

POTOWMACK NEWS

Potowmack Chapter of the Virginia Native Plant Society

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MILKWEED AND MONARCHS

BY SUE TATE



ASCLEPIAS SYRIACA (PHOTO BY MARGARET CHATHAM)

The native plant movement is far more than a quaint exercise in nostalgic antiquarianism, as Doug Tallamy makes abundantly clear in Bringing Nature Home. He explains that prior to the European settlement of North America, biomes evolved over millennia in which plants, animals, birds and insects came to exist in a complex -- and we now realize -- fragile web of interdependence. Economic development of the continent -- logging, mining, and industrial agriculture -- has brought great wealth and untold benefits. It has also brought potentially catastrophic, albeit unintended, consequences. Rachel Carson's Silent Spring with its account of the deadly effects of DDT on birds was a classic early warning of the danger. The potential fate of milkweed and the monarch butterfly is another case in point, and nowhere is this clearer than in my home state of Iowa.

Cardiac glycosides evolved in milkweed repel most insects and in so doing proved beneficial for the plants. Monarchs evolved a toleration of the toxin, enabling their caterpillars to feed on milkweed and in turn share the protection from potential predators. This relationship insured that plant and insect thrived.

Today, in Iowa, of the original 30 million acres of tallgrass prairie biome that once covered more than 80 percent of the state, less than 0.1 percent remains. With the invention of the steel moldboard

CONTINUED ON PAGE 3

Upcoming Events

First Wednesday Plant Sales

10 am-1 pm, June 3; July 1; August 5

Weather permitting, VNPS-Potowmack Propagation Committee welcomes the chance to sell plants at different parts of the season, so that you get to see what blooms between the usual spring and fall Garden Day Sales. Visit them in the propagation beds behind the Horticulture Center at Green Spring Gardens Park. On these occasions, cash or check work best for payment. Anyone inspired to join the crew? Just come by on a Wednesday morning. Have too many of some desirable native in your yard? Check with Laura Beaty (laurabeaty@mac.com) or Margaret Chatham (margaret.chatham@verizon.net) to see whether we could use your plant donation.

Milkweeds at Riverbend Meadow

TBD, June

The meadow at Riverbend Park supports five species of milkweeds: common (*Asclepias syriaca*), butterfly weed (*A. tuberosa*), swamp (*A. incarnata*), purple (*A. purpurascens*) and clasping (*A. amplexicaulis*). Watch for the announcement on date, & come see how many you can find in bloom.

All events are free and open to the public.

Join our listserve at

<http://groups.yahoo.com/group/vnps-pot> to receive notices with walk registration links

WORD OF THE MONTH: DECUSSATE

(adjective) describes a plant with opposite leaves on which each pair of leaves comes out at right angles to the pair above and the pair below it, like some milkweeds.

BOTANIC NAMES: WHOSE PLANT IS IT?

BY MARGARET CHATHAM

It all goes back to Linnaeus. In establishing his botanic binomials, he used classical names for plant genera where they were handy (think *Quercus* for oak or *Acer* for maple), but in many cases there were no classical names for the plant in question, so Linnaeus named some for people. The plant he chose to put his own name on is one we don't have in Virginia: *Linnaea borealis*, Twinflower, which grows in circumpolar places from Sweden to as far south as New Jersey. But Virginia has other plants that memorialize Linnaeus' colleagues. The coneflowers, *Rudbeckia*, recall Linnaeus' professor in botany at Uppsala University, Olof Rudbeck the younger (1660-1740), and his father.

Our Mountain Laurel, *Kalmia latifolia*, is named for Pehr Kalm (1716-1779), Linnaeus' student who spent 2 years collecting plants from a base in Swedesboro, NJ. During this time, Kalm traveled to Quebec and met with Jean Francois Gauthier, doctor to the governor of Quebec, who was charged with seeking new plants of medicinal use. Gauthier also spelled his name Gaulthier, so perhaps you can guess that Teaberry or Wintergreen, *Gaultheria procumbens*, is named for him.

If you've read *The Brother Gardeners* by Andrea Wolff (I recommend it), you may be wondering what was named for John Bartram (1699-1777) who collected so many plants to send to England. He didn't get a vascular plant, but a whole family of mosses, including Apple Moss, *Bartramia pomiformis*. Peter Collinson (1694-1768), who ordered and distributed Bartram's boxes of plants, is remembered in *Collinsonia canadensis*, Horsebalm.

Virginia's contribution to plant discoveries is recalled in *Claytonia virginica*, Spring Beauty, named for John Clayton (1693-1773), author of the last flora of Virginia, and *Mitchella repens*, Partridgeberry, named for Dr. John Mitchell (1676-1768), who corresponded with Linnaeus.

Other familiar plant genera are named for people we are less likely to know. The genus of *Mertensia virginica*, Virginia Bluebells, honors Franz Carl Mertens (1764-1831), a German botanist who specialized in the study of seaweeds. The genus of *Goodyera pubescens*, Downy Rattlesnake Plantain, honors John Goodyer (1592-1664), who added many plants to the British flora and sorted out British elm species. *Lonicera*, the honeysuckles, are named for Adam Lonitzer (1528-1586), who wrote & published German herbals. The genus of *Ruellia*, including our wild petunias, was named in honor of Jean Ruelle (1474-1537), a French botanist who is credited with the first attempt to popularize botany. Or maybe it doesn't all go back to Linnaeus: this last name was given by Charles Plumier (1646-1704), who made three plant exploration trips to the West Indies, wrote and described extensively, creating genera and species names that Linnaeus later adopted. Plumier is the eponym of *Plumeria*, the beloved tropical frangipani.



GOODYERA PUBESCENS BY MARGARET CHATHAM

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plow, the rich prairie soil was plowed, cultivated, fertilized and sprayed until native birds, insects and plants were destroyed or displaced. Since World War II, an increasingly industrial agriculture has replaced a richly varied environment with acre after acre of corn and soybeans. Spraying genetically modified crops with Round-Up has proven to be what many fear the final straw for milkweed and the monarchs that depend on them.

Roughly half of all Mexico-bound monarchs have historically emerged in the Midwest. It's estimated that Iowa lost 58 percent of its milkweed and 81 percent of its monarchs between 1999 and 2010. Milkweed and monarchs are like canaries in the coalmine, revealing the extent of the damage we have done to the environment in the pursuit of goals in and of themselves good, but with tragically harmful consequences.

At least seventeen species of milkweed are native to Iowa. As a genus, milkweeds are adapted to a range of conditions, from the driest sand and gravel to wet marshy areas and from the full sun of open prairie to the semi-shade of savanna and open woodland.

Five milkweed species have been selected by the Xerces Society as a priority for habitat restoration in the Midwest region (Iowa, Minnesota, Illinois, Indiana). These species are *Asclepias incarnata* (swamp milkweed), *A. syriaca* (common milkweed), *A. tuberosa* (butterfly milkweed), *A. verticillata* (whorled milkweed), and *A. sullivantii* (prairie milkweed). Of these, only *A. sullivantii* does not grow in Virginia.

Sullivantii milkweed occurs in 51 of Iowa's 99 counties and was likely more abundant in pre-European time. Today, it's rare, but not threatened as it is in some states in the region. It is similar in appearance, growth form and distribution to common milkweed. Being less aggressive, it could potentially perform better (persist and increase in abundance over time) in mixed stands of native plant communities, at least in wet-mesic and mesic sites. It remains a question whether it is equally as suitable as common or preferred by monarchs.

The Tallgrass Prairie Center at the University of Northern Iowa leads the way in native prairie restoration in the state. Its primary programs are Research and Restoration, Integrated Roadside Vegetation Management (IRVM), and Natural Selections. The Research and Restoration Program works in prairie reconstruction, restoration, management, and advocacy. The Integrated Roadside Vegetation



Management Program (IRVM) assists Iowa counties in implementing IRVM programs utilizing native vegetation. Natural Selections develops regionally adapted Iowa Source Identified foundation seed for commercial production.

The Integrated Roadside Vegetation Management program distributes more native, source-identified seed per year--and verifies its planting--than any other program nationally. At present, these roadside plantings include swamp and butterfly milkweed, plus grasses and dozens of species of nectar plants, feeding wildlife all season long. This program operates in nearly half of Iowa's counties under the auspices of the Boards of Supervisors. Spot spraying and mowing, prescribed fire and native vegetation establishment are used. In 2015, this program will seed approximately 1,400 acres of county rights of way.

The Natural Selections program produces the seed used. This program has been collecting, increasing and releasing Iowa germplasm of fifty-nine native prairie species from 142 regional Iowa sources for over twenty-five years. For this project, the state is divided into three climate regions—northern, central and southern.

For example, Northern Iowa Butterfly Milkweed is a composite of thirteen populations of seed from remnant prairie sites located in seven counties across Northern Iowa. Original source collections were made in 1998 and 1999. Approximately fifty seedling plugs were greenhouse propagated for each population, and out-planted in block eight inches on center, adjacent to other populations derived from within the described region. Subsequent seed harvest from initial populations were bulked and used to establish an increase field in 2000. Additional populations collected in 2001 and 2004 were added for a total increase field of 1840 square feet. Germplasm was released in 2008.

Currently, four plots of swamp milkweed seed, two plots from remnant prairie in Central Iowa and two from remnant prairie in Northern Iowa, are being greenhouse propagated for foundation seed. Similarly, common milkweed seed from Central Iowa is being grown, as are whorled and prairie milkweed seed from their respective areas of remnant prairie.

In the second and third year of growth, the foundation seed is made available to commercial growers. Iowa DOT bids on this source selective seed for inclusion in the IRVM mix used for Iowa roadways.

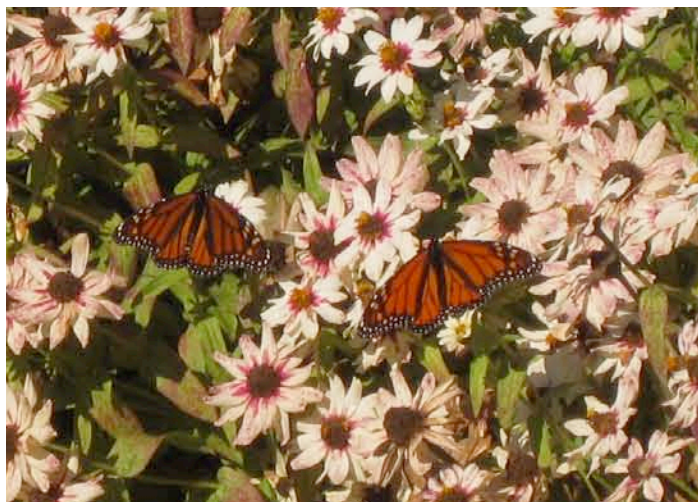
Common milkweed has not traditionally been included in restoration seed mixes as it comes in readily to roadsides on its own and is rejected by farmers because of its invasive growth. It has been found that ninety percent of monarchs who have arrived in Mexico have fed on common milkweed.

Milkweed seed, in general, can be challenging to produce for many reasons, including establishment, disease, differential seed ripening, rapid dispersal from pods when ripe, harvesting/cleaning challenges, and low yield. It takes at least two years from seed for a good crop.

In another, much broader effort to promote native milkweed conservation, Monarch Watch distributed 100,000 milkweed plugs in 2015. The map of ecoregions on their website indicates that *Asclepias incarnata*, *A. tuberosa* and *A. perennis* were available to purchase in 2015 from the Milkweed Market for the ecoregion which includes the eastern half of Virginia. This eco region extends from Virginia to Florida. If there is no milkweed available for a certain area, a new 2015 vendor list contains the names of more than 200 nurseries that sell native milkweed. Nature by Design is the only source listed in Virginia.

To keep many species in the Milkweed Market available, Monarch Watch relies on local fall seed collectors from across the country. Seed collecting, processing, labeling and mailing instructions are given on the website. Donated seeds are grown and plants sold or donated back to the ecoregions where they originated.

My father often reminisced about visiting the farm of a relative one late summer afternoon. He never forgot the vision of a small tree completely covered with resting monarch butterflies. But, as Dr. Karen Oberhauser, Director of the University of Minnesota Monarch Lab, told a group of students recently, we probably can't change the U.S. agricultural system in time to save the monarchs or many other species. To save monarchs and milkweed, we can't rely on an agricultural model, but we can use our own backyards to create habitat that can serve as a bridge to other neighborhood gardens, eventually creating corridors for wildlife.



WHY WHACKING INVASIVE PLANTS IS SO WORTHWHILE

BY STEVE YOUNG

For years, while mercilessly killing non-native invasive plants at Long Branch Nature Center, I have harbored the admitted fantasy that the invasives removal will magically reveal some cool, unexpected native plants. And to be sure, I have seen some nice native plants and have been able to track how many of them respond positively to the removal of invasives. For example, native tree seedlings pop up again in places where they were choked out before. Plants like Mayapples (*Podophyllum peltatum*) poke up happily where the invasives are gone. I contemplate how plants like Mayapples are survivors that evolved to cope with the fall of great trees on top of them, able to come back years later when the conditions improved.

Last spring, as I enjoyed whacking dense ground webs of Japanese Honeysuckle (*Lonicera japonica*), something caught my eye. Around me were many white-flowering plants of Star or Great Chickweed (*Stellaria pubera*), an under-appreciated native. But this white-flowered plant was different. A vague memory offered up Dwarf Ginseng (*Panax trifolius*), but I thought “Naw, no way, it’s something else, more common, that I should recognize.”

Now maybe about 12 years ago, after I removed truly monumental amounts of invasive plants, especially Multiflora rose (*Rosa multiflora*) and Burning Bush (*Euonymus alata*) from a spring/seep area near the building, someone found a single Dwarf Ginseng there afterwards. This caused a flurry of interest and even a mention in this newsletter. But the plant was never seen again. I knew that naturalists had seen it at one or two other places in Arlington and were looking for it.

Anyway, I did a quick Google check on my phone and realized that the plant really did look like Dwarf Ginseng. And as I looked around, there were more. More flowering individuals, and little seedlings, too. In fact later, I discovered the colony was larger than I first realized, and there easily may be more than two dozen flowering individuals, plus the seedlings. And I found another plant nearby that Rod Simmons identified as Wood Anemone (*Anemone quinquefolia*), very scarce in Arlington.

After the first Dwarf Ginseng find, I walked into the Nature Center building with a chip-eating grin on my face and announced my find. I’ve now shown it to County staff and we are confident of the identification. Also, we have a voucher specimen, since I found that my earlier honeysuckle pulling had yanked a flowering stem out of the ground. Well, you always need a voucher for posterity.

That same area has what I believe is an uncommon for Arlington occurrence of Common Carrion-flower (*Smilax herbacea*), and one of only two known Arlington occurrences of Melic Grass (*Melica mutica*). So I think it’s really a special little place that had survived the invasive onslaught and can now regenerate. Who knows what else might be hidden away in there?

This makes my crazy plantwhacking fell so worthwhile. It’s what I have hoped for even though Long Branch has not been considered a top Arlington site for native plant diversity.

So, shall I disclose my nuttiest fantasy related to invasive plantwhacking? The Small Whorled Pogonia (*Isotria medeoloides*) is an endangered species of orchid found only in a few places in the mid-Atlantic. There is some evidence that it tolerates and may even need a little light soil disturbance. I like to think of it as the “Small World Pogonia.” My fantasy is that it will turn up some day at Long Branch, popping up somewhere that had been an invasives hell. OK, it is a fantasy, but it doesn’t feel quite as far-fetched as it did not long ago. Of course, if an endangered plant did turn up, I couldn’t tell you, or I’d have to whack you...

PHOTO DWARF GINSENG BY MARGARET CHATHAM

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WHERE YOU CAN WHACK SOME INVASIVE PLANTS

Falls Church Habitat Restoration Team

Help restore the local ecosystem in city parks. Remove invasives and plant natives that will benefit local birds and butterflies. For more information contact Melissa Teates at 703-538-6961 or melanite@verizon.net

Arlington County’s Remove Invasive Plants (RiP) Program

Help Rescue Arlington parks from alien plant invaders! Please bring your own tools. For more information, contact Sarah Archer at 703-228-1862 or sarcher@arlingtonva.us

Reston Association’s Habitat Heroes Program

Help restore local wildlife habitat through invasive plant removal and replanting with native plants For more information, contact Ha Brock at 703-435-7986 or ha@reston.org.

Fairfax County’s Invasive Management Area (IMA) Program

Help remove invasive plants and plants and learn about new species. For more information, contact Erin Stocksclaeder at 703-324-8681 or erin.stocksclaeder@fairfaxcounty.gov

Bryophytes: a new world to conquer By Gaylan Meyer

Now that the Grass Bunch has made a dent in identifying grasses, sedges, and rushes; we've sometimes wondered what about the green "mosses" growing on rocks, forest floors and tree trunks? These are Bryophytes, the name given to non-vascular land plants that include mosses, liverworts and hornworts. They are a step lower on the evolutionary scale, not having flowers or seeds but reproducing by spores. In fact, many of the hornworts and liverworts do not have a leaf, stem or root. Instead they have a thallus: a greenish structure that combines the functions of all three. This is one way to tell them from mosses since mosses have stems, leaves and roots. Another way is by observing the shape of the sporophyte (the structure producing spores). Mosses have capsules on slender stalks that contain the spores while hornworts have thickened stalks (the "horn" in hornwort) but no capsules and liverworts have stalks with an umbrella-like structure containing the spores.



A good reference book for mosses is *Common Mosses of the Northeast and Appalachians* by Karl B. McKnight, Joseph R. Rohrer, Kirsten McKnight Ward, and Warren J. Perdrizet. It has an excellent key that requires only three fairly easy steps (determine growth form, leaf shape and presence or absence of a midrib) which leads to a group of pictures or a more detailed key. The authors say a hand lens will suffice to identify the key features, but I think a microscope is more useful since some of the measurements are in tenths of a millimeter! To date, I have identified three mosses and one hornwort. The three mosses have descriptive English names falling into two categories: the Starburst Mosses and the Fern Mosses. The former look like starbursts when viewed from above and the latter look like miniature ferns. Their pictures can be viewed on Flickr using this link: <https://flic.kr/p/r7HY8z> <https://flic.kr/p/r7HY8z>. While I haven't found a good book covering hornworts, the Internet helps in their identification. Here is the Dotted Hornwort-*Anthoceros punctatus*. Another reference that doesn't contain a key but has great pictures of mosses and liverworts is *Outstanding Mosses & Liverworts of Pennsylvania & Nearby States* by Susan Munch. When I come across a liverwort, it should be invaluable in identifying it and helping to

conquer the new (to me) world of Bryophytes.

If you would like to receive this newsletter (in full color!) electronically, contact Alan Ford at: amford@acm.org

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