

Field Notes – Fourth Week of July
Carrie Crompton

BEEES AND MORE BEEES

I noticed last week that the colony of bumblebees in our “upstairs” home garden was released from service to the queen; the bees were no longer collecting pollen in their corbiculae. They were free now to move away from their home nest in search of mates. But nobody’s really moving out: the count has stood at about 6–10 bees per square meter in those gardens for a week. There are more small bees (males) than large ones (females). They all drink nectar busily all day, settle down on the thyme flowers around 6:00 p.m., and sleep in until about 8:00 the next morning.



Bumblebees foraging on thyme, July 26

While the bumbles are still sleeping, the squash bees are working. These bees seem to have arrived in the vegetable garden just this week, are specialists: they’re interested only in squashes, pumpkins, melons, and gourds—crops that were first cultivated in Central America as much as 10,000 years ago. Seeds of the plants were moved north by the Native American cultivators; the bees followed along, probably unbeknownst, from one patch of garden soil to another. The active bees I’m seeing this week are the progeny of a female who laid her eggs underground on little mounds of squash pollen that she collected last summer in our vegetable garden. The eggs hatched, and the larvae used the pollen to develop to the pupal stage, in which they rested through most of the year. Now they’re mature bees, mating and beginning the process all over again. They keep early hours, working above ground from dawn to

about noon, at which point the males tuck in for a nap in the closing flowers and the females burrow into the ground to lay their eggs.



Squash bees collecting pollen on summer squash blossoms, July 30

On the other side of the house, in the “downstairs” gardens, I’m noticing more pollen collection activity in a small but increasing worker bumblebee population. So I guess we’ve had two bumblebee colonies all along, with queens on different schedules. If this is the case, there may be no need for the males of the “upstairs” colony to travel out of the yard to find mates. It occurs to me that the difference in their colony sizes and maturation time may be related to the kinds of flowers in the gardens—there’s not much overlap.



Worker Bumblebees collecting pollen on Mountain-mint and Coneflowers.

This week, I'm also noticing more medium-sized mining bees and sweat bees. These are all definitely in pollen-gathering mode.



Middle-sized bees collecting pollen on Sunflower and Coneflower.

I'm also noticing Carpenter Bees again. They disappeared for about a month after mating, and now I'm seeing the new generation.

I'm trying to keep an eye on all of these pollinator groups at home while also getting out to see what's happening with bees living on the "wild side." On my walks, I notice lots of bumblebees that are not collecting pollen, some (relatively few) that are, and lots of smaller bees, as well. (Butterflies, too. They're not major pollinators, but they are wonderful to see, and there are more out now than there were earlier in the summer.) Here are some of the places I found noticeable pollinator activity this past week:

- The Raymond Brook Wildlife Conservation Area of the Airline Trail in Hebron



Queen Anne's Lace growing on Airline Trail in Hebron, July 27

This is both a beautiful pedestrian/bike pathway and a rich pollinator pathway. The sides of path are minimally mowed, so one is always close to the plants that live there. I find fewer invasive plants here than I do on many trails that are intensively mowed. This week, there's a lovely stretch of Queen Anne's Lace, a biennial plant that's been

naturalized in New England for centuries, near the parking lot on Route 85. It's not at all surprising to find a European honeybee on a European Queen Anne's Lace; this explains how they got naturalized in the first place! But some of our native bees also enjoy the nectar:



European Honeybee on Queen Anne's Lace (no surprise) / Native Green Sweat Bee on Queen Anne's Lace



Native Bumblebee collecting pollen on Queen Anne's Lace

Further down the trail, closer to the marsh, the Summersweet pleases everybody—it smells so good, you have to put your nose into it, and you're apt to come eye-to-eye with a pollinator when you do so. The bushes are alive with feasting insects—everything from bumbles to the tiniest little flying things.



Summersweet (*Clethra alnifolia*) on the Airline Trail

Here, too, are abundant Early Goldenrod and Showy Tick-trefoil.



Early Goldenrod (*Solidago juncea*)



Showy Tick-Trefoil (*Desmodium canadense*)

- The Eversource power line intersection with Cone Road



Intersection of Eversource power line with Cone Road

More Queen Anne's Lace! At first, the path doesn't look too promising. There are a lot of invasive species here, but I know from experience that this is a good place to find some flowers that I don't find anywhere else in Andover—like Blue Vervain. The first time I saw Blue Vervain in Western Massachusetts, July 16, 1974, I felt almost dizzy: it was like seeing the blue of distant mountains up close—like a wrinkle in space. Every July since, I've looked for it, and every time I find it, the intense but elusive blue affects me the same way. No camera of mine has ever captured it; and when I look for images online, I find that the color renditions all look a little off. For the past few years, I have found a small vervain population reliably beginning to bloom just after mid-July on the power line. The flower spikes are still opening in the last week of July.



Blue Vervain (*Verbena hastata*) intermixed with Purple Loosestrife (*Lysimachia salicaria*), power line, July 24

The USDA•NRCS website page on Blue Vervain attests to its many, wonderful faunal associations (https://plants.usda.gov/factsheet/pdf/fs_veha2.pdf):

The cardinal, swamp sparrow, field sparrow, song sparrow, and slate-colored junco eat the seeds of blue vervain. The cottontail rabbit will sometimes eat the foliage; most other mammalian herbivores avoid it due its bitter taste. The caterpillars of the verbena moth feed on the leaves and it is the larval host for the common buckeye butterfly. Long- and short-tongued bees collect the nectar and sometimes the pollen. Other bee pollinators include: epoline cuckoo bees, eucerine miner bees, halictid bees, and the verbena bee, a specialist pollinator. In addition, the thread-waisted wasp, bee flies, thick-headed flies, and golden soldier beetle are also known to all visit blue vervain.

Wow. Heat wave or no, I am determined to see some of these bees. I get out in the morning while it's still in the 70s, and sure enough, I find many tiny bees and other insects on the vervain. Except for the relatively large mining bee pictured below, they are all too small and too fast-moving for my camera. There are no bumbles or honeybees. I'm fascinated to learn that there is a specialist bee that loves nothing more than vervain pollen. Really? Loving a plant that blooms only in sunny wet spots in not-huge numbers for only 4-6 weeks of the summer? What a risky life plan! I find that this bee is actually rare (<https://jarrodflower.com/specialist-bees.html>), and am not surprised. But now, having just met the specialist squash bees and having learned about the specialist vervain bees, I am ruminating on this business of pollinator specialization. How many of our native pollinators depend upon "the one" flower for them?



Mining bee on Blue Vervain

Another plant I see on the gas line, and nowhere else in my usual rounds, is Virginia Meadow Beauty. This is a low-growing plant that blooms in wet openings—places where for some reason, the taller plants like Purple Loosestrife, Blue Vervain, the Tick-trefoils, and Goldenrod are *not* growing. There is just such an opening on the Cone Road power line. This week, I found Meadow Beauty there for the first time this year. What a surprise to see this beautiful flower growing below the level of the general vegetation! Right next to the Meadow Beauty, in the same wet opening, I found the Seedbox, another short-stemmed flower that is usually not visible amid the tall vegetation of late July.



Virginia Meadow Beauty (*Rhexia virginica*) / Seedbox (*Ludwigia alternifolia*)

Thoreau remarked about the *Rhexia*:

July 23, 1853. It is fitly called meadow beauty. Is it not the handsomest and most striking and brilliant flower since roses and lilies began?

August 1, 1856. I was surprised to see dense beds of rhexia in full bloom . . . They make a splendid show, these brilliant rose-colored patches . . . Yet few ever see them in this perfection—unless the haymaker who levels them or the birds that fly over the meadow.

I always feel privileged to see it! I've read that Rhexia depends on buzz pollination by my good friends the bumblebees. I didn't actually see any bumbles on the Rhexia, but I know that they're present on the power line; they will find it, and the Seedbox, too.

- The shores of Bishop Swamp



Bishop Swamp, July 26

The shoreline is a very busy pollinator pathway, with many plants in fresh and continuing flower. Where the swamp borders Jurovaty Road, there are many Buttonbush shrubs, as well as a few Purple Loosestrife plants. Now, Purple Loosestrife, though beautiful, is an invasive weed, and it can take over an entire wetland. That hasn't happened here (yet). In order to take over, its seeds need bare, disturbed soil, which is, I think, why I find it right next to Jurovaty Road, but not further back in the swamp, where the swamp vegetation is largely undisturbed. But I can't help noticing that the Purple Loosestrife is very attractive to bumblebees (oh dear!). The Swamp Milkweed, a host for the

Monarch caterpillar, is also in bloom here, as well as many, many buttonbush shrubs, which are magnets for Tiger Swallowtail butterflies.



Bumblebee on Purple Loosestrife



Swamp Milkweed



Bumblebee on Pickerelweed



Tiger Swallowtail on Buttonbush

• Gay City Park Upper Pond



Steeplebush on the periphery of Gay City Upper Pond, July 26

This pond is a little deeper than Bishop Swamp, and the edge of the embankment is more sharply defined. I see a different set of flowers here. No Pickerelweed, no Smartweed, no Purple Loosestrife, but a lot of Joe-Pye-weed just coming into bloom and a beautiful stand of Steeplebush. The bumbles love this Steeplebush way station. There's a lot of nourishment here.



Bumblebees on Steeplebush (*Spiraea tomentosa*) / Square-stemmed Monkey Flower (*Mimulus ringens*)

Right next to the Steeplebush is a smattering of Square-stemmed Monkey Flowers. These are hosts for the caterpillars of the Common Buckeye butterfly.

I step into the woods below the embankment of the pond, and find two beauties at the edge of the Blackledge River:



Cardinal-flower (*Lobelia cardinalis*), July 26 / Fringed Loosestrife (*Lysimachia ciliata*), July 26

The Cardinal-flower is pollinated only by hummingbirds, which know the color red when they see it, and have long enough beaks and tongues to get to the nectaries of these tubular flowers. The Fringed Loosestrife produces an unusual oily nectar (unlike most flowers' sugary nectar) that is preferred by a specialist known as an "oil bee." With attractions like these, modest populations of these flowers can survive off the beaten sunny pollinator pathway.

I have to say, there have been many summers of my life when I almost stopped looking for new wildflowers after the middle of July. It gets hot . . . and there are fewer and fewer new species blooming on a daily basis.

But I have never tired of rediscovering the regular dates that all the wildflowers keep: year after year, they appear for the first time within 4–5 days of their last appearance date. Given that the weather can vary quite a lot between one July and the next, I have always thought that even after the solstice, the signal for the opening date for most floral initiation must be something consistent, like daylength. And now I'm pretty sure that the reason it needs to be consistent is that flowering is like a convention of many parties that need to be in the same place at the same time. In the case of our garden plants, isn't it great that the squash bees show up just in time to pollinate the flowers and give us loads of zucchini and summer squash in August? In the case of the wildflowers and their pollinators, isn't it amazing how both show up at the right time to ensure seed production, which is necessary to ensure the future of the plant and the pollinators and all the other species that depend upon the plant's leaves and roots and seeds for sustenance and reproduction? Habitat destruction and pesticide use do in fact disrupt the synchronized appearances of flowers and pollinators to a great extent. So I keep going out looking for the summer wildflowers—especially the ones that are never seen in large numbers, even in a "good" season—just to be sure they're still there, in their just-right habitats at their just right-times.

Correction: Last week I mislabeled a photo in the photo-spread about green fruits. The photo showed Witch-hazel, but the caption read Speckled Alder. Here are the two species with their correct labels.



American Witch-hazel (*Hamamelis virginiana*) / Speckled Alder (*Alnus incana*)