2013 has been another remarkable year for our GCMGA. The demonstration garden continues to expand with more and varied vegetable gardens to support our community food banks, building projects continue at a fast pace, a beautiful new Earth-Kind garden is taking shape in the north end of the garden just before you enter the serene Asian garden, and we’ve had expanding, phenomenal interest in our monthly public garden tours. Our educational programs have inspired an ever growing number of participants over the 2013 calendar year and they continue to be popular both for weekend courses and week-night offerings. Of course we conducted two successful plant sales this past year and are looking forward to our next sale in the spring. A special thanks goes out to all the MGs who volunteer their time and talents to make us successful! Please continue to volunteer; many are needed to continue our success in supporting our Galveston County community.

The next few months continue to be one of the best times to get out and work in our gardens. Our last newsletter for 2013 features several educational articles and other ideas to fit with this season. Laurel Stine has provided timely guidance on an insect pest invading our region, the Asian Cycad Scale. It is impacting our Sago palms (page 5). Learn or refresh yourself on the correct method to trim crepe myrtles on page 4, discover how to improve the quality of your home’s indoor air with plants on page 6 and find out the facts on that irksome bur clover weed (page 13). This is the time of year to plant bulbs. Many types of bulbs grow magnificently in our Gulf Coast area and some are featured in this month’s “Best Shots” on pages 10-11. Jan Brick’s story on page 9 talks about the much coveted Amaryllis, a type of bulb. What would the holidays be without a Christmas tree for those who celebrate with one? Dr. William Welch offers alternatives to throw-away trees that will last in your landscape long after the holidays have passed (page 7). Donna Ward’s piece on page 8 provides a list of activities that will keep us busy until spring and our landscapes beautiful. Enjoy visiting Anne Coppenhaver’s Amazing Yard on page 12 to learn that you don’t always need grass! Don’t miss our regular features including the Carbide Park update on page 16, and updated coming events, our calendar and the bulletin board.

The newsletter team hopes 2013 was a good year for you and your family and wishes all a great holiday season and Happy 2014!

By Camille Goodwin
MG 2008

You might be a Master Gardener—if you argue constantly that compost smells sweet, you delay vacation travel until after the harvest, you get at least a dozen catalogs in the mail – and they send you into a state not experienced since teenage dating, people share all their plant problems with you, trays of seedlings are on top of your refrigerator, cuttings are in the refrigerator, you use Latin words in public, when you tour a garden you first look for their composting set up, you won’t let anyone else prune the fruit trees, and you’re in a national park and you have to resist the urge to pull weeds!
Inside This Issue...

2 Intro by Camille Goodwin
3 How to Reach Us
4 Ask a Master Gardener Q&A: Crape Myrtle Pruning by Kaye Corey
5 Ask a Master Gardener Q&A: Asian Cycad Scale by Laurel Stine
6 Meet Chris Wiesinger—Indoor Plants that Clean the Air by Pat Forke
7 Live Christmas Trees by Dr. William C. Welch
8 Trowels and Tribulations by Donna Ward
9 The Island Garden—Merry Christmas Amaryllis by Jan Brick
10 MG Best Shots & Narrative - Bulb Gardening by Camille Goodwin
11 Landscaping Without Grass by Cheryl Armstrong
12 Weed of the Month: Bur Clover by Marian Kimbrough
13 What’s the Biggest Problem with Growing Roses by John Jons
14 Seasonal Bites - Roasted Vegetables by Linda Steber
15 Gardening Calendar - December-January by Jenifer Leonpacher & Gregory Werth
16 Gardening Calendar Video - by Jenifer Leonpacher and Gregory Werth
17 Project: Demonstration Gardens by Tom Fountain
18 Meeting Minutes - MGA Meeting by Mary Lou Kelso
19 The Photography Group - Who We Are by Helle Brown
20 Upcoming Events
21 The Last Word by Dr. William M. Johnson
22 2013 Monthly Meetings

Check out pages 10 & 11 to learn more about bulb gardening

Front Cover Photo by MG Shan Revak

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By Kaye Corey
MG 2002

Hot Line Topics

**crape myrtle pruning**

**Question:** What is the proper way to prune a crape myrtle?

Galveston County’s brightest mantles of summer color are from our crape myrtles. These trees flower through the sweltering heat of our summer months and can give us repeated splashes of color if pruned correctly. These trees should be allowed to develop their natural style and beauty without cutting off their tops.

When it begins to warm in the spring, the practice of chopping off the tops of crape myrtles has become very commonplace. Many people believe it is required to promote flowering. Some prune because the plant is too large for the space provided; others see their neighbors doing it and feel the need to follow suit. Horticulturists have been known to refer to this practice as ”Crape Murder.”

Homeowners, please ask your landscapers not to prune your crape myrtles. City park officials, please consider leaving the crape myrtles in your medians and public areas natural without severe pruning. You will see the difference in the performance of the trees. Watch them fill out naturally and cover with blooms.

View the beautiful full crape myrtles in the medians on Clear Lake Blvd in the City of Clear Lake. Those crape myrtles are allowed to grow naturally with a minimum of pruning (only damaged, dead or low-hanging branches as well as suckers). Their color display is impressive and is well-appreciated by motorists travelling the boulevard.

Once a crape myrtle has bloomed and shed its flowers, the tree will set seed. If the small, round seed pods weigh the limbs down, use a sharp pair of clippers or hedge trimmers, to cut off the seed pods. New shoots with buds will quickly appear and you will get a second bloom. The seed pods can be mistaken for flower buds but the pods are larger and harder than the buds.

If the temperatures stay warm into the fall and you continue to remove spent flowers, you may get a third and fourth bloom from the tree. If you choose to not remove the seed pods, they will fall off and the tree will put out new shoots and continue to bloom anyway.

If your trees get untidy, simple grooming techniques can be applied. Suckers or shoots from the base of the tree can be removed at any time. Cut them off as close to the soil level as possible. If you do not remove a limb by cutting close to the trunk, you will get several shoots in its place. Cut them off close to the tree trunk. The trunks are beautiful during the winter months. Dead limbs can be removed at any time.

Crape myrtles today are available in a variety of sizes (from miniatures to tall trees) and colors (ranging from white to watermelon red). Many crape myrtle cultivars have disease resistance to powdery mildew, the most common disease problem on crape myrtles grown in our area.

Select the right tree for your sunny location. Or, you might consider replacing older trees with one of the newer varieties. One of the newest and most striking crape myrtles is the “Black Diamond.” A revolutionary new crape myrtle with stunning, near-black foliage crowned with masses of vivid red blooms. The mature size is 10’ by 8’ wide.

Have you witnessed the trunks of crape myrtles that appear to be twisted or braided? You can accomplish that sculptural enhancement by allowing crape myrtle shoots to grow in height, then simply braid or twist three or four shoots together while they are young.

More details on pruning, a video and variety information can be found at [http://aggie-horticulture.tamu.edu/archives/parsons/publications/stopthecrape.html](http://aggie-horticulture.tamu.edu/archives/parsons/publications/stopthecrape.html)
Asian Cycad Scale
a formidable insect pest of cycads

Q uestion: I see strange white stuff on my sago palm?

Our beloved Sago Palm (*Cycad revoluta*) has been under siege recently. How many of us have watched these formerly easy-care specimens turn white, then yellow, then wither and die? The MG Hotline often receive calls from county residents about “...white' stuff appearing on sago palms.” Worse, many of these specimens have belonged to us, the Master Gardeners!

Sago Palms as well as other members of the family Cycadaceae are susceptible to a relatively new pest known as the Asian Cycad Scale. Members of Zamiaceae and Stangeriaceae (two plant families that are closely related to the family Cycadaceae) are also susceptible to this insect pest, although none are as widely grown here as the Sago Palm.

Asian Cycad Scale (*Aulacaspis yasumatsui Takagi*) is an armored scale which was first discovered in Miami, Florida in 1996. It originated in Thailand and Southern China, and is believed to have been imported in legal shipments of Sago Palms.

This scale is difficult to control because it infects the roots at depths of up to 2 feet and it spreads easily from adjacent properties. Release of beneficial predators has not been successful in controlling scale populations.

Damage first shows up as yellowish spots on the upper leaf surfaces, but fronds later become brown and shriveled. Badly infested sago palms can be completely covered with a white crust composed of several layers of live and dead scale insects.

This insect pest multiplies quickly and the crawler stage can be easily disseminated by air currents. A medium-size sago palm left untreated may be killed within a year. If the pups (small plants around base of trunk) are coming up white, there is a heavy infestation below ground.

A number of years have passed since this pest has come to live among us, and we have been able to better determine which methods provide better control.

The “gardener’s shadow” is of utmost importance in the management of these insects. Vigilance is paramount, and a spray program must be commenced as soon as scale insects are detected. Scout the plants, inspecting the trunks and the lower leaf surface especially in the spring when the new crawlers hatch out.

To control, try washing the plant with a hard stream of water to knock off some of the scale insects. Apply a foliar spray of a horticultural oil product like Ultra-Fine® oil, SUNSPRAY® oil, neem oil or another similar product.

Malathion and other broad-spectrum pesticides can be used, but they will also kill the beneficial insects that feed on these pests. Complete coverage is critical to good control; use a high-pressure sprayer to coat the entire plant including the underside of leaves and every tiny crevice. Also spray the soil or the mulch under the plant leaves. Repeat these sprays once a week for an entire month. If you don't apply multiple applications, the insects will very likely return.

Following treatment, continue to check plants in case the insects are coming back from the roots or from neighbors’ plants. Because they are spread by the wind, it is important for an entire neighborhood to treat infested plants within the same time frame.

If there are heavy infestations on the leaves, remove heavily infested fronds (leaves) before treating and bury them on your property or place them in plastic bags for disposal by household trash pick-up (do place with yard trash or green recycling material). A root drench of 2 percent horticultural oil may be helpful in controlling populations of the insect pest below ground, but it will be difficult to achieve adequate coverage. Safari is a systemic product that is effective and can be applied by commercial pest control companies.

Photos: B. Castro, Texas AgriLife Extension Service
With more people spending more time indoors, The World Health Organization (WHO) has stated “there is probably more damage to human health from indoor pollution than from outdoor pollution.” With the advent of the energy crisis, newly constructed building are better insulated and sealed tightly to conserve heat and reduce air conditioning costs.

While this does save money and energy, more pollutants are trapped indoors and have less opportunity to dissipate to the outside. Also newly constructed building are more likely to be constructed with man-made building materials and furnished with synthetic carpeting, fabrics, laminated counters, plastic-coated wallpaper, and other materials known to “off-gas” pollutants into the interior environment.

There is the phrase “sick-building syndrome” used to describe this result. If your home or office is older and leaky and drafty, you may not need to worry about as many interior pollutants. However, if you live or work in a newer, energy-efficient building where the air feels stale and the circulation is limited, you may exhibit the symptoms associated with indoor pollution. These include allergies; asthma; eye, nose, and throat irritations; fatigue; headache; and nervous system disorders in addition to respiratory and sinus congestion.

In the late 1980’s the National Aeronautics and Space Administration (NASA) and the Associated Landscape Contractors of America studied various plants with the intention of finding ways to purify the air for extended stays in orbiting space stations. There were nineteen different plant species studied over two years.

Most of the plants are true houseplants which can be kept indoors year-round. These indoor plants evolved in tropical or sub-tropical forests where they received filtered light. Because of this, these plants are able to photosynthesize more efficiently under low light conditions thus allowing them to process gases in the indoor air efficiently.

Benzene, Trichloroethylene and Formaldehyde are the three chemicals tested with the indoor plants. Benzene is a common solvent found in oils and paints. Trichloroethylene is used in paints, adhesives, inks and varnishes. Formaldehyde is used in many building materials including particle board and foam insulations. While NASA found that some of the plants were better than others for absorbing these common pollutants, all of the plants had properties that were useful in improving overall indoor air quality.

The plants best suited for treating air contaminated with Benzene are English Ivy (Hedera helix), Gerber Daisy (Gerbera jamesonii), Florist’s Mum (Chrysanthemum x morifolium), Peace Lily (Spathiphyllum ‘Mauna Loa’), Bamboo or Reed Palm (Chamaedorea sefrizzii), and Snake Plant (Sansevieria trifasciata).

For treating trichloroethylene, you might choose the Peace Lily, Gerber Daisy, and Reed Palm. The Bamboo or Reed Palm, Snake Plant, Warneck Dracaena (Dracaena deremensis ‘Warneckii’), Peace Lily, Red-edged Dracaena (Dracaena marginata), Golden Pothos (Epipremnum aureum), and Spider Plant (Chlorophytum comosum) worked well for filtering formaldehyde. See the box on this page for a listing of all fifteen plants recommended from this study. The top five indoor plants recommended by TreeHugger.com are the Bamboo or Reed Palm, Gerber Daisy, English Ivy, Florist’s Mum, and Peace Lily.

Soil and roots were also found to play an important role in removing air-borne pollutants. Microorganisms in the soil will become more adept at using trace amounts of air-borne pollutants as a food source as they are exposed to them over an extended period of time. This process become more effective if lower leaves that cover the soil surface are removed so is as much soil contact with the air as possible.

How many plants do you need to significantly improve the air quality in your home? The NASA study recommends you use 15 to 18 “good-sized” houseplants in 6 to 8-inch containers for a 2,000 square foot home. The more vigorous the plants, the better job they will do at removing pollutants.

For a more aggressive approach to “growing” your own indoor air, check out this video by Kamal Meattle about a 2009 study done in India: http://www.treehugger.com/green-food/ted-talk-grow-your-own-fresh-air-with-plants.html. Meattle lists three plants that are used in India with significant results. Those plants include the Areca Palm (Chrysalidocarpus lutescens). Other plants include money plant or Golden Pothos in addition to Snake Plant (also known as the mother-in-law’s tongue) which comes highly recommended for use in bedrooms as it converts carbon dioxide to oxygen at night at relatively high rates.

While some plants may be better than others at improving air quality, all plants absorb carbon dioxide and add oxygen, humidity and beauty to our surroundings. Indoor gardening can be done year-round, in all types of weather, and without the threat of water rationing, weeds, or mosquitoes.

### Best air-filtering houseplants (Reported in a NASA Study)

- English Ivy *Hedera helix*
- Spider Plant *Chlorophytum comosum*
- Golden Pothos *Epipremnum aureum*
- Peace Lily *Spathiphyllum ‘Mauna Loa’*
- Chinese Evergreen *Aglaonema modestum*
- Bamboo or Reed Palm *Chamaedorea sefrizzii*
- Snake Plant or Mother-in-law’s tongue *Sansevieria trifasciata*
- Heartleaf Philodendron *Philodendron scandens*
- Selloum Philodendron *Philodendron selloum*
- Elephant Ear Philodendron *Philodendron domesticum*
- Red-edged Dracaena *Dracaena marginata*
- Cornstalk Dracaena *Dracaena fragrans*
- Janet Craig Dracaena *Dracaena deremensis*
- Warneck Dracaena *Dracaena deremensis ‘Warneckii’*
- Weeping Fig *Ficus benjaminia*
Live Christmas Trees

The boughs of holly have been used to deck the halls, and sprigs of mistletoe hang over every door, but the one plant that Christmas would not be complete without has yet to be brought in—the Christmas tree. The kids are anxious; they want to decorate the tree NOW! But this year, for something new and longer-lasting, a living tree was what you wanted. Now what?

The first thing to do is pick out a tree. Consider the following: Aleppo Pine, Japanese Black Pine, Japanese Yew, Loblolly Pine, Deodar Cedar, Juniper, or other coniferous evergreens. Perhaps you prefer a broad-leaved tree; possibilities include: American Holly, Burford Holly, Compact Cherry Laurel, or Yaupon. Or you might decide on a tubbed plant to remain inside after the Christmas season? The Norfolk Island Pine, kumquats, calamondins, or Yews would be good choices.

Once the tree is chosen (if it isn't tubbed), a container must be chosen as well. If the tree roots are balled and burlapped, a container must be used that will allow at least an inch of peat moss, potting soil, or compost around the ball to prevent drying out. If the plant has been grown in a container, it can be made much more attractive by placing it in a redwood tub, ceramic or clay pot, or even a wooden box lined with a polyethylene film liner. All containers should be well drained to prevent damage to the roots caused by excess moisture. A pan underneath the container will also prevent floor damage.

Now that the tree is in the container and in the house, you can start to give the kids a little leeway. All you have to do now is find a good place for the tree that is not in the stream of heat or near a stove or radiator. When not occupied, the room should be kept as cool as possible, and the plant should be watered when dry. A simple way to tell when the plant needs water is to push a sharpened pencil into the soil. If the pencil comes out dry and clean, the plant needs water; otherwise, wait until the next day.

After Christmas, it is best to plant the tree in the landscape as soon as possible. The selected site for the tree should fit into the landscape design, and allow sufficient room for growth and development. The pit dug for the tree should be large enough to allow three to four inches of soil along the vertical sides of the soil ball. It should be planted at the same depth it was planted at the nursery or in the container. For the backfill, add one part peat moss, pine bark, or compost to two parts soil, and pack this mixture firmly around the ball. When the pit is three-fourths full, the tree should be watered thoroughly, and then filled the rest of the way. If the plant was balled and burlapped, the burlap should be loosened before completely filling the hole.

The tree can be used to serve another purpose—the beautification of your yard. Planted into your landscape, these trees can add a nice touch in the spring, summer, and fall, and can even serve as an outdoor Christmas tree next time Christmas rolls around.

The tree is now a permanent part of your landscape. To keep it healthy while it is adapting to its new environment, here are some tips:

- Water it regularly, but allow the soil to dry a little between waterings.
- Mulch the surface with some kind of organic matter, to reduce weeds and conserve moisture.
- Avoid fertilization until June or July following planting.
- Keep weeds and grass down, to prevent competition.

In 1991, MG Mona Ray's Live Christmas Tree (Norfolk Island Pine) in Dickinson started out in a pot and was then planted in her yard. Just look at it today!
Now – That was quick! One morning in November we were still enduring what seemed to be an endless summer, and by that afternoon winter had arrived. By the next morning, most of us were looking for those warm fuzzy slippers that had been shoved to the back of the closet.

Now you may think that your gardening chores are over when jingle bell season arrives, but you’d be wrong. I know, those last minute gifts need to be purchased, and we couldn’t be further behind in the cookie baking department, but December is your last chance to complete the gardening chores you neglected last month. Are we behind – or what?

I know it’s hard to believe, but spring isn’t that far off, and there are many chores we need to complete in preparation for that season. That large dead oak tree you had removed this summer was shading those azaleas, and now they’re getting too much sun. There couldn’t be a better time to move them. Just be sure to keep them mulched and watered to prevent any winter damage. Same goes for the camellias. Maybe you don’t have any to move, but it’s also an ideal time to plant new ones. Azaleas and camellias thrive in an acid soil. Acidifiers are available in both granular and water soluble form.

If your favorite nursery still has pots of pansies it’s not too late to add winter color to your landscape. While you’re at the nursery, take a look at the snapdragons. A stand of tall yellow snaps behind a grouping of purple pansies is a real attention-grabber! Remember that if you keep the old faded pansy blooms removed, the more they will reward you with new happy faces. You can also get some instant color with ornamental kale, primroses and cyclamens.

If you like the challenge of planting seeds, nasturtium, California poppy and phlox can be put in a prepared bed right now. Chances are there’s a rack of vegetable seed packets next to the flower seeds at the nursery. You could start some onion seeds indoors now and grow your own transplants for planting in the vegetable garden in January or February. Always use a sterilized potting soil for this as soil dug from the garden contains fungal organisms and a gazillion weed seeds. Try to pull weed sprouts from a pot of hair-like onion sprouts – Good Luck!

If the weather guru on your preferred television station predicts a freeze, unwind the hose and give everything a good watering. More plants die over winter from lack of water than from the cold. Just because it’s winter, don’t put the hose in the garage. If a freeze is predicted and you put a protective cover over your plants, be sure to remove it ASAP in the morning. Never, never put plastic sheeting directly on a plant. Plastic touching the leaves will turn them brown by morning. Always put it on top of the protective cover.

If someone gives you a potted amaryllis for the holidays, consider yourself special. These long lasting beauties make a great gift for all the special people on your list, too. Remember to tell them that when the blooms fade, it can be put directly into a well-drained spot in the garden and then forgotten. Don’t plant it too deep; be sure the neck of the bulb is above ground. It will tolerate full sun, but prefers a little afternoon shade. I almost forget that I have mine, and then suddenly a huge red blossom appears amongst the green of the garden - Lovely, to say the least.

Before the long awaited gift-giving day arrives, cut branches of greenery to decorate the house. Yew, ligustrum, holly, magnolia, juniper, and pittosporum branches can be turned into attractive holiday decorations. A light pruning won’t hurt the shrubbery, and it might even benefit them.

Take the bag of tulip and hyacinth bulbs out of the refrigerator where they have been tricked into thinking it’s winter for the past 6 or 8 weeks. Let someone else clean up the Christmas dinner leftovers and wash the dishes while you go outside and plant bulbs. If by chance you’re too stuffed to bend over - you could wait until New Year’s Day.

Happy Humbug.
S since most of my ten grandchildren have grown up, it seems like eons ago that I would make a special trip to my favorite garden center to purchase Amaryllis bulbs for them—red for the boys and pink for the girls! This was the time of the year for our special moments working together to “force” the bulbs into bloom before the holidays were upon us. Bulb kits are available for purchase now and are the easiest way to teach children a garden task that is quickly accomplished—with gratifying results in a short span of time. These kits contain a bulb, a planter, and the soil that you need. Just follow the directions—a child can do it—which is the point, of course! Within days of planting, the stem can be seen sprouting from the bulb and growing visibly day after day with beautiful blooms soon after as the prize. Once the plant has been spent, it can be planted outside in a flower bed where year after year it will reappear reminding us of our special moment and providing us yet another reward with no effort on our part.

These special moments are a part of what I call my “Reap What You Sow” effort. In these days of extended families, children may have multiple sets of grandparents. This affords us an opportunity to create little vignettes of memories by sharing our own particular interests and talents with our young progeny. Within our blended and extended family, I am known as the gardening grandmother. “Gee” is the grandparent name that I have come to be called. I always had a supply of child-size gloves, garden implements and garden books that were written with youngsters in mind. While I attempted to foster an interest in gardening in the hearts of my grandchildren, I also experienced additional pleasures myself from the innocent questions and comments of an inquiring child. When a child adopts a curiosity for your particular interest, you are rewarded! You do indeed “Reap What You Sow.”

Amaryllis is a small genus of flowering bulbs with two species. For many years there was confusion among botanists over the genera Amaryllis and Hippeastrum. Species in both genera are similar in appearance except that Amaryllis belladonna has a solid flower stem while plants in the genus Hippeastrum (including Amaryllis) has a hollow flower stem.

Plants known commonly as “Amaryllis,” “Dutch Amaryllis,” or “Giant Amaryllis” belong to the genus Hippeastrum, and those grown today are mostly hybrids of several species from South America and South Africa. Most of the so-called Amaryllis bulbs sold as “ready to bloom for the holidays” actually belong to genus Hippeastrum despite being labeled as ‘Amaryllis’ by sellers and nurseries.

The name Amaryllis is taken from the name of a shepherdess in Virgil’s pastoral Eclogues, from the Greek (amarysso), meaning “to sparkle.” The species was introduced into cultivation from South America’s tropical regions at the beginning of the eighteenth century. Reproducing slowly by bulb division or seeds, amaryllises have gradually naturalized in many areas.

Of all flowering bulbs, Amaryllis is the easiest to bring to bloom, indoors or out and over an extended period of time. These facts plus the beauty of the extremely large flowers make Amaryllis popular among novice and experienced gardeners alike and in demand worldwide. The flower heads are often so large the stems cannot support them. It may be helpful to insert a thin stick inside the hollow stem for support.

Amaryllis can be found in a spectrum of colors and color combinations including various shades of red, white, pink, salmon and orange. There are striped and multicolored varieties as well, usually combining shades of pink or red with white.

The fleshy stalk of an Amaryllis retains a great deal of moisture giving the flowers a water supply within the plant itself. You can use Amaryllis as a dry decoration for a limited period; a few stems with fully blown flowers can be placed on a dinner table without becoming instantly limp.

Topped by four or five substantial sized blooms, these flamboyant starry trumpets (which spring from huge papery bulbs) make an impressive display. The ability to survive and sustain itself is another attractive detail of this plant; an Amaryllis bulb may produce blooms for up to seventy-five years! The Amaryllis bulbs in my gardens were torn from the soil during Hurricane Ike and lay strewn around the yard—I cleaned them up—replanted them and they have continued to bloom every year since!

Definitely fitting nicely into my “user-friendly” category of favorite plants, the Amaryllis will make an excellent addition to your flower beds and containers. Try some…you will be glad you did!
MG BEST SHOTS

Crinum 'Ellen Bosanquet' by Anna Wygrys

Gladiolus by Margie Jenke

Canna by Sam Powers

Water Lily by Eileen Storey

Dahlia by Shan Revak

Narcissus tazetta 'Paperwhite' by Linda Steber
Bulbs are a group of plants known as geophytes. Geophytes are plants with underground storage organs that contain food and energy for the plant’s life cycle. Geophytes go through a cycle of putting out leaves, blooming, dying back to the ground, and going dormant until the next growing season.

Bulbs generally fall into two groups: spring-flowering which are planted in the fall and summer-flowering which are planted in the spring. Spring-flowering bulbs are hardy bulbs and are planted prior to the first freeze. Many, like some daffodils, naturalize and are left in the ground to spread and re-bloom each year. Summer-flowering bulbs are tender bulbs need to be dug up and stored between seasons.

There are five classifications of geophytes. Understanding the different structures is important because they affect how the bulb is planted, how it grows, and how it reproduces. Classifications are:

**TRUE BULBS** are rounded, with a flat bottom (called a “basal plate”) that produces roots, and a top that produces the stem. They grow vertically and must be planted right-side up. Bulbs have layers (like onions), and if you slice a true bulb right down the middle, you’ll find an embryonic bud at the center of the bulb, surrounded by layers of food. True bulbs reproduce by creating smaller bulbs (called “offsets” or “bulblets”) attached to the parent bulb. These can be separated and planted to produce more plants. Examples include Tulip, Lily, Narcissus, hyacinth, Daffodil, Crinum and Amaryllis.

**CORMS** look similar to bulbs on the exterior but they are actually the fattened base of the stem itself. A corm does not grow in layers or have an embryonic bud at the center of the bulb, surrounded by layers of food. True bulbs reproduce by creating smaller bulbs (called “offsets” or “bulblets”) attached to the parent bulb. These can be separated and planted to produce more plants. Examples include Crocus and Gladiolus.

**RHIZOMES** are actually fat underground stems that grow horizontally. They creep along just under the soil surface and sprout stems and leaves upward, and roots downward, all their length. Unlike bulbs and corms, which are more like self-contained units, rhizomes have many growing points and can be propagated by cutting them into sections. Examples include Calla Lily, Canna and Bearded Iris.

**TUBER** is sometimes used as a catch-all for any plants that don’t fit into the other categories listed above. True tubers are swollen underground stems that have eyes (like potatoes) where plants and roots will sprout. They don’t have a basal plate – instead, roots grow all along the bottom and sides, with plant growing points along the top surface. They also may be propagated by cutting them into pieces. Examples include Caladium and Water Lily.

**TUBEROUS ROOTS** look very similar to tubers but are actually swollen roots, not stems. They don’t have eyes. Tuberous roots often sprout at one end (called the “crown”) and grow in clumps, so a large flowering plant may have multiple tuberous roots radiating out from a sprouting “crown.” The plant sprouts from the base of the old stem, not from the root. Propagating tuberous roots is trickier, because many of them will only sprout if the divided section contains adequate crown tissue. Examples include Dahlia, Tuberous Begonia and Anemone.

Successful bulb gardening in our low chill hour region requires careful selection of bulbs. Some need weeks of chilling in your refrigerator before you can plant them in the ground. Always be sure that the bulbs you purchase are appropriate for our climate. Most bulbs are reported to bloom best in sunny locations in soil that is slightly acid to neutral (pH 6.5-7), porous, crumbly and well-draining. While most soils in the Galveston County growing region are slightly alkaline (between pH 7 to pH 8), a wide variety of bulbs grow very well here.

Most purchased bulbs will come with its specific instructions as to how to chill (if needed), depth to plant, type of fertilizer needed, color, size, spacing, etc. If someone trades you a bulb, it’s easy to research to find its growing requirements. Most bulbs will last a long time, so it’s worth the effort to purchase good quality bulbs.

Prefer to force bulbs instead of planting outside? Forcing makes bulbs flower out of season. Most spring bulbs can be forced. Popular bulbs to force include daffodils, amaryllis, paperwhites, hyacinth, tulips and crocus. For successful forcing, choose bulbs that are plump and firm. The larger the flower bulb the bigger the bloom. Prepare them by placing them in a refrigerator (between 35 °F. and 45 °F.) for 10-12 weeks. Do not put them in bins with fruit!

Once pre-chilled, you can force in soil or in water. For soil, fill the pot with a light potting mix. Don’t use soil from your garden. Plant the flower bulbs you will be forcing halfway to three quarters of the way deep into the pot. The pointy tops of the bulbs should be out of the soil. Water the bulbs and keep the soil moist.

For water forcing, you can also use a pan or bowl filled with pebbles. Bury the bulbs halfway into the pebbles, with the points facing up. Fill container with water so that the lower quarter of the flower bulb is in the water. Make sure that the container always has water. Keep your planted bulbs in a cool (50 °F. - 60 °F.) place until it starts to form leaves. Once leaves appear, you can move the flower bulbs to a warmer location. They prefer bright, indirect light. Make sure to keep your forced bulbs watered. The roots should always have moisture. Once your forced bulbs have finished blooming, cut the spent flowers off and plant them outside.
More and more is being written about the use of water in gardens and lawns. There is discussion about reclaiming rainwater, minimizing runoff, and Xeriscaping as an alternative. Some cities, like Las Vegas, Nevada, for example, are requiring new homes to have front yards with no lawns at all. So, what is a gardener to do?

This month we are featuring the landscape of Dickinson resident, Anne Coppenhaver. Several years back, Anne decided it was time she found a way to create a beautiful landscape that not only required less water; but also required less maintenance—a huge undertaking. She and her husband broke the tasks into doable phases. They mapped out their yard, drew up a plan and went to work morphing their back landscape.

As you look at the photos of their backyard, you will see that there is no lawn at all. The backyard is entered through double glass doors. As you come out of those doors, there is a bed with a tiered fountain, designed as a focal point, to draw you into the garden. Meandering around the yard is a wide gravel path. The gravel path was constructed with a French drain to minimize water pooling along the path. Large plant beds encompass the rest of the yard with lush tropica and natives that are known to grow well in the Houston/Galveston area. A desire to hide the fence was solved by planting Black Bamboo, *Phyllostachys nigra*, a fast growing, non-invasive variety. The end design is to have no irrigation at all. All plants will be sustained by natural rainfall and moisture in the air.

Until they reach that point, however, they recognized that newly planted plants needed irrigation, so they installed a temporary above-ground irrigation system. This system will be removed when the plants’ root systems are mature enough not to need the additional watering. Flowering pots add the seasonal colors. There are a minimum number of pots carefully located on the patio. These add beauty while minimal gardening efforts are required. Statuary and trellises dotted here and there create interest and keep the eye moving.

The front landscape is something to behold as well. While they kept some lawn in the front, it is minimal and meandering in creative paths. The bulk of the landscape is large, wide beds, sometimes separated by creative stone pathways and other times lawn. Pine needles from their trees are raked up and used as mulch with minimum mulch being brought in from the outside. The view from the street is one of order and beauty. Who would guess it requires so little of their time?

This yard captured my interest because it is so easy for me to get caught into a trap of more, more, yummy plants and flowers until pretty soon I have a maintenance nightmare on my hands. The Coppenhavens’ inventive landscape has reminded me that being responsible with resources does not translate into an ugly yard.

The effort to create a sustainable landscape requiring less of my time and less water is worth taking another look at it. Thank you, Anne, for sharing your beautiful landscape with us.
Weed of the Month: Bur Clover

When using herbicides and other pesticides, always read and follow label directions carefully.

A common clover-type plant that grows in this area and is quite invasive is known as bur clover. Even though it is not a true clover, two species identified in this area are commonly known as large bur clover (Medicago polymorpha) and small bur clover (Medicago minima). Both species are dicots (broadleaf plants) in the legume family and are closely related to the true clovers. Large bur clover and small bur clover are native to Europe but brought to the States as grazing material (fodder crop) for cattle.

Large bur clover can grow from 6—22 inches and has flower clusters consisting of 3—5 flowers, blooming in early spring. Small bur clover can grow from 6—18 inches long with 10 or more flowers displayed per head (inflorescence). In this region, bur clover’s blooming period is from February to June but can grow year round. Germination is in the fall season when temperatures are cooler.

Bur clover can be readily identified by its small pea-like yellow flower, three green clover-shaped leaves and purple stems. It reproduces from seeds contained in “burred” seedpods, as well as spreading prostate stolons, which allow it to tolerate close mowing, increasing its survival and spreading abilities. The exterior of burred seedpods have numerous velcro-like hooks that may become entangled in animal coats or human clothing, which serves as a common means of dispersal.

Preventive practices, such as good turf management, are best in reducing infestation. Here in the Gulf Coast area, a lawn fertilization program based on soil tests will encourage growth of a dense, healthy turf, which will inhibit the clover from becoming established. Mechanical or physical removal is not recommended because stolons may break and sprout, increasing rather than decreasing the infestation.

Pre-emergent herbicides like those contained in “weed and feed fertilizers” may be used to prevent seed germination in the fall. Timing of the application is critical for effective control. Early October is recommended as cool fronts typically occur during this time and the seeds of cool season weeds start to germinate. While weed and feed fertilizers for lawns can be an effective tool, they can stress or kill landscape trees and shrubs if applied under or near their drip line.

Over-the-top herbicides or post-emergence herbicides like “broad-leaf weed killers” may be used in the spring. If you choose to use a post-emergence herbicide, do so when the bur clover is actively growing. Apply a broadleaf lawn herbicide containing a combination of 2,4-D and MCPP or triclopyr as its active ingredients late May or early June. More than one application may be necessary. To be most effective, the herbicide should be applied when temperatures are between 60—80 degrees, no rain is forecast for 24—48 hours, and no wind is present to blow the herbicide onto desirable broadleaf plants.

For spot treatment of small, unwanted patches, you can avoid the use of a tank sprayer by mixing the herbicide according to label directions and then applying it with a disposable paint brush or a sponge tied to a stick. Glyphosate (Roundup) works well for this since the area may be reseeded seven days after application. Be aware, though, that glyphosate is non-selective—it can kill or damage the grass or other green, living plants that it touches. Be sure to read and follow the product’s label instructions and precautions.

Photos by GCMG Digital Library

The exterior of burred seedpods have numerous velcro-like hooks that may become entangled in animal coats or human clothing which aides its dispersal.
What's the biggest problem with growing roses?

By John Jons
MG 2003

Often get asked the question “What is the biggest problem with growing roses?” and my answer tends to surprise a lot of people. For me the biggest problem in growing roses is “weeding!” I would anticipate that most people would expect the answer to be one of the following: selecting the right rose; preventative spraying for fungus or insects; watering; fertilizing… Weekly, I spend more (non-enjoyable yard work) time weeding my rose beds than doing any other garden activity.

As a rose gardener, you build the rose beds and plant the roses and then the weeds come. I’ve read the literature on weed prevention/control, attended the seminars on weed prevention/control and consulted with other Consulting Rosarians and Master Gardeners on weed prevention/control, and I have come to the conclusion there is minimal prevention and its mostly the control of the weeds.

I have tried industrial strength weed blocking cloth, and the weeds grow on it and use it to anchor their roots to fight you when you try to pull them out of the ground. Then lots of weeds grow better and stronger from their roots that were stuck in the weed cloth. I tried mulch 3 to 6 inches deep, and I have discovered that some weeds love to grow in and on mulch. Plus, when you put fertilizer intended for the roses on the mulch and you add a sprinkler system, you grow more and more healthy weeds. I have even discovered that weeds seemed to like native mulches better. I briefly tried using a small burner to toast the weeds, but that set the mulch on fire. I tried herbicides. One kind is supposed to go to the plant’s root and kill it, and another kills the weed on contact; so while spraying the weeds with the herbicides, I managed to kill a rose and create a yellow fringe on the leaves of some roses. I discovered that some weeds seem to be impervious to the herbicides available to the homeowner. The weeds appear to be winning.

While trying all the different weed preventing and/or control techniques, you learn that the weeds you fight all winter long and almost beat are replaced by different and more aggressive summer weeds. You also find that some weeds have billions of seeds per plant. Some weeds have innumerable ways of self-propagation. Plus, some of the annuals and perennials you purchased at garden sales, that the vendors claim are great for this area, turn up in your rose beds as prolific weeds. I have also discovered that, if you are not careful, plant swaps can turn out to be weed swaps.

I think I have learned a lesson that has been blatantly obvious to me but I seemed to have missed it. When I began to learn about roses, I studied books that featured the great rose gardens of Europe. On several visits to Europe I noticed that there were not many of the great rose gardens left. Where great gardens once existed there are now very large lawns. It appears that the owners of these great gardens could no longer afford to pay people to weed, so they replaced the gardens with lawns. The weeds won!

For the last 15 years my rose beds have gotten larger and my lawn has gotten smaller but my garden maintenance, specifically weeding, appears to have significantly and disproportionately increased. Due to this painful increase in yard work, my lawn area may soon start growing again. I’m thinking that in my garden, the weeds may be winning.
Seasonal Bites

Irresistible Side Dish

Roasted Vegetables

by Jenifer Leonpacher
MG 2010

by Gregory Werth
MG 2012

Here is a recipe with a different twist using fresh vegetables.

You can use any combination of fresh vegetables, but I used zucchini, yellow squash, red potatoes and onions.

Preheat oven to 400º. Cut the vegetables in "bite-size" pieces and put in an uncovered 9x13" casserole dish. Season with salt and pepper and drizzle with olive oil. Bake for 45 minutes. Stir once in the middle of baking.

Combine 1 cup French fried onions, crushed and 1/2 cup panko (Japanese breadcrumbs). Remove casserole from oven and sprinkle with breadcrumb mixture. Seed and dice 2 plum tomatoes and sprinkle over vegetable mixture. Return to oven for 10 minutes. Serve immediately.

December/January "Things To Do"

Gardening Calendar Video

by Linda Steber
MG 1991

Click on the "Play Video" icon (above right) to see what a "group effort" can do (by the aforementioned Master Gardeners) to prepare an exceptional "Things to Do" Calendar.

2013 MG Re-certification (Continuing Education) Hours Available Through the AgriLife Extension Office

In order to retain the Texas Master Gardener title, individuals are required each year to earn a minimum of 6 hours of recertification (i.e., educational) training and provide an additional 12 hours of volunteer service through the local Extension office.

Click on the link to the right to see 136 recertification hours available over the 2013 calendar year.
Autumn like weather has coaxed leaves and pecans to start falling in our area. Although a few mornings were a little brisk, the nice weather has encouraged a few more gardeners to come out to Thursday workday. Over the past month, the okra plants were cut back or were replaced with more fall crops. We have also had some special visitors. A group of Master Gardeners from Jefferson County came to take a tour of our garden.

The seasons are not the only thing changing at the Carbide Demonstration Garden. A new work group got together recently to start a butterfly garden. The group pictured with Dr. Johnson has already designed the garden, selected the area, and they have it laid out near the serenity garden. The walk and the entrance to the greenhouse is taking shape, and the bed rehabilitations are finished for most of the vegetable beds in the garden.

Don’t think the work groups at the garden are exclusive, they are not. They can always use a helping hand, and they will even let me help. We had the annual Thanksgiving lunch at the garden. If you missed this, you missed out. We sure have a gifted group of cooks who provide all the side dishes. Ira and his crew outdid themselves with the Cajun fried turkey. Great job all.
OCTOBER AND NOVEMBER MG MEETINGS

By Mary Lou Kelso
MG 2000

The Tuesday, October 8, 2013, monthly meeting of the Galveston County Master Gardener Association was called to order by President Jim Edwards. The meeting took place at the home of Rose Marie, Charlie and Jenny Smith on Galveston Island. The members present enjoyed a lovely evening in the beautiful backyard of the Smiths’ residence. Everyone enjoyed the garden art of musical notes, a special gift from Rose Marie’s brother which followed with a contest to see who could identify the song.

Jim reminded MGs that the fall plant sale is scheduled for Saturday, October 12, and MGs should monitor their e-mails for updates and volunteer assignments. Jim also announced that Laura Bellmore and Peggy Budny will co-chair the Officer Nomination Committee which is charged with preparing a Slate of Nominees at the next monthly meeting in November.

The Tuesday, November 12, 2013, monthly meeting of the Galveston County Master Gardener Association was called to order by President Jim Edwards. The meeting took place at the Galveston County AgriLife Extension Office in Carbide Park. Dr. Johnson recognized Jim for his contributions as President since 1997 and recognized Wes Ruzek as Treasurer since 2005.

Cheryl West, Jim and Joy Edwards’ daughter, was recognized as a special guest at the meeting.

Wes presented the Treasurer’s Report.

Bobbie Ivey then presented a very humorous testimonial of Jim and Wes during their tenure in office, followed by a PowerPoint presentation entitled “Jim’s Famous Quotes.”

Dr. Johnson provided an informative PowerPoint presentation about the history of the GCMGA. In 2013 there are 73 male and 202 female Master Gardeners in the Association. Additionally, in 2013 there were 2,737 attendees at the Gulf Coast Gardening educational seminars to date which is a record for all past years.

Dr. Johnson thanked Chris Anastas, Robert Marshall, Judy Anderson and Penny Bessire for their leadership in planning and conducting the educational seminars. The 2013 Interns also provided assistance with registration and with room set-up and clean-up.

Dr. Johnson introduced Frank Resch who discussed the five-year plan for the Association with Ira, Tim, Wes, Anna and Ed serving as members of the Committee.

Dr. Johnson then provided a presentation addressing eligibility of Interns to vote and hold office. Dr. Johnson stated that the requirements contained in our Association bylaws for election of BOD officers would be the same as those stipulated for Officers for the MG Association. Dr. Johnson explained that he would oppose any effort that would mandate or infer that the qualifications for eligibility for election of officers (President, Treasurer, etc.) be less than those already stipulated in our Association bylaws for Board of Director positions. Requirements for eligibility for election to a position on the GCMGA Board of Directors mandate members be “In Good Standing” and must maintain certification as a Texas Master Gardener for three (3) consecutive years prior to the effective date of assuming a term of office.

The Nomination Committee was made up of Peggy Budny and Laura Bellmore. Based upon nominations from the GCMGA membership, the Nomination Committee submitted the following candidates as follows.

Elected Officers: President - Ira Gervais; Treasurer - Julie Carter-mill; Assistant Treasurer - Tim Jahnke; Secretary - Mary Lou Kelso; and Vice President for Projects - Clyde Holt and Bobbie Ivey.

Board of Directors (two positions for three-year terms): Camille Goodwin and Frank Resch; TMGA State Association Delegate 1 - Velda Cuclis.

Camille Goodwin made a motion that the nomination be closed. Her motion was seconded by Dotti Krustchinsky and the membership voted in favor of the motion.

The Slate of Officers and Board of Directors were elected as presented by the unanimous vote of vote-eligible members present with no nays.

Following the meeting, the members enjoyed a celebratory dinner honoring Jim and Wes for their years of service to the Association.
Upcoming Events

Please be sure to register for the programs you want to attend. Accurate attendance counts are needed so that program materials may be on hand for attendees. The following AgriLife Extension Programs are free to the public.

Location: Galveston County AgriLife Extension Office in Carbide Park
4102-B Main Street (FM 519), La Marque, Texas 77568
For course reservations, call 281-534-3413, ext. 12 or email GALV3@wt.net

Tuesday Night & Saturday Seminars

WHAT IS A GALVESTON COUNTY MASTER GARDENER? ... It takes a village!
Thursday, December 5, 2013
e-mail GALV3@wt.net to pre-register
1:30 - 3:00 p.m.

Interested in learning more about the Galveston County Master Gardener Program? ... Interested in becoming a Master Gardener? Are you interested in the various programs offered by the Galveston County Master Gardeners? Then the following program is for you. Galveston County Master Gardener Coordinator and County Agent, Dr. William Johnson, along with a panel of Galveston County Master Gardeners will give a forum-style presentation discussing the many facets of this volunteer program.

GROWING TOMATOES FROM SEED
e-mail GALV3@wt.net to pre-register
Saturday, December 7, 2013 9:00 - 11:30 a.m.

Do you want to learn how to grow great tomatoes? The first in a series of programs by Galveston County Master Gardener Ira Gervais on learning all about how to grow great tomatoes here in Galveston County. This first part will cover learning how to grow tomatoes from seed and where to obtain seeds and supplies needed to start and grow your seedlings. Discussion topics include how to pick the best varieties for Galveston County, seed starting and growing techniques and preparing your starter plants for garden planting.

UPCOMING CONFERENCE - MARK YOUR CALENDAR
Texas Master Gardener Conference 2014

The conference will be hosted by the Permian Basin Master Gardeners on September 25-27, 2014 at the MCM Grandé Hotel and FUNDome, Odessa.
http://mcmgrandeoressa.com/

There will be numerous garden field trips, expert presentations, informative exhibits, fun times, and much, much more!

Plans are developing, so periodically check out their website -
http://2014tmgaconference.org/

MAKE PLANS TO ATTEND NOW!
and the winners are!
Texas Master Gardener Conference 2013

Of the five award applications submitted, our Galveston County Master Gardener Association received five awards this year at the Texas Master Gardener Conference held in McAllen, TX. They are as follows:

First Place – Outstanding Association
First Place – Individual Master Gardener – Herman Auer
First Place – Publications – Your 12 Least-Appreciated Beneficial Insects
Second Place – Newsletter
Second Place – Mass Media – Donna Ward’s newspaper column which is printed in our newsletter

and the survey said!
Sweet Potato Results from the Test Garden

I love sweet potatoes so I was very anxious to try some different varieties this year in the Horticulture Research and Demonstration Gardens in Carbide Park. I placed an online order of 8 varieties (Purple Delight, bunch Porto Rico, Carolina Ruby, Molokai Purple, Resisto, Ginseng Orange, Memphis Pride, Cordner’s Red) from Duck Creek Farms located in Mounds, OK.

The slips arrived in the middle of June. I planted the slips in cups then transplanted two plants of each variety in among my peppers in Bed #12 on July 5. I fertilized once with the organic Micro Life 6-2-4. After the plants were established, I watered deeply once a week when there was no rain. In order to keep the vines “tamed,” I cut them back to the edge of the raised bed every two weeks and fed the greens to my horses who loved them!

Did you know the fresh leaves are tasty in salads, steamed or stir fried. I harvested the potatoes in early November which provided about 120 days of growth. My visual top 3 favorites with insect and disease resistance along with the best yields are Cordner’s Red, Ginseng Orange and Memphis Pride.

The 3 picked are still waiting the taste test once they have been fully cured. Curing sweet potatoes requires a warm, humid environment for a period of 4 days to two weeks (ideally at 80-90° F. with 80-90 percent humidity). The closer you come to these ideal conditions, the less time it takes to do the job. After curing, you are supposed to store them at 55-60° F. for 6-to-8 weeks to finish developing the sugars.

Cordner’s Red: An heirloom sweet potato dating from the 1950’s). This is a very compact bush type plant with red skin and orange moist flesh. Excellent for people with small gardens. The name “Cordner’s Red” was given by local growers as it was never officially released. From the breeding material of Dr. H. B. Cordner of Oklahoma State University. Early harvest with fair storage qualities but great tasting.

Ginseng Orange: Excellent production with medium tubers that have a light orange skin and deeper orange, semi-sweet flesh that has a great flavor. Early season yielding medium tubers on a semi-bush that produces ivy-lobed leaves.

Memphis Pride: A vining, heirloom sweet potato, that produces cut leaves and pinkish skin with light orange flesh with a mild flavor. Midseason productions with average yields of medium tubers.

Purple Delight and Molokai Purple: Both varieties are both worth a mention that I will try one more year. They are purple-fleshed with dark purple skin. Flavor is typical to the other purple-fleshed varieties, which is not real sweet. Vining growth with mid-season medium production but the roots tend to be long and skinny.

From L to R - Ginseng Orange, Cordner’s Red & Memphis Pride.
**VOLUNTEER OPPORTUNITIES**

To volunteer for the MG Phone Desk contact Laura Bellmore by e-mail at galv3@wt.net or by calling the office at 281-534-3413, ext 1.

**Libbie’s Place Adult Day Care** has been designated as a Demonstration Garden for the Master Gardener Association. It is located at 5402 Avenue U in Galveston and is part of Moody Methodist Church outreach ministries (http://www.moody.org/libbies-place-senior-day-program). A crew is needed to maintain and upgrade the garden as needed with your time spent counting towards MG volunteer hours. MG Pam Gilbert is heading up the crew and will determine the day, time and frequency of the work days. If you are interested, or have any questions, please contact Pam at 409-771-5620 or by email at DrPGilbert@aol.com to let her know the day/times (AM/PM) that would work best for you. Thank you for your time and consideration in this great new endeavor for the Master Gardeners.

**VOLUNTEERS NEEDED**

Tour Guides for “First-Thursday-in-a-Month” Public Access & Tour of our Demonstration Garden

Long-winded title but it says what we will be doing. Our Demonstration Garden will be open for touring by the general public on the first Thursday of each month from 9:00 to 11:00 a.m. MGs are needed to serve as tour guides for our demonstration Garden. Contact MG Julie Cartmill at 281-932-8986 or email evergreentreesinc@gmail.com or MG Bobbie Ivey at 713-748-8564 or email at biivey@sbcglobal.net to volunteer. Master Gardener Digital Photo Library Committee

Do not be alarmed/dissuaded with the name of “committee!” If you like to organize things—join our newest volunteer endeavor known as the Master Gardener Digital Photo Library Committee. The current weekly time schedule for this activity is every Thursday from 10 a.m.-12 noon. MG Sandra Devall will be providing leadership for this. Volunteers will be adding photographers’ names to digital photos for cataloging/sorting, sorting photos, or looking up botanical names. If any of those tasks fit your interest—just show up and get with Sandra (281-534-3413, Ext. 17 or sandra.devall@co.galveston.tx.us)! The Photo Library has been the primary source for photos used in PowerPoint programs, website, publications, newsletters, etc. Volunteers are needed to help with the Saturday programs and the Tuesday evening programs. If you can help please contact Christine Anastas (281) 468-3787 or Robert Marshall e-mail rbrtm01@att.net

**THE PHOTOGRAPHY GROUP**

The Photography Group meets on the second Wednesday of each month at 1:30 pm at the Extension Office at Carbide Park. This photography group is open to all Master Gardeners and Master Naturalists for fun, learning and practice of photography. Pictures are submitted to the MG/MN database for use in publications and lectures.

**SPECIALIST & OTHER MG RELATED TRAINING**

Please see the Texas Master Gardeners Website for details. Please note that if you go to the website you can find up-to-date information on Specialist Programs that were added in between editions of the newsletter. http://www.texasmastergardeners.com. You may download the application forms from that website. Note that all applications for the Specialist Training courses must be approved and signed by Dr. William Johnson. Note that fees do not include lodging or food unless specified otherwise.

Educational Tour with Doug Welsh to SOUTH AFRICA

February 15-26, 2014

Join Doug Welsh and explore the lush gardens of Johannesburg, South Africa’s stunning national parks and the gorgeous flora of Cape Town. In addition, you’ll discover the dramatic landscape of the Cape of Good Hope, sip wines in South Africa’s premier wine region, and stay in the Dutch colonial town of Stellenbosch. Your journey will culminate at the Bakubung Bush Lodge where you’ll ride into the bush in an open safari vehicle with Swazi trackers and African rangers for an intimate viewing of South Africa’s lions, leopards, rhinos and elephants.

For more information, call Earthbound Expeditions at 800-723-8454, email at info@earthboundexpeditions.com, or visit http://www.earthboundexpeditions.com/february-2014-south-africa-with-doug-welsh

**NEED A GIFT?**

The following Master Gardener award-winning publications are on sale. Stop by the Extension Office to pick them up for yourself or for gift-giving.

- The Butterflies of Galveston County
- Ambrosia from Your Back Yard
- Bilingual Guide to Yard Care
- Herbs for the Upper Gulf Coast of Texas
- Our Edible Landscape
- Creating the Tropical Look

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**THE Galveston County Master Gardeners Magazine** - December 2013/January 2014 - Page 20
The last word . . .

UNDERSTAND HOW COLD TEMPERATURES AFFECT CITRUS TREES

(Editor’s Note: This article is a reprint of Dr. Johnson’s Weekly Gardening Column in The Galveston County Daily News)

In the past, many gardeners have inquired about the susceptibility of citrus to cold temperatures. The winter season is tough on citrus plants.

It is important to understand how cold temperatures affect citrus trees. Among the citrus types most easily killed or damaged by freezing weather are citrons, lemons and limes. Temperatures in the high 20s will kill or severely damage these plants.

Sweet oranges and grapefruits are somewhat more cold-hardy and usually require temperatures in the mid 20s before incurring major damage to large branches.

Tangerines and mandarins are quite cold-hardy, usually withstanding temperatures as low as the low 20s without significant wood damage.

But, among the edible types of sweet citrus, the satsuma and kumquats have the greatest degree of cold hardiness. Properly hardened bearing trees will withstand temperatures as low as 20 degrees Fahrenheit without appreciable wood damage.

Temperatures at ground level can be several degrees lower than temperatures around the canopy of the tree, especially if there is no wind.

Keep in mind the temperature ranges given above only refer to leaf or wood damage. Citrus fruits easily freeze at 26 to 28 degrees when these temperatures occur for several hours.

A longer duration of freezing temperatures is required to freeze grapefruit compared to sweet oranges.

The particular temperature at which tissue of a given plant will freeze and the degree of the damage sustained are functions of a number of factors in addition to the species and variety involved.

Some of the more important are:

The freezing temperature reached;

The duration of the minimal temperature;

How well the plant became hardened or conditioned before freezing temperatures occurred (the freezing point of tissue of a hardened citrus plant might be 5 to 6 degrees lower than an unhardened plant);

Age of plant (a young plant cannot withstand as much cold as a more mature tree); and

Healthy trees are harder than diseased trees.

Another complicating factor contributing to observations by some that citrus plants seem to freeze at higher temperatures in some years is the difference between air (ambient) temperatures and leaf (tissue) temperature.

On a windy night with clear or cloudy skies, leaf temperature will be about the same as air temperature. On a cold, clear night with light or no wind movement, however, leaf temperature can easily drop several degrees (3 to 4 degrees) below the air temperature because of supercooling caused by frost.

Thus, under the latter circumstances, while the minimum air temperature on a given night may have only been 25 degrees, actual leaf temperature of the plants may have reached 21 to 22 degrees.

The critical temperature is that of the leaf or fruit and not the ambient air temperature.

Trees with a good fruit crop are less hardy than those with no fruit.

Research data provided by Louisiana State University indicated trees growing on bare ground have a higher probability of survival than trees growing in turf areas.

The heat from the ground can radiate upward into the canopy of trees. The difference in the canopy of the tree can be up to 5 degrees.

In general, it is recommended citrus trees be protected when the temperature is expected to go below 27 degrees for an extended period.

Citrus trees can better withstand cold weather when they are dormant.

No immediate action is needed when freeze injury is suspected. There is no benefit to pruning the plant until spring growth commences, and the full extent of injury is manifested. Pruning might actually be counterproductive by stimulating faster bud activity before the danger of additional frost/freeze events has truly passed.

Some gardeners who protect their citrus trees during cold snaps are surprised to see their plants setting flower buds as temperatures start to warm.
2013 MGA MONTHLY MEETINGS

January 17, 2013
Heidi Sheesley - TreeSearch Farms
Pre-Fruit Tree Sale Presentation
1:30 pm - Extension Office
Carbide Park - La Marque

February 12, 2013
Elyane Kouzounis - Hummingbirds
6:30 pm - Extension Office
Carbide Park - La Marque

March 12, 2013
Cindy Croft - Herbs
6:30 pm - Extension Office
Carbide Park - La Marque

April 9, 2013
Karen & Morris - Backyard Meeting
5:30 pm - 2910 Bayshore
Bacliff

May 14, 2013
Barbara & Gary Hankins - Backyard Meeting
5:30 pm - 12030 Sportsman Road
Galveston Island

June 11, 2013
Graduation at Mikey and Allen Isbell's
7:00 pm - 1715 - 35th Street
Galveston Island

July 9 2013
Pat Forke & Cheryl Armstrong
7:00 pm Extension Office
Greenhouses
Carbide Park - La Marque

August 13, 2013
Moody Gardens
Galveston Island
Venues from 9:30 am, Meal @ 5:30 pm

September 28, 2013 - (Saturday)
Heiei Sheesley - Annual & Perennial Pre-Sale Meeting
9:00 - 11:30 am - Wayne Johnson Community Center
Carbide Park - La Marque

October 8, 2013
Rose Marie & Charlie Smith - Backyard Meeting
5:30 pm - 11 Lakeview Drive
Galveston Island

November 12, 2013
Annual Meeting, Election of GCMGA Officers
7:00 pm - Extension Office
Carbide Park - La Marque

December 10, 2013
Holiday Meeting - Mikey and Allen Isbell
6:30 pm - 1715 - 35th Street
Galveston Island

MG Judy Anderson is asking for volunteers to host backyard meetings. You may contact Judy at jande10198@aol.com if you would like to volunteer.

By Judy Anderson
MG 2012