

Yavapai Gardens

Master Gardener Newsletter

June-July 2016



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Horticultural “Beauty” Shows

by Nora Graf



Have you ever wondered why you see particular plants in your local nursery? Who makes those decisions and how do they make them? It's especially noticeable when you see the annuals each spring. New colors, new shapes

and sometimes even new varieties. They come to us via a long process, a beauty contest for plants otherwise known as a plant trial.

The purpose of a trial is to evaluate plants in the field vs. a greenhouse setting. Trials are designed to test plants against other plants and to see which plants grow best in different environments. Plant people are in a constant process to take plants in the wild and move them into gardens or creating new versions of older varieties. For example horticulturists may trial multiple new cultivars of zinnias or they may trial a variety of different *Agastache* species. Trials generally take place in multiple places in the country.

Universities and botanical gardens often do trial plots along with commercial organizations. Since a trial is designed to figure out which plants do best, the plots in a location are treated the same. The soil is tilled, fertilizer may be added but the key is all the environmental conditions are the same so differences are about the plant and not the growing conditions.

Professional horticulturists evaluate the plants throughout the growing season so a grower can see how it does in different climate and soil conditions. Factors that the horticulturist look at are number and size of flowers, leaf color, plant vigor, uniformity of the plant and flowers, insect and disease issues including resistance, and general overall appearance. Vegetables are trialed in much the same way although they will be evaluated on criteria like fruit production. Since the same plants are trialed at different locations it helps pinpoint the best locations for the plants, Pennsylvania vs. Arizona for example. The data collected shows how each plant performs over time for the entire growing season. For annuals obviously the trial will last one season. Perennials trials last about three years after one season to establish



themselves. Some trials will also evaluate factors like drought tolerance, heat and cold tolerance. All the information you sometimes find on plant labels comes from the data collected at plant trials. (Maybe I'm wrong but labels seem to be carrying less and less information these days.)

The University of Arizona has done some trial gardens in the past. The research I could find seems to be more oriented towards commercial agriculture (vegetables & fruits). The closest states that do trials on home horticulture plants are California, Colorado and Texas.

Some trial gardens are open to the public, for example the one at Colorado State University. You can visit and see the plants that will, at least some of them, appear in a nursery near you down the road.

Chances are that the flowers that win the beauty contest this year will be available soon.

Here are some of the 2016 winners:

Pumpkin, Super Moon (very white, large size, up to 50 lbs, disease resistant)

Cabbage Katrina F1 (small heads, can grow in containers, matures early)

Tomato Candyland Red (current-type, sweet, dark red, tidy plant)

Pepper Carnito Giallo (bright yellow-orange, early bloomer, long season producer)

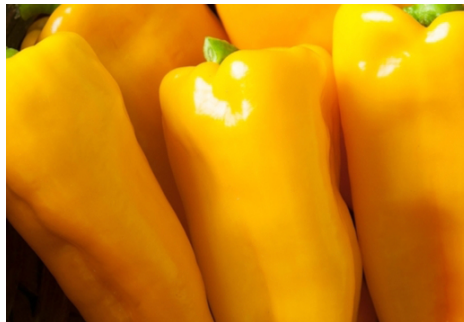
Onion, Bunching Warrior (grows quickly, matures early, good for western gardens)

Basil 'Dolce Fresca' (one comment said this basil was very drought tolerant)

Pepper 'Emerald Fire' (Very hot)

Zucchini, 'Bossa Nova F1' (compact plant)

Butternut squash, 'Butterscotch F1' (small squash, good for one or 2 servings)



Annuals

Zinnia, 'Zahara, Double Fire' (double-flowered, bright red-orange, mildew resistant)

Dahlia "XXL Sunset" (multicolored petals yellow to pink, big blooms, small plants, good for containers.

Petunia 'Cascadia Indian Summer' (yellow to orange color, bloom early and long)



Calibrachoa 'Super Bell, Evening Star' (yellow centers, purple petals, heat & cold tolerant)

Salvia farinacea, 'Catherdral Shining Seas' (bicolor, blue-white, compact plant)

Perennials

Coreopsis, "Electric Avenue" (good flowering, seems to handle cold winters)

Blue Boa Agastache (long flowering period, large plant, very drought tolerant)

Yellow Coneflower 'Leilani' (long flowering period, good vigor)

Purple coneflower, "Profusion" (compact plant, profuse flowers)

Blue Fescue 'Beyond Blue' (very blue color, maintains nice ball shape.)



Salt Damage in Plants

by Nora Graf

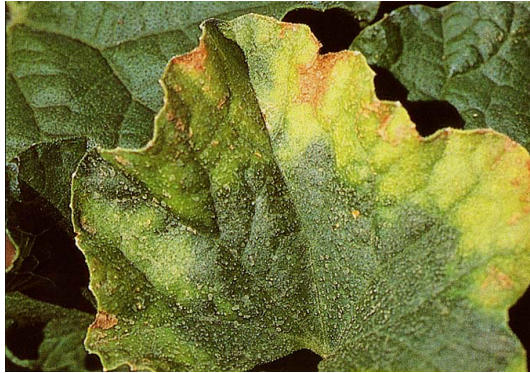
One of the problems we contend with in Arizona is salt damage. Depending on your location, salt in the soil and/or in the water can be a hazard for your garden.

When salt dissolves in water the sodium and chloride ions separate and the sodium ions replace other nutrients like potassium, calcium and magnesium, making these nutrients unavailable to plants. Roots take in the chloride ions and move them into the leaves where they accumulate. You can see the evidence in the leaves. Symptoms include chlorosis of the leaves and necrosis (death) of the tips and margins of the leaves. Chloride interferes with chlorophyll production and photosynthesis. Another issue is that salt absorbs a lot of water, making it unavailable to the plant. In desert conditions this is fatal to a plant. When water evaporates, salt is left behind.

If you live in snowy parts of the country, salt can come from salting the roads. In Arizona many of the soils and water have a high amount of salts. Another source of salt in soil is fertilizers, including manures. Salt accumulation can cause changes in soil pH which affect the availability of iron. I read the figure that 30 inches of rain would be required to leach salts away from the root zones of most plants. That's not likely to happen here. Our low rainfall and often poor watering practices can cause salt to accumulate in the soil.

When you see white crusts on your soil or in your plant containers, you have a salt issue. Plant symptoms include browning and brittleness of the leaves starting at the edges. They may show signs of an iron deficiency. The leaves will be bright yellow with green veins. Sometimes the plant will look wilted even though the soil around it is wet. Some of the salt-sensitive plants are carrots, onions, strawberries, beans, cabbage, and fruit trees. Some plants will tolerate various levels of salt and they include asparagus, *Rosa rugosa*, prickly pear cactus, columbines, and daylilies. Moderately tolerant plants include beets, squash, zucchini, chrysanthemums and many evergreens.

You cannot reclaim saline soils by adding any



chemical amendments, conditioners or fertilizers. The best way to minimize the salt problem in the soil is by flushing. Large quantities of water can leach the salts below the roots. Improving drainage will also help. Mulching prevents evaporation and helps retain moisture, which reduces the salt problem. If you have a serious problem with salt,

try raised beds. You can control the salinity, pH and compaction and provide a better environment for your plants. Do not over fertilize. Take a hard look at your watering practices. People have a real tendency to water for too short a time too frequently. I can't believe the number of people who set their timers for 15 minutes, 4 times a week (or more). Those without timers go out with a hose and sprinkle until they think everything is wet. Both of those methods are so wrong. The number one job is to check on what is really happening. Do you really know how much water your plant is getting? Once your timer goes off, get out there with a shovel, moisture probe or piece of rebar and dig down to see how far the water has penetrated. If it's just a couple of inches, it's too little. Reset the timer so you water for longer periods and fewer days. Those of you who hand-water, should do the same thing. Unless you are a really patient person, you will probably find your plants aren't getting as much water as you think.

Gypsum has often been touted as a solution to salt problems in desert soils, but before you start throwing chemicals out there, do some testing of your soil by seeing how fast water infiltrates. If the water is quickly absorbed, you don't need gypsum. If the water sits on the surface for a long time and doesn't percolate through the soil then you have a problem that gypsum can help with but get a soil test first to verify.

Salt is a serious problem but a few simple methods should help give you a beautiful garden.

<http://ag.arizona.edu/yavapai/anr/hort/byg/archive/gypsum2014.html>

<http://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1413.pdf>

A Plant and a Man

by Nora Graf

Hooker's Evening Primrose *v* *Sir Joseph Dalton Hooker*

Oenothera hookeri or *O. elata*

In July 2015 a plant was brought into the Camp Verde office to be identified. While it wasn't confirmed at the time of this writing, we were calling the specimen Hooker's Evening Primrose. (Turns out, it wasn't.)

Most primroses have big lovely flowers with translucent petals. The flowers of this species can measure 3 inches across. Hooker's Evening Primrose are a sunny yellow color that turn pinkish to orange on the second day. The flowers open in the late afternoon, hence the evening part of the name, and are closed by noon the following day. This tall primrose grows up to 4 feet. The longest leaves measure up to 9 inches and the leaves get smaller as you move up the plant. The plant is biennial, meaning vegetative growth on the first year and flowering in the second year. Hummingbird moths are attracted to this plant.

Primrose grows in a variety of habitats including pinyon-juniper woodlands, upper deserts and ponderosa pine clearings, preferring riparian areas. It is often seen along roadsides. Geographically the primrose grows in the west and mid-west regions of the United States.

The seeds are edible and were eaten by Native Americans. Young leaves can be cooked and eaten. The boiled root is edible and has a mucilaginous texture. If you eat okra you might like it. The Zuni's reportedly dried the flowers to use as a poultice to reduce swelling. Seeds are available if anyone wants to experiment with this plant in their garden.

That's the plant, but the source of the name turns out to be the more interesting story. Joseph Dalton Hooker is considered one of the greatest British botanists and explorers of the 19th century, and one of Charles Darwin's close friends. Hooker is



remembered as the founder of geographical botany. He followed in his father's footsteps, another great British scientist, to become the director of the Royal Botanical Gardens, Kew. Hooker is also credited with starting "rhododendromania."

The son of Sir William Hooker (a botanist), Joseph Dalton Hooker was born in Halesworth, Suffolk, England in 1817. At 7 years old he attended his father's lectures at Glasgow University. Even then he was interested in the geography of plants. As a child he listened to the tales of David Douglas, one of the great explorers of the time. After finishing high school at the age of 15 he studied medicine at Glasgow University and graduated in 1839. During his school years he met Charles Darwin which started a lifelong friendship and who introduced him to Captain James Clark Ross. At that time Ross was preparing to lead a British expedition to the Antarctic. Hooker chose adventure over settling down to a city medical practice. He enlisted in the Naval Medical Service and joined Ross's Antarctic expedition, in search of the South Magnetic Pole. This was the last major expedition conducted entirely under sail (no engines of any kind). As assistant to the primary surgeon Hooker was directed to collect zoological, botanical, and geological specimens. Hooker gathered up specimens at each stop along the way. The journey lasted four years but ended successfully.

When the trip was over Hooker took a job at the Geological Survey of Great Britain where he worked in the field of paleo botany, researching in the fossil fields of Wales. From there, through his father, he was given the opportunity to go to India and the Himalayas in 1847 to collect plants for the garden at Kew. For three years he wandered through areas never seen before by Europeans. His book about the



trip, *Himalayan Journals*, is dedicated to Charles Darwin. It was on this trip he discovered new rhododendrons. When he published his book *The Rhododendrons of Sikkim-Himalaya*, it created a mad desire for many of the plants and they became a bit of a

craze, rhododendron mania. At one point someone wrote, "The money spent on rhododendrons during twenty years in this country (Great Britain) would nearly suffice to pay off the National Debt."

By the time he returned from this expedition his father was director of the Royal Botanic Gardens, Kew and a well-respected scientist. He was able to get a grant for his son for an annual stipend to put together the book *Botany of the Antarctic Voyages*. The book was also to include material collected on the Beagle expedition. The goal was to compare floras in the eastern US and the eastern continental Asia and Japan.

Hooker went onto other expeditions, one to Palestine in 1860 and then to Morocco in 1871 and in 1877 he came to the western United States. In the United States he worked with Asa Gray, America's leading botanist. Their travels took them around the West with Hooker exploring the geography of plants. He earned a global reputation as an expert in plant distribution.

In 1865, as a well-respected scientist, the younger Hooker succeeded his father as the Director of Kew Gardens and remained the director for 20 years. In 1885 he retired from Kew and continued to work on botanical matters until he died in 1911 at 94 years old. Hooker spent years of his life, translating his knowledge and expeditions into publications. He and George Bentham spent 26 years working on *General Plantarum*, which became the most outstanding botanical work of the 19th century. He wrote the *Flora of Ceylon* and *Flora Indica* and continued working until his death. He had an extraordinary life, with extraordinary hardships, challenges, and rewards.

Royal Botanic Gardens, Kew

Kew (Cue) is one of the great gardens of the world. The garden was started when the village of Kew acquired a new neighbor. King Henry VII built a palace at his royal hunting park nearby. In response the village grew and became a hotbed of royal intrigue.

Early in eighteenth century Kew became the summer residence of the Royal family. Prince Frederick and Princess Augusta started a garden around the palace. From that point the garden expanded until 1820 when royal interest died and increasing numbers of botanical gardens caused a decline in attendance.

Britain began some of the great explorations of the century. Joseph Banks, botanist, friend to the Royal family, made it a personal mission to collect as many botanical specimens as he could before other gardens collected them. He helped create a gardening paradise at Kew and its botanical collection became the greatest in the world. Banks turned Britain into the horticultural center for the world. Also during this time Archibald Menzies and Captain George Vancouver surveyed the west coast of North America. Captain Bligh took his second voyage to the South Pacific.

When William Jackson Hooker became director in 1841 he worked to make Kew one of the finest gardens in the world. It was then that the great glasshouse, the temperate house, Palm House, a new arboretum was conceived and the herbarium collection was founded. Queen Victoria became a patron of the garden and the railroad made it more available for the public.

Since then Kew's fortunes have been up and down but they have become a leader in conservation programs around the world. In 2003 they were named one of the UNESCO World Heritage Sites. Currently funding has been cut and its science staff has been severely reduced. If you are in the London area you should make the effort to stop in.



Getting to know Master Gardener, Tom Konzem

By Lori Dekker

One of the perks of this well-paid, highly prestigious job is that I get to meet really nice people and get to talk with them. Late last month I spent a wonderful hour interviewing Tom Konzem, MG Class of 2009. His dog Mel had very little to say, and in fact slept through most of the hour so I was able to pry a lot of good stuff out of Tom.

Tom is a retired pharmacist who was a district manager for Kaiser in Southern California. He and his wife, Josie, enjoy a rural lifestyle so they lived and raised a family in the very tiny town of Oak Glen, high in the San Bernardino Mountains. Tom commuted daily to the flatlands of San Bernardino County; he says his office was his car as he motored around to 12 different Kaiser facilities managing the pharmacies. He and his wife planned to retire in Santa Fe, New Mexico until they drove through Prescott. After several visits they decided to relocate to Inscription Canyon in Williamson Valley, where they could get several acres. They learned to grow their flowers and vegetables in raised beds because of the caliche. Just recently, the Konzems moved closer to town, off Senator Highway, to a smaller home with much less yard. Tom says they are surrounded by flowering bushes so his gardening will probably be limited to container plantings.

I asked Tom what his favorite part of Master Gardening was and he quickly said that he really, really enjoys co-managing the mentor program. When he came on board the percentage of MG Class graduates who completed their 50 hours of volunteer time sat at about 25%. That was 2010, now, thanks to

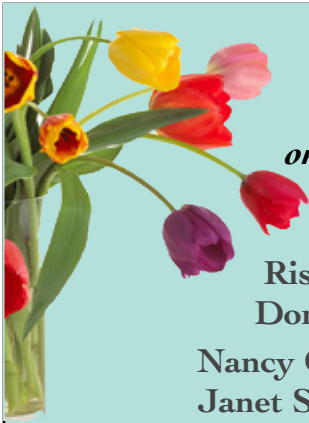


his efforts and Betty Loos' on the Cottonwood side, the percentage is up to 65% and may actually hit 80% by this summer for the Prescott class of 2015. So a lot of the outreach that is happening in our area is happening because of the efforts of Tom and Betty working hard to get folks certified. Of course, Tom is always on the look out for Master Gardeners that can and want to participate in this really successful program that actually makes a difference in people's lives.

Not surprisingly, he really commits to his weekly Tuesday morning stint at the Help Desk. He says it's the best way for him to stay current as he spends any downtime there researching and perusing the library. As a science-based pharmacist the transition to science-based gardening advisor seemed like a natural progression. Other perks in both his Help Desk and the

Mentor Program work include the many opportunities to network and form new relationships. Like many of us, gardening has always been a part of Tom's life, and retirement means that he finally gets to indulge. We also all know how nice it is to be around other people who understand the thrill of a seedling and the agony of an aphid infestation. Yavapai County is lucky to have such a kind, well-prepared individual to help us really get our hands dirty.

Give Tom a call some Tuesday morning on the Help Desk; maybe you can stump him. And consider becoming a mentor and encouraging others to get involved with the many ways we help in our communities!



Congratulations

on completing 50 hours of service.

Risa Little—mentor Anita Fleming
Don Booth—mentor Mary Barnes
Nancy Christie—mentor Suzette Russi
Janet Steven—mentor Patrick Beatty
Helen Brown—mentor Herdis Maclellan



Iris Rhizome Sale, Prescott Area Iris Society

New Location:

**Yavapai Title Building Conference Room
1235 E. Gurley Street, Prescott, AZ
At the intersection of Gurley and Sheldon
Streets**

Saturday, July 30, 2016 10:00 AM to 3:00 PM

Sunday, July 31, 2016 12:00 PM to 3:00 PM

Join the Prescott Area Iris Society (**PAIS**) for our annual Iris Rhizome Sales with hundreds of Iris varieties for sale, all colors of the rainbow. Come early for best selection. Planting and care instructions given. Portions of the proceeds are used to support the PAIS public outreach programs and horticultural education programs in local public schools. For information contact Dennis 623-980-6627. Visit our web site at <http://prescottirissociety.org> or contact

president@prescottirissociety.org



2016 Newsletter Deadline Schedule

The newsletter comes out every two months. Please note the deadlines.

Publish	Date	Deadline
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Feb-Mar	Feb 1	Articles Jan 5, announcements Jan 25
April-May	April 1	Articles March 5, announcements Mar 25
June-July	June 1	Articles May 5, announcements May 25
Aug-Sept	Aug 1	Articles July 5, announcements July 25
Oct-Nov	Oct 1	Articles Sept 5, announcements Sept 25
Dec-Jan	Dec 1	Articles Nov 5, announcements Nov 25

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MG NEWSLETTER



Meetings

The Master Gardener Association meets on the third Wednesday of the month at 6:30pm in either Prescott or Camp Verde. There is no meeting in July (Monsoon Madness sale) or December.

June 15: Cottonwood, Monthly Master Gardener Association meeting. Welcome new associate members. There will be no business meeting. Refreshments provided by the Master Gardener Association; there is no need for members to bring food to this meeting.

NOTE: This meeting will be held at the Cottonwood Recreation Center, 150 S. 6th St., Cottonwood, a different location from our regular meetings. Time is still 6:30PM.

Monsoon Madness Plant and Yard Sale July 9, 2016, at the Extension office on Rodeo Drive, Prescott.