High on the Desert Cochise County Master Gardener Newsletter

Vol. 24, No. 3 March 2013

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

The Virtual Gardener—The Garden Cloche

One of the sessions I attended at the High Desert Gardening & Landscaping Conference this year was a presentation by University of Arizona Extension Specialist, Dr. Ursula Schuch, on hoop houses. The purpose of a hoop house is to serve as a low-tech greenhouse to protect winter crops from cold damage and extend the growing season. The structures are constructed of lengths of PVC pipe bent into arches (the "hoops") which are covered with plastic sheeting to provide the glazing. They can be tall enough to stand in and up to 30 feet wide by 140 feet long. Although many are not that large, a hoop house may still be overkill for a backyard gardener. How about a smaller option—the cloche.

The word *cloche* is French for *bell*. The bell jar (*cloche en verre*) has been a common piece of laboratory equipment for centuries and the first cloches used in gardens were probably appropriated from chemistry labs. They seem to have been first used in horticulture in France, but by the early 17th century were also widely used in England. Typically they were bell-shaped, made of thick glass, and had a heavy, smooth flange at the base. They were commonly about 15 inches tall and 16 inches in diameter.

The first garden cloches were made of solid glass but soon holes were added to the top to allow wooden handles to be attached so they could be more easily carried. The handles could be removed once the cloche was in place in the garden leaving the hole to provide for ventilation. Even with the holes in the top, the bottom edge of the cloche had to be elevated slightly to allow air to be drawn in to create circulation.

During the 19th century many new designs for cloches were developed. Some even allowed sections to be added to the cloche to accommodate growing plants. Another innovation was the "continuous cloche" developed in 1912 by an Australian civil engineer, Major L. H. Chase. This cloche was constructed of two sheets

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of glass joined together by wire along one edge which could be opened like a hinge to form an open-ended "tent." These tents could then be placed end to end to form a continuous glass tunnel and the open ends blocked with additional sheets of glass. Later the design was improved to create the Chase Barn Cloche, a product that is still used and available in the UK.

Glass cloches are still available for purchase and make a beautiful statement in the garden, although they are too expensive to deploy in large numbers. I have seen some advertised on the internet for nearly $50 apiece.

Less expensive clear plastic cloches are also commercially available. They come in various shapes and sizes, have built-in vents for air circulation, and are much less susceptible to breakage than glass. Their downsides are a shorter lifespan and the need to be staked to keep them in place in the wind.

If you have glass cutting skills, it is possible to make your own cloches from glass jugs, but I would not recommend it unless you have the right equipment and know how. Working with glass can be dangerous.

Some people use plastic containers as cloches. A gallon-sized plastic milk container can be used as a small cloche if the bottom is cut out. It will not perform as well as a glass cloche for several reasons. First, it will deteriorate in the sun after a relatively short time. Second, it is so light that it can be easily blown over in the wind. And last, but not least, it will not retain heat overnight as well as glass.

The meaning of the term *cloche* has expanded these days to include many types of portable or semi-permanent shelters for plants, even miniature hoop houses created with PVC. A publication from Oregon State University provides detailed **instructions** on how to build a 4 by 8 foot hoop house style raised-bed cloche for under $300.

Garden cloches are basically season extenders that can add extra days or weeks onto the growing season, especially here in the High Desert where winter gets a late start anyway and is over early. Heat gain is one of the most difficult problems to deal with here. On a sunny day in January when the outside temperature is in the forties, the temperature inside a glass or plastic cloche can reach nearly a hundred degrees. This means that the cloche must be vented to allow air to circulate and heat to escape. Excess heat can also dehydrate the plants so their water needs must be carefully tended.

If you would like to read more about cloches, check out Garden Cloche Ideas on **eHow.com**.

Until next time, happy surfing.

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Note: See Page 6 of this newsletter for some unusual cloches!

Cuttings 'N' Clippings

❄ The **Thursday, March 7** CCMGA meeting speaker will be Master Gardener Kevin Taylor. He wants to make "permaculture" better known to this area. When asked what permaculture is, he replied, "It's the lazy gardener's way to raise food." A longer explanation is that Permaculture is a branch of ecological design, ecological engineering, and environmental design which develops sustainable architecture and self-maintained agriculture systems modeled from natural ecosystems. The meeting location is the Public Meeting Room at UASV and the time is 5:00 p.m. For information call (520) 458-8278, Ext 2141 or contact Joyce at: **jwilliam@ag.arizona.edu/**

❄ The Water Wise schedule for March includes an information table at the Southern Arizona Contractors Association Home and Garden Show held at Buena High School on **March 15 & 16.**
"Mini talks" will be held at Lowes and ACE Hardware on "Irrigation Systems" and "Timing Irrigation Systems." Visit the stores for dates and times, call (520) 458-8278, Ext 2141, or contact Joyce at: **jwilliam@ag.arizona.edu/**

❄ A new Master Gardener class began February 26. It's not too late if you would like to take the class. For information call 458-8278, Ext 2141 or contact Joyce at: **jwilliam@ag.arizona.edu/**

My Perspective on the High Desert Conference

The 20th annual CCMGA High Desert Gardening & Landscaping Conference was held in February, and in my opinion, it was one of the best that I've attended. The speakers and the topics on which they spoke were just top notch. I particularly enjoyed the morning general session Thursday morning featuring a broad discussion of the state of agriculture and its associated technologies, as well as an interesting session on sky islands ethnobotany. Friday's sessions were oriented more towards home gardening, plus a bonus discussion of climate change.

While each of the morning speakers addressed distinctly different topics, in a very real sense they all spoke to the same big issue: feeding a world of seven billion people effectively and efficiently while doing so in an environmentally responsible way. Conference attendees got a good look at the challenges facing agriculture from a local and a global perspective. Especially interesting to me were charts showing the ever increasing world population and continually increasing agricultural output as contrasted with a decreasing availability of arable land and a decreasing portion of people engaged in agriculture. In other words, fewer and fewer farmers are feeding more and more people on less and less land. Technology is undeniably responsible for this triumph. Furthermore, the trends shown are projected to continue as our population grows and farming land continues to be taken over by urban development.

Another subject from Thursday was genetically modified (GM) foods. This subject is quite controversial, probably more so than it should be. After all, we have been genetically modifying plants for millennia, as has Mother Nature herself. For example, the Celebrity and Early Girl tomatoes growing in your veggie patch are, as hybrids, GM plants. Current GM technology allows more precision in selecting the characteristics wanted in a plant, often resulting in new varieties in much less time than older breeding techniques. Nonetheless, I confess to an uncomfortable feeling when I hear that we are inserting genes from a bacterium (Bt, or *Bascillus thuriengensis*) into a plant. Yes, I know that these kinds of crosses can happen naturally, but it's still somewhat disconcerting. How much we resist change at times!

Have you ever heard of guayule? I hadn't, but according to Julie Murphree of the Arizona Farm Bureau, it's a plant that you might be hearing about in the future. Guayule (*Parthenium argentatum*) is a plant native to the southwestern US and northern Mexico. It produces latex. Furthermore, the latex from guayule is hypoallergenic and can be used by many who are allergic to the latex currently in use. Guayule is projected as a potential future cash crop for Arizona since it is well adapted to growing in arid regions.

The two Friday morning talks, given by Dr. Jeff Gillman of the University of Minnesota, brought to the forefront the issue of organic versus "conventional" agriculture. Dr. Gillman effectively made the case that too many of us view this situation in terms that are too simplistic. "Organic" is often equated with "harmless" and that just ain't so. A good case in point is the insecticide rotenone, which has been widely used as an organic pesticide choice for many years. Rotenone was often recommended by *Organic Gardening Magazine.* Now, Rotenone is illegal for home use as it has been shown to be very toxic to aquatic wildlife and it has implicated as a possible cause of Parkinson's Disease. Organic, yes. Safe, no!

Another example provided by Dr. Gillman was that of using vinegar as a herbicide. He related a story of using horticultural vinegar (of 20% acetic acid strength—normal household vinegar is only 5% acetic acid) for killing weeds in his yard. He inadvertently sprayed a small frog with the vinegar and the frog was dead within a minute or so. This isn't to say that vinegar isn't a relatively safe choice. It is, and the frog aside, it has minimal environmental effects. It is to say that ANY poison, even vinegar, has negative effects and should be used with caution and a full knowledge of its properties. I stick to my opinion that the less we can use any poisons in the home garden and yard, the better off we are.

By the way, our conference is the longest running gardening conference in the state of Arizona. Kudos to the long-time members for establishing this wonderful event and keeping it going!

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Master Gardener

Thomas Robert Malthus:
Was He Right or Wrong? Part 2

Thomas Robert Malthus was a controversial figure and the purpose of these articles has been to illustrate the reasons why this is so. Recent statistics show that one in seven people in the world go hungry every day. This is a sobering figure but it also means that six out of every seven have adequate food to eat (85.7%). A clear majority. Sixty percent of the people in this world have access to a cell phone, personal computer, or other form of high technology. Another clear majority, and rather astounding considering the fact that these technologies have only existed for three decades. However, despite the fact that most have enough food to eat, that one in seven figure means approximately a billion people in this world are starving. Does this statistic indicate that Malthus was correct in his predictions? Some believe so.

Our growing population has taken a heavy toll on resources such as water, prime agricultural land, and oil. Constant population growth is forcing humans to consume resources faster than they can be replenished. Take water for example. India uses water at a rate of twice that of which its aquifers can supply. Since 55% of India's food is from irrigated fields and at least half of its population already starving, this does not bode well for India's future. This does not mean that we are not producing enough food worldwide though. The fact is that we have been thus far. However, some nations are incredibly wasteful of their surplus resources and certain governments and markets are terribly inefficient and/or corrupt, resulting in the food not reaching those who really need it.

Farming is also decreasing at an alarming rate. More people live in cities and more farms and ranches are being turned into subdivisions, resulting in less people producing food. Much of the arable land is also being destroyed through erosion, over-building, and pollution. We continually destroy habitat, pollute our water and air, and use up limited resources as we try to "fix" our problems. The overuse of fossil fuels is one example of this.

There have been many debates about using corn for fuel. Turning corn into biofuel seemed like a good way to conserve the limited oil supply. What was not considered were the potential problems of starvation in countries like Mexico where corn is the main staple food. Turning corn into fuel resulted in a higher demand and drove the corn prices up, causing poor Mexicans to be unable to afford to feed themselves. This price increase actually caused more devastation than it was intended to eliminate. Corn does not appear to be the answer so we still need to find a viable alternative.

Does all this mean Malthus was right? The answer is not clear. If humans learn to consume only what we need, then we can feasibly produce enough resources to sustain the poorest countries. However, cutting back is only part of the solution. We also need to direct more of our financial resources to areas where they can be of the most help. The Food and Agriculture Organization (FAO) claims that we need to increase expenditures on agriculture by at least 50% if we are going to avoid malnutrition or starvation in the future. This will be no easy feat. Human ingenuity and productivity has thus far disproved or at least postponed most of us from the fate that Malthus predicted. Whether this remains true and whether we manage to feed those billion starving people depends on us.

Sources:

http://en.wikipedia.org/wiki/Food_security

http://www.populationinstitute.org/resources/populationonline/issue/1/8/

http://business.time.com/2011/07/15/was-malthus-right/

Stephanie Blanchette
Master Gardener

Note: *Additional reference provided by Susan Pater, Cochise County Cooperative Extension Director. .* http://www.fao.org/fileadmin/templates/wsfs/docs/Issues_papers/HLEF2050_Investment.pdf

March Reminders

- Prune roses
- Start seeds indoors
- Check cactus for fungus
- Plant cool-season veggies
- Reconsider your water usage (Call Water Wise for a free audit—458-8278, Ext 2139)
- Remove and replace winter mulches

Plant Profile—*Penstemon*

Botanical name: *Penstemon*
Family: *Scrophulariaceae*
Range: Native to the Western US and Mexico

This huge genus of wildflowers is essential for any Xeriscape garden and is one of the best flowers for attracting hummingbirds. There are more than 250 *Penstemon* species. They can be found growing in sandy soils arid hillsides, in forests, on the plains, and from the low deserts to the highest mountains. So choosing a species suited for your specific conditions, no matter where you live, is easy. They range from 1 to 6 feet in height and can spread from 1 to 3 feet across. Most are perennial, can be deciduous or evergreen, are drought-tolerant, come in a rainbow of colors, and like their relative, the snapdragon, produce flowers along a spike.

Penstemons feel at home in rock gardens, borders, courtyards, containers, wild gardens, meadows, and look wonderful with southwest plants which share their water usage to include yuccas, cacti, and our native trees and shrubs. Plants improve with age and reach their glory in the second or third year.

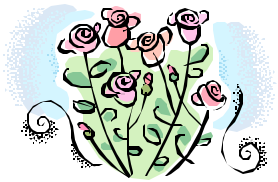
After blooming, let the seed heads ripen on the stalk, collect, and scatter them where you want to start a new colony or leave seed heads on the plant and let them do the work for you. Depending on the weather conditions in winter, you should see new volunteers next spring. Most require well draining, loose sandy or gravely soil. Poorly drained soil encourages crown rot, as well as "wet mulches" (wood mulches), so use a "dry mulch" such as sand or rocks. During the bloom period, if the weather is hot and dry, a supplemental, deep irrigation every ten to fourteen days will keep the foliage and flowers looking their best.

If you are new to this wonderful group of plants, here are a few of the easier ones to try first. If you are a "Penstemaniac" go crazy! *Penstemon eatonii* (firecracker penstemon) grows 2 feet high by 15 inches wide. It is native to Utah., a prolific bloomer in late spring with numerous spikes of scarlet flowers and dark green foliage. A head turner! *P. palmeri* (pink wild snapdragon) grows 4 to 5 feet high and 24 inches wide. It is native to New Mexico and Arizona, is very hardy, heat-tolerant beardtongue with highly fragrant spikes of huge, light white blossoms that are tinged with lilac or pink. The foliage is gray and it flowers in early summer. *P. pseudospectabilis* (desert beardtongue) grows 36 inches high by 18 inches wide and loves hot weather. It grows 36 inches high by 18 inches wide with long spikes of hot pink flowers with gray leaves. Deadheading faded flowers will keep the plant blooming for many months.

Penstemon—a wildflower you should get to know!


P. eatonii

(Note: Reprinted from the March 1997 Cochise County Master Gardener Newsletter written by former MG Cheri Melton.)



In Memoriam

My wife and I, along with many other people, recently attended a memorial service for a long-time friend and fellow Master Gardener, Frank Christ who passed away in December. Frank and his wife, Alice, were graduates of the 1992 Master Gardener Training Class, and Carolyn and I first met them at the graduation picnic for their class. Our friendship was instantaneous and lasted for more than two decades. Frank, a WW II Veteran and Professor Emeritus from California State University, Long Beach, was an internationally recognized expert in learning assistance and an active lecturer and consultant in the field until his death at age 89. He was also active in Master Gardening for many years. In addition to his many other contributions to the Master Gardening Program, he was instrumental in starting the High Desert Gardening & Landscaping Conferences that have taken place annually in Sierra Vista for the past 20 years and served with me on the organizing committee that created the Cochise County Master Gardeners Association and wrote its constitution.

Euge bone serve et fidelis.

Gary Gruenhagen, Master Gardener

Cochise County Master Gardener
Newsletter Editor
Carolyn Gruenhagen

Cloches for cactus!

High Desert Gardening & Landscaping Conference

High on the Desert

February 14 & 15, 2013

Click here to go to a web page with the names of all the people involved in holding another successful conference. We sincerely thank each and every one of them!

Click here for a short three minute video of the conference highlights and plan to join the fun next year!