



PRAIRIE BREEZE

THE LIVING PRAIRIE MUSEUM NEWSLETTER

FALL 2016

INSIDE THIS ISSUE:

- Our Herbarium on Canadensys 1
- The Prairie in Fall Colour 2
- Native Wildflower Plantings... 3
- Upcoming Events 4

FALL INTERPRETIVE CENTRE HOURS

Sundays
10 - 5 pm

Until October 9th

UPCOMING EVENTS

Volunteer Seed
Collecting

See p. 4

Get the latest news here:
friendsoflivingprairie.org



/LivingPrairie
Museum



@livingprairie



@livingprairiemuseum

Our Herbarium on Canadensys

Our plant specimens are now available to the world. Our student technical assistant, Ka Man Choi, worked hard to update our herbarium, create a new data base for our specimens, and make this data available to anyone through Canadensys.

Canadensys is a huge, online network of species data managed by the Université de Montréal Biodiversity Centre. It is a solution to the problem of data being isolated in natural history collections. Large amounts of biological information are hidden in museum basements, when they could be helping researchers around the world gain a better understanding of ecosystems, species abundance, and biodiversity. This is why Canadensys is so important; it provides a platform where this information can be shared world-wide, greatly increasing the breadth of information available to researchers.

Our herbarium collection now contains 355 plant specimens. Of those, 82 were newly collected by Ka Man last summer. These specimens offer a glimpse of the flora native to the prairie region, as well as some of our more

prominent invasive species.



Pressed dotted blazing star.

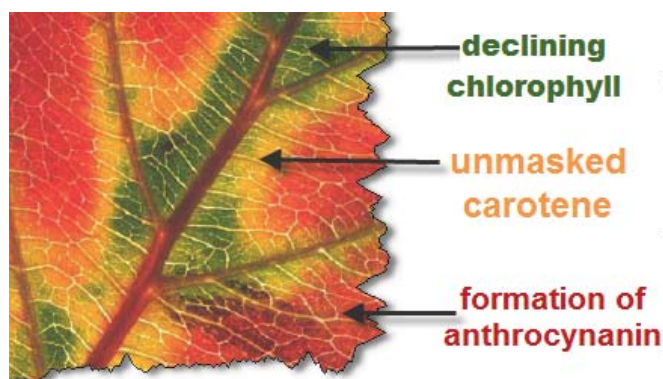
One can never know when these specimens will be needed. Biological collections are irreplaceable records of life on earth, and can help us better understand where and how that life persists. It can also tell us about our impacts on other species by providing a record of expansions or declines. Specimens can even serve as a reservoir of genetic information that can be sampled in the future.

We're very excited to have our herbarium available to the scientific community.

The Prairie in Fall Colour

As the season changes, so does the colour of the leaves on our prairie plants. But how, and why, do deciduous leaves change color in fall?

Leaves get their brilliant green colour from a type of pigment called chlorophyll. Chlorophyll enables a plant to photosynthesize by absorbing sunlight to transform CO₂ and H₂O into carbohydrates. The dark green color of chlorophyll masks other pigments that are present in the leaf, like xanthophylls (yellows) and carotenoids (oranges). During the growing season, chlorophyll is constantly being replaced. It breaks down with exposure to sunlight, like a flag fades in the summer sun. But as we are all experiencing now, hours of sunlight do not remain constant. Declining daylight hours stimulate the plant to begin hardening off, which influences leaf colour.



<http://vivacoloring.dvrlists.com/>

The colour of leaves begin to shift with changes in carbohydrates. Plants are compartmentalizing experts that can wall off damage from injury, pests, and disease. As daylight hours shorten, they begin to build walls (abscission layers) between the leaf and branch in order to drop leaves before winter. The abscission layer clogs the vascular tissues, stopping the flow of carbohydrates produced by the leaf to the roots for storage. It also clogs the pull of water from the roots to the leaf. These blockages make replacing chlorophyll increasingly difficult, so the

xanthophylls and carotenoids shine through. This process is quite prominent in the yellows of birch and poplars, and the oranges of maple leaves. What about the reds and purples of sumac and dogwood leaves? Anthocyanin pigments responsible for darker colors are stimulated into production by surging sugar concentrations, trapped in the leaves due to abscission layers. This elegant process has sealed off the cut that will sever the leaf from the branch, and has produced a magnificent color display.

Pigments and declining sunlight are not the only factors. Seasonal temperatures can also influence leaf colour. Early frost weakens bright reds and purples, as frost damages the chemical reactions that produce anthocyanins. But cool, above freezing temperatures intensify color displays. The species of tree and soil pH are also important factors – think of the famous display of sugar maples in eastern Canada. Lastly, sufficient soil moisture and overcast days also boost fall colors.

The question persists: Why change colour? The tree spends energy to produce anthocyanins, so there is a cost. What are the benefits? Some experts hypothesize the bright fall colors warn insects that the plant is robust. It has energy to spare, advertised through lots of dazzling colors that encourage pests to move on to a drab, weaker plant that will have fewer defenses. Perhaps anthocyanins act as sunscreen to inhibit chlorophyll destruction so the plant can photosynthesize just a bit longer. Maybe the darker leaf colors limit water loss from the leaf during dry fall periods. Or, might the higher sugar content related to anthocyanins in leaves help prevent frost injury to leaf tissue? Questions to consider on a beautiful cool day while enjoying autumn, the season writer William Cullen Bryant calls "...the year's last, loveliest smile."

Native Wildflower Plantings: Seeds and Pollinators

If you've stopped by the museum this summer, you may have noticed our new plantings next to the north side of the interpretive centre. These new beds contain tall grass prairie wildflowers that will act as a source of seed, and as resources for pollinators.



Getting started in spring.

These two flower beds had been vacant for a couple of years in preparation for planting. Planting native species can be an exercise in frustration if the soil is not weed-free, so we spent two seasons weeding, tilling, and edging. Weedy beds may lead to native perennials being out-competed by fast-growing annuals. Perennials are small in their first year, as energy is directed to root production to survive the winter. By being patient and working the soil, we've provided our flowers with the best opportunity for survival.

We've planted a variety of wildflowers that will become excellent sources of native seed. Many of the locally collected species we planted can be hard to find or difficult to propagate. By planting close to home, we've created an important source of seed that we can monitor more easily. These beds will allow us to increase the diversity of our seed mixes used in restorations.

Our flower beds will also be a boon to our local, wild pollinators. The species we've planted will provide pollen and nectar to a host

of bees, flies, beetles, butterflies, and moths, from early spring to early fall. The leaves of the flowers will serve as food and shelter for larval insects, such as caterpillars. The bare soil around the bases of the plants will be good real estate for ground-nesting solitary bees, and the dry stems and thatch will be great for overwintering insects.

Here are some of the species we've established in our new native wildflower beds:

Prairie crocus, whorled milkweed, bottle gentian, pink-flowered onion, false dandelion, upland white aster, dotted blazing star, meadow blazing star, bergamot, Flodman's thistle, smooth fleabane, blanket flower, black-eyed Susans, purple prairie clover, three-flowered avens, smooth aster, many-flowered aster, white cinquefoil, and long-fruited anemone. We have plans add other species, such as wood lilies.



A bottle gentian blooming in our new bed. It was carefully grown in a pot for a full year by Naturalist Services Branch staff before being planted.

Much of what we planted has been doing extremely well. We've been careful to keep up with weeding, and we made sure to water during hot days. Our greatest challenge seemed to be grazing by deer! If all goes well, we should see a beautiful canvas of prairie colours next summer.

Thank you!

Our 10th annual Monarch Butterfly Festival was a huge success. We had over 1100 guests in four hours, which is a new record for the event.

This event isn't possible without our volunteers. You tough it out in the heat, rain, and non-stop activity. Thank you!

We had a full house for our special guest speaker, Luke Wonneck of AWES. Luke presented about a variety of beneficial insects, how AWES is working to create habitat, and shared some great resources.

MUSEUM STAFF

Sarah Semmler
Lois Grieger
Kelly Ferrand
Nick Moore



Thank you for receiving your newsletter electronically.

UPCOMING EVENTS

Volunteer Seed Collecting

Join us as we harvest native seed in various prairie habitats. Events take place from **6:30 - 8:00 PM**, weather permitting. Collecting seeds helps us with our restoration efforts, while also giving you an opportunity to gather prairie seeds for your own gardens.

September 15 - Little Mountain Park. Meet in the large north parking lot off of Farmer Ave.

September 21 - Living Prairie Museum. Meet in the Interpretive Centre.

October 3 - Little Mountain Park. Meet in the large north parking lot off of Farmer Ave.

October 5 - Assiniboine Forest. Meet in the parking lot at Chalfont and Grant Ave.

Please call 204-832-0167 to register in advance.

Watch our website, facebook, and twitter posts for cancellations due to weather.

Watch for updates in January!

Winter is grand at the Living Prairie Museum.

Watch for updates on our new line-up of Winter Speaker Series presenters.

Our Snowshoe Sundays will return with the winter snow.

Don't worry about the cold, our biofuel pellet stove will keep the interpretive centre cozy.



LIVING PRAIRIE MUSEUM

2795 Ness Avenue Winnipeg, MB R3J 3S4

Tel: 204-832-0167 Fax: 204-986-4172 E-mail: prairie@winnipeg.ca

<http://www.winnipeg.ca/livingprairie>

www.livingprairie.org

www.friendsoflivingprairie.org