



Missouri Native Plant Society Hawthorn Chapter Newsletter

Volume 26, Number 4
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The Hawthorn Chapter of the Missouri Native Plant Society Newsletter is published monthly. Send submissions to:

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Future Activities

Watch email for notices of impromptu hikes. **Please offer suggestions of your favorite walking destinations** to Paula or Becky; we will get them posted as soon as weather permits. **PLEASE call or email Becky 657-2314 or Paula 474-4225 as soon as you know you will attend an activity.** We don't want to leave anyone behind if weather or plans change. Leave your name and PHONE # if you leave a message. If you do not communicate by email and have a suggested destination or want notice of a walk, call Paula 474-4225 to get on the phone list. Carpool meeting place, MDC Research Center, is on College just north of Stadium.

If you have potted plants you have over-wintered for booth sales, it would be good to bring them inside a sunny window to green them up.

Randall Clark's wildflower walks. Three Creeks, Devil's Ice Box parking lot, every Wednesday at 5:30.

2 April Saturday: Serviceberry and other spring flowers at Baskett Area, east of Ashland. Meet at MDC Research Center at 1pm for carpools. Call Becky now if you don't have email and you want to participate.

9 April Saturday 10 am – 2pm: Plant Sale at Bradford Farm. Be there at 9 for set-up. Bring potted plants ready for sale. This is always well attended: Call Paula to confirm your time to volunteer.

17 April Sunday Earth Day Columbia, Noon to 6pm. Be at the booth site [space 4&5] on the south side of Elm just east of the University gates [near Peace Park] between 9 and 10 am for set up. Bring potted plants ready for sale. Cars must be off the street by 11. This is always well attended and fun: Call Paula to confirm your time to volunteer.

21 April Thursday: Lunch with Native Plant enthusiasts. 11:30 RagTag [Uprise] 10 Hitt St just south of Broadway.

23 April Graham Cave State Park. Woodland and glade spring flowers. Meet at MDC Research Center for carpools to leave at 9 am. Bring water, snack, camera, sunhat and any other personal comforts. Late lunch at Crain's store in Williamsburg.

24 April thru 7 May impromptu mid-week: Shooting stars at 3-Creeks CA. Call Becky if you don't have email and you want to participate.

30 April -2 May State Meeting Joplin. Field trips to Diamond Grove Prairie and Wildcat Glade. See Petal Pusher for details.

Calendar continued on Page 2

Call Paula for more information 474-4225

Thanks to Nadia Navarrete-Tindall for ther submission to the newsletter. The more diversity I get for submissions, the richer will be the content of this newsletter. Everyone can write, just go for it! Editor

BIG THANKS to Doug Miller for reviving the web site. Hopefully all members will visit our website to see the exciting information available to the public.

Use it as a tool to invite new members.

SAVE TREES, SAVE NPS MONEY. SIGN UP FOR THE EMAIL NEWSLETTER.

Jonathan Drori: Every pollen grain has a story

http://www.ted.com/talks/lang/eng/jonathan_drori_every_pollen_grain_has_a_story.html#

[Editor's note: This article is the **transcript of a short video** available for viewing by using the link under the title.]

“Thank you. I have two missions here today. The first is to tell you something about pollen, I hope, and to convince you that it's more than just something that gets up your nose. And, secondly, to convince you that every home really ought to have a scanning electron microscope. (Laughter) Pollen is a flower's way of making more flowers. It carries male sex cells from one flower to another. This gives us genetic diversity, or at least it gives the plants genetic diversity. And it's really rather better not to mate with yourself. That's probably true of humans as well, mostly.

Pollen is produced by the anthers of flowers. Each anther can carry up to 100,000 grains of pollen. So, it's quite prolific stuff. And it isn't just bright flowers that have pollen; it's also trees and grasses. And remember that all our cereal crops are grasses as well.

Here is a scanning electron micrograph of a grain of pollen. The little hole in the middle we'll come to a bit later. But that's for the pollen tube to come out later on; a very tiny tube. So, that is 20 micrometers across, that pollen grain there. That's about a 50th of a millimeter. But not all pollen is quite so simple looking.

This is Morina. This is a plant which I've always thought to be rather tedious, named after Morin, who was an enterprising French gardener, who issued the first seed catalog, actually, in 1621. But anyway, take a look at its pollen. This is amazing, I think. That little hole in the middle there is for the pollen tube. And when the pollen finds its special female spot in another Morina flower, just on the right species, what happens? Like I said, pollen carries the male sex cells. If you actually didn't realize that plants have sex, they have rampant, promiscuous and really quite interesting and curious sex, really. (Laughter)

My story is actually not about plant propagation, but about pollen itself. So, what are pollen's properties, I hear you ask? First of all, pollen is tiny. Yes we know that. It's also very biologically active, as anyone with hay fever will understand. Now, pollen from plants which are wind-dispersed, like trees and grasses and so on, tend to cause the most hay fever. And the reason for that is, they've got to chuck out masses and masses of pollen to have any chance of the pollen reaching another plant of the same species.

Here are some examples. They're very smooth if you look at these pictures of tree pollen that is meant to be carried by the wind. Again, this time, sycamore, wind-dispersed. So, trees, very boring flowers, not really trying to attract insects. Cool pollen though. This one I particularly like. This is the Monterey Pine, which has little air sacks to

Activities Calendar 2011 Continued

9 May Monday Regular Meeting 7:00pm at the Unitarian Church, 2615 Shepard Blvd. Lea Langdon will present the program on edible wild plants. See article page.

14 May USFS/Paris Fork [Callaway Co]: orchids and other woodland spring flowers. Meet at MDC Research Center for carpools to leave at 9 am.

21 May Clifty Creek NA [Maries Co]: A little off the beaten path. A real treat for the adventurous. Meet at MDC Research Center for carpools to leave at 8 am. Bring camera, water, snack, sunhat, any other personal comforts. Lunch after at Native Stone Winery south of Prairie Home.

4 June Saturday: Jean Graebner's prairie planting in Rocheport. Meet at MDC Research Center for Carpools to leave at 9 am. Visit McDermott Memorial planting [do some weeding] in park in Rocheport on First Street. See Jean's prairie about 10:15; we can talk about habitat reconstruction and challenges. Bring lunch fixings [hot dish to a large cut-up sub, fruit or salad] to share. If you want to do only the planting tour and potluck, you may contact Jean at Graebner@centurylink.net.

16 June Thursday afternoon: Quail & Native Plants Bradford Farm. 4 -8 pm. Set up at 3 pm. Please volunteer to help with booth.

10-12 June Friday-Sunday: State Meeting based at Ironton. Visit restoration efforts at Johnson Shut-ins and near-by fens – probably see grass pink orchids and Hine's emerald dragonfly. See Petal Pusher for details.

25 June: Mule Shoe Conservation Area [Hickory Co] small fens, dolomite glades, John George [member and MDC Regional Naturalist] leader. Meeting time TBA.

23 July Mark Belwood Prairie restoration near Marshall Jctn. Meet at MDC Research Center for Carpools to leave at 8 am. Bring camera, water, snack, sunhat, any other personal comforts. We can talk about habitat reconstruction and challenges. Lunch at Glenn's [Cajun] Restaurant in Fredrick Hotel in Boonville. See article

20 August Saturday Coakley Hollow and Ozark Cavern NA [Camden Co]. Watch for details.

9-11 Sept, Friday -Sunday: State Meeting Sedalia: Most outstanding prairies in the region. Watch Petal Pusher for details.

24 September Saturday: HaHaTonka State Park. Watch for details.

8 October Fall Color walk. Send us your idea for a destination. Watch for details.

15 October Chestnut Festival 10am to 4 pm. Be there at 9am for set-up. Bring potted plants ready for sale. This is always well attended and fun: Call Paula to confirm your time to volunteer.



Becky, Lea and Paula help at booth. [VMS photo]

make the pollen carry even further. Remember, that thing is just about 30 micrometers across.

Now, it's much more efficient if you can get insects to do your bidding. This is a bee's leg, with the pollen glommed onto it from a mallow plant. And this is the outrageous and beautiful flower of the mangrove palm. Very showy, to attract lots of insects to do its bidding. The pollen has little barbs on it, if we look. Now, those little barbs obviously stick to the insects well, but there is something else that we can tell from this photograph, and that is that you might be able to see a fracture line across what would be the equator of this, if it was the Earth. That tells me that it's actually been fossilized, this pollen. And I'm rather proud to say that this was found just near London, and that 55 million years ago London was full of mangrove palms. Isn't that cool? (Laughter)

Okay, so this is another species evolved to be dispersed by insects. You can tell that from the little barbs on there. All these pictures were taken with a scanning electron microscope actually in the lab at Kew Laboratories. No coincidence that these were taken by Rob Kessler, who is an artist. And I think it's no coincidence that someone with a design and an artistic eye like him that has managed to bring out the best in pollen. (Laughter)

Now, all this diversity, means that actually you can look at a pollen grain and tell what species it came from. And that's actually quite handy if you maybe have a sample and you want to see where it came from. So, different species of plants grow in different places. and some pollen carries further than others. So, if you have a pollen sample then, in principle, you should be able to tell where that sample came from. And this is where it gets interesting for forensics.

Pollen is tiny. It gets on to things, and it sticks to them. So, not only does each type of pollen look different, but each habitat has a different combination of plants, a different pollen signature, if you like, or a different pollen fingerprint. By looking at the proportions and combinations of different kinds of pollen in a sample, you can tell very precisely where it came from. This is some pollen embedded in a cotton shirt, similar to the one that I'm wearing now. Now, much of the pollen will still be there after repeated washings. Where has it been? Four very different habitats might look similar but they've got very different pollen signatures. Actually this one was particularly easy. These pictures were all taken in different countries.

But pollen forensics can be very subtle. It's being used now to track where counterfeit drugs have been made, where banknotes have come from, to look at the provenance of antiques and see that they really did come from the place the seller said they did. And murder suspects have been tracked using their clothing, certainly in the U.K., to within an area that's small enough that you can send in tracker dogs to find the murder victim. So, you can tell from a piece of clothing to within about a kilometer or so, where that piece of clothing has been recently, and then send in dogs.

And finally, in a rather grizzly way, the Bosnia war crimes. Some of the people brought to trial were brought to trial because of the evidence from pollen, which showed that bodies had been buried, exhumed, and then reburied somewhere else.

I hope I've opened your eyes, if you'll excuse the visual pun, to some of pollen's secrets. This is Horse Chestnut, by the way. There is an invisible beauty all around us, each grain with a story to tell, each of us, in fact, with a story to tell, from the pollen fingerprint that's upon us. Thank you to the colleagues at Kew. And thank you to palynologists everywhere. (Applause)"



Snow trillium [VMS photo]



Shooting stars and larkspur [BE photo]



Regal fritillary on *Liatris pycnostachya* at Paintbrush Prairie Pettis Co [BE photo]

Rediscovering the Tallgrass Prairie Given at March Meeting.

submitted by Mark Belwood, landowner and restorationist

Mark gave a very good broad history of the North American prairie and followed with a more recent history of the local Tallgrass Prairie. He had really inspiring photos taken at local public prairie remnants in the Lamine River watershed and Blackwater River watershed and at prairie restoration plots on our farm which focused on prairie flora. The program concluded with restoration methods. He explained his efforts as examples.

July 23 will be a good date for a field trip to see Mark's reconstruction. [Mark your calendars NOW!] Bring water and a snack for yourself, a sunhat and any other personal comforts as we will be in the open for about two hours. For carpools, meet at the MDC Research Center to leave at 8am. Or drive yourself to Mark's house: from Columbia, take I-70 west. At the cloverleaf intersection with US 65 Hiway, take the 65 South exit toward Sedalia. Soon [immediately] after getting onto US 65 move into the left lane. Turn left at the first crossover which is South Outer Road East (or Saline County Road 116). At about 1/2 mile turn right onto Katydid Lane driving south until it dead-ends at Mark's house (about 1/3 mile).

After a tour at Mark's farm we will have lunch at Glen's Restaurant [Cajun food] in Hotel Fredrick, in Boonville around noon.

Green Fire

Aldo Leopold is considered the father of the modern Environmental Movement [Sand County Almanac]. The Leopold Foundation has produced a video entitled *Green Fire* which illustrates how Leopold's land ethics vision continues to inspire people around the world. The trailer is well worth watching <http://vimeo.com/8669977> To see where it's showing near you

<http://www.greenfiremovie.com/>

DATE: Thursday, April 7, 2011

TIME: 7pm (Doors open at 6:30pm; reception follows viewing)

LOCATION: Conservation Hall

ADDRESS: Anheuser-Busch building, on the MU campus between the Agriculture building and the Kit Bond Life Science Center.

Becky will man a table there to hand out information.

Outing to Jean's

4 June Saturday: Jean Graebner's prairie planting in Rocheport. Meet at MDC Research Center for Carpools to leave at 9 am. Visit McDermott Memorial planting [do some weeding] in park in Rocheport on First Street. See Jean's prairie about 10:15; [we can talk about habitat reconstruction and challenges](#). Bring lunch fixings [anything: hot dish to a large cut-up sub, fruit or salad] to share. If you want to do only the planting tour and potluck, you may contact Jean at Graebner@centurylink.net for directions.

**SAVE TREES, SAVE NPS MONEY.
SIGN UP FOR THE EMAIL NEWSLETTER.**

Program for May Meeting at 7 pm



Wild ginger
BE photo

Edible Wild Plants Presented in May

Submitted by Lea Langdon, member

Lea Langdon has been interested in edible wild plants almost as long as she has been gardening, and she enjoys harvesting them and sharing nature's bounty. For the May meeting program, she will present some edible wild plants that you can find both in your garden and in wild spaces, and will share how to harvest and eat them in simple ways. She expects to bring a few wild foods to taste as well. Lea does not claim to be an expert, and would welcome input from other NPS folks, if there are others with this interest. She invites you to bring some of your favorite or suggested wild edibles for us to try.

Wild Leek (*Allium tricoccum* Aiton), a native food delicacy could be grown in your backyard.

Submitted by Dr. Nadia Navarrete-Tindall; Native Plant Extension Specialist, Lincoln University Native Plants Program

Lincoln University Native Plants Program is conducting preliminary trials about native plants with potential as specialty crops for their food value potential. One of these plants is *Allium tricoccum* known as wild leek in Missouri, also known as ramps in Louisiana and other southeastern states. In Missouri, this plant is reported in 12 counties, including Boone, Howard, and Osage in the central region. It is naturally found in rich soil and moist woodlands under the canopy of trees like sugar maple, hickory, and oaks. In central Missouri, leaves start developing in early March through April (photos attached). After leaves die back, onion-like flowering stalks with white flowers emerge in July and seed mature in late summer. Studies developed by North Carolina State University Extension showed that the best time to establish leek from seed is in late summer to fall under shady conditions. Similar studies will be conducted at Lincoln University in the recently established community garden located in Jefferson City. Different shade levels, using shade cloth, will be evaluated to determine its effect on vegetative growth and seed production. Leaves and bulbs are edible but if one prefers to maintain a population of wild leeks, only some of the leaves could be harvested in the spring. If you are lucky of having access to a wild patch of wild leeks try the following recipe. Leaves are extremely tasty and add color to your meals.

Potatoes with wild leeks [NNT recipe]

Ingredients

1 tsp butter or olive oil
1 cup wild leek leaves-cut in pieces
1 medium size russet potato or sweet potato-cut in cubes
1 tsp diced fresh ginger
½ cup milk or soymilk
Pinch of salt, pinch of nutmeg
Cilantro-optional

Preparation: Add oil or butter to a pan at medium heat, toss leek, potato, ginger, and salt for 5 minutes. Add milk and let potatoes simmer for 20 minutes or until potatoes are soft enough to eat. If you want to skip the milk, cook potatoes a little longer.



[NNT photo]

Spring leek leaves and dried flower structure in upper left.



Diced potatoes and leek leaves

[NNT photo]

Selected references.

- Greenfield, J. and J. M. Davis. 2001. Cultivation of ramps (*Allium tricoccum* and *A. burdickii*). Horticulture Information Leaflets-New 6/01 HIL-133. North Carolina State University. Accessed on March 25, 2011
<http://www.ces.ncsu.edu/depts/hort/hil/hil-133.html>
- Yatskievych, G. 1999. *Steyermark's Flora of Missouri, vol. 1, rev. ed.* Missouri Conservation of Conservation, Jefferson City, in cooperation with the Missouri Bot. Gard. Press, St. Louis.

Please Step Forward For Service

Please contact one of the officers ready to volunteer a little time to a very good environmental and educational service. We need people to serve as officers, to grow plants for fundraising and we need people to man our information booth at events such as Earth Day and Chestnut Festival. If you get this only by mail, please consider requesting email delivery; it saves us money.

___ Regular (\$16.00)*

___ Student (\$11.00)

___ Contributing (\$26.00)* designate chapter or state

___ State Lifetime (\$200)

___ Chapter Lifetime (\$120 – you must also be a member of the state organization to utilize this option)

___ Chapter only (\$6.00 – this is for members who already belong to State and another chapter)

*Includes both Chapter (\$6) and State (\$10) dues.
Make check payable to: **Missouri Native Plant Society**.
Send check and this form to: Paula Peters, 2216 Grace Ellen Dr., Columbia, MO 65202

MEMBERSHIP FORM Missouri Native Plant Society—*Hawthorn Chapter*

July 1 through June 30.

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Method of receiving chapter newsletter:
(circle preference) **Email** **Regular mail**

Email delivery brings you color photos and it saves NPS money. With email delivery you also receive updates and announcements between newsletters. Regular Mail includes NO interim updates or reminders without request for phone contact.

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