate the room.
- Mosquitoes don't like vinegar. Dip a cotton ball in some vinegar and rub it on exposed skin. The vinegar evaporates immediately, so there is no chance of you smelling like pickles.
- Basil, planted in window boxes, also keeps mosquitoes away.

-Southern Arizona Home Builders Association (SAHBA)