

Events & Activities

MG Association Meeting, Wednesday 3rd Wednesday of the month. 6:30pm

Alta Vista Gardening Club, Prescott, 4th Tuesday of the month, 12:30pm. Call 928-458-9508 for information.

Prescott Area Gourd Society, 3rd Wednesday of the month, 10:30am, at Miller Valley Indoor Art Market, 531 Madison Ave, Prescott

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

Mountain View Garden Club, Prescott Valley, Dewey area, 2nd Friday of month, 1:30pm, call 775-4993 for location as it changes.

Native Plant Society Meetings - Prescott. 2nd Thursday of the month, 6:30pm. Attending the talk gualifies as Continuing Education. Non-members are welcome. Highlands Center for Natural History, 1375 S. Walker Rd. (928-776-9550).

The Verde Thumbs Garden Club, Cottonwood 2nd Tuesday, 6:30 pm at The Seventh Day Adventist Church. (928) 634-7172

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University of Arizona Yavapai County Cooperative Extension

Yavapai Gardens

Master Gardener Newsletter April—May 2016

Identifying plants

by Nora Graf



Master Gardeners are frequently asked to identify plants. What most people don't recognize, including Master Gardeners, is how difficult that can be. There are plants that you come to know and can recognize at the drop of the hat. Some

plants you think you know but you are likely wrong and some are just plan tough to figure out because identifying plants can be a difficult task made harder when all you have is a dried up specimen. Master Gardeners often rely on pictures in books. The problem is that books only cover a fraction of the plants out there. They include the most common plants, plants with pretty or distinctive flowers, but they leave a lot out. They also rely on common names and sometimes (as all of us should know) one common name can be associated with more than one plant, which can cause a lot of confusion.

Taxonomists are people who study the relationship of living things. They identify, describe, classify, and NAME plants. Starting in the 1740's, Carl Linnaeus, set about finding and classifying plants. He devised the foundation system that scientists still use today. Classification of a plant follows a hierarchy. It begins with the most general characteristics and moves on to what makes a plant unique.

Kingdom—This defines in broad terms where something fits. Today there are six kingdoms: animals, plants, Fungi, Protista (a microorganism with a simple level of organization), Archeae/Archaeabacte-

ria (single-cell organisms with no cell nucleus) and Bacteria/Eubacteria (in other countries they only claim 5 kingdoms.)



Depending on where you live these are all bluebells



Desert Mallow

Hibiscus

is basically plants that have a certain degree of similarity based on body plan.

Class—A vague grouping, which isn't worth going into. **Series**—Another vague grouping.

Family-This is really where the identification process starts. Learning the characteristics of families can go a long way to figuring out genus and species. Families are based on similarities in the plant's reproductive structures. Families can sometimes, but not always share comparable cultural requirements and similar insect and disease problems. They can be remarkably diverse. Many include shrubs, annuals, and even trees but they all have similarities. The family name always ends in "aceae". For example, the pea family is Fabaceae. So mesquite trees and your garden pea are closely related, like cousins. The hibiscus plant and the common Arizona native, the desert mallow, are in the Malvaceae family which is another easily-recognized group of plants. Cotton, okra and cacao are also in the Malvaceae family. If you see a plant you don't recognize, but it has flower features that resemble another plant you know, chances are it's related and in the same family.

Genus—This is the first part of the plants name but acts like a human last name. For example: *Rudbeckia hirta*, common name: Black Eyed Susan. *Rudbeckia* is the genus name. Genera (plural) have very similar characteristics, so similar in some cases that it it can be hard to tell different plants apart. Learning characteristics of genera can be very valuable and confusing. Sometimes you think it's the same genera but it's not. Sometimes the genus name is also the common name, as in *Agastache*.

Species—This refers to one plant and how it differs from all others in the genus. *Acer palmatum* refers to the plant better known as the Japanese maple. While many different plants may be called Japanese maple there is only one *Acer palmatum*.

Unfortunately, names don't always stay the same. With the advent of DNA technology, plants have been moved into new groups and names have been changed, causing an uproar in the plant world. A number of years ago the genus Chrysanthemum was split into several genera, causing a firestorm when the beloved Chrysanthemum was given a new name. When you change the name of a relatively unknown plant, no one cares, but when it is a popular one, people get excited. It's like having a kid that is named George for 10 years and then one morning someone says his name is really Fred. It makes people unhappy. Sometimes the issues are resolved, sometimes you just have to learn the new names. Over the years I have been knocked for a loop when entire groups of plants changed their families. In my day sunflowers were members of Compositae, now they are in the Asteracea family. Peas were once in the Leguminosae family while today it's the Fabaceae family.

So now that you know how plant names work you need to know how to find the species. Taxonomists use dichotomous (two part) keys. Dichotomous keys are simple and complex at the same time. In dichotomous keys you have two options, you pick the option that best describes the plant. The first choice leads to the second and so on until the end. The graphic below illustrates how a key works—think genealogy chart.



In taxonomy books the key is in a different format.

- 1a. Plant is a tree..... 2
- 1b. Plant is not a tree...... 3

If your plant is a tree find number 2 in the key, if not, go to 3.

- 2a. Plant has white bark.....4
- 2b. Plant has green bark.....Palo Verde
- 3a. Plant is shrublike5
- 3b. Plant is grasslike6
- 4a. Plant has branching limbs.....Sycamore
- 4b. Plant has straight trunk......Aspen

And so on.

While this technique is a sure way of finding the species the difficulty lies in understanding the terminology of taxonomy. This is an actual section of a key from "Flora of Arizona."

29. Stamens numerous, corolla only slightly sympetalous. Fruit of several separation carpels, or a several-celled cap-



sule... (Malvaceae family) 29. Stamens 5; corolla weakly to strongly sympetalous (30)

This is an easy example; others are much tougher. For example, do you know what 'reticulated' is or 'pinnately veined' or 'palmately veined'? It's important because it will mean the difference in figuring out the species of a plant. These words describe a leaf and are easily seen and understood. What would you do if you came upon this statement: "Teeth of the lemma acute, pedicels slender but not capillary."

While I was a pretty good taxonomist when I was a lot younger, I struggle today to remember what it all means. Adding to the pain, some of the features are so tiny you need a microscope to see them. While you will probably never need to know what a lemma is, (for the curious, it's the lower of the two bracts enclosing the flower in the spikelet of grasses) understanding some of the terminology is important. The good news is there is a book in the MG library that can help you. The book is old: I still have my copy from the taxonomy class I took many, many, many years ago but it still works. It is "How to Identify Plants," by HD Harrington and LW Durrell.

The point of this article is when you are identifying plants, don't jump to conclusions too guickly and even when you are using a picture book, read the description carefully. If you don't understand the terminology, look it up. The difference in knowing the terminology of plants will help you improve your identification skills.

I can see eyes glazing over, so for those of you who actually finished this article, congratulations. Learning how to use a dichotomous key can be fun...really. It is exciting when you discover the true identity of a plant. You can learn a lot about plants this way. You can become a plant detective!

If you are interested in experimenting with taxonomy, both Extension libraries have the book "How to Identify Plants" and "Flora of Arizona." "Flora of Arizona" is the bible of Arizona plant identification. It can be intimidating as it has small print and over a thousand pages. One way to start may be to work backward with a plant you already know.

If you need another explanation of dichotomous keys, try the site below. It was put together by John Kava, Rangeland Management Specialist, Natural Resources **Conservation Service**

http://azrangelands.org/presentations/Winter%202013/ Plant%20Identification.pdf

The computer has changed things and you can search for plants by filling out a form picking out different characteristics. It doesn't cover every plant and most sites seem to have little information about western plants but it's a good start to learning how to identify plants. For Yavapai County check out the site below which was created and is managed by Yavapai County Master Gardeners.

http://www.yavapaiplants.com/SearchWoodySucCacti.php

On facebook there are identification groups you can post to for both plants and insects. You will have to request to join but they are guite good.

Kaleidoscope of Color 2016 Prescott's Festival of Iris



Saturday, April 30, 10:00 a.m. to 3:00 p.m. Location: Mortimer's Nursery, 3166 Willow Creek Road, Prescott, Arizona. Prescott Area Iris Society (PAIS) contact: Dennis (623) 980-6627, website: http://prescottirissociety. org. Email: president@prescottirissociety.org. PAIS presents its 17th Annual Iris Exhibit and Sale. Free event open to public, features an amazing variety of iris in all the colors of the rainbow. Vote for your favorite irises. Stunning displays of blooms and arrangements. Planting and care demonstrations. Hundreds of potted Irises for sale. Local gardeners, who wish to participate in horticultural, or artistic design categories may pick up the rules form at Mortimer Nursery, or go to our web site http:// prescottirissociety.org and print the form. Also visit the Richard Marcusen (Yavapai College) Sculpture Garden, 1100 E. Sheldon Street, Prescott, to see iris gardens in bloom.

Meet a Master Gardener - Bill Marmaduke

by Marti Griggs



The earthy, herbal scent of tomato plants evoke strong memories of early childhood for Bill Marmaduke who helped his father tend their vegetable garden in Louisiana. That love of growing things has been a mainstay of his life.

After attaining his doctoral degree in archeology from the University of Texas, Bill moved to Flagstaff in 1976. After a brief stint with the Museum of Northern Arizona, he started a consulting business in the relatively new fields of environmental and cultural resource management.

While living in Flagstaff, Bill built a large vegetable garden and small orchard. He won numerous awards for his vegetables at the Coconino County Fair and in late August his garden was a veritable jungle overflowing with bounty. His main nemeses were the ubiquitous deer that inhabited the forest surrounding his garden. He once had to dismantle his fence to take down a large dead tree. Thinking it would be OK to leave the fence down one night and complete the task in the morning was a huge mistake. They didn't leave him so much as a single cucumber!

After thirty-two years, Bill and his wife, Sharon, decided to escape snowy winters and settled on a large property south of Camp Verde along the river. During the last eight years Bill has built an orchard with about thirty trees from which he harvests apples, pears, plums and peaches. He enjoys experimenting with heirloom varieties and the orchard continues to grow. He also tends a large vegetable garden (not being able to resist planting any seeds that come his way) and his wife enjoys growing flowers and herbs. "Bugs" (and their often resultant diseases) are now his biggest challenge and he is always seeking that delicate balance in integrated pest management (IPM).

A Master Gardener since 2011, Bill has focused primarily on volunteer opportunities where he can help other gardeners – the Extension Help Desk and Camp Verde Farmer's Markets. He likes research and helping people solve problems. Taking his commitment to the Master Gardeners Association a bit further, he is currently president. His future plans include expanding his home landscape, a few more heritage fruit trees and continued involvement with Master Gardeners.

Bill's advice to gardeners who are new to the area is to understand your specific environment. There are vast differences within Yavapai County and even within each community. Look around at what is working for your neighbors and don't be sentimental. If it doesn't work, dig it up and try something else. And of course, contact the Help Desk to get advice!

Rose Pruning at Sharlot Hall

According to Kathy MacCauley, who chaired the event this year, there were 20 MG volunteers and over 200 rose bushes were pruned. She also stated that the "museum greatly appreciates this help every year and it is a huge help to them".

Kathy MacCauley

Phyllis Jicalone, Nancy Christie

Kirby Hughes



If Your Seeds Don't Sprout

by Nora Graf



Starting your own seeds is one of the most miraculous things you can do. From a tiny seed springs the wonder of a new plant.

T h e r e are challenges to growing seeds. They

can be picky about temperatures, light, moisture, etc. The good news is that most of the common vegetables grow from seed easily. Below are some techniques you can use to improve germination and things to look for if your seeds don't sprout.

People don't always think of how deep the seed should be planted. Too deep and the poor plant will never see the light of day. There are several "rules" (I use the word loosely) that you might read about planting depth. There is the one that says 4 times it's shortest dimension, 2 times its longest dimension. So that means if you have a seed 1/4 inch the shortest dimension you would plant 1 inch deep. Easy rule, if the seed is a pea or squash but some of the flower seeds are so tiny that they are just specks in the hand. There is one rule about using your knuckle. I would guess that your knuckle is a different size than mine so forget about that one! The point is that you need to read the seed packet. If it doesn't have a depth, consider that the smaller the seed the shallower it needs to be planted. Most vegetables just need a tiny bit of soil over them. Flower seeds may only need to be gently pressed into the soil. Others just want the barest skiff of soil over them. Some seeds need light and don't want any soil over them. For all seeds press them down so they have good contact with the soil.

Watering is important, but be cautious. Remember they don't have roots, so don't drown them. This applies even after they come up. Don't take a hose to seed beds or you will simply wash the seed away. A mister setting or a hand controller on your hose works well. It provides the gentle touch that is needed, but still supplies enough water. Probably the best way is to water from the bottom if you can, although salt can be carried onto the surface of the soil. If you have salt encrustations forming, water with a mister from the top to carry the salt away.

If you are planting seeds directly in the ground, make sure the soil is very loose. When the soil is crusty, the water may not penetrate well or the tiny sprout may not be able to push through the crust.

Check the temperature of your soil. No matter

how much you want to grow tomatoes (or anything else) the seed won't sprout unless the soil temperature meets its needs. The seed package should have that information. Squash and melons have a MINIMUM temperature of 65, and an optimum temperature of 95, while their maximum temperature is 106. Don't plant until your soil (NOT air temperature) is above the minimum temperature requirement. Plants like lettuce, spinach and onions will germinate starting at 32 degrees while their optimum temperature is 70 degrees. As you can see, there is a huge range. Know your temperatures!

Make sure you have good seed. Under optimum temperatures most seeds can last an incredibly long time but, since most of us don't have special drying apparatus and freezers, our seeds are generally stored in a closet or (if they are real lucky) a refrigerator, and chances are that the seeds will degrade fairly quickly. You can do a simple germination test to find out if the seed is viable. You will need:

Paper towels Water resistant marker Plastic bag or plastic wrap

Label the bag or container with the date and the number of seeds. Dampen a paper towel, line up at least 5 seeds in rows about 1 inch from the top of the towel, one half inch apart for small seeds, 1 to 1 1/2 inch apart for larger seeds. Fold the bottom of the towel over the seeds, then loosely roll the towel from side to side. If your seeds need light to germinate, simply place the towel on the bottom of a clear container, cover with plastic wrap or a clear lid. Place the seeds where they will get indirect light and the correct temperature. Check every day to make sure the moisture is consistent, damp but not wet. Too wet and damping-off disease can kill the little sprouts. Start checking after three days. If the seeds mold, they are dead and need to be removed. Keep track of how many seeds there you started with. Count and keep track of the date and remove any seeds that germinate. The test is over when all the seeds have germinated or the normal germination time is up.

To calculate the germination percentage, divide the number of healthy seedlings by the total number of seeds in the test and multiply by 100. The lower the germination rate the sooner you need to grow that seed or even just throw it away.

http://www.seedsavers.org/site/pdf/HomeGermTests_ LAFrevised.pdf

Other things that might reduce germination are animals; ants will carry off seeds; birds will eat them and so will gophers and squirrels. In spite of the problems, sprouting your seeds is a rewarding experience, so have fun.

A Special Congratulations!

On Monday March 28 Jeff Schalau and Karen Pizzuto were bonored by the University of Arizona Cooperative Extension.

Jeff received the award for 2015 Extension Faculty of the Year. Karen was awarded the 2015 Extension Staff of the Year.

These awards reflect the bard work and dedication that belp make Yavapai County programs so successful. On behalf of the Master Gardeners a bearfelt thank you and congratulations.





2016 Prescott Area Garden Tour

Alta Vista Garden Club, Prescott, Arizona, presents its biennial garden tour on Saturday, June 18, 2016, from 8:00 AM to 3:00 PM. Guests will experience creative blends of perennials, annuals, native plants and vegetables located in six private gardens in Prescott Area's varied landscapes.

All gardens will include professional discussions of the techniques used, as well as local artists and musicians to add ambience to each garden setting.

On the day of the tour the program with maps and wristband entry IDs will be available between 8:00 and 11:00 AM in front of the Yavapai Performing Arts Center at Yavapai College off of Sheldon Street in Prescott.

Tickets are limited. They must be purchased in advance for a \$15 donation at several Prescott area merchants or visit *www.altavistagardenclub.org*. and click on the "Garden Tour" tab to purchase your tickets using the Pay-Pal account on the website.

Proceeds from this event go toward the Alta Vista Garden Club's work in local education, conservation and beautification projects. For more information about the Alta Vista Garden Club, visit *www.altavistagardenclub.org.*

MG Announcements

April 16th – Division Derby – Prescott Extension Office – 1:00pm Continuing Education opportunity

Learn how to divide plants, air-layer, and graft. Also, bring plants that need dividing and help divide and pot them for our plant sale. Please send a message to *ycmgyavapai@gmail.com* if you are coming, and if you are bringing plants to divide. We are providing pots and soil and we need to know how much to bring. Bring gloves, pruners, knife for dividing, hat, water, etc. We will be outside.



2016 Newsletter Schedule

The newsletter comes out every two months. The list below shows the issues, when they will be published, basically the day they will be available (or close to it) for you to read and the deadlines for each issue. If the article is time-sensitive, please let me know ahead of time but please get it to me by the deadline. There is a lot more latitude to the short announcements (a few lines) and if you let me know in advance something is coming I can be a bit flexible about things.

Issue Publish date Deadline

Feb-March—Feb 1—Articles Jan 5, short announcements Jan 25 April-May—April 1—Articles Mar 5, short announcements Mar 25 June-July—June 1—Articles May 5, short announcements May 25 Aug-Sept—Aug 1—Articles July 5, short announcements July 25 Oct-Nov—Oct 1—Articles Sept 5, short announcements Sept 25 Dec-Jan—Dec 1—Articles Nov 5, short announcements Nov 25 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. Nora Graf PO Box 3652 Camp Verde, AZ 86322 mesquite2@hotmail.com (928) 567-6703

Ihal

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Arizona Cooperative Extension Yavapai County 840 Rodeo Dr. Building C Prescott, AZ 86305



MG NEWSLETTER



The Camp Verde Meeting is held in the Yavapai County Superior court building, 2830 Commonwealth Dr.

Next Meeting

April 20, Camp Verde, 6:30pm Bill McDorman of the Rocky Mountain Seed Sabers Alliance (RMSA) located in Ketchem, Idaho will present seed saving and current seed news.

May 18, Prescott, 6:30pm Eric Moore from Jay's Bird Barn talking on "Birds in our Gardens."

The Prescott meeting is held at the Extension office on Rodeo Dr.