MG Association Meeting, Wednesday, Feb 17, 6:30pm, Prescott, see address page for map. Our speaker will be Cindy Scott.

Alta Vista Gardening Club, Prescott, fourth Tuesday of the month, 12:30pm. Call 928-443-0464 for location and information.

Prescott Area Gourd Society, third Tuesday of the month, 6:30 pm, at the Smoki Museum.

Prescott Orchid Society, 3rd Sunday of the month, 2pm at the Prescott Library, call Cynthia for information. (928) 717-0623

Prescott Area Iris Society call 928-445-8132 for date and place information.

Verde Valley Iris Society call Linda Smith at 928-567-7470

Check out the new MG blog. More garden information, events and pictures. http://yavapaigardener.blogspot.com

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When I sit by the fire on a cold winter day, I start wondering things—like why do so many people think that gardeners are actually scientists. Maybe it is because gardeners walk around with test tubes and wear white coats. Aah... no. Maybe it is because gardeners know about botany (plants) and zoology (gophers and insects) and weather (meteorology). Well, botany and zoology are branches of biology, and meteorology is one of the branches of the earth sciences, along with the composition of soil.

Anyway, people say, “You’re a scientist. Why does anyone think that global warming is a fact? This is the earliest, coldest, nastiest winter ever!” I guess we need a good, scientific explanation for this apparent paradox. (Two physicians walking along the seashore, a pair of docs) . . . But I digress. Of course it is all about the amazing value for the specific heat of water. I’ll get back to that shortly.

This winter started out with a blast, an early cold, wet blast. Winter came to North America and Europe a month early with cold nasty winds, blizzard conditions in the central U. S., and record-breaking snow storms. On Christmas Eve, the main activity on the eastern seaboard was plowing record snows off the streets of all the cities from south of Washington, D.C. to Boston and beyond. Stranded travelers spent a lot of time enjoying the amenities of airports, from Minneapolis to Dallas, on the way to a family holiday celebration in another state. European countries also suffered, with Spain getting record winter weather and the channel tunnel shut down by rare powdery snow gumming up the train engines. Bah humbug on global warming!

Except of course there is an abundance of evidence for global warming that will soon affect agricultural, forestry and gardening activities. Already we are seeing invasive plants extending their ranges both to higher latitudes and higher altitudes. The warmer climate of the future is expected to result in the spread of tropical disease like malaria and dengue fever. Allergy sufferers will “benefit” from early and prolonged production of ragweed pollen and other plant allergens. Asthma sufferers are likely to feel the effects of an increase in mold exposure from warmer, moister climates. But wait! Where is all the heat? I’m freezing!

The evidence for global warming is conclusive and multifac-
The ocean surface waters at the equator are several degrees warmer than in the past. The glaciers around the world are retreating (Glacier National Park may have to be renamed!). A new ocean passage has opened between the Pacific Ocean and the Atlantic Ocean over the top of Canada with the melting of Arctic Ocean ice in the summer time. Bye bye polar bears and walruses! A tremendous amount of energy has been required to cause these changes.

So how do we get such cold winters with global warming? First weather and climate are different things. Climate is a long-standing, wide-spread status of the environment, whereas weather is what gets your socks and shoes wet in a rain storm. When the earth as a whole gets warmer, the oceans become warmer and the ice at the poles and in the mountains starts to melt. It is a global phenomenon. And it is all about the specific heat of water. Unlike any other common substance, water has a very high specific heat. It takes a lot of energy to melt ice, warm water, and convert 100 degree Celsius water to 100 degree Celsius water vapor. Heat refers to the internal energy of a substance, the speed that the molecules move—the warmer, the faster. It can be described as the energy in transit from a warm material to a cooler material. Temperature is merely the kinetic energy portion of that internal energy. (Internal energy is part kinetic energy and part potential energy.)

While a test tube of water would be drinkable (lukewarm) after being held in a flame for 10 to 20 seconds, a knife blade would be untouchably hot after being in the same flame for 5 seconds. Metals have a low specific heat and become very hot with minimal exposure to heat. Most metals have a specific heat that is only 3% of the specific heat of water. (The internal energy in a metal object is mostly in the form of kinetic energy whereas most of the internal energy in water at the same temperature is actually potential energy.)

Now let’s melt a bunch of glaciers in the Alps, in Alaska, in Canada, in Greenland, and especially in Antarctica where the ice pack is regionally two miles thick.

Where does the zero degree ice water go? Into the five to fifteen degree oceans which cool off as a result. So the North Pacific and North Atlantic Ocean waters are cooled by all this ice water from the Arctic and Greenland. And where do we get our weather from? The temperate zone of the Northern Hemisphere has prevailing westerly winds. North America gets its weather from the Gulf of Alaska and the North Pacific basin and Europe gets clobbered by weather from the North Atlantic basin.

So while the slightly warmer equatorial ocean waters are flowing toward the poles, the deluge of ice water from the melting arctic is headed south. (It’s more complicated than this – Coriolus effect and all.) But the bottom line is that the oceans are (temporarily) colder than before and our winter weather can be expected to be crummy for another decade or more until all the ice melts. After that, look out! With no ice left to melt and absorb the increased heat, the planet will start to cook! Some people are proposing that Arizona will become much drier than it already is, but I am expecting more of the climate of a tropical rain forest, because warm ocean water evaporates faster than cool water and we can expect much more humidity from those prevailing westerly’s in about 10-15 years. But gardening should be a lot of fun year round in the Central Highlands of Arizona as long as you have good soil drainage.

**PRESCOTT, PRESCOTT VALLEY & CHINO VALLEY**
- Protect frost-tender plants from freezing
- Prune deciduous trees
- Plant bare-root trees, shrubs and roses
- Prepare soils for early spring seeding/planting by adding well-composted organic matter (add nitrogen and phosphorus fertilizers at planting time)

**SEDONA, COTTONWOOD & VERDE VALLEY**
- See above AND:
- Prune roses
- Plant spring annuals (pansies, poppies, snapdragons, etc.)
- Plant wildflower seeds 1 month before last hard frost (for more information see Extension bulletins #27 & 74)
This is the time of year that you are likely planning the spring garden. If you are like me that means sitting down with a pile of catalogs and a pen and starting the wish list. The wish list is of course all those things you would really like to try, with little regard to have much space you have, whether they would grow in your zone or even if you can afford them. Then comes the hard part, winnowing down the list to something affordable and that should grow.

There are other considerations when you are shopping via a catalog. Are they a reputable company? Will you get what you ordered? The cost—seed and plant prices continue to go up and up. Costs vary from catalog to catalog, along with the size and quantities. I’m sure we have all paid a high price for plants or seeds only to discover on opening the package that there are barely enough seeds to fill a six pack or the plants are barely 2 inches high.

Over time you find your favorite catalogs by trial and error. Some of mine, like High Country Gardens, Pinetree Seeds, Bakers Heirlooms, Southern Exposure Seeds, Seed Savers, among others, are the ones I turn to year after year. While it’s easy to return to the favourites, there are times when you find something new but are not sure what kind of company they are.

Dave’s Garden website has a section for information on garden catalogs http://davesgarden.com/products/gwd/ The site gives reviews and ratings for catalog companies. (Read their FAQ’s, there is a lot of great information about buying from catalogs: http://davesgarden.com/faq/gwd/

It is a good place to start if you are planning on ordering from a new catalog. Dave’s Garden Watchdog is free; if you want to post information and leave comments you will need to register.

Looking for information about vegetable varieties? Try the Cornell University website at http://vegvariety.cce.cornell.edu/index.php Yes, I know Cornell is in New York, a long way from the desert, but they take information from anyone, anywhere. In fact while you are there, post your own experiences. It is a Citizens Science Program. Check out the following website for more information: http://vegvariety.cce.cornell.edu/about.php You can search for others ratings or post your own; it’s a terrific website.

From their news release: “Gardeners looking for help sorting through seed catalogs this winter can turn to Cornell’s Vegetable Varieties for Gardeners website for help.

“It’s like an Amazon.com for vegetable varieties, only we don’t sell the seeds,” says Lori Bushway, the Senior Extension Associate in Cornell University’s Department of Horticulture who coordinates the website.

Gardeners can register at the site (http://vegvariety.cce.cornell.edu) to rate and review their favorite vegetable varieties, as well as those that didn’t work so well for them. Anyone can visit the site to read those reviews and ratings to find varieties that will work best in their gardens.

Launched in 2004, the site has grown to include:

• More than 5,600 vegetable variety descriptions with seed sources.
• More than 3,400 reviews/ratings from more than 2,300 registered users.
• Online tools to help you find the best varieties for your garden.

“We’re calling on passionate vegetable gardeners to help us spread the word about the site and improve it by contributing more ratings and reviews,” says Bushway. “The more ratings and reviews we get, the more reliable and valuable the site becomes.”

The site also links to other Cornell gardening resources, including online growing guides for more than 60 vegetable crops, and a new project, “Vegetable Varieties Investigation (VVI).” This intergenerational citizen science project bridges the technology divide, helping youth connect with gardeners in their community, learn survey skills, and explore biodiversity through the whimsical world of vegetable varieties.”
Prevention Magazine featured an interesting article, not about what food experts would eat, but rather what they would not eat. The seven foods are canned tomatoes, corn-fed beef, microwave popcorn, non-organic potatoes, farmed salmon, milk produced with artificial hormones and conventional apples.

If one of these foods is your favorite, maybe you should stop here. If you like to grow your own food or eat only organic food, then read on. I will give you a brief reason to avoid each one.

An endocrinologist who studies bisphenol-A claims that the resin linings of tin cans contain bisphenol-A, a synthetic estrogen linked to many ailments. You guessed it, the acidity in the tomatoes causes the hormone to leach into your food. The solution Prevention recommends is to buy your tomatoes in glass jars or Tetra Pak Boxes. Of course you could also grow your own tomatoes and preserve them in jars.

Joel Salatin of Polyface Farms does not recommend eating corn-fed beef. He explains that cattle evolved to eat grass, not corn and chicken manure. What’s missing are vitamins and minerals exchanged for the higher saturated fat. Buying grass fed beef is the solution.

So what’s wrong with microwave popcorn? I can’t watch a movie without it. The problem concerns chemicals lining the popcorn bag that are linked to infertility. The culprit is a compound called PFOA. So pop your own popcorn if you are concerned about infertility.

Non-organic potatoes? Root vegetables absorb herbicides, pesticides and fungicides that wind up in the soil. Most of the potato growers say they would not eat the potatoes they sell. Well, buy organic potatoes and solve this problem.

The problem with farmed salmon is that nature did not intend for salmon to be cramped into pens and fed soy, poultry litter and hydrolyzed chicken feathers. So these salmon are lower in Vitamin D and higher in contaminants. You are what you eat after all. You should only eat one of these salmon every five months to not increase your cancer risk says the expert. Switch to wild caught salmon.

We know about milk produced with artificial hormones to boost milk production. It is linked to increased cancer risk. Wasn’t it banned not too long ago? Experts say you should still check the label and make sure your milk is rBGH-free and rBST free.

The problem with most apples, says an expert with a farm policy research group, is that if there were a “fall fruit most doused in pesticides contest”, apples would win. The solution is to buy organic apples or peel and wash your apples before eating.

For more details check out the full story in Prevention Magazine.

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2009 Great Gardening Books
by Angie Mazella

Ketzel Levine, the gardening editor at National Public Radio compiled her five favorite Gardening Books of 2009. I invite you to buy any that catches your interest and review them for this newsletter. Here they are:

Farm City: Education of an Urban Farmer by Novella Carpenter is supposedly a most humorous manifesto on homesteading you are ever likely to read. This is a personal story by the author.

The American Meadow Garden: Creating a Natural Alternative to the Traditional Lawn by John Greenlee is a revolt of what the author calls “the madness of lawn culture” offering alternatives in no-mow landscapes that are colorful and creative.

Rodale’s Ultimate Encyclopedia of Organic Gardening is still considered the ultimate reference.

Bulb by Anna Pavord is a beautiful book by a British bulb enthusiast that is supposed to be hard to resist.

Lastly, and the one that intrigues me is Wicked Plants: The Weed that killed Lincoln’s Mother and other Botanical Atrocities by Amy Stewart. This serious writer is enchanted by the plant kingdom’s criminal element. The reviewer calls it a wonderfully illustrated book on the history of plants that have insinuated themselves into our unsuspecting lives. Just as many diseases have changed the course of history, I am not surprised that many plants have done so too.
Being an Arizona native and with parents that loved to travel we spent a lot of time on the road. Coming back to the state at some point you had to stop at the Agriculture check station where the inspector asked if you were carrying any fruits or vegetables. Most of the time Dad said no and we all knew about the oranges, grapefruit, apples or other fruit in the bag under the seat. The inspector would send us on our way with CONTRABAND APPLES. Wow, illegal apples. It impressed us for a while. Unbeknownst to us we could have been carrying the next plague into Arizona. We just thought it was a bit silly. But simple uninformed actions can transform the world.

A number of non-native pests have transformed our landscapes and costs us a fortune. Here's a short list:

Formosan termites also dubbed the super termite: This creature is so voracious it can destroy the support structure of a house in months. In New Orleans it has caused extreme devastation. They can chew through electrical cable. It came into the US on wood products from Formosa after WWII.

Dutch Elm Disease transformed eastern forests and urban landscapes destroying nearly every elm tree in America. While horticulturist and scientists have made some headway in developing a resistant tree, the great elms of America are gone. The disease came in on logs from France.

Emerald Ash borer is in the process of destroying the Ash trees as the Dutch Elm did the Elms. It is a recent arrival apparently coming in on an overseas shipping container.

Medfly is one of the world’s most destructive pests and the US is desperately trying to prevent it from taking hold in America. About the size of a small housefly it can easily be brought into this country in fruit. The fly deposits its eggs under the skin of fruit and can’t always be recognized by the traveller. In the United States, the Medfly could attack peaches, pears, plums, apples, apricots, avocados, citrus, cherries, figs, grapes, guavas, kumquats, loquats, nectarines, peppers, persimmons, tomatoes, and several nuts. It has been found in California but so far the US has been lucky.

Travellers bringing dogs into the country brought cattle screwworm into Florida.

In 2003 bags of pine cones from India being sold in craft and chain stores were recalled when they discovered wood-boring insects in them.

This is just a short list of pests brought into the United States. It isn’t just plants though, its animals. Did you know that the Everglades are now home to a large population of pythons and other tropical snakes? Originally released or escaped snakes now breed there. The English sparrow that dominates most urban bird feeders was imported because they apparently reminded some people of home.

This is why when you come into this country you may get asked about plants or food you may be carrying. Do us all a favor and follow the rules! Oh! and those agriculture stations in Arizona—they have all been closed for budgetary reasons.

Gardeners: This holiday season, spread peace, love and joy. Not citrus deadly greening disease.
Despair is the word that comes to mind a lot these days. Since Jerome State Park closed last year I have worked at five parks. I am currently at Tubac State Historic Park in southern Arizona, just north of Nogales. I am living in a tiny trailer at Patagonia Lake State Park. (see photos at http://www.flickr.com/photos/arizonagardener/)

Tubac State Park will be closed March 29. After that I don’t know what will happen. Along with the park closures, there will be more layoffs. It’s just a matter of waiting to see what happens. I am taking the time to explore the area while I can. I am going to the “Velvet Elvis” for pizza this week. Can’t go wrong if the area has a really good pizza place.

I am in a situation where it is very difficult to work on my gourds and no place to garden. I really miss that. I just hope it rains enough to keep everything going in my yard back in Camp Verde. I was looking forward to the lettuce and peas I planted just before I found out I was moving. I might also miss my iris bloom! It’s been a tough year with more pain to come, I’m sure, but not being able to garden, now that’s despair.

Nora Graf
Editor

Editor Request

I have an incredibly slow internet connection where I am living now so I have a request for everyone that wants to send me something.

1. DO NOT send me giant files that have to be downloaded. It takes hours for some files to complete downloading. Pictures only need to be at the most 5 x 7 in size and no more than 180dpi, 72 dpi is usually enough.

2. DO NOT sent me any document files that are .docx. files. I know these are the newest thing from Microsoft but I cannot open them.

3. If you have an announcements or articles PLEASE just paste it into the body of the email and send it it that way.

February Speaker

Our February speaker is Cindy Scott. Her topic, “The history of Heirloom Seeds and How to Save Them.”

Cindy Scott has an Associate of Applied Science in Agriculture Technology Management with an emphasis in Environmental Structures Management. (AKA Greenhouses). She also has Certificate in Wildlife/Forestry Conservation. She worked for six years at the Highlands Center for Natural History were she was responsible for public relations, fundraising, membership and the development of the successful Grow Native! Plant Sale and Educational Festival. Prior to working for the Highlands Center, Cindy worked in the accounting and tax field and also had a short stint working for the Yavapai County Cooperative Extension as an instructional aide for the Project Wet program. In 2008, Cindy and her husband Stephen purchased Underwood Gardens, an heirloom seed company that was based in Woodstock, IL since 1993. They moved the company to Arizona and it is now known as Terroir Seeds LLC, the Home of Underwood Gardens, which specializes in heirloom vegetable, herb and flower seeds for home gardeners and small growers. Her world has been full of seeds ever since!
**MG Volunteer Opportunities**

Go to the following website for the current calendar of events:

http://cals.arizona.edu/yavapai/anr/hort/mastergardener/index.htm


Need chairs for staffing MG tables at the Prescott, Camp Verde, and Sedona Farmers Markets. Contact Mary Barnes, 583-0889.

**Campout**
The Program/Education committee is planning an insect/bug collection/identification campout at the Mingus Group Campgrounds on August 7th and 8th. Stephanie Shank (Entomologist) at the Prescott Extension Office is leading the “bug” portion of the event. Stephanie has held this type of campout in the past for other groups, and has offered to do it for Master Gardeners. Before firm plans are made, we’d like to have a show of interest for this type of event. Please let Christi Armer know if you’d be interested in participating, ch_armer@hotmail.com (underscore after the ch), 713-9881.

**Pecan and Wine Festival – Camp Verde**
We need more people to help with staffing the MG table at the Pecan and Wine Festival, Feb 13th and 14th.

1 person 1:30pm – 6pm on Saturday, Feb 13th  
1 person 10am – 1:30pm Sunday (if someone from Prescott would like to do it you may be able to carpool with the other Prescott volunteer)

We could also use some help picking up the supplies from the Cottonwood office on Thursday, Feb 11th, and returning them on Tuesday, Feb 16th. You would just need to help set-up and then be there Sunday to tear-down and take the supplies. Contact Lynn Hazlewood, klwoodz@cableone.net, 776-1018.

**Tree Pruning Workshops**
Saturday February 6 at 10 AM at the McLandress Orchard, 850 S. Maricopa in Chino Valley. The second will be held on Saturday February 20 at 10 AM at the City of Sedona Jordan Historical Park, 735 Jordan Rd in uptown Sedona. The third will be held on Saturday February 27 at 10 AM at Chino Valley Farms, 2572 N. Rd 1E in Chino Valley.

FROM THE EDITOR: Please send or email articles and announcements to the address below. All articles must be in my hands by the 10th of the month. Short announcements (no more than 2 or 3 lines) will be accepted until the 25th.

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Cottonwood  
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