SHORTIA

NEWSLETTER OF THE

WESTERN CAROLINA BOTANICAL CLUB

SUMMER 2017

Shortia galacifolia

Oconee Bells
MEMBER NEWS

Field Trip Cancellations: Occasionally, field trips must be cancelled or changed either for weather conditions or other reasons such as road closings. Such changes are sent out by email to all members by 7 AM the day of the field trip. If you do not have email access, please call the leader, co-leader, or recorder (whose phone numbers are listed on the schedule) to be sure that the walk is going to go as planned. Indoor programs are cancelled when Henderson County Schools are closed (see http://www.hendersoncountypublicschoolsnc.org) but NOT necessarily cancelled because of delayed opening.

For any change of address, email or telephone number, please inform Alan Graham, 42 Autumn Glen Court, Brevard, N.C., 28712. 828-884-3947 ——- adgraham@comporium.net.

President's Message

It seems like only yesterday that I became the President of WCBC. Now my reign is over, and this is my last Message from the President. I can't believe how fast the past two years has gone by. Thanks to all of you and the Board members for helping me survive!

A lot has happened during that time. The Board approved starting our website, wcbotanicalclub.org, which everyone seems to enjoy. We are fortunate to have several talented photographers among our members who are willing to share their wonderful pictures. Thanks to them, one of the nicest features of the site is that we can see pictures of the plants (and also birds and bugs!) we encounter even if we didn't go on that particular field trip. However, I think an even more important aspect of our website is that we can use it as a learning tool. Both the field trip “Posts” and the “Wildflower of the Week” pages contain valuable information that might have been missed during our walks. As webmaster I can now often remember genus names, if not necessarily the species, thanks to having to label many of the photographs I process each week! Also, if there is a special or unusual plant on a particular walk, like the Lycopodium tristachyum on the Blue Ridge Parkway Ridgeline trail, the Hydrophyllum macrophyllum we saw at Craven Gap, or the Packera millefolia, Polygala polygama, and Smilax laurifolia we saw at Eva Chandler Heritage Preserve, looking back at the photographs may help us remember the plant next time.

Our first field trip post was of the Doe River Gorge walk in April 2016. As of May 26, 2017 we've had 52 postings and welcomed 3,126 visitors to the site. To date, the post with the greatest number of viewers in
one day was the Corneille Bryan Native Garden field trip on April 21, 2017. We’ve had visitors from 81 different countries in all, although most of our viewers come from the United States, as you’d expect.

You may have noticed that we don’t post pictures of special or endangered plants on the website. That policy was approved by the Board out of concern that identifying the locations of some plants might lead to them being overwhelmed or stolen. I’m sure you have all encountered situations where a plant you remember seeing on a field trip in the past is now missing for some reason or other. In particular, now that photographs are often tagged with GPS coordinates, this policy seems wise.

I really enjoyed my term as President. You all welcomed me and helped make things run smoothly, and I know you’ll do the same for Susan and then Gayle during the next few years. I’ll be continuing as Webmaster for the club and look forward to posting more great pictures and information for you all to enjoy. See you out there!

Elf Orpine

by Lucy Prim

This past April 28 we went to Glassy Mountain in South Carolina. One of the plants we were most interested in seeing was the Elf Orpine, Diamphora smalii, a curious semi-succulent plant I don't think we ever see on our walks up in the higher elevations. When we got up on Glassy Mountain’s rock faces where we have in previous years seen Elf Orpine in abundance, there was disappointingly little of it to be found, and we found only one solitary flower. We did find many of the other plants we’d expect to find on a rock outcropping like this such as Minuartia uniflora, Appalachian Sandwort, which was in full bloom, its cheerful little white flowers tossing in the warm breeze. Talinum teretifolium, Fameflower, and Hypericum gentianoides, Orange Grass.

After exploring the mountain and having lunch at the top, we returned to the cars. Then those of us who were up for more exploring followed Penny, who knew about a place called “Boggs Rock” and had done
some great detective work to find where it was. It took some driving along winding country roads to find this place and we lost Joe and his crew for a bit. We pulled into a gas station to let Joe find us and away we went again, on and on until we came to a very inauspicious looking pull-off where we parked the cars, walked off the road a short way, ducking under some branches, and to our astonishment found ourselves on a wide flat rock with the most amazing displays of Elf Orpine spreading out in lovely sweeping crimson ribbons of red stems and red leaves, white Reindeer Moss in patches here and there, and the brightest green moss, all mingling and weaving in and out across the gleaming wet rock in the gayest profusion of color.

We carefully ventured out, taking care not to step on any of the plants or tread too heavily on the lichens and we bent down to peer into the pools formed in shallow depressions in the rock. What a strange little plant Elf Orpine is when you look at it closely, with its bright red stems and leaves like plump shiny red spheres.

Tim Spira, in his book “Wildflowers and Plant Communities,” has a wonderful section on the “Granite Outcrop Community” in which he describes most of the plants we saw that day. As he always does, Tim tells us fascinating tidbits about the plants and how they survive and fit into their habitat. He tells us how Elf Orpine inhabits a very special place on these rock outcrops, living in soil that is too shallow for almost any other plants.

Being an annual, it dies back each spring after it has spilled out its minute seeds onto the rock. How resilient the little seeds need to be, waiting there on the exposed rock, no soil or leaves to cover them and protect them from the blasting heat of the South Carolina summer sun. The seeds germinate in the fall or winter and grow into little rosettes which must withstand all the challenges of ice and snow and raw winds that sweep over the rock during the winter months. In the spring the rosettes send out three to four inch semi-succulent stems that can store water for times of drought.

In April and May the flowers open, and this is just when we were there to see them, at their peak moment of beauty. How lucky we were to be witness to that amazing scene, the shallow rock pools brimming with water, black pollywogs darting about amongst the tangled profusion of red stems, the round gleaming orbed leaves, and thousands of white flowers open wide to the sky.

References


In the last issue of Shortia I continued a series on the ethnobotany of the Cherokee people, examining their relationship with seven sacred plants. In this issue we will explore the third of these plants, Yellow-root.

Yellowroot (*Xanthorhiza simplicissima*, Marshall)

**Cherokee Name:** da lo ni

**Description:** The third sacred plant of the Cherokee is our native Yellowroot (*Xanthorhiza simplicissima*, Marshall), also known as Shrub Yellowroot and Brook-feather. The only member of the genus *Xanthorhiza*, it is a subshrub in the family Ranunculaceae and one of very few genera in this family with woody stems. A spreading shrub growing to 28 inches in height, with erect leggy stems, smooth bark ringed with leaf scars, and yellow inner bark. Spirally arranged 4 to 7 inch leaves are once- or twice-pinnate, divided into five-toothed leaflets, glossy and green, turning yellow to purple in autumn and at times persisting as a tan color throughout the winter. Small, five-petaled, star-shaped, purple-brown, inconspicuous flowers in crowded terminal clusters emerge from the upper portion of the unbranched stems. Fruit is a dry, pale yellow follicle. The bright yellow roots send out underground runners forming mat-like colonies of plants.

**Distribution and Adaptation:** Yellowroot is native to eastern North America, growing naturally from Maine to Florida and west to Ohio and eastern Texas. In the wild it is found in silty soils along sun-dappled stream banks. It can be cultivated as a groundcover in moist soils and will produce more vivid flowers and fall colors if grown in direct sunlight.

**Name Origin:** Both the common name and the genus name refer to the plant’s bright yellow roots (*xantho* meaning “yellow” and *rhiza* meaning “root”). The species name *simplicissima* refers to the “simple” or unbranched root.

**Cherokee Legend:** At the Museum of the Cherokee Indian in Cherokee, North Carolina, there is a plaque describing how plants became useful to man:

“Diseases were created long ago by animals in revenge for the abuses they suffered from man. When the plants, who have always been the friends of man, learned of the afflictions caused by the animals, they decided that they should counteract the evil designs. Each tree, shrub, and herb, down even to the grasses and mosses agreed to furnish a remedy for one of the diseases with the promise ‘I shall appear to help man when he calls upon me in his need.’ Thus did medicine originate, and every plant has a use if only we knew it.”
Plants like Yellowroot that grow along the edges of swiftly running water were watched over by Long Man Spirit. Long Man Spirit inhabited the East, so to appease him riparian plants were always harvested on the east or “spiritual” side. (This practice was adopted by early European settlers who came to believe bark gathered for medicinal purposes had more potency if cut from the east side.) Plants were always gathered at the “proper” time of year accompanied by chants and incantations specific to each plant. The bark of Yellowroot was harvested for medicine in spring and early summer when the medicinal qualities were strongest and in late summer and fall for dye when the yellow pigments were at their brightest.

The Cherokee used the “Doctrine of Signatures” to determine which plants were valuable and useful and for what purpose. This doctrine theorizes that plants exhibit the color, shape and smell similar to the disease they cure. For example, the roots and stems of Yellowroot are brilliant yellow and since yellow is associated with jaundice it would follow that this plant would heal the liver and gallbladder.

**Cherokee Ethnobotany:** The inner bark and roots of Yellowroot contain the alkaloid berberine whose bitter and astringent properties make it valuable for both medicine and dye.

**Medicine:** As an anti-inflammatory and natural antibiotic, Yellowroot was used by the Cherokee to treat many ailments, including ulcerated stomachs, colds, jaundice, piles, sore mouth, sore throat, colds, earache, cancer, cramps, cuts and wounds. The inner bark and roots were stripped during spring, laid out in the shade to dry, and then macerated into a pulp. This pulp was then boiled and made into a tea to be drunk as a general tonic or for various digestive problems. The pulp could also be used externally as a salve for chapped lips and dry skin or in liquid form as an eye/ear wash. At times the bark was placed directly on gums and lips to soothe mouth ulcers or chewed as a digestive aid. Powdered bark and stems were sprinkled on infected cuts and abrasions to help heal and protect.

**Dye:** Yellowroot was used as a dye for cloth and baskets and often added to war paint. The roots and stems were collected during the late summer months, sliced and placed in the shade to dry, and then stored in a cool, dry place. When making dye the sliced pieces were laid in a large kettle of water and boiled for 30 to 40 minutes, resulting in a brilliant yellow color. For basketry, sticks and grasses were soaked in the kettle until the desired color was reached for weaving. Dye for cloth was created in the same manner. For war or festival paint, the roots and stems were ground into a powder and then mixed with clay to form a paste.

**References**


When I was visiting my mother in South Carolina a few weeks ago, I saw a beautiful butterfly flitting about in her garden. It did not look familiar to me. It was black and white, with the shape of a swallowtail. Later, when I got home, I looked it up in my butterfly book and saw that it was a Zebra Swallowtail. And I learned a very interesting fact about this butterfly—The only food the Zebra Swallowtail caterpillars eat is the leaves from the Pawpaw tree! I asked my mother if she knew of any Pawpaw tree near her house and she said no she didn't. But there must be a tree somewhere, maybe down in the creek where she never goes because it is such a tangled thicket of bushes down there.

The Zebra Swallowtail is classified as a Kite Swallowtail. Of the 140 Kite Swallowtail species found worldwide, the Zebra Swallowtail is the only one to live in the temperate areas of the United States. The host plant, our Pawpaw, is the only member of its genus to live outside the tropics. How astonishing! And how fascinating to imagine what happened with these two species, how they separated from the rest of their kind over many millions of years, moving about in response to climate changes, especially the ice ages, and how Wooly Mammoths and Indians and early American settlers ate Pawpaws and spread the seeds far and wide over the Eastern United States.

The life of a Zebra Swallowtail begins when a female butterfly lays her eggs one by one on separate leaves of the Pawpaw, taking care not to lay them too close to each other since the caterpillars are cannibalistic. The caterpillars come in two color variations, one being a light green form and the other a dark form.
According to Weakley’s Flora, there are 12 species of Pawpaws, all endemic to Eastern North America. The two that we find here in our mountains are *Asimina parviflora* and *Asimina triloba*. *Asimina parviflora*, Dwarf Pawpaw, is a shrub, rarely growing up to 5 meters tall, with small flowers 1–2 cm wide. We had hoped to see an example when we went to Glassy Mountain this spring, but we never did find it. *Asimina triloba* is a good bit larger, growing up to 15 m tall with flowers 2–3 cm wide. Pawpaws send out lots of little trees from the roots of the parent tree, so when out in the woods we might see a thicket of Pawpaw trunks growing together in a colony.

We rarely see Pawpaws on our outings, but when we do see them, it seems to be on our walks down the escarpment rather than up in the higher elevations where we usually go. I wonder if we may walk past them now and then, perhaps mistaking a Pawpaw for Black Gum, *Nyssa sylvatica*. A good way to tell them apart is to notice that each side of the Black Gum leaf forms a lovely concave curve as it leads to the tip, while the sides of the Pawpaw leaf leading to the tip are straighter. Another quick way to identify a Pawpaw is to press a little piece of the leaf and smell it. The Pawpaw leaf has a very stinky smell, while the Black Gum has a nice fresh leafy smell.

My sister Sarah has lots of Pawpaws growing in her woods in upstate South Carolina. They grow in little thickets near the creeks. The strange, dark purplish flowers are usually so high up in the branches we have trouble getting a good look at them. But if we can grab hold of a branch and pull it down we can see the curious little flowers and smell the strange odor. Sarah never gets any of the fruit. She suspects animals eat it up before she has a chance to pick it. But I imagine the ancestors of these Pawpaws nourished our
family long ago, since this piece of property has been in our family a very long time.

Carroll Toole’s friend David grew up in West Virginia, a state known for its Pawpaws. I asked him if he’d had experiences with Pawpaws when he was growing up. He got excited and told me he hadn’t thought about Pawpaws in a long time. He told me he used to love Pawpaws when he was a boy. He and his friends used them as weapons. They’d throw them at each other. He said they were hard and it hurt if you got hit, but it didn’t hurt as much as a rock would. He also said they tasted very good and he really liked to eat them with peanut butter.

References


Menziesia pilosa or Rhododendron pilosum?

by Penny Longhurst

In the last issue of Shortia I wrote about ITIS (the Integrated Taxonomic Information System), the society that strikes terror into every botanist’s heart! I hadn’t heard of ITIS before I became a WCBC Board member. It is the authority that the Board endorsed a few years ago for our plant botanical names. Thus, over the past few years many of the botanical names in our plant lists have been changed by our long-suffering Master Recorders to be currently acceptable. You may be interested to read an article by Alan Weakley that was reprinted in the summer 2004 issue of Shortia where he bemoans how the botanical names of asters changed, seemingly, overnight! I think we are all confused sometimes, even 13 years later.

A couple of years before I joined the club I went on a field trip on the Flat Laurel Creek and Sam Knob loop and was introduced to the Minniebush. I dutifully scribbled the name down, not really knowing how “Minnie” should be spelled or which plant it was, and immediately forgot about it. Then, after I joined the club and started going on field trips, I discovered from the plant lists that Minnie was really Menziesia pilosa. What a great name! Now the hard part was how to recognize her.

We encounter Menziesia pilosa most often along the Buck Springs Nature Trail and Shut-in Trail. Most of us know that from a distance the Minniebush looks very like a native deciduous azalea. Closer examination reveals that the leaves have a distinctive white tip and are covered with long soft hairs (pilose). When flowering, there is no mistaking that it looks more like a Vaccinium than an azalea (see photograph).

The genus Menziesia, consisting of 9 species in the family Ericaceae, was named after Archibald Menzies (1754–1842), a Scottish botanist and surgeon. Dr. Menzies was a ship’s surgeon on several voyages, including accompanying Captain Vancouver in the Discovery on an expedition around the world. Menzies indulged his passion for botany by collecting plant specimens, including the first Monkey Puzzle tree seeds (Araucaria araucana) brought to Europe from Chile. Menzies was probably never in the Southern Appalachians, but visited the Pacific Northwest on at least two different occasions and presumably returned with the Western version of Minniebush, Menziesia ferraruginea (Fool’s huckleberry, mock or false azalea), or even an Asian variety.

According to Britton and Brown (1913), our Minniebush was originally known as Azalea pilosa and then named Menziesia pilosa in 1805. However, recently several publications have reported that all Menziesia are genetically related to members of the Rhododendron family, especially Rhododendron vaseyi. So our initial visual identification is not all wrong. In fact, Weakley (and also Wikipedia!) now list Minniebush as Rhododendron pilosum, but ITIS and the USDA still show Menziesia pilosa as the accepted name. We'll have to keep an eye on ITIS and see when or whether they change Menziesia Pilosa to Rhododendron pilosum, but I, for one, will never call it Rhodiebush!
Photograph of Minniebush shot on Frying Pan Mountain field trip, May 2016

References:


Charters, M.L.: Calflora.net


Book Review

Pawpaw
In Search of America's Forgotten Fruit
by Andrew Moore, Chelsea Green Publishing, 2015

Reviewed by Lucy Prim

When I got interested in Pawpaw trees this spring I noticed there was a book totally devoted to this subject! It is 264 pages long. Who would have thought there would be so much to know about Pawpaws! I didn’t expect to enjoy this book as much as I have. But amazingly enough, it is a very entertaining sort of book. Most of it is about attempts to find and develop Pawpaws that are very tasty and have few seeds, the sort of Pawpaw that could be marketed successfully. This search for the best Pawpaws to eat makes for a very entertaining story. In addition to that, all sorts of fascinating tidbits concerning Pawpaws are scattered throughout the pages, some of which I have listed below:

The men on Lewis and Clark’s expedition lived for three days on Pawpaws when their provisions ran out. It was recounted that “the party appear perfectly contented and tell us they can live very well on the Pawpaws.”

No other native fruit in the continental US is as big as the Pawpaw.

Pawpaws never ripen if you pick them before they are ready to fall. They just turn black and rot. They tend to ripen when the goldenrods begin to bloom.
Wild patches produce little to no fruit.

Pawpaws need to cross-pollinate with a tree that is genetically different. (This helps explain why the wild patches have fewer fruits, those trees being mostly clones of each other.)

The word *Asimina* comes from the Indian Powhatan word “Assimin.”

Many Pawpaw seeds have been found at certain American Indian archaeological sites.

A very large thicket of Pawpaws grew right beside the Jamestown settlement.

Kentucky State University has a program dedicated to researching the Pawpaw, exploring the feasibility of small farmers switching from Tobacco farming to Pawpaw farming.

The chemicals in Pawpaws, Annonaceous acetogenins, are said to kill mosquito larvae and head lice and to have anti-carcinogenic properties. (The author doesn’t say he believes these claims, he just mentions them.)

There is more Pawpaw research going on in other countries than we have here in the US. South Korea is growing millions of Pawpaws, attempting to determine whether they possess beneficial medicinal properties.

The most entertaining parts of this book are the author’s descriptions of his travels back and forth across the Pawpaw growing areas of our country, talking to all sorts of people involved with Pawpaw research and farming. He tastes lots of Pawpaws and makes comments about how tasty (or not so tasty) they are. He has a good way of telling a story. I found myself smiling again and again while reading this book, and this fall when the Pawpaws get ripe, I am determined to try to find one for myself to see what it tastes like. I hope it will be a tasty one with few seeds!
The purpose of the Club is to study the plants of the southern Appalachian Mountains and the Southeast through field trips and indoor meetings. **Membership is open to all.** Individual/family memberships are $15. New members joining from the period July 1-December 31 pay $8. All memberships are renewable on January first of each year. Send dues to Alan Graham, 42 Autumn Glen Court Brevard, NC 28712.

Please send me Botanical Articles or stories or tips on plant identification that you think would be good to include in one of our SHORTIAs. If you see anything that needs correction or if you have additional information about a subject or perhaps a personal experience related to a subject, send that in too, and I can include it in a future SHORTIA. Please try to get this to me by August 25 to get it into the Fall issue.