

# & BOTANICAL GARDEN

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# ArborNotes

A Newsletter of the Arboretum Associates

December 2012

# The John and Winifred Dixon Butterfly Garden

ohn and Winifred Dixon have been long time Arboretum supporters, with one of the most creative (and time consuming) methods I have ever seen. They collected errant golf balls in the Arboretum, cleaned and sorted them, then sold them at the Moscow Farmer's Market and donated the proceeds to the Arboretum. In 2009 they mentioned that they thought that a Butterfly Garden would make a nice addition to the Arboretum. I started looking into the idea, but I didn't make much progress until John died quite suddenly in 2010, and the Butterfly Garden was designated as a memorial.

I started looking at possible sites within the Arboretum. There were a few requirements that dictated where it would be located. The first requirement from my perspective was that it be easily accessible for the public and for maintenance. Since our maintenance



Installing the engraved rock for the John and Winifred Dixon Butterfly Garden 8-28-12 Paul Warnick photo

activities are based out of the Arboretum barn, it seemed that it should be relatively close to the barn. Since the garden would probably include a range of plants from different parts of the world, by the barn also made sense, since that area is designated



Will Boyd, Ian MacConnell, Joshua Hail Butterfly Garden construction, 6-11-12 Paul Warnick photo

for Display Gardens in the Arboretum master plan, rather than restricted to plants native to specific geographic areas like the rest of the Arboretum. Another desirable characteristic for a successful Butterfly Garden is accessible water and mud. Both of those could happen by the stream—so the logical spot seemed to be adjacent to the existing Xeriscape

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# ArborNotes

A Newsletter of the Arboretum Associates University of Idaho Arboretum and Botanical Garden

Published by ARBORETUM ASSOCIATES University of Idaho P.O. Box 443143 Moscow, Idaho 83844-3143

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Garden. As a bonus, the flowering plants in the Xeriscape Garden will add to the available food sources, and the nearby poplars and willows can serve as host

plants for some native butterfly gardens.

Butterfly Gardens seem to be divided into two types those that are designed primarily as a food source for the adult butterflies and those that are designed to provide habitat and food sources for the



Will Boyd constructing Butterfly Garden bridge, 6-28-12 Paul Warnick photo

entire life cycle from caterpillar through chrysalis to the adult butterfly. Given our limited space and resources, it seemed best to primarily focus on adult butterflies. The garden was designed using a fairly limited number of species of perennial flowers, all chosen for their attractiveness to butterflies, primarily high nectar content combined with floral tubes. I did include three different species of milkweed (Asclepias). Their flowers are attractive to many butterflies; the plant is also a host plant for the Monarch Butterfly caterpillar. Monarchs are not common here in Moscow (partly because milkweeds are not common); but maybe the new additions will help. One frequent Arboretum visitor photographed a Monarch in the Butterfly Garden this summer. No doubt that was just a lucky coincidence since the plants in the garden were barely getting established. It was still fun to see the picture. In addition to the perennial beds, I also included one bed of annual flowers that attract butterflies, including cosmos, calendula, verbena, and nicotiana. All of the annuals that were selected re-seed themselves (often too well!) so the idea is to let them re-seed and mix themselves.

I wanted something besides just the plants to attract human visitors to the site. I remembered from my days in a retail nursery that bridges seem to automatically act as children magnets. We sold small ornamental bridges at the nursery, and we would display them by putting them out in the aisles. Children would run back and forth across the bridges, even though they really didn't go anywhere. I found a kit for a bridge that would work and recruited Ken White, a contractor friend of the Dixon's to help with constructing the concrete footings for the bridge. Then my crew and I installed the bridge. It seems to succeed as planned as I often see children on the bridge.

The final piece of the puzzle was to identify the site and recognize the donors. I liked the way the engraved basalt rock worked in the Asian Pergola, but didn't want to repeat the same column look. I found a rock that seemed like it would work in the Facilities storage yard. Russell Paul of P & R Sandblasting, who does the engraving, looked at the rock and said it would work, assuming we could get it out to his shop and then install it on site. That turned out to be more challenging than expected when the rock tipped the scale at a little more than 4,800 pounds! It turned out that the most challenging aspect was

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engineering the way to strap it so that the University's big loader could lift it. Surprisingly, it settled down into the hole with the inscription oriented properly and nearly perfectly level.

Now, we will wait for spring and hope that the perennials have all established well enough this year to flower prolifically next year. One source I read said that butterflies are 'near sighted' and a big splash of color works best to attract them. I am guessing that the color will also attract more human visitors! As we enjoy this new garden next spring--and for many years in the future--we will continue to thank John and Winifred Dixon for their generosity.

— Paul Warnick

### New Pines Inoculated with the Morel Fungus



Plantings in University of Idaho Experimental Forest. Mary Ridout photo.

A new planting of ponderosa pine in the UI Arboretum parallels a research project established in the University of Idaho Experimental Forest (UIEF) by PhD student, Mary Ridout. Mary and her mentor, George Newcombe, are experimenting with microbial inoculants that might benefit western conifers. About half of the ponderosa pine seedlings added to the



Site of new planting and future Morel patch in Arboretum. Paul Warnick photo.

Arboretum this fall were inoculated with a morel fungus. Morels are highly prized, wild edibles in the Pacific Northwest. Not only do morel fungi form gourmet mushrooms in the spring, but they also colonize many plant species. In western conifers morel fungi are typically mycorrhizal with the roots of their hosts. In additional research, Mary and other members of George's lab have found that morel inoculations can improve growth, seed production, heat tolerance and disease resistance in some plants. No one knows, however, whether inoculation of the new seedlings



Close up of one of the trees that was treated with the inoculum. Paul Warnick photo.

will lead to morels fruiting in the Arboretum. And if it does, those morels may first appear many years from now.

— George Newcombe and Mary Ridout

# Arboretum Associates Donor Roll

Thank you to the many generous donors who supported the University of Idaho Arboretum and Botanical Garden from July 1, 2011 to June 30, 2012. A total of \$36,478.90 was received from membership gifts, gifts for Arboretum endowments, and gifts to support specific Arboretum projects. Your support makes a difference.

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## 2012 Plant Sale a Success

The Arboretum Associates annual plant sale was held on June 2, 2012. This is the major funding raising project of the associates and this year we had our second highest total sales of \$13,068.50. The plant sale is an amazing community event that happens because of the work of very dedicated volunteers as well as Arboretum Horticulturist Paul Warnick and his staff. It takes countless hours to collect, propagate, transplant, and nurture all the plants for the sale. We are grateful for the many volunteers who make this festive event possible but also for the hundreds of loyal customers who look forward to the first Saturday in June with anticipation. We hope you will join us on June 1, 2013!

— Joy Fisher

# Crocus Versus Colchicum: Two Frequently Misidentified Plant Genera in Two Different Plant Families

**C**rocus is a very common corm-forming garden perennial with scores of species and cultivars of spring and autumn flowering plants in the Iris Family (Iridaceae) which also includes *Gladiolus* and *Crocosmia*, etc. Crocus plants have grass-like leaves and flowers in shades of blue, white, yellow, rose, and intermediate shades. *Crocus sativus*, the famous saffron of cookery and coloring of many monks' gowns, is the costly grocery 'spice' which rivals the cost of gold on a weight basis. Saffron is a sterile plant, vegetatively propagated in Spain, India, and other Middle Eastern and Asian sites where low wages can permit its production, harvesting, and packaging.

Crocus plants, like gladiolus, annually form new corms from terminal buds atop a diminishing-withering corm. As a flowering corm withers and new corms form, contractile roots from the new corm(s) slowly pull new corms down in the soil; the depth of corms remains constant in soils even in neglected gardens.

Crocus flowers, in non-double forms, each have three sepals, three petals, three stamens, and a pistil (gynoecium) of three united carpels with three stigma branched atop. Fertile fruits can bear many seeds. Just as is the case with *Iris, Gladiolus, Crocosmia*, and other members of the Iridaceae, the flower parts are all attached/develop on the top side of the pistil/seed capsule (epigynous floral insertion). In sexually fertile crocus, fertilization occurs underground after pollination occurs well above ground by action of various pollinators. If pollination and fertilization



Crocus going dormant. White line indicates soil level. R.J. Naskali Photo.

occur the base of a maturing capsule elongates and typically raises the seed pods above ground by midsummer; where ants and other agents disseminate the seeds.



Developing Colchicum fruits/capsule, 6/2/2012 R.J. Naskali photo.



Crocus sativus (Saffron) flowers each with three. long, pendant red-orange stigmas (harvested and the source of saffron food coloring) and three yellow, infertile stamens), 10/30/2012 R.J. Naskali photo.



Colchicum flowers each with 6 stamens. R.J. Naskali photo.

In the case of *Colchicum*, floral anatomy and development vary greatly and significantly from the patterns typical of Crocus. *Colchicum* is a member of the Lily Family (Liliaceae)—which is recently raised by some taxonomists to the Colchicaceae. Single flowers of *Colchicum* each have three sepals, three petals, six stamens, and a pistil (gynoecium) of three united carpels topped by a threelobed or branched stigma. In contrast to Crocus, the sepals, petals, and stamens of *Colchicum* are all attached below the pistil (hypogynous floral insertion)—as you regularly can observe in lily, tulip, and onion flowers! Colchicums in most gardens flower in late summer to mid-autumn after the coarse, spring-emerging foliage has died down; flowers emerge without any leaves—thus resulting in the names: 'Naked Ladies', 'Magic Lilies,' etc.

Our most common *Colchicum autumnale* should be called 'Colchicum' or 'Meadow Saffron' and should not be called

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'Fall Crocus.' For the sexually fertile species and cultivars of Colchicum, pollination occurs above ground; and the pollen tubes grow down through the stigmas and styles and sexual fertilization occurs well underground near the larger dense corms. In the following spring, large, oval shaped coarse leaves emerge and developing Colchicum fruits (capsules) develop, mature, and open well above ground; seeds emerge about mid-summer. For some 1,500 years, *Colchicum autumnale* corms have been the source of colchicine—a very important alkaloid prescribed to treat some forms of gout in humans. In plant research, colchicine is very important in preventing part of normal mitosis: colchicine can induce polyploidy. The unprescribed use of colchicine and the ingestion of Colchicum plant parts is very dangerous for all plant parts are toxic!

— R. J. Naskali

# **Report from the Horticulturist**



4H volunteers removing English ivy, Shattuck Arboretum, 6-14-12 Alicia Sterling photo

I thas been a relatively calm year in the Arboretum this year with fewer dramatic weather events than usual, stable budgets, and adequate staffing. I am grateful to have had, once again, a motivated, hard working crew of seasonal workers. All of that has allowed us to continue to improve the maintenance of the site, while at the same time adding new things to both the Shattuck Arboretum and the Arboretum and Botanical Garden.

Most of the plants in the Shattuck Arboretum (Shattuck) were originally planted between 1909 and 1917 under the supervision of Dr. C.H. Shattuck. We have written records and maps of those plantings that were updated in 1934; although no doubt other plantings happened, I have not seen any records of them. This spring a crew of volunteers from the state 4H convention helped plant 39 new trees and shrubs in the open area west of the amphitheater. The collection includes trees and shrubs native to the west side of the Cascade Mountains. One big leaf maple (Acer macrophyllum) was planted in 1922 in the Shattuck. We added more of those along with vine maple (Acer circinatum) along with some more marginally hardy things like Pacific dogwood (Cornus nuttallii). We also planted these same species in the "new" Arboretum to see if the site makes any difference in their survivability. All of these plants were provided by a donation in memory of Jerrod R. Rockwood

by his daughters Melissa Rockwood and Betsy Rockwood Snyder.

The state 4H conference also donated funds for a third new bench in the Shattuck. It is located west of the amphitheater with a great view over the amphitheater to the Administration Building. A crew of nearly 100 teenagers volunteered a morning of their conference to work in the Shattuck. Besides the Rockwood collection of plants, the volunteers also planted five new giant sequoias around their new bench. Three of the new trees are seedlings from seeds from the giant sequoia that was planted in 1916, and two of them are grafts of the new cultivar 'Idaho Endurance', which grew from cuttings from the same tree. In addition to helping plant trees, many of the volunteers did a massive clean up job, hauling brush from multiple downed trees down to where we could access it for chipping; and another group worked on removing English Ivy vines from many trees.

English ivy (*Hedera helix*) can be a significant problem in forests in milder climates where the vines climb established trees, sometimes girdling or shading out the host tree, and choking out more desirable native understory plants. English ivy also has a somewhat unique characteristic in that it rarely if ever flowers while growing horizontally, but

**ARBORNOTES** 

#### continued from Discovery of the Dawn

elsewhere in the world. Today, many nurseries sell seedlings and specimen plants. In Northern Idaho and adjacent Washington, the three largest dawn redwood trees are growing in the Rose Garden at the base of the Lewiston Hill (two specimens) and one private home garden in Clarkston, WA—a fertile



Pollen bearing cones on pendant branches, Clarkston, WA. 10/19/2011 R.J. Naskali photo.

specimen which gives rise to volunteer seedlings.

Dawn redwoods are deciduous conifers as are the baldcypress (*Taxodium*), larch (*Larix*), and golden larch (*Pseudolarix amabilis*) trees. On baldcypresses and dawn redwoods, two kinds of branches develop each year:



Fresh-cut long shoot with 10+ short shoots. 10/23/2011 R.J. Naskali photo.



Ripe seed cones with seeds. 10/24/2011 R.J. Naskali photo.

"long shoots" and "short shoots;" in the autumn, the long shoots persist but the short shoots abscise annually. Dawn redwoods have given rise to world-registered cultivars some of which are in the UI Arboretum (The Jeanne & Elmer Stout Grove, planted in 1995 at quadrant U11).

– R.J. Naskali

#### continued from the Horticulturist

given the opportunity to grow vertically, hormones change, and they begin to flower and set seeds. That is the primary method for it to become an invasive problem. The English ivy has been growing in the Shattuck Arboretum for a long time (I remember it as a child, over 45 years ago), but it has only recently begun to climb trees. I believe this might be due to climate change—tougher winters in the past killed the vines that got above the protection of snow cover. The 4H volunteers replicated that by cutting down the vines (many 30' long or more!) that were climbing trees.

In addition to the West Coast native trees that we planted in



President Duane Nellis with 4H state conference officers on new 4H bench 6-14-12 Brandy Kay, Bonneville Extension photo.

the "new" Arboretum we also planted a group of full moon maples (*Acer japonicum and Acer shirasawanum*) donated by Jan and Dick Leander and Kristine and Thomas Yeomans in memory of Joan and Dick Worden; the new John and Winifred Dixon Butterfly Garden (see accompanying article); along with the usual additions to the Xeriscape Garden, and the J.F Schmidt Nursery Trial Pack program.

It has been an outstanding year for fall color in the Arboretum. Just the right combination of cool enough temperatures without hard freezes, along with lots of sunshine and not much wind or rain allowed most plants to

> fully develop their whole range of color; and then the leaves were able to hang on a long time for everyone to enjoy.

Rather than try to rake up and dispose of all the leaves (pretty much an impossible task with our available labor), we use our large mowers and shred the leaves and mulch them in place. This works pretty well for all of the leaves that cooperate and drop their leaves before it snows. Unfortunately, quite a few trees (most of the oaks especially) are reluctant to let go that quickly, and their leaves hang on until it is difficult or impossible for us to get to them with the mowers. That isn't too big a problem, except that again, unfortunately, many of the oaks are adjacent to the lower pond. I think that a lot of those oak leaves blow into the pond, where they decompose and release nutrients into

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the water. Those nutrients are some of the contributing factors to the excessive algae growth that plagues the pond in warmer weather. We are trying what may prove to be a cheap, easy fix by installing a snow fence all along the east edge of the pond in hopes of catching the leaves before they blow into the pond. I certainly don't like the aesthetics of the snow fences we install every year, but they do seem to discourage sledders; and hopefully this new one may help make the pond more attractive during the summer.

All of the funding for new plants and other additions to the Arboretum (including the new automatic irrigation) is provided through donations. Your continued support is always appreciated; it is what allows us to continue to improve the Arboretum.

— Paul Warnick



Will Boyd, Arboretum crew member, leading a Moscow Parks and Recreation Day Camp, 7-27-12, Paul Warnick photo.

# Naskali's Garden Nominated for 2012 Moscow Wisescape Award

CDr. Richard Naskali, Emeritus Arboretum Director and Professor, local botanist –This garden has been a work in progress for 30+ years. Dr. Naskali started his Wisescape adventure by eliminating all turf and his lawn mower. He added a variety of perennial and bulb plants that



bloom throughout the seasons. Adding mulch decreased weeds. The walkways, guide-stones and plant species give a feeling of walking through a poly-ethnic, Japanese style garden. He recommends, "Get a good book with pictures and information about the plants that you are interested in and take a walk through the arboretum to understand what the plants will look like when they are full sized. Follow nature."



Text and photos (10 Aug., 2012) by Nichole Baker (Moscow Water Dept.) & David

Pierce; "Water Matters in the City of Moscow", Fall 2012. Reprinted with permission.

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