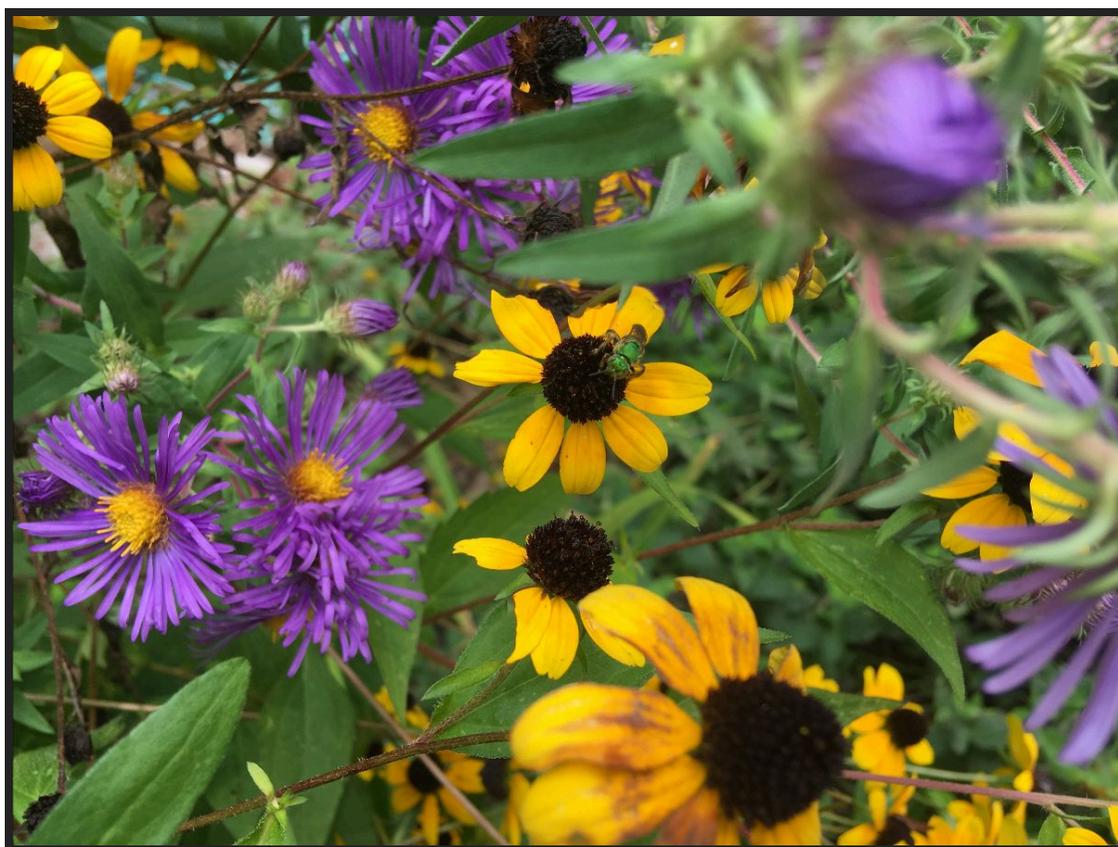


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*New England Asters (Symphyotrichum Novae-angliae) with
Brown-Eyed Susans (Rudbeckia triloba) K.Patrie*

September 2020

SEEDLINGS

What more substantial service to conservation than to practice it on one's own land?--Aldo Leopold



Sea Oats (Chasmanthium Latifolium) K.Patrie

Dear Friend,

Summer's window is slowly closing. Soon we won't have the luxury of being outdoors every day. I have taken many photos of my gardens and the preserves I have been frequenting, so I have a reminder of the loveliness of summer sun and native greenery and blossoms.

Looking forward, our upcoming September 23 program with Dr. Dave Warners will feature native shrubs and trees and their importance to wildlife. This will be our first public meeting held in an electronic format on the Zoom app. All the information you need about how to register and participate is in this letter.

I am excited about this new phase of our outreach! I encourage you, if you haven't done so already, to download the ZOOM app onto your computer, laptop, or smartphone and familiarize yourself with how it works. Try out a session/meeting with a friend and see how it goes. Then

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hope to "see" you there!



Stay Safe, and Be Well,

Kim Patrie

Editor

*Downy Sunflower
(Helianthus mollis) K.Patrie*



Native Shrubs and Trees

The Rodney Dangerfields of Residential Landscaping

**Dr. Dave Warners, Professor of Biology, Calvin University &
Plaster Creek Stewards Director**

Using native plants in residential landscaping has been catching on, assisted by the dedicated efforts of groups like the Native Plant Societies, the Native Plant Guild, Wild Ones (including the Kalamazoo Area chapter!), and others.



Yet, often when people consider the possibility of including native plants in their own yard, visions of Purple coneflower, Butterflyweed, Black-eyed Susans, and Coreopsis come to mind, along with the butterflies and bees that will benefit from these plants. However, plants don't necessarily need to be showy to promote biodiversity. In fact, you may do more good for local biodiversity by planting a single oak tree than by planting a whole garden full of perennials.

highlight why native shrubs and trees are such important components of biodiversity-friendly residential landscapes. With stories and photos he will also spotlight some of the often overlooked native woody species he has found to work really well in urban and suburban yards.

Young sassafras trees (*Sassafras albidum*)

K.Patrie



Local Native Garden: Kalamazoo Loaves & Fishes

Kim Patrie *Photos: Carol Cormack of Loaves & Fishes*

One year ago this month, Kalamazoo Area Wild Ones, Monarch Joint Venture and Kalamazoo Loaves & Fishes collaborated to install a pollinator garden and Monarch Waystation at the Loaves & Fishes building at 901 Portage Street (corner of Jackson St.) in Kalamazoo. The planting was supervised by Steve Allen of Geum Services, Inc.

The garden is doing well, and bringing enjoyment and beauty to the community. A bus stop at one end of the garden enables bus patrons to enjoy the green vistas and vibrant wildlife in the garden, and Carol Cormack of Loaves & Fishes reports that they saw many butterflies and bees this summer in the garden.

Funding for the garden was provided by Monarch Joint Venture, Kalamazoo Loaves & Fishes, and the Nancy Small Memorial Fund.

If you're in town sometime soon, stop by and take a look at the garden in it's late summer cloak. These photos were taken in June, before many of the plants had blossomed.





Sleuthing the Mystery of Chrysalis Colors

Ilse Gebhard

Having determined that the green or tan color of black swallowtail chrysalises has nothing to do with the sex of the butterfly, it occurred to me that it might have to do with camouflage. Do larvae take their cue from the surrounding and form green pupae in summer and tan pupae in fall?

First let me explain that black swallowtails have 2 broods in Michigan. The adults emerge in spring from pupae that overwintered, the 1st brood. They reproduce, resulting in a 2nd brood. The 2nd brood also reproduces but metamorphosis is stopped at the pupal stage, which overwinters. Hence you have chrysalises that form in mid-summer and a 2nd set in fall.

To test my hypothesis I collected black swallowtail larvae and placed them in quart size canning jars to raise. I placed the jars in either brown bags covering the lower 2/3rds of the jar or brown bags lined with green tissue paper again covering the lower 2/3rds of the jar. I was hoping this would simulate summer and fall leaf colors.

The jars were placed on a table where they experienced the same temperature and same amount of light. I did this for a group that I collected in late June through mid-July and another group collected in September. I also collected a group in October which I put in the same location but with no bags.

The data and interpretation of this rather crude experiment are below.

Summer:

Green bags: 10 green pupae, 2 brown pupae

Brown bags: 9 green pupae, 3 brown pupae

Clearly green pupae predominated from either color bag in summer. So additional factors other than color may be at work. But the green color would provide better camouflage.

Green bags: 4 green pupae, 3 brown pupae

Brown bags: 3 brown pupae

No bag: 3 brown pupae

Unfortunately the sample size is a bit smaller than for the summer cohort but brown pupae predominated overall in fall, making for better camouflage. There is a slight hint that surrounding green may have some influence on pupal color since the green to brown ratio was 4 to 3 from the green bag in fall.

Other cues that larvae might hone in on could be day length, temperature, and day and night temperature gradients. All things that could be tested in a proper facility but not on the kitchen table.

Plant of the Month: Bottlebrush Grass

Laura Shaw *Photos: K.Patrie*



Early fall is a good time to see Bottlebrush Grass (*Elymus hystrix*) along the Kal-Haven Trail between 10th St. and F Avenue and in other parks in the Kalamazoo area.

The seed heads of this plant begin as pale green inflorescences which turn to the color of straw in late summer. Despite the resemblance to a bottlebrush, the spikelets are not sturdy enough to scrub with, as the ripened seeds are easily dislodged from the stem.

Bottlebrush grass at woodland edge.

Bottlebrush Grass is a perennial native of Eastern and central US woodlands and Eastern Canada. It thrives in part sun to shade, in dry, moist or average soil. Reaching heights of 2.5 to 4 feet, it grows in clumps which spread 1 to 1.5 feet. Its characteristic spikes and hairless, alternate, arching leaves (1/2" wide and up to 12" in length) are seen in woods, meadows, clearings and along river banks.

seed) is surrounded by long bristles (awns). Pollinated by wind, *Elymus hystrix* is self-compatible, meaning that it can reproduce using its own pollen.



Bottlebrush grass is sometimes cultivated as a low maintenance ornamental grass valued for its textural beauty and unusual shade and drought tolerance. It is also useful in woodland restoration and erosion control. Not considered aggressive, it spreads by reseeding itself, often forming small colonies of several plants.

The Northern Pearly Eye butterfly (*Enodia anhedon*) lays its eggs on Bottlebrush foliage, which is attractive to various moth caterpillars as well. This grass may also be a summer host to aphids and leaf hoppers. In fall its seeds provide food for the White-footed Mouse, other small mammals and songbirds.

Bottlebrush grass closeup

Northern White Cedar: My Favorite Evergreen

Ilse Gebhard *Photos: Russ Schipper*



On the Northern White-Cedar, *Thuja occidentalis* in the Cypress family, that I can see from my office window. As with other evergreen trees, they do not keep all their foliage forever. Instead, they shed a few leaves at a time, mostly in the fall. But it seemed too early for the flattish, scale-like leaves to turn brown. By the way, tiny resin glands on the underside of the leaves give them the aromatic smell.

Time to get the binoculars and take a closer look. To my surprise it was not brown leaves that I was seeing but rather small cones. There probably had been some in previous years and I missed them – a good reminder that while we see things with our eyes, we also need to see them with our consciousness.



White Cedar habitat, left

Northern White-cedar as per *Michigan Trees* by Barnes and Wagner is a small to medium-sized tree that is shade tolerant, slow-growing and relatively short-lived. Its bark is fibrous and shreddy and the trees often have secondary trunks, dividing at the base.

It is unclear to me what they mean by relatively short-lived as a web page by the US Forest Service (USFS) states the following: Northern white-cedar reaches ages in excess of 800 years. Two trees on the Niagara Escarpment in southern Ontario were dated at 935 and 1,032 years.

According to *Michigan Trees* Northern White-cedar is abundant in the Upper Peninsula and common in the Lower Peninsula. It prefers cold, alkaline swamps and stream borders but also occurs in upland areas under certain conditions but not in acidic soils. It can form fairly dense, pure stands, an example of which can be seen from one of the trails at Pierce Cedar Creek Institute in Barry County.

As to the cones that caught my attention, cone buds form in autumn and expand the following spring. The trees are monoecious, meaning that both male and female cones are found on the same tree, and are wind-pollinated from late April to June. Cones are fully grown by mid-August, ripen in August and September, and open 7 to 10 days after ripening.



According to the USFS web site, Northern White-cedar begins producing cones as young as 6 years of age and large quantities by age 30. The best production occurs after age 75. Good crops occur at 2 to 5-year intervals with intervening years having fair to medium crops.

White cedar cones

Our trees were planted by the previous owner about 50 years ago as part of a wildlife package. Maybe I missed the cones in years past because there were so few.

Pine Siskins eat the seeds of Northern White-cedar and Red Squirrels feast on the cones on small branches that they clip off. Swainson's Thrushes and Red Squirrels are known to use strips of the stringy bark in their nests. But the greatest value to birds is safe nesting habitat in its dense stands. Deer browse on it heavily in winter and prevent the establishment of new trees. One thing I noticed is the difference in height of the browse line between our trees and the ones you can see in the UP. In the UP the browse line is much higher up the trunk because of the greater snow depth.

Michigan's Northern White-cedar Big Tree is on South Manitou Island where there is grove of old growth that dates back over 500 years. We enjoyed back-packing twice on the island in the mid/late 1980's and admired these giants that have withstood many a Lake Michigan storm. Humans have found many uses for Northern White-cedar, one being their use by native Americans for birchbark canoe frames and ribs. I can envision them stopping at South Manitou Island as they plied their large canoes on the Great Lakes.

What's Happening at the National Office

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early October. **Deadline for October issue is October 1.**

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Ilse Gebhard

To share comments and suggestions, simply reply to this email.

We look forward to hearing from you!

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