

A Botanic Garden in the High Country

Rosalie M. Laune, Franklin County Master Gardener

In early June, I spent a little over a week in Colorado. I arrived in Denver a day and a half before the official start of the tour I would be joining. One of the attraction I visited in my free time was the Denver Botanic Gardens.

The Gardens began in 1951 on 100 acres in City Park. In 1958 it moved to its current location on a transformed old cemetery. The mission of Denver Botanic Gardens (DBG) is to connect people with plants, especially plants from the Rocky Mountain region, and 30 regions around the world with high altitude climates similar to Colorado's. Due to its geographic location it is a conservatory of alpine plants and habitats. In its 50 gardens it includes more than 17,000 plant species from around the globe.

I became cognizant of the climatic variations of a more alpine ecosystem even before I arrived at the garden. Throughout Denver jonquils were in full bloom and iris and peonies were in bud stage, a month to six weeks later than in Missouri. I'm not sure if this was entirely related to climatic variations between the two regions or the delayed arrival of spring in some areas of Colorado. A heavy snow closed the Trail Ridge Road through the Rockies the week before our arrival. I spoke with volunteers who were planting annuals in the botanic garden and was told they were at least a week behind the normal planting schedule.

It would take one more than a day to visit all the gardens, but some which I found of interest are described below:

The Sam Mitchel Herbarium of Fungi has the most complete and diverse collection of mushrooms housed anywhere in the Rocky Mountain region, with 20,680 specimens

The Gardens of the West includes a steppe garden and features eco-systems that thrive in Colorado's climate: shortgrass prairies and sage brush valleys

The Streetside Garden features hardy, drought-resistant plants that thrive on steep slopes. The plants are fast-growing, low-maintenance with a tightly intertwining root system that help prevent rainwater from washing away soil.

The low water Crossroads Garden, near the entrance to the gardens, features a collection of yuccas and other members of the agave family. Relatives of lilies these plants are held sacred and used by Native Americans living in arid climates. Their deep taproots access and store underground water. The water can be drunk, the root itself can be roasted, and the fibers curling from the edge of each spiky leaf make a durable rope and cloth.

The Gates Montane Garden was the first outdoor garden established at the new location in 1961. It simulates a walk through the montane regions of Colorado, the forested ecosystem of ponderosa pine, quaking aspens and other trees and shrubs common to altitudes of 8,000-10,000 feet. I think it was there that I spotted a sugar maple tree. I asked an attendant working in the area if it produced sap but was told that had not been explored.

The Sacred Earth garden was inspired by the heritage of 20 Native Americans tribes from the Four Corners area. It demonstrates the importance of plants in the lives of American

Indians who used these plants are medicines, building materials, dyes and food and in their spiritual and ceremonial life. It also includes a

dryland agriculture demonstration garden that incorporates Native American heirloom crops and traditional cultivation methods. When the garden was redesigned in 2000 there was an official blessing by representatives of the Tarahumara Pueblo, Sioux and Hopi tribes.

The Sam Mitchel Herbarium of Fungi has the most complete and diverse collection of mushrooms housed anywhere in the Rocky Mountain region, with 20,680 specimens



A Botanic Garden(continued from page 2)

Shofu-en Japanese Garden features twisted and weathered Ponderosa pines. Their twisted and weathered form appear throughout the garden. The pine, an important and symbolic tree in Japanese gardens, signifies longevity and happiness. All of the 130 are each over 250 years old.



Rock Alpine Garden is a world-renowned garden internationally acclaimed as a premier example of the art of rock gardening. With more than 500 tons of rock used in its construction, this garden provides habitats similar to more than 20 different high altitude environments for more than 2,300 species of plants.



The Steppe Garden teaches about the fragile steppe biome and about steppe landscapes across the world with climates and plant communities similar to Denver's semi-arid region. Featured are Central Asian, South African, Patagonian and North American Steppes

O'Fallon Perennial Walk which was designed in the early 1990s was modeled after European perennial borders. It contains a variety of perennials of varying

colors, heights, shapes and textures along a backdrop of a formally pruned native juniper hedge. This hedge creates an optical illusion; the rows are angled so that the views from the north end make the south end appear farther away than it actually is.

The Perennial Walk ends at a pool in which the Dale Chihuly sculpture, "Colorado" is the focal point. Behind the sculpture a Laburnum x watereri (golden chain tree) was in full bloom. a bright yellow I think I saw it at its peak, unfortunately the picture does not do it justice. It was breathtaking beautiful. It gets its name from the drooping



clusters, up to 24 in long, of pea like bright yellow flowers. Although it thrives in full sun or part shade, it does not tolerate heat and humidity. Alas it probably would not do well in our climate. Also, its beauties belies a sinister facet- -all parts of it are poisonous

The Monet Pool, the largest water garden, is meant to emulate a Monet painting. It includes hardy and tropical waterlilies, Victoria waterlilies, cattails, pickerel plants, cannas, iris, among others

In Denver County, the Master Gardeners are a community function. They are not under the auspices of the Extension Office. Its 120 members volunteered 4,400 hours for an annual value of \$96,800



FCMG Scholarship Established 2019

Sally Bocklage, Franklin County Master Gardener

The spring of 2019 marked a special time for our Franklin County Master Gardeners as our chapter announced we would award a \$500 scholarship to a worthy high school senior entering a horticulture or agriculture related field; and that it will become an annual scholarship! With excitement in the air, a Scholarship Committee formed which included Sally Bocklage, Chair; Nathan Bailey, Ann Rall, Debbie Ciegel, Brenda Peters and Colleen Simons. Step one was to create the Application Form itself. Then, it was essential to get the word out that such a scholarship was available. Very happy to report that every high school in Franklin County was contacted and arrangements were made, either through the school office or directly with a counselor, to make the Application Form available to eligible students. The deadline to submit was April 3, 2019.

There was eager anticipation as to how many students would apply. Since the criteria was career path specific, we wondered if we'd even get a couple forms returned. Would we hear from two "hopefuls" or more? Tracking incoming applications, close to the deadline several forms arrived. Oh, yes, things looked good! More followed, making a total of seven applications to evaluate. The candidates came from St. Clair High School, Washington High School and Union High School. Other schools who were made aware of the new scholarship were Sullivan High School, Pacific High School, Four Rivers Area Career Center, New Haven High School and Borgia Regional High School. There were no submissions from those schools, however, we made progress in making it known to them.

I couldn't have asked for a better group of folks to assist with this really important matter for our chapter. The committee members viewed the screening process in an impartial and diligent manner. Each candidate was given a ranking.....and the winner was selected. On the evening of April 25th, Deb Klak and I awarded the 1st Annual Franklin County Master Gardener Scholarship to Morgan S. Juergens, a student from St. Clair High School. She is pursuing a degree in Natural Sciences and Agriculture Business from Missouri Baptist University with long-range plans to operate a large scale greenhouse.

Here are some things about Morgan that you may appreciate knowing: She was in FFA for four years and during her junior year the FFA advisor trusted her to take on management of the greenhouse. During this time she dedicated most weekends picking up shipments of soil or plants or watering and tending the plants. In her own words, "I loved every second of it, and by the end of the year I realized it was something I could see myself doing for a long time." She added: "This scholarship will help me further my education and will play a huge roll in my career and overall goals after graduation. I ensure you that your investment will contribute to a worthy cause." Other activities and accomplishments include being in the Pep Club, on the Softball Team, Track and Field and one year of wrestling. She was on the Honor Roll, was honored as Athlete of the Week, and was Media Facilitator at her church.

It was a pleasure meeting Morgan and an honor to sponsor her through this \$500 Scholarship. We wish her well as she pursues these goals through her studies this fall and beyond!



Pictured: FCMG Member Sally Bocklage, FCMG Chairman Deb Klak, and scholarship winner Morgan Juergens from St. Clair High School.

Flooding Unlikely to Affect Japanese Beetle Population

Kevin Rice and Ben Puttler, *Division of Plant Sciences University of Missouri*

Invasive Japanese beetle adults have begun to emerge in central Missouri. Adult beetles feed on over 300 host plant species including natural weeds, shrubs, hardwoods, and

cultivated crops such as to corn, soybean, ornamentals, and fruit, often resulting in economic injury. Recent flooding throughout the state is unlikely to affect Japanese beetle populations. Beetle grubs overwinter in the upper 5-15 inches of soil and resume feeding on grass root in the spring prior to adult emergence.

Although standing water on agricultural fields can reduce oxygen availability and enhance the spread of disease, it is unlikely to suppress over all beetle populations levels. During the 1940, wide scale flooding on the east coast did not affect the beetle abundance. Furthermore, adults will emerge from grasses not effected by flooding.

Adults will continue to emergence throughout early summer, with peak populations typically occurring in July. Adults can cause severe defoliation in soybean.



Photo by Emily Althoff, University of Missouri

Economic thresholds are based on defoliation. During vegetative growth, chemical applications should be considered at 30% defoliation, and 20% during

reproductive stages. Japanese beetles often form aggregations in field edges, therefore border treatments may provide sufficient management, however, interior of fields should also be scouted. Late planted soybeans may reach thresholds earlier as these plants will be smaller.

Adult beetles also consume corn silks, resulting in reduced pollination and ear fill, however foliage feeding does not cause injury. Insecticide applications should be considered when silks

are present, and three or more

beetles are present per ear and pollination is less than 50% complete.

Researchers at the University of Missouri are currently investigating an attract-and-kill strategy to manage Japanese beetles while reducing insecticide applications. This technique uses lures containing pheromones and plant volatiles to attract adult beetles to a specific area where they can be killed.

From Matt's Desk

Matt Herring Franklin County Master Gardener

Franklin County is celebrating their bicentennial this year with a wide range of events. You have probably seen the kites businesses and organizations have purchased, decorated and hung to recognize the county's namesake, Benjamin Franklin. Franklin is recognized for many contributions to society, but for many people his inventions hold particular interest. From Biography.com I learned that he invented the Franklin Stove that provided more heat with less fuel, bifocals, the armonica that was used by both Beethoven and Mozart, the rocking chair and the American penny. He studied ocean currents, discovering the Gulf Stream and he conducted experiments with electricity. Our county's namesake was an inventor and scientist. Much of his discovery was not as the result of formal education, but driven by curiosity.



As Master Gardeners you have the freedom to "Discover". Discovery is one of four values of the University of Missouri. Your volunteer efforts can be discovering something new related to horticulture. Master Gardeners have conducted experiments evaluating different varieties, effects of mulch, crop rotation, pest control, irrigation and the list goes on. The improvements in all aspects of our life we enjoy today are largely because someone asked the question why, or how or what if? If you have an interest in conducting experiments, I would encourage you to follow this interest. If you conduct experiments in your garden, I would encourage you to keep careful notes, take pictures and record your observations. Sharing what you learned at the end of the experiment increases the knowledge of others. If you would like help with experimental design, let me know.

From the University website that discusses the value Discovery "What we know is not all that is." I want to encourage you to be bold and try something new. Experiment. Share what you learn.

Matt

Garden Tour Photos June 2019



The Cozy Bailey House, FCMG Member Nathan and Barbara Bailey's home.



Jackson Serenity Garden



Beautiful plant and sitting area from David and Diane Brunsworth's garden

Appreciation gifts for garden hosts



Bob Dobsch's lovely landscaping



Garden Tour stop at the home of Joe and Pat Schneider

(continued on page 6)

Garden Tour Photos (continued from page 5)



**Franklin County Master Gardeners
Pollinator Demonstration Garden**



**Franklin County Golf Course was one of the
stops on the garden tour.**



**Garden Tour participants investigate the Master Gardeners
Pollinator Demonstration Garden.**



Franklin County Golf Course Monarch Waystation



Another Garden Tour stop was the home of the Hensen Family