



# The Fringe

Newsletter of the Native Orchid Preservation and Education Society  
[nativeorchidpreservationeducationandsociety.com](http://nativeorchidpreservationeducationandsociety.com)

Summer 2022

## Letter from the President

Hello everyone,

I hope everyone is having a great summer and seeing a lot of orchids.

Some of our members went to Washington State to the Native Orchid Conference Symposium. The speakers were great and, of course, we saw plenty of orchids. This is a good group to join.

We all love to see orchids, but part of our mission statement is about preservation.

There will be opportunities in the near future to work on invasive species removal. If you have some spare time, please consider volunteering to help.

I hope you will be joining NOPES on our upcoming tour of Longwood Gardens, Valmont Bog and maybe the Pine Barrens.

See everyone soon!

Teresa Huesman

## Note from the Editor

This has been an unusual season for the Native Orchid Preservation and Education Society. Weather (along with COVID concerns) caused us to cancel several of our planned hikes. Several of our members still managed to visit the planned hikes sites and will be reporting. Next year we will reschedule the missed hikes. Jan Yates has done a great job updating you with emails about ongoing activities and the plants in bloom. The next several articles will cover different members activities and the society hikes we did have.

## Wister's Coral Root

Jan Yates

In late April, an early blooming orchid is hidden among the lesser celandine which grows rampantly in sections of the Cincinnati Nature Center – *Corallorhiza wisteriana*, the Spring Coral Root or Wister's Coral Root. The flowers are a richly-colored oxblood red, like some beloved loafers I once had, but so small and the stems so short that it is most easily found by getting eye-level with the celandine.



A single inflorescence of Wister's Coral Root can carry up to 16 flowers but the population at the Cincinnati Nature Center usually has fewer flowers.



Wister's Coral Root clump, in April 2021, growing with Lesser Celandine

The Wister's Coral Root is uncommon in this area. I know of two populations, and this is the nicer one. Usually, one can find around 20 plus plants at a trail intersection on a hillside; this year the count was half that. And at this site, the lesser celandine was gone, so the ground was bare and very dry. This Coral Root likes moist forests and is myco-heterotrophic, meaning it obtains nutrients through mycorrhizal fungi instead of photosynthesis (it has no leaves). It can also stay dormant underground for years so maybe 2022 is an off year.



Same location, April 2022.

On a happier note, additional plants were spotted growing on the hillside below the trail intersection and that number is growing slowly year by year. And, for the first time that I'm aware of, plants were seen in another corner of the trail intersection where the lesser celandine was still vigorous (and the ground likely moister.)

A bittersweet note about the population in Mt. Airy Forest where a few plants grow along the steps of a hillside trail. Last year, multiple folks looked for them and found none. This year as well.

### ***Cypripedium reginae* at Cedar Bog**

Jan Yates

The Showy Lady's Slippers have come and are now gone at Cedar Bog Nature Preserve – even though seeing them in late May through early June was not a formal NOPES trip this year, we notified members of the two weekend days the public was invited to see them in their prime from the boardwalk. According to CBNP Facebook postings, *Cypripedium reginae* was at its peak on





June 8<sup>th</sup> and volunteers counted more than 650 plants in the main sedge habitat. Dragonflies, including the rare Elfin Skimmer, are a bonus. Mark your calendar for next year.

## Late Spring Orchid Hunting in Michigan

Jun Lao

A long drive in early June was in order to see a few orchids not usually found or hard to find in Ohio.

The first location was in Waterloo, where one needs to cross the forest to get to the wooden boardwalk over the moat, while fighting the attacking and flying defenders in order to see the Dragon's Mouth.



Dragon's Mouth, *Arethusa bulbosa* with Pink Lady's Slippers, *Cypripedium acaule* in background

While the mosquitoes are especially pesky here because of the presence of standing water in the bog, along the way you get to see lush stands of cinnamon fern and royal fern (bringing to mind images of Jurassic rainforests), and small white “candles” on the forest floor – Canada mayflowers.

As you reach the boardwalk which marks the end of the trail, there you see the reward for your efforts – blooming Pink Lady’s Slippers (*Cypripedium acaule*) growing in a wet location on the mounds on the bog, and the vivid pink flowers and yellow lined lips of the Dragon’s Mouth Orchid (*Arethusa bulbosa*). Most of the time, the flowers tend to look away from the boardwalk, but there is usually one or two that face the boardwalk and the rest you catch their side views or profiles.



Canada Mayflowers

This portion of the bog is exposed to the Sun and is a rich botanical area. There are a lot of Northern or Purple Pitcher Plants (*Sarracenia purpurea*) with their flowers and pitchers next to the Dragon’s Mouth orchids. Plus, if you look closely, you can also see bladderworts.

The one thing we’ve noticed about the Dragon’s Mouth orchid is that their bloom time is notoriously fickle, and the flowers don’t last a long time. The good thing is that you can call the Eddy Discovery Center and ask if they are in bloom before you head over.

There are other orchids in the area – Northern Small Yellow Lady’s Slippers (*Cypripedium parviflorum var makasin*), known for its small and darker yellow pouches with dark sepals which bloom around the same time, and Showy Lady’s Slippers (*Cypripedium reginae*) – though it was still early for them to be in bloom. Also, a little early to be in bloom were the Eastern Prairie Fringed Orchid (*Platanthera leucophea*), Rose Pogonia (*Pogonia ophioglossoides*), and Grass Pink Orchid (*Calopogon tuberosus*).

The Waterloo area is not confined to just this forest trail and boardwalk. While driving around, I spotted a large snapping turtle on the right side of the road, which of course I couldn’t wait for it to cross as it would have taken forever; as well as a large black snake with a racing stripe on its side, on the left side of the road. When I stopped the vehicle and stepped out to take a picture of the snake, it very rapidly went off into the brush. I don’t think I’ve seen a more rapid dash by a snake on the ground.



Northern Small Yellow Lady’s Slippers  
*Cypripedium parviflorum var makasin*

From there, it was a long drive to get to a spot in the northeast portion of Michigan's Lower Peninsula which faces Lake Huron.



Northern Small Yellow Lady's Slippers  
*Cypripedium parviflorum* var *makasin*

There are plants here that are the same as some plants in the orchid hotspot that is the Bruce Peninsula in Ontario, Canada. It is interesting that they are in a similar latitude, separated by a large number of miles by Lake Huron.



Bluebead lilies *Clintonia borealis*



Gaywings or Fringed Milkwort  
*Polygala paucifolia*

As this area is facing a large freshwater lake, there are a number of bogs and wetland areas here that a number of plants like. Bluebead lilies, Bunchberries, Canada Mayflowers, Gaywings or Fringed Milkwort, and Starflowers were among the plants we don't get to see much as you go south.

While I wasn't able to spend as much time as I would have wanted to in order to explore the many parks and nature preserves here, there was enough to entice you to return and spend more time here, including, I heard, seeing a population of dwarf lake iris, which is also present in the Bruce Peninsula.



Starflowers *Trientalis borealis*



Ram's Head Orchid *Cypripedium arietinum*

The primary plant that was the reason for the trip here was the Ram's Head Orchid (*Cypripedium arietinum*), with flowers so small that even the Small Yellow Lady's Slipper's pouch is considered big. As the plants and



Ram's Head Orchid  
*Cypripedium arietinum*

flowers are small, they are a little hard to find, but with the help of an acquaintance in the area who gave great directions, it did not take long to find them. They were in the location that was mentioned, and there were a few plants in bloom. Close to the Ram's Heads were a couple of Pink Lady's Slippers in bloom. It would be nice to further explore the area, but the mosquitoes and black flies really made me feel unwelcome while there, so had to head back to the vehicle.



Yellow Lady's Slipper  
*Cypripedium parviflorum* var. *pubescens*

A short drive from there toward the lake, I was told to stop by the time the road turned to a gravel road, to see Yellow Lady's Slippers by the side of the road. It didn't take long to spot them even before I hit the gravel road, as they were similar to the Bruce Peninsula where they were growing and blooming on the roadside. This was a nice treat amidst the view toward the bay.



Yellow Lady's Slipper  
*Cypripedium parviflorum var pubescens*

The drive toward the lighthouses was a nice one, given the mild temperatures and blue skies, and the blooming Yellow Lady's Slippers you see on the roadside every so often. From there, it was a few hours' drive north to cross the Straits of Mackinac using the Mackinac Bridge and on to the Upper Peninsula, to the shores of Lake Superior. There, in one of the overlooks to the lake, I searched for the Frog Orchid (*Dactylorhiza viridis*), but unfortunately, wasn't able to find them, although I did find an Early Coralroot (*Corallorhiza trifida*) in bloom – another orchid with a green stem and green flowers.



Early Coralroot  
*Corallorhiza trifida*



Pink Lady's Slippers  
*Cypripedium acaule*

The drive wasn't a waste, as I had wonderful views of the lake and the tall cliffs of the Upper Peninsula, plus Sable Lake and Sable Falls.

Staying overnight at Mackinaw City, I had a nice sunset and sunrise view facing Lake Huron.

# Olympic Peninsula Symposium with the Native Orchid Conference

## Ann Tsui



The Native Orchid Conference (NOC) is a national organization providing an annual symposium, journal and Zoom presentations. On June 24-27, 2022, the Symposium was held on the Olympic Peninsula of Washington State. Several NOPES members had the privilege of attending.

The Symposium consisted of 2 days of lectures and 2 days of guided tours, viewing and photographing the delicate native orchids in the area, along with the abundant wildflowers, animals, and awesome scenery.

The lecture days first introduced participants to the native orchids and botanical diversity, plus the geology, habitat and history of the area. The Olympic Peninsula has a varied biome, generally an old growth temperate rainforest easily receiving 140 inches of rain on the western side, to alpine meadows just emerging from snow when we were there, to the rain shadow areas requiring irrigation for the lavender fields. The forest consists of virgin douglas fir, hemlock, sitka spruce and red cedar trees, often 200-400 years old, and draped in moss. Ferns and many types of mosses cover the ground. The trails are padded with pine needles making them soft to walk on.



Temperate Rain Forest  
Doug Martin and Jan Yates

Mycorrhizal symbiosis is currently a hot area of study for orchid enthusiasts, mentioned by most of the presenters. For example, we know that fungal mycorrhizae are essential for orchid seed germination, but how significant is it during the life of the plant? DNA “bar coding” has been used in animals, and now is being applied plants and even fungi for identification. Orchids are associated with only 5 or 6 fungal families. So how do orchids attract those fungal families needed to come in (and get eaten) by their roots? And who would have thought to check the bacteria associated with the mycorrhizal cells located inside the roots of orchids?

Other lectures included a summary of 2 decades of political petitioning and negotiations leading to the successful removal of 2 Elwha River dams. Ten years later the pre-dam salmon runs that were so prolific and essential for the people, plants and animals in and around its tributaries are still slowly recovering. Another lecture looked at the orchids, primarily the charming bee orchids, found on the island of Rhodes in Greece.



Organized hikes assured the viewing of orchids and many unusual plants. The prize was the *Calypso bulbosa*, a small delicate flower in sheltered forest positions.



Coralroots, potentially 7 varieties, were the most commonly found native orchids. Often single stalks, or sometimes found in bunching groups.



*Corallorrhiza maculata*  
var. *maculata*

*Corallorrhiza maculata*

*Corallorrhiza mertensiana*  
Pacific coralroot

*Corallorrhiza mertensiana*



*Platanthera unalascensis*  
Alaska rein-orchid



*Neottia cordata*  
Heart-leaf twayblade



*Goodyera oblongifolia*  
Western rattlesnake plantain

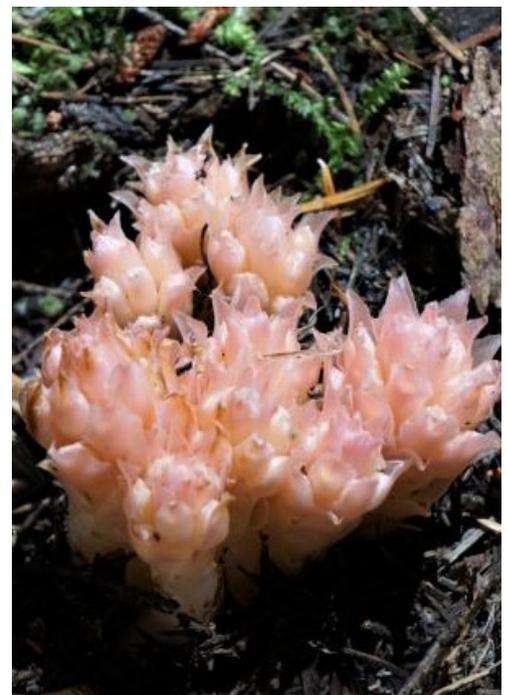
The small heartleaf twayblade, *Neottia cordata* is hard to spot. The Western rattlesnake plantain, *Goodyera oblongifolia*, sometimes has just a line down the center of the leaf.



*Allotropa virgata*  
Candystick



*Boschniakia hookeri*  
Vancouver groundcone



*Hemitomes congestum*  
Gnome Plant

The aptly named Candystick, the Vancouver groundcone, and the gnome plant are incredibly strange saprophytes.

**In Summary:** The 2022 Native Orchid Conference four-day seminar and outdoor experience held in the Olympic Peninsula of Washington State was well planned and immensely enjoyable. Next year, it will be held in Michigan!

For more information visit the NOC website. Excellent recorded zoom presentations can be viewed by NOC members and non-members. All are also invited to enter photos in a Photo Showcase. [www.nativeorchidconference.org](http://www.nativeorchidconference.org)

## Orchid Wanderings

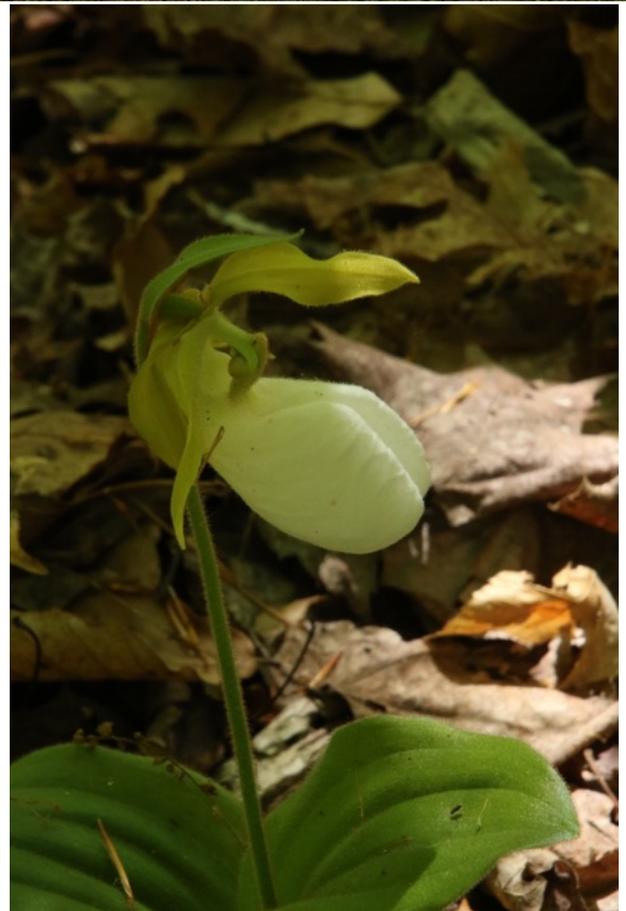
Jeanne Rhinehart

My activities have been very limited with my knee surgeries last year, but I have managed to get back into the swing of things. After missing the Wister's Coralroot, Barry and I managed to see our showiest Ohio orchid visit of the spring with the *Cypripedium* show at Shawnee State Preserve! The *Cypripedium acaule* did not disappoint.

The beautiful plants always start with the field of Indian Paintbrush in a field along State Route 125. The plants are doing so well that they are extending into surrounding areas.



The first stop was at the Edge of Appalachia Wilderness Trail to see the Pink Lady's Slipper, *Cypripedium acaule* forma *albiflorum*, growing here for the first time this year. Jun Lao patiently met us there to make sure we didn't miss it. We also found many other *acaules* growing on either side of the trail.





While the Wilderness Trail had many more wildflower adventures available to us, we wanted to head on to Shawnee State Forest to see the anticipated orchids ahead.

Teresa Huesman had traveled this route earlier and told us that we could find the Showy Orchis (*Galearis spectabilis*). Along the trail behind the Nature Center. We decided to push ahead to the *acaules*.

We would stop on the way back to see them and to check the location for the Large Whorled Pogonia that has been found there.

The Pink Lady's didn't disappoint!!



One disappointment here was that the road was bulldozed on either side to make more room for the logging trucks to traverse the area. In doing so, they tore out some Large Yellow Lady's Slippers, *Cypripedium parviflorum* var. *pubescens*. We did find a few hardy plants over the hill side and that they did not wipe out the semi-alba Pink Lady's Slipper on the other side.

Last year *Cypripedium acaule* was covered as the Orchid of the Month and at the time I didn't research the naming of the two white Lady's Slippers. GoOrchids only had one listed and I decided to check the orchid taxonomy Gods at The Royal Botanic Gardens, KEW and sent an email asking if there was an official name accepted today

from what Correll and Luer had written in their books. I was surprised and pleased to get a response from Phillip Cribb, botanist and curator of the Orchid Herbarium of the Royal Botanic Gardens at KEW:

Dear Jeanne,

Andre Schuiteman has passed on your email for me to answer.

Albino forms are common in flowering plants with red or blue flowers. To my understanding, the term refers to flowers that have lost their anthocyanin pigments not all of their pigments. Thus, many albino have yellow and green present in some floral segments as is the case with *C. acaule* forma *albiflorum*. This name was published in 1894 by Rand and Redfield. It is later than forma *album* which was coined by Ballif in *Lindenia* in 1888 but never formally described, a process necessary for a name to be valid.

In some species we find not only true albinos but also ones in which some anthocyanin persist. Horticulturists call these 'semi-albas'. Cribb

I hope that helps.

All the best,

Yours sincerely,

Phil



*Cypripedium. acaule* forma *albiflorum* Wilderness Preserve



*Semi- alba* *Cypripedium. acaule* Shawnee State Preserve

The hillsides here have dozens of the Pink Lady's Slippers but only the one semi-alba. A stump protects it from the state workers at present. (Although they mowed it down a couple of years ago when it was in bloom. This location has so many of the plants as seen below. The Pink Lady's show some color variation but only one plant

that is white. Several were in bud and looked to possibly be white. The Large Yellow Lady's Slippers in the area are also pictured below.





So, we finally started our trek home with one stop behind the nature center. There were a very few *Galearis* plants and the Large Whorled Pogonia again did not appear.



A second stop at a different location to check on the Cypripediums there. It was a little disappointing as the number of Pink Lady's seemed to be down. The Large Yellow had about the same number with a few seedlings in the mix.

A couple of days later we made the trip again to bring Doug and Beth Martin to see the area. We also saw the plants in bud before were now open and not white but a pale pink. We also hiked to find the Green Violet.



One of the lighter *acaules* in the area



Beth getting a photo of one of the pink *acaules*



The Green Violet



Doug photographing the *alba acaule*

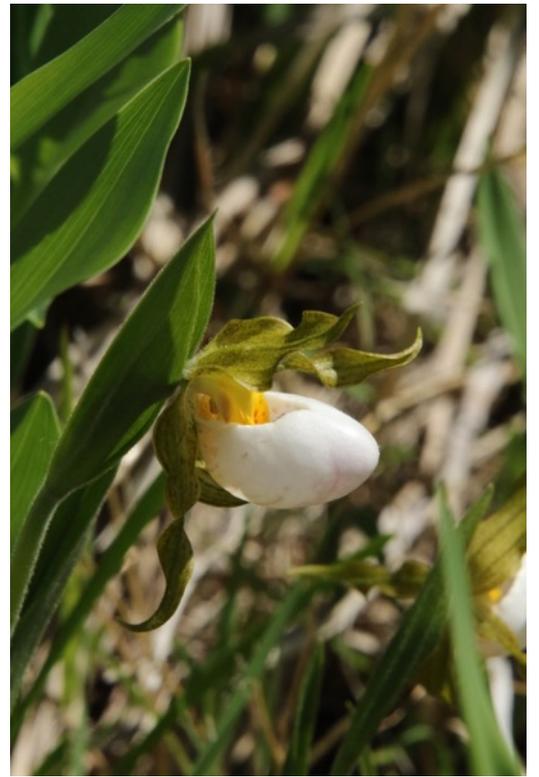
A few days later we were back to Shawnee to meet with Jun and Donna and Brian Wise for a reported sighting of several Large Whorled Pogonia in a different area. Alas we were too late!



We had been too tired on these trips to check on the *Cypripedium kentuckiense* across the river in Kentucky. So, Teresa Huesman and I drove back to the region again to see what we could find. The area was more overgrown, but we finally managed to find them.



As NOPES had no planned hike to Castalia, OH to see how the prairie looked after its major burn, Jan and I made a day trip to see what we could find. There were multiple new trails mowed throughout the prairie, but it appeared the numbers of *Cypripedium candidum* were down from past years especially as we entered the prairie. We made a determined effort to cover as much of the area as we could and found many plants. Only one of the yellowish hybrids, *Cypripedium x andrewsii* that we found in the past appeared but, we did find a few others as pictured below.



Trails through the prairie with the tiny white specks the many orchids.



One of the larger clumps.



The only yellow *andrewsii* we found



Note how small these blooms are. You can see how they compare in size to a normal violet growing near them!



Previous year's *andrewsii*



One of this year's *andrewsii*

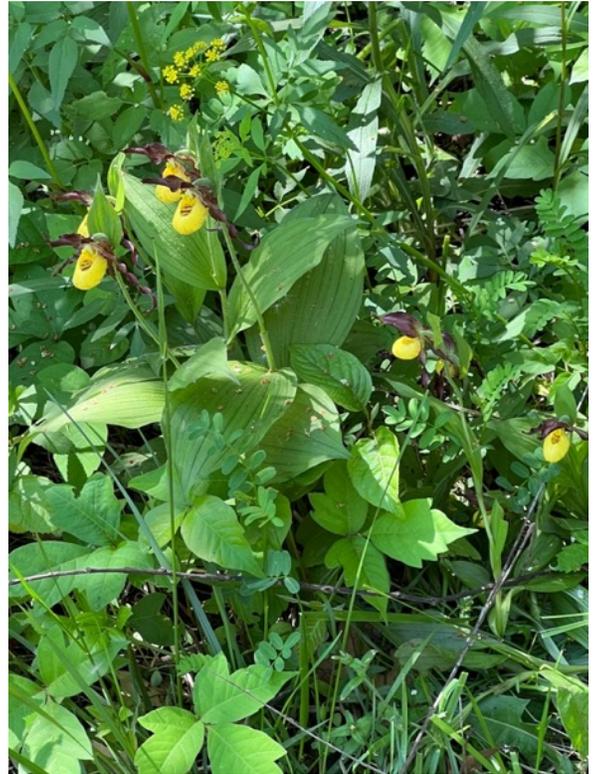


NOPES scheduled hike to Waterloo State Nature Preserve had no one sign up. Many of us still traveled to Michigan to see the Small Yellow Lady's Slipper, *Cypripedium parviflorum* var. *makasin*, and the Dragon's Mouth, *Arethusa bulbosa*. There were not as many of the *Arethusa* and the *Cypripedium acaule* were on their last legs but as usual the Dragon's Mouth made the trip worthwhile, not to mention the beautiful hike through the preserve to reach the bog.



There were a couple of *acaule* that were still in good shape.

After hiking to the usual location to see the *Cypripedium parviflorum* var. *makasin*, we were disappointed to see only one plant and it was in the middle of the thicket. We decided to visit the Nature Center there and it was a great decision as the naturalists there told us of another location for them. This location had many clumps of *makasin* including the largest clump we have ever seen!



Angela, Dan Boone and I joined the Wildflower Society and DNR botanist Rick Gardner to learn about flowers on sedges. Rick managed to find over 10 different sedges and helped us to appreciate their flower structures and functions.



*Cyripedium reginae*. As usual it did not disappoint.

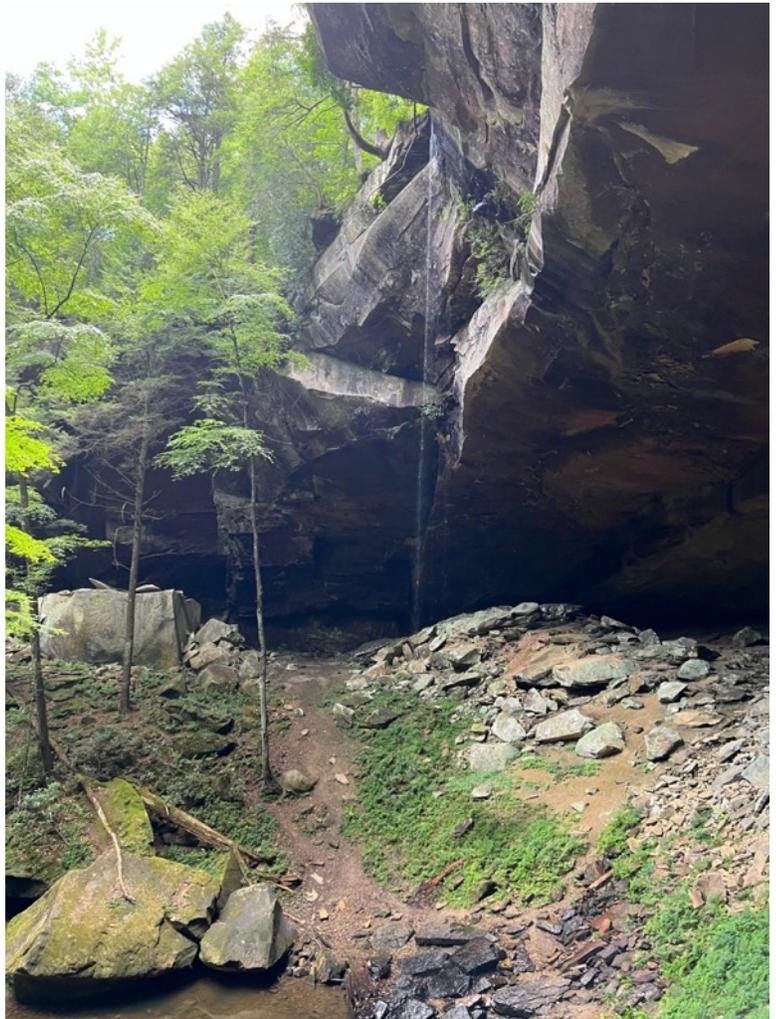
But like any trip with Angela, we had to make further stops. One to check on *Platanthera flava* var. *herbiola* Northern Tubercled Orchid, at Lawrence Woods to see if they were in bloom as it was a future planned trip for NOPES. Plants were up but with no bloom spikes. Then on to Cedar Bog to see the Showy Lady's-Slipper,





The Ohio monsoons of 2022 canceled our planned hike to Mohican State Park, Brown's Lake Bog, and Lawrence Woods to view *Platanthera orbiculata*, Rose Pogonia, *Platanthera flava*, and carnivorous plants. There were so many rainy days that none of us challenged the mud to see the usual spectacular display of *Platanthera orbiculata* where we in past years saw more than 40 plants. Luckily for Barry and me, our new home bog had first bloom Rose Pogonias for a show!

Our final trip so far this year is the NOPES field trip to Kentucky and Tennessee to Yahoo Falls, Couchville Cedar Glade and May Prairie. The region has been very dry especially at Couchville. I have wanted to see the orchids here for several years.





We first arrived at Yahoo Falls which was a beautiful forest hike. It was so dry the falls was just a trickle as seen above, but we still managed to see orchids. The first we saw was a fruiting plant of the Large Whorled Pogonia.



It was here that we got to see a new orchid for me *Goodyera repens*. It was so much smaller than I was expecting as seen here with Angela getting a closeup. Having seen *Goodyera pubescens*, I was expecting something that size. While its small size was disappointing, its beautiful, patterned leaves made up for it.





Our final orchid sighting in the region was a *Goodyera pubescens* just starting to spike.

We also managed to see some interesting non orchids including the Filmy Fern and a local amphibian finding a shady, moist region to survive the drought and heat.



Our next stop was Couchville Cedar Glade which really showed the effects of this prolonged period of little rain. But hardy plants manage to survive amongst the rocky landscape including the Tennessee Purple Cone Flower *Echinacea tennesseensis*, one of the St John's Wort and Limestone Fameflower, *Phemeranthus calcaricus*. The coneflower had almost dried up.





After dinner we traveled to the May Prairie for a quick evening hike. And after struggling through the brush, we did manage to see a couple *Platanthera nivea*. With the dry and hot conditions, they were smaller than usual.



Early the next morning we arrived back at the prairie. We hoped to beat the heat of the day. Walking further into the prairie we found a region with many more *nivea* and several of the wildflowers of the region.



The *nivea* in this part of the prairie were much more numerous and larger. The larger plants were starting to fade.

Dan Boone checking for a possible new sedge for the region dotted with *nivea* all around.



Angela also managed to spot our last orchid of the trip:  
a fruiting *malaxis*.

After this successful trip we are heading for the NOPES hike to Pennsylvania to visit Longwood Gardens and Valmont Bog and then on to the Pine Barrens of New Jersey.

## **NOPES Conservation updates**

Several ongoing projects have shown successes. Jan Yates checked the Puttyroot, *Aplectrum hyemale*, site at Winton Woods and found that a large dead ash had fallen over an area that in previous years had a large patch of plants.



At Appalachia Ohio Alliance properties, eight of nine *Cypripedium parviflorum* var *pubescens* plants from last year came up with one new bloom, one seed pod. All new plants planted last year came up with no blooms. *The Platanthera ciliaris* had not been checked on yet. Ken Mettler also found *Platanthera lacera* there.

The seeds from our Dayton MetroPark at Germantown Grant which were in flask earlier are now in pots. Pictures of *Liparis liliifolia* from Doug Martin are below.



## Conservation corner

We again want to remind our readers of other groups who need are support with their activities. Support them by joining or donating to their efforts, volunteering for their many projects, and by joining their hikes or participating in their educational efforts. Clicking on their website links show what they have been doing and what they are offering.

**Ohio Natural Areas and Preserves Association (ONAPA)** <https://www.onapa.org>

ONAPA has two invasive species control projects in August at locations we visit. We want to encourage your attendance at any of the locations they list. August 6 is at Jackson Bog and August 11 is at Cedar Bog. Registration and the forms you need to complete are on their website.

**Appalachia Ohio Alliance (AOA)** <https://www.appalachiaohioalliance.org>

July 23 Summer Orchid Walk at AOA's Mercer Woods Old Growth Forest, July 30 Prairie, Pollinator and Butterfly Walk at AOA's Cossin and Kreisel Preserves along the Scioto River, August 6 In the Creek with Kelly – Explore Hocking River Aquatic Life at AOA's Conservation Demonstration Site.

**Division of Natural Areas and Preserves (DNAP)** <https://ohiodnr.gov/discover-and-learn/safety-conservation/about-ODNR/nature-preserves>

**The Nature Conservancy** <https://www.nature.org/en-us/about-us/where-we-work/united-states/ohio/>

**North American Orchid Conservation Center** <https://northamericanorchidcenter.org>

## Orchid of the Month *Arethusa bulbosa* Linnaeus Dragon's Mouth, Bog Rose, Wild Pink

Jeanne Rhinehart

*Arethusa bulbosa* is a spectacular fragrant bog orchid. Carlyle Luer quotes Morris' and Eames' picturesque description in *Our Wild Orchids*. "The slender upright stem bears aloft at its summit a graceful poised blossom, large and showy; the rose-magenta sepals and petals grouped together, erect or bent over, behind the bold protruding lip; a dragon's tongue of a lip, lolling lambent and flickering, pale pinkish white, varied with purple and gold, triple-crested down the middle, the central crest flanked by a pair of madder lines, and the margins streaked with dark flecks that converge toward the nectaried throat of the flower ... to us it has always been, quite startlingly, a face watching and aware. We shall never forget the moment when our eyes first fell on its blossom in the lonely depths of a sphagnum bog. The feeling was irresistible that we had surprised some strange sentient creature in its secret bower of moss; that it was alert and listening intently with pricked-up ears. We believe that many of those whose senses are similarly attuned to living forms in Nature will understand exactly what we mean." <sup>1</sup>



*Arethusa bulbosa* is the only species in the genus *Arethusa*. The former *Arethusa rosea* is now *Bletia rosea*. At one time *Arethusa japonica* was a member of *Arethusa* found in similar habitats in Japan. It is now *Eleorchis japonica* and is the only species in its genus.

Johann Friedrich Gronovius named the orchid *Arethusa* in his 1743 description and Linnaeus kept the name in his *Species Plantarum*.

*Arethusa* comes from Greek mythology. "In Greek mythology *Arethusa* was a nymph in the retinue of *Artemis*, goddess of chastity, the daughter of *Zeus* and the twin sister of *Apollo*. While bathing in the river, *Arethusa* was seen by *Alpheus*, the river-God, and in human form he pursued her. To rescue her *Artemis* changed her into a spring which emerges at *Ortygia* near *Syracuse*, on the island of *Sicily*. The river *Alpheus* in Greece then supposedly flowed underground and under the sea to unite his waters with those of the spring."<sup>2</sup> *Bulbosa* is Latin for "with a bulb" and refers to the corm of its roots.

"Description: Plant glabrous, 15-20 cm tall. Roots slender, attached to a small bulbous corm, 10mm long x 5 mm wide. Leaf

solitary, lanceolate, emerging after flowering, 4-6 cm long x 6-10 mm wide. Inflorescence with 1 (rarely 2) flower (s) atop a solitary stem, each with a small floral bract 2-4 cm long. Lip 20-25 mm long x 12-15mm wide, obovate, with short lateral lobes and wavy margins. Central portion of lip fringed with yellow bristles. Remainder of lip smooth and pink, with pinkish-purple markings throughout. Petals oblong to oblanceolate, pink, 2-2.5 cm long x 3-4 mm wide. Sepals similar to petals, 3-4 cm long x 8-10 mm wide.”<sup>3</sup> Philip Keenan has a photo of a double lipped flower in his *Wild Orchids Across North America*.

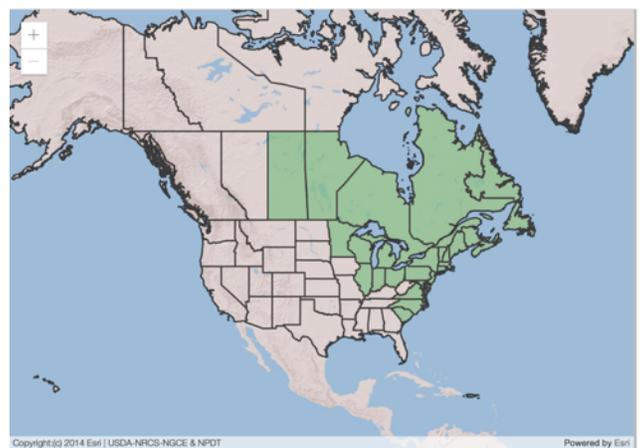
It has 2 color forms: the most common bright pink to lavender forma *subcaerulea* and the pure white forma *albiflora*. The leaf appears after the flower finishes blooming.



*Arethusa bulbosa* forma *albiflora* Photo by Laura Caddy<sup>4</sup>

*Arethusa bulbosa* is usually found growing in bog conditions usually containing sphagnum moss. It is found growing in central and eastern United States and Canada extending as far south as South Carolina. In the southern Appalachian regions, it grows on the eastern slope of the Blue Ridge Mountain Range. It grows more abundantly the farther north in its range. In the Maritimes of eastern Canada, they are found in large quantities sometimes in the thousands. Thus, it is considered globally secure but considered rare over much of its range including 17 of 21 states and 6 of 9 provinces. It is considered an early successional species; thus, its numbers decrease as the shrubs in a region increase.

5



While it normally grows in bog conditions it is also found in North Carolina mountains growing in moist humus beneath rhododendron and mountain laurel. It is thought this may be historical with it surviving in this region during the Last Glacial Period and inhabiting bogs to the north as the ice receded eventually reaching Newfoundland and northern Ontario. It grows in peaty moors in Newfoundland.

It blooms from May to early August. In many regions having late frosts limiting growth. Frederic Case observed that when heavy late frosts cover Michigan that *Arethusa*, *Cypripedium acaule* and pitcher plants die back and do not produce seed the next year. Rodents are also known to eat the corms. He felt that this could cause the variation in numbers in different years. Over a 30-year period in Michigan bog plant numbers varied from as low as 12 to over a thousand on various years.

It is found growing with *Calopogon tuberosus* and *Cypripedium acaule* in many locations.

*Arethusa bulbosa* has ultraviolet absorbing anther-like bristles on its lip and while it is fragrant, it has little nectar causing it to deceive pollinators. As it has little reward for the pollinators, they quickly learn to avoid *Arethusa*. This does lower the seed production for the species. It is usually pollinated by recently emerged inexperienced queen bumble bees like *Bombus ternarius* and *Bombus terricola*. The flower's structure prevents self-pollination by forcing the bee to collect pollen as it backs out of the flower. *Arethusa* also reproduces asexually through its tubers.



*Arethusa bulbosa* growing in the bog at Waterloo Preserve

### Footnotes and additional references

- 1 *The Native Orchids of the United States and Canada excluding Florida*, Carlyle A. Luer, The New York Botanical Garden, 1975, pp. 264-268
- 2 Ibid.
- 3 *Orchids of Indiana*, Michael A. Homoya, Indiana Academy of Science, 1993, pp. 67-70.
- 4 UBC Botanical Garden <https://botanyphoto.botanicalgarden.ubc.ca/2018/07/arethusa-bulbosa/>, Laura Caddy, Image License: [Creative Commons License](#).
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Ken Mettler is one of our board members and very involved with Appalachia Ohio Alliance (AOA) <https://www.appalachiaohioalliance.org>. He writes a column for the Central Ohio Orchid Society called In The Wild. He works at the Ohio EPA. He is graciously allowing us to reprint his articles, this one from last year.

## Discovering the Fen Orchid, *Liparis loeselii*, in Vinton County

Finding orchids in the wild is fun. Many people don't even know that there are orchids native to Ohio. For those who do, their usual experience is being led into the habitat by someone else who has found the orchids. I've been in both of these categories. But now, after nearly forty years of observing orchids in the wild, I am thrilled that I've become fairly adept at finding individuals and populations on my own.

This isn't some magical talent, and I didn't get there overnight. It comes from spending time out in natural habitats, finding interesting orchids and other species (plant and animal), and keenly observing where they are living. When I find a member of a plant species in the wild, I frequently ask myself, "why is it growing here, and not over there?" Sometimes, the answer simply is, that's where the seed fell. Usually, it's far more complex than that. It's a combination of where the seed fell, and subsequent factors: Was the seed able to germinate? (This requires specialized fungi for orchids and many other plants.) Were the moisture, light, and temperature correct? Did the seed or plant get predated by herbivores? How long is the natural life span of individuals of that species? I'm sure this list of questions could go on and on.

Having grown up in suburbia, I consider myself lucky to now live in an area with many natural habitats and a great diversity of wild species. If I try, I can find native orchids every day of the year, unless the ground is deeply covered with ice and snow. But I really knew I'd "arrived" when I started recognizing habitats. I frequently see an area of habitat and get that "gut feeling" that I should look there. Sometimes I don't find the species I'm looking for, but more often than by pure chance, I find it. And there are the times when I find a plant growing seemingly out of place. I joke that "the plants don't read the books", but this can lead to a greater understanding of the natural world. One example was finding a wetland species growing high on a ridgetop. Several observations of this have led me to speculate, and then confirm, that just below the surface there was a "perched water table" on top of a solid rock formation. This allows moisture loving species to grow in atypical habitats.



*Liparis liliifolia*



*Liparis loeselii*

I keep trying to find new populations of species, and document the rare, or otherwise interesting ones. When I do, I report my findings to the botanists at the Ohio Department of Natural Resources. There are two species of the genus *Liparis* native to Ohio. The Large Twayblade, *Liparis liliifolia*, is the more common of the two. It grows in mesic forests throughout eastern and southern Ohio. The other species, the Fen Orchid, *Liparis loeselii*, has a scattered distribution from northeast through southern Ohio. It is noticeably absent from the far western counties and most of southeast Ohio. This makes sense when you consider that it likes to grow in moist to mesic woodlands and wetlands, usually with a bit of lime in the soil. Since Hocking County has no naturally occurring limestone, for years there was only one known population of this species. I've since found two more in Hocking County, both growing near roadways and driveways where crushed limestone was used. From all the botanical records I've been able to find, *L. loeselii* has never been found in Vinton County. Until now...

On June 21, 2020, I was hiking in the fantastic Bison Hollow nature preserve, which straddles the Hocking/Vinton County line. I found four species of orchids this day. (I'm averaging almost one new species of orchid each time I go to Bison Hollow.) In an opening in the woods, I found a population of Tall Green Milkweed (*Asclepias hirtella*), one of my favorite milkweeds. I've nicknamed this site the milkweed prairie. I found Large Twayblades in the woods nearby. These were juvenile plants, not yet blooming. A little farther into the woods I found a *Liparis* plant with a stem of seed pods. This one caught my eye for several



Tall Green Milkweed  
(*Asclepias hirtella*)



Rattlesnake Plantains (*Goodyera pubescens*),

reasons. While both species bloom in late May and early June, and should set seed pods by this time, their pollination mechanisms are totally different. *L. liliifolia* is insect pollinated, probably by mosquitoes. (See, they are good for something!) *L. loeselii* is a self-pollinating species. The flowers point upward at about a 45-degree angle, and the lip is funnel shaped. It is thought that they may be rain assisted pollinators. A raindrop that lands on the lip splashes up against the column, jostling the antheridia into contact with the stigmatic surface. For this reason, *L. loeselii* can set a large number of seed pods, while I rarely find more than four pods on a stem of *L. liliifolia*. The plant I found had seven pods on the five-inch stem. It was

slightly smaller than most blooming plants of *L. liliifolia*, and the leaves were proportionately narrower, and just a shade lighter green than *L. liliifolia*. Good clues, but these characteristics can all overlap between the two species. I would have to see it in bloom for a positive identification.

So, on June 6, 2021, I headed back to Bison Hollow. Finding a five-inch plant in 250 acres of greenery can be a little bit daunting, but I knew where it was in relation to the milkweed prairie, and last year I had strategically placed some flagging tape on a nearby tree. (Smart move!) Nearby were Rattlesnake Plantains (*Goodyera pubescens*), Ragged Fringed Orchids (*Platanthera lacera*), and the large Twayblades (*L. liliifolia*) that I had found last year.



Ragged Fringed Orchids (*Platanthera lacera*)

And then I found my plant. It had grown two inflorescences, but the larger one had been damaged, and did not bloom. I found a few mealy bugs on the plant, which may have caused the bloom failure. Fortunately, there was the smaller inflorescence with one open flower and two buds. Not a very good blooming, but enough to positively identify the species. *L. loeselii* has light green upturned flowers, while *L. liliifolia* has liver-colored flowers that emerge horizontally from the stem. A photograph and GPS location were later sent to ODNR to document this find.



Fen Orchid, *Liparis loeselii*



Fen Orchid, *Liparis loeselii*

After finding and identifying this plant, I continued hiking for several more hours. Creeping Mint (*Meehania cordata*) were in full bloom in the bottom lands near the streams. This is an Appalachian endemic, ranging in only seven states, from western Pennsylvania to northeast Tennessee. It is only found in eleven counties in Ohio, all near the southeast edge of the state. The light purple, inch-long tubular flowers were at their peak, and blooming by the hundreds, if not thousands. I found a nice colony of Large Yellow Wood Sorrel (*Oxalis grandis*). Looking like a giant version of the Common Yellow Oxalis (*Oxalis stricta*), this is another Appalachian species. It grows knee-high, with large yellow flowers. And I would be remiss if I didn't mention that the Swainson's Thrushes (*Catharus ustulatus*) provided a beautiful musical soundtrack for most of the hike.



Creeping Mint (*Meehania cordata*)



Large Yellow Wood Sorrel (*Oxalis grandis*)