

Forgotten Flowers: Spring Ephemerals

Each week, we will highlight a spring ephemeral by posting an information sheet, photos, guiding questions and enrichment activities designed for formal and informal educators, as well as life-long learners.

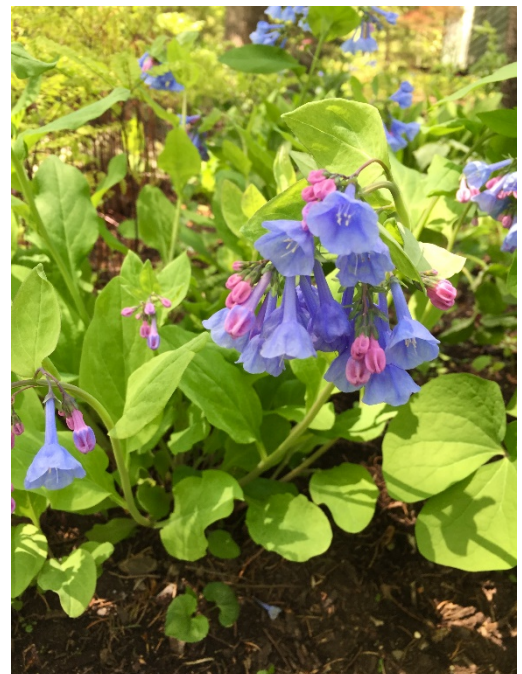
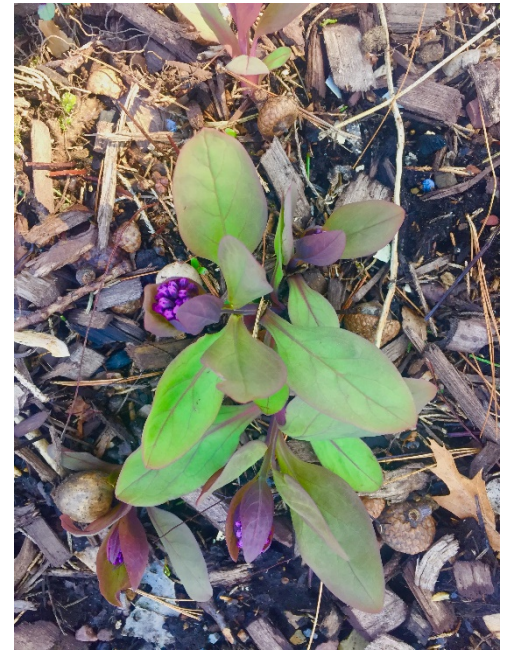
Week 2: Virginia Bluebells

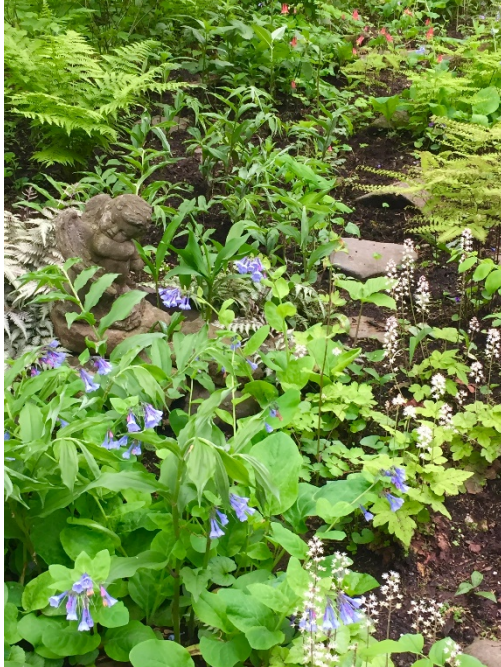
One of the true-blue early ephemerals is **Virginia bluebells** (*Mertensia virginica*). Named for a German botanist, Franz Carl Mertens, and Virginia, the place where they were first observed in the new world, bluebells thrive in rich lowland soils and river bottoms. At Duke Farms we can still find them growing along the banks of the Raritan River.

The leaves emerge first, splashes of dark purple and green in the drab winter landscape. Tight clusters of purple flower buds can soon be found snuggled deep among the oval leaves. As the plants grow, the leaves turn silvery green and the fuchsia flower buds swell. Then the corrugated buds unfurl into tiny trumpets of cerulean blue. The color change is due to variations in the pH of the soil and the petals. Like some hydrangeas, bluebells growing in more acidic soils will have flowers in deeper shades of blue.

Bumblebee queens that emerge from winter hibernation need protein-rich pollen to feed the larva in their newly established colonies. The bees also need nectar for energy to forage from flower to flower and fly home to feed the babies in the growing bumblebee colony. Virginia bluebells provide both at a time when conditions can be harsh and few flowers are blooming.

The plants benefit as well, for the bees inadvertently pollinate the blossoms when they visit. As the queen bumblebee lands in a newly opened flower and probes the deep nectaries with her long tongue, the pollen from the anthers dusts her fuzzy body. She then spreads the pollen to other flowers as she forages. Besides bumblebees, honeybees, mason bees, some leaf-cutting bees, miner bees, hummingbirds, moths, and butterflies can reach the nectar deep in the trumpet. Happy bluebells, happy birds, butterflies, and bees!





In the early summer, the plants turn yellow and go dormant and each flower sheds its petals and produces four small seeds. The self-sowing seeds spread easily, but bluebells also have an underground rhizome system that enables them to increase their numbers that way. Virginia bluebells can form large colonies on their own in wet woodlands but will also thrive in shady spots in your yard.

Virginia bluebells have other wonderful folk names like old ladies' bonnets and Jefferson's blue funnel plants because in 1766 Thomas Jefferson described them as "bluish-colored, funnel-shaped flowers" in his *Garden Book* of plants he grew at Monticello. Maybe the best folk name is lungwort oysterleaf as early colonists mistook bluebells for the unrelated European lungwort as they both have blue flowers. The oysterleaf part of the name comes from the leaves, which supposedly taste like oysters when cooked. However, bluebells contain some toxins so to be safe, do not eat them!

Want to grow Virginia bluebells in your garden? Because they are such beautiful early bloomers, many nurseries stock them. Your best bet is to buy them from reputable native nurseries. **Never collect them from the wild!**

The Native Plant Society of New Jersey is a great resource to help you find where to buy them or to get more information.

Guiding Questions and Enrichment

1. Where were Virginia bluebells first observed by colonists in the New World?
Answer: In the state of Virginia.
2. Where do Virginia bluebells naturally grow?
Answer: In lowlands and along river banks.
3. Bluebells emerge in early spring at the same time that queen bumblebees emerge from hibernation. What do bluebells provide to queen bumblebees?
Answer: Pollen as food for larva in the growing bumblebee colony and nectar for energy to forage.
4. What is unique about bumblebees that allows them to reach the nectaries at the base of the trumpet-shaped blossoms?
Answer: They have long tongues.
5. What other insects visit bluebells to collect nectar and pollen?
Answer: Honeybees, mason bees, some leaf-cutting bees, miner bees, moths and butterflies.

6. What bird relies on bluebells for nectar in early spring?
Answer: Hummingbirds.

7. Virginia bluebells spread to form large colonies in their natural habitats. How do bluebells increase their numbers?
Answer: They reproduce by seed which easily spreads and from underground roots called rhizomes.

8. Another common name for this plant is Jefferson's blue funnel plant. Where does that name come from?
Answer: Thomas Jefferson studied them and grew them at Monticello and he called them "bluish-colored funnel-shaped flowers".

9. Can Virginia bluebells be grown in a garden or yard? Where can you buy them?
*Answer: Absolutely! Click the link at the bottom of the article to find NJ Native plant nurseries that are reliable sources. **Never collect them from the wild!***

Bonus and Enrichment

As you have read, Virginia bluebells have other wonderful folk names like old ladies' bonnets and Jefferson's blue funnel.

Folk Names

Historically, folk names were used commonly by people of a specific region. Can you think of words that you use to describe everyday objects that may be called something different in another area of the country? For example, when you order a sandwich on a roll, do you call it a sub, grinder, hoagie, or something else?

If you have friends and family living in different parts of the country, this would be a fun way to use your favorite technology-based communication method to connect with them long-distance and keep track with a list. By the way, is that a Taylor Ham sandwich or is it Pork Roll and Cheese?

What's in a Name?

To consider why bluebells have been called Jefferson's blue funnel, think of the shape of a funnel. Can you "find" this shape when observing a photo of the flower? Through illustration, draw a picture of the bluebell and label the part that you think looks like a funnel. As a step further, can you construct a model of the flower by using common household materials?

Old ladies' bonnets is another folk name that has been used for this flower. Try drawing a picture entitled, "Old Ladies in their Bonnets" and don't forget to use that beautiful blue color in your picture. Perhaps your "old ladies" have stems and leaves for bodies! Use position words, (under, above, below, on top of, next to) to describe elements of your drawing. I.e., The stem is below the flower.

Duke Farms Connection

Virginia bluebells can be found at Duke Farms along the Lowlands.

Additional Resources:

- Lady Bird Johnson Wildflower Center
- USDA Plants Database
- New York Botanical Gardens Plant Talk
- Mt. Cuba Center

Sample Next Generation Learning Standards:

Lessons and activities can be adjusted to specific goals and objectives. The following NJ Learning Standards provide ideas on how you may integrate science into ELA and mathematics. If you are using this outline for the lower grades, the information sheet and Q/A would probably not be relevant, but by showing the photos, constricting the reading, or just by doing some of the activities as family projects, participants can enjoy learning more about these native NJ plants.

New Jersey Learning Standards ELA

- NJSLSA.R4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
- L.4.5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

New Jersey Learning Standard Math

- Geometry K.G A. Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). 1. Describe objects in the environment using names of shapes and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.

To share ideas or for additional resources, please contact Kate Reilly, Manager of Education, Duke Farms. Kreilly@dukefarms.org.