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notes

Lobelia Siblings in the Garden

Scarlet Drama Meets Blue Serenity

By Jill Zdunczyk

Every family has its unique dynamics, and the genus of Lobelia is no different. Cardinal Flower *(Lobelia cardinalis)* and Great Blue Lobelia *(Lobelia siphilitica)* are the quintessential siblings of the wet meadow world. While these siblings have strikingly contrasting personalities, both love dipping their roots in the occasionally wet environments of waterway corridors, stream banks, wet meadows, and swamps.

The Cardinal Flower *(Lobelia cardinalis)*, the bold and dramatic sibling, flaunts its breathtakingly scarlet-red flowers on 3–4 feet tall spires. This stunning sibling attracts a showy garden visitor, the vibrant Ruby-throated Hummingbird (its primary pollinator), to its long, tubular, nectar-filled flowers. While it enjoys a part sun/shade setting, this fiery darling can also steal the spotlight in a sunny garden location from July through September. *continued on page 6*

Siblings admiring the Cardinal Flower.
Photo: Liz McDowell

Photo: Joel Bolden

PRESIDENT'S LETTER

Hello, and Happy New Year!

I'm excited to be writing my first address in the PA Native Plant Society newsletter as your new president. Over the last two years, while serving as the vice president, I have had the privilege of learning from my predecessors, Andrea and Sarah, in preparation for this role. I am so grateful to have had their guidance and support.

Professionally, I am a Forestry and Wildlife Educator for Penn State Extension, traveling the state to provide science-based education around my areas of expertise: native plants, non-timber forest products, agroforestry, and forest ecology. I know the power of change comes from connection, knowledge, and empowerment, so I strive to foster all three in my work. When I take the public on plant identification walks, there is nothing better than seeing the "light bulb" moment of a participant noticing distinct details of a twig or understanding the importance of native plants for the first time. That's what inspires me daily.

With the passionate support of our membership, I will work hard to further our mission of conserving native plants and their habitats and promoting native plants in the landscape. By leading by example, educating, and advocating, we as a society can bring those empowering lightbulb moments to new audiences in Pennsylvania.

The power of a society is the combination of its talents and strengths that can be leveraged to move our goals forward. When reflecting on your interests and your capacity to be involved with PNPS, consider what you have to offer. By paying your annual dues, you fund our grants program, which gets more native plant gardens on the landscape and supports research. Our chapters hold plant sales, and table at events across the state to inspire new native plant enthusiasts, so if that interests you, consider volunteering your time. If advocacy is your calling, have a conversation with your local nurseries about the Green Seal Pledge. This program helps landowners make informed decisions about their landscapes and promotes nurseries that align with the PNPS mission. If you need more time outside, consider helping at one of our demonstration gardens, which showcases garden designs and reaches new audiences. If donating time or money is not an option this year, remember that our personal gardens and conversations with friends, loved ones, and strangers can inspire small changes that have a positive impact on our ecological neighborhood. So, keep connecting, educating, and empowering those around you because you can be the spark to someone's light bulb moment.

Keep Growing,
Cathryn Pugh, President

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Since the Monarch butterfly was officially listed by the International Union for Conservation of Nature as an endangered species on the brink of extinction, the Lancaster chapter feels it is crucial to educate the public on the Monarch's habitat needs.

We designed a Monarch Jane postcard with a QR code which refers recipients to a website. The Lancaster chapter is working to further develop the Monarch Jane website and needs educational material to make it more complete.

Please send any article or information to Rita at rmtomassetti@gmail.com for the Monarch Jane website.

After the website is competed, we hope to develop the campaign further.

The 2025 PNPS Grant Cycle is Now Open!

Members, do you have an idea for a project involving native plants? PNPS opens a small grant program annually to support part of our mission to encourage other volunteer organizations, individuals, or groups, who believe in the benefits of planting native plants and the important part these species play in our environment. Our grant program has three categories:

1. **Native Garden**
2. **Student Projects**
3. **Justice 40 Area Gardens**

Details for each category can be found on our website: www.panativeplantsociety.org/grants.html. Typical funding for a project is around $1,000. Examples of previous projects include installing a native plant garden at a school, cleaning up a retention basin and filling with native plants, removing invasive species and replacing them with natives, and conducting research on native plants in a natural area.

Through the generosity of our members, the PNPS budget for the annual grant awards has increased from $1,000 in 2020, to $8,000 in 2024, which has helped us to go from funding two projects in 2020 to 11 projects in 2024. Thank you members!

The 2025 grant cycle will close February 15, 2025. Visit our website to review requirements and send any questions to info@panativeplantsociety.org.

PREVIOUS GRANT WINNERS

Right: 2023 Student Project winner, Chris Perrone of the University of Pittsburgh, working on his project titled, "Determining the Effects of a Changing Climate on Phenology of a Dioecious Species: *Lindera benzoin*"

Below right: Garden photo from a 2024 winner Groundwork Erie & Erie County Planning Department. "In collaboration with Groundwork Erie and the Erie County Planning Department, we designed and planted a native pollinator garden in the East Bayfront neighborhood of Erie, with input from neighborhood residents. Installation was completed by Groundwork Erie's Green Team of local young adults.

TIPS FOR A SUCCESSFUL GRANT APPLICATION

- **Plan for specific growing conditions in the project area**
- **Include a letter of permission from the landowner**
- **Research approximate costs of plugs, seeds, or any other equipment you may need and include a budget**
- **Species lists may only include Pennsylvania native plants and plan to include at least 50% straight species (i.e. limit cultivars)**
- **Research which species may be best for the project's ecoregion**

Straight Species vs. Native Cultivars

Native: Physostegia virginiana. Photo: Karen Smith

Victoria Holderer, Ecological Consultant, PNPS Board Member

If you're a member of the Pennsylvania Native Plant Society (PNPS), it's likely safe to assume that you know what a native plant is: a type of plant species that has evolved to a particular region's ecosystem over millions of years without human intervention. There are many ways to interpret a native plant's range, but to make things more complicated, native plants can also be separated into varieties, cultivars, and hybrids. For this article, we'll be talking about native cultivars and the common questions that come up with them. What are they? Do they count as a native species? Are they ecologically equal to a straight species native plant? Below, we will discuss some recent studies through Penn State Extension and Mt. Cuba Center which searched for answers to these pressing questions.

Within each plant species, there is a unique genetic diversity developed from its regional environment, usually leading to slight genetic variations within a singular species. Over a long stretch of time, this might develop into its own variety. This genetic variation could affect the plant's ability to resist specific pests, alter its flower color and overall form, and even the amount of pollen or nectar available within the plant. Natural genetic variation keeps plant populations healthy, introducing new genes, allowing for the adaptation of ever-changing environmental conditions, thus permitting each species to continue to thrive in its environment. These native plants are typically referred to as "straight species" and can be designated between ecoregions or even by state.

Occasionally, a specific trait from a straight species is recognized as a desirable trait. These could include more abundant blooms, dwarfed growth structure, insect or disease resistance, or a more colorful flower. To preserve a trait, cultivars are created. A cultivar is a plant propagated through cloning methods like grafting, cuttings, root division, layering, and tissue cultures. This method of propagation entirely skips over cross-pollination and seed production and allows for the genetic makeup to remain the same and perfectly preserves the desirable trait. This is made possible through a totipotency, or the ability of plant cells to retain the genetic potential to develop into a whole organism from a single part.

Many straight species of native plants have cultivars. You can recognize them in any garden center, typically labeled with their straight species Latin name followed by their cultivar name. For example, *Physostegia virginiana* 'Vivid': *Physostegia virginiana* is the Latin name for this particular straight species, and 'Vivid' is the cultivar. There has been a lot of speculation and confusion around whether a native cultivar is of equal ecological value in comparison to a straight species. At the Pennsylvania Native Plant Society's 2022 Annual Meeting, we were fortunate enough to have Connie Schmotzer (a Consumer Horticulture Educator at Penn State Extension for 22 years) discuss her own research into the world of native cultivars and highlight other notable institutions and researchers who have been exploring this same question — what difference is there between straight species and cultivars?

In her presentation, Connie referenced a few studies that her findings were based on. A research trial, published in 2016 at Penn State University Southeast Research and Extension Center, titled "Bees, Bugs, and Blooms" tested these theories from the years 2012 to 2015, testing straight species native plants and their popular cultivars. In the study "Bees, Bugs, Blooms", straight species and native cultivars were planted in trial gardens and observed closely for pollinator visitations and the diversity of pollinator species present. One such comparison was *Penstemon digitalis* and *Penstemon digitalis* 'Husker's Red'. When comparing these plants visually, *P. digitalis* 'Husker's Red' is largely very similar to *P. digitalis*, except for a slight redness to the stems and leaves. This genetic variation can also be seen slightly in the straight species on occasion. This comparison showed relatively comparable pollinator counts and diversity to the straight species, and it seemed that this redness to the leaf did not affect the pollinators utilizing the flowers, which remained the same color (if not ever so slightly more lavender). Another comparison was made with *Symphyotrichum novea-angliae* and *Symphyotrichum novae-angliea* 'Purple Dome'. Here, *S. novae-angliea* 'Purple Dome' saw far fewer pollinators, likely due to its dwarfed size and therefore fewer flowers. Another species tested was *Symphyotrichum laeve* and *Symphyo-*

trichum laeve 'Bluebird'. *S. laeve* 'Bluebird' is a cultivar that has many more blooms than normal and saw far more pollinators compared to the straight species, likely due to its abundant flower count. From this study, we can see how the overall form of the plant species influences pollinator visitations. If there are more flowers on a cultivar, it will positively impact pollinator counts, whereas if the cultivar has fewer flowers than the straight species, this will have a negative effect on pollinator counts.

Some fear that if the flower color is vastly different on a cultivar, it may affect which pollinators are able to recognize it. Many pollinators use ultraviolet light to see flowers and follow floral markers to find pollen. Colors appear extremely different under UV light, which could prevent specialized pollinators from finding their flowers. However, *Eupatorium maculatum* 'Bartered Bride', has white flowers as opposed to the regular dusty pink, which lead to a higher pollinator count than the straight species. This is attributed to the fact that certain pollinators are more attracted to white flowers, which are very easy to see under UV light. And if all this were not already complicated enough, while some native perennial cultivars have "out competed" a straight species in pollinator counts, these may not live as long or be as physically resilient as a straight species. This was seen with the native cultivars *Coreopsis verticillata* 'Zagreb' and 'Moonbeam'. Each of these cultivars have more flowers and, thus, more pollinators, but both faded out after a few years' time, while the straight species kept growing strong. This is likely because cultivars do not evolve, and their genes do not adapt over time. Another problem with buying native cultivars is that sometimes plant species are improperly labeled at garden centers or by suppliers, making a plant appear to be a cultivar when it is a hybrid between native and non-native species, as in the case of *Agastashe* 'Blue Fortune' (a cross between *Agastashe foeniculum* x *Agastashe rugosa*).

Within each plant species, there is a unique genetic diversity developed from its regional environment, usually leading to slight genetic variations within a singular species.

Woody plant species also need to be taken into consideration when analyzing the effects a cultivar may have on a plant's ecological contribution to its habitat, especially since many trees are valuable lepidoptera host species. In a 2018 trail at Mt. Cuba, research done by Emily Basiden and Douglas Tallamy explored the differences between woody straight species and their cultivars. During this trial, traits like enhanced fall color, leaf variations, changes in habit, disease resistance, and variations in leaf color were tested for the effects they might have on caterpillar species. This study found that the greatest difference in caterpillar counts occurred when there was variation in the color of the leaves. For example, certain Ninebark cultivars have red pigmented leaves, such as *Physocarpus opulifolius* 'Summer Wine'. The red pigment in the leaves is caused by anthocyanin, which is a natural pest deterrent found in most plant species, and which can lead to insect death. When it is present in such high quantities, it changes the color of the leaves, as in *P. opulifolius* 'Summer Wine'. In this case, it is possible that cultivars with similar pigmentation on leaves could prevent caterpillars from using that particular native perennial cultivar as a larval host plant.

From this overview of the differences between cultivars and straight species, we can begin to see how small, yet simple nuances change the ecological value of any given plant. There are so many variables that need to be considered, and there is still so much to learn about the differences between cultivars and straight species. From these studies, we can deduce one key takeaway: the more manipulated and changed the cultivar, the less attractive to pollinators they will be. For now, we can see how key differences in form, leaf color, and flower color can shift the kind of interaction a plant has with its pollinators or larval host species. It's important to keep these key characteristics in mind when choosing a plant for its ecological benefits. Therefore, it's always best to do what research you can to make sure that any given cultivar you might be interested in does not have a vastly different growth structure from its straight species, and if so, to research how this may affect pollinators. If you are interested in continuing to learn about cultivars, I'd recommend two lectures available through online searches: "Native Plants vs. Cultivars: Which to Choose?" by Connie Schmotzer, and the lecture "How Native Plant Cultivars Affect Pollinators" by Annie White. Happy planting!

Cultivar: Physostregia virginiana "Vivid". ***Photo: Bonnie Finch***

2025 Central Pennsylvania Native Plant Festival

Saturday, May 3rd
10:00am–3:00pm
Millbrook Marsh Nature Center
Puddingtown Rd • State College, PA

The Pennsylvania Native Plant Society's Annual Native Plant Festival and Sale is excited for its third year at the Millbrook Marsh Nature Center! Celebrate the arrival of spring, the return of wildflowers, and the beginning of another gardening season at the Central PA Native Plant Festival and Sale and acquire some new additions to your garden. There'll be over 350 species of native plants for sale; educational presentations and resource tables where you can get answers to your native plant and gardening questions; Food by Good Day Cafe and Super Duper Cafe; live music by folk rock band The River. Admission is free. (No sales before 10:00 am, but you can pre-order by contacting our vendors directly.) A list of vendors and plants will be available on the event page on our website by the middle of April so you have plenty of time to prepare your wish list. Speakers are being confirmed, so check our website periodically for updates.

www.panativeplantsociety.org/pnps-central-pennsylvania-native-plant-festival.htm

Calling all plant donations for the Native Plant Sale

The PNPS Donated Table is always a big attraction at the Festival, and it is our biggest fundraiser. With spring in hand, as you work in your garden, consider donating some divisions for the sale.

How to donate & some tips for digging and potting

- Dig and pot as early as the weather will allow. The longer your plant is in its pot, the better it will look and feel!
- Dig plants where you have permission to dig, for example, your yard or a friend's yard. DO NOT dig plants from "the wild."
- Notify Betsy Whitman (bbwhitman@gmail .com) with the Latin name (Genus species) of any donations at least 2 weeks prior to the sale so we can make a plant tag with name, plant description, and growing needs.
- If possible, bring any donations to the Millbrook Marsh on Friday, May 2, between 3:00–5:00 pm. Otherwise, please bring your donations by 9:00 am the day of the plant sale.

THANK YOU!

Lobelia

continued from page 1

In contrast, the Great Blue Lobelia *(Lobelia siphilitica)*, the cool, calming sibling, is content to keep its spires of blue/white flowers in the dappled part sun/shade. Its more compact blooms are a favorite of native bumblebees but also draw in other insect pollinators such as digger bees, yellow-faced bees, green sweat bees, and small carpenter bees from August through September.

Both bring the drama by being a bit of a fussy perennial. Reputed as short-lived, these darling siblings thrive on a bit of disturbance around their basal rosettes to ensure new seedlings. Blanketing them with mulch is not recommended, as these late-summer blooming beauties love to keep their rosettes in the open air.

These Lobelia siblings will be a welcome addition for pollinators of all kinds in a rain garden, a pond or creek's edge, a dry creek bed, near a downspout, or anywhere they can occasionally soak their feet.

Black swallowtail butterfly on Cardinal Flower. Photo: Kathleen Molton Engle

Cardinal Flower. Photo: Liz McDowell

Don't Forget to Renew!

Please be sure to check your membership expiration date above the mailing label. PNPS membership is a bargain, just $15 for regular annual membership.

Join or Renew online:

www.panativeplantsociety.org/join-us

Or send your check to:

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Be sure to write membership on the memo line of your check. And thanks for your support!

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