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President's Corner

By Richard S. Thoma

To all in WGNSS, thank you for giving me the opportunity to serve as president. I am extremely honored that you believe I can take on this responsibility and promise to do my best in the coming years. For those of you in WGNSS who may not know me, please let me introduce myself. I have been a member of WGNSS for approximately 24 years. Natural history, in particular entomology has been a passion of mine even longer. Even though entomology is my primary focus, I still very much enjoy being outdoors and experiencing all of nature. On a recent field trip, the find of the day was a timber rattlesnake and not the insects I originally went out looking for. To me there are always things to see and learn about whenever I've gone out into the field. About five years ago, I volunteered to be on the WGNSS board as the entomology chair when long time member, past president and great friend, Marshal Magner retired from the position. Working with the WGNSS entomological community in St. Louis over these many years has been a very fulfilling experience. I have also had the opportunity to be chairman of the education committee. Each year WGNSS awards two or more students scholarships to support their field research efforts. It may be a challenge to determine which proposal is the best but the reward is to hear the excitement of the student when they are told they have won. Though I am passing the entomology and education chair positions on to others, I am very much looking forward to the challenges of the president's position.

Please join me in thanking Ann Earley for her years of service in WGNSS. As president she did an unbelievable amount of work, mostly unseen, to keep the organization running smoothly. She made sure that conservation and natural history took front stage in everything WGNSS did and was a strong advocate for our organization out in the St. Louis community. It was through her efforts that today, WGNSS continues to be one of St. Louis' premier natural history organizations.

I would also like to recognize the WGNSS Board for their continued commitment to make this organization great. It is through their tireless efforts that all the necessary behind the scenes functions required by a nature organization get done. My appreciation goes out to George Yatskievych (1st Vice President in charge of the general meeting), Jane Deschu (2nd Vice President in charge of social gatherings), Anne McCormack (2nd Vice President in charge of publicity), Layne Van Brunt (Secretary), Paul Brockland and Joe Whittington (Treasurer and Assistant Treasurer), Ted MacRae (Newsletter Editor) and Burt Noll (Member at Large) for stepping forward to help out WGNSS. There are also numerous other people in WGNSS that volunteer their time in support of these board positions. The next time you see a board member, please thank them for all the work they do to make WGNSS great.

– In This Issue –

Field trips, natural history meetings and outreach are some of the biggest things that attract people to WGNSS. I would like to recognize George Van Brunt (Botany Chair), Jack Harris and Fr. James Sullivan (Botany Walk Leaders), David Becher and Jim Ziebol (Ornithology Chairs), David Becher and Jackie Chain (Bird Walk Leaders), Phillip Koenig and Jane Walker (Entomology Chairs), Yvonne Homeyer (Conservation Chair) and Emily and John Christensen (Education Chairs). Let us extend a hand of gratitude to the group chairs and field trip coordinators who plan and organize all the WGNSS events.

John James Audubon once said: "*During all these years there existed within me a tendency to follow nature in her walks*". I believe this quote very much reflects the spirit of WGNSS for we all have "…a tendency to follow nature in her walks"!

March Bird Report

Compiled by Jim Ziebol

Sightings: Com. Loons were found at CCL on 3/24-CMc, and HL on 3/28-FH. Eight Horned Grebes were seen at HL on 3/21-FH, and 7 were seen at RMBS on 3/24-JM. An estimated 2000 Pelicans were present at HL on 3/18-FH, and on 3/8 some were seen at Lk. 33 BCA-JM. Heron and Egret arrival dates included: Black-crowned NH 3/6, Great Egret 3/12, Little Blue H 3/26, Yellow-crowned NH 3/30-FH. On 3/30, Dick Coles spotted a Sandhill Crane along Hwy. 79. Frank Holmes saw his last migrating Bonie at HL on 3/8. A Franklin's Gull was found on the Island HL on 3/9-BRu. Bill also had an adult Iceland Gull at HL on 3/1. One thousand Snow and a few White-fronted Geese were seen at CB on 3/5-CMc. On 3/9, 3 Ross' Geese were observed on the Island HL-FH. Wood Ducks were reported in very good numbers this spring. 2500 Ruddy D. and 6200 Coots were estimated at HL on 3/22-FH. Chris McClarren reported 20 Wigeon and 30 Redhead at CB on 3/11. On 3/22 at HL, Frank Holmes found 6 Golden Plovers. Woodcocks were reported in good numbers at BCA 3/6 by JC, CA. A Woodcock was seen in TGP on 3/11-CMc, JZ. Jim flushed another Woodcock at HL on 3/23 and also saw 2 E. Phoebes.

Two N. Harriers were found at CB on ¾-CMc, and another was seen there on 3/25-JC, WGNSS. Red-tailed Hawks nested in TGP-CMc, and Cooper's H. nests were located in TGP-CMc and Lafayette Pk-SMcC. Chris also reported a dark morph Red-tail at CB on 3/12. Two owllets were fledged by the Great Horned pair in TGP. An E. Phoebe was reported at BCA on 3/2-BRu: On 3/8, 15-20 Pipits were seen along Confluence Rd.-BRu, CMc. The Thursday WGNSS group found Horned Grebe and Pine W. at BCA, a Red-shouldered H. and a displaying young Turkey at Rockwood Res.-JC

A Louisiana Waterthrush appeared at LVT on 3/20-Bryan Prather. Sixty Fox Sparrows were counted at TGP on 3/20-CMc, and on 3/31 a very early Chipping Sparrow was found at BCA-YH. Rusty Blackbirds were reported from Confluence Rd. on 3/2-BRu, and at HL on 3/20-FH. In TGP Rusties first appeared on 3/11, followed by 250+ on 3/18 and about 50 were seen there on 3/25-JZ. On 3/10 at HL, several Cormorants, 7 Bonies, 5 Blue-winged T., 85 Red-breasted Merg., one Pectoral Sandpiper, a Golden P. and a few Rusty Blackbirds were observed-JZ.

Contributors: C. Alwood (CA), J. Chain (JC), D. Coles, F. Holmes (FH), Y. Homeyer (YH), C.

McClarren (CMc), S. McCowan (SMcC), J. Moe (JM), B. Prather, B. Rudden (BRu), J. Ziebol (JZ).

Abbreviations: BCA, Busch Conservation Area; CB, Columbia Bottoms Conservation Area; CCL, Creve Coeur Lake; HL, Horseshoe Lake; LVT, Lost Valley Trail; RMBS, Riverlands Migratory Bird Sanctuary; TGP, Tower Grove Park.

April Bird Report (partial)

Compiled by Jim Ziebol

The only birds that were normal in numbers during April, especially in TGP, were Creepers and Hermit Thrush. Purple Finch were well above their usual numbers in TGP-CMc, JZ. Sadly, Black-and-white, Chestnut-sided and Magnolia Warblers and Redstart were not seen in TGP as of 4/30. Golden-crowned Kinglets were average and Ruby-crowns were way down in numbers. This is the strangest and worst passerine migration this reporter has seen since 1983.

Sightings: On 4/4, Snowy Egret arrived at HL-FH, and a Cattle Egret was found at Cahokia Mounds-FH, BRu. Two Willets, an ad. Lesser Black-backed and a Yellow-headed Bb were seen at RMBS on 4/2-JU. Also on 4/2, two Franklin's Gulls were spotted at RMBS-MT. Stilt sandpipers joined Pectorals and Yellow-legs in Monroe Co. on 4/18-BRu. Bill indicated Stilts successfully nested there last summer.

Dennis Bozzay spotted a possible Mississippi Kite in St. L. Co. on 4/3, and on 4/6 they appeared in St. L. City-JZ, TGP-JC, JZ and two on the Lewis and Clark Trail-YH. This followed three warm days with brisk south winds. The first Osprey was found at HL on 4/13-FH. A Swainson's Hawk seen at CB by BR, was a good find. Jack Cowan had a Peregrine Falcon fly over TGP, probably a "Tundrius". A Barred Owl was found at BCA on 4/18-JM, and several NABA members observed this owl.

Contributors: Dennis Bozzay, J. Chain (JC), Jack Cowan, F. Holmes (FH), Y. Homeyer (YH), C. McClarren (CMc), J. Moe (JM), B. Rowe (BR), B. Rudden (BRu), M. Thelen (MT), J. Huffman (JU), J. Ziebol (JZ).

Abbreviations: BCA, Busch Conservation Area; CB, Columbia Bottoms Conservation Area; HL, Horseshoe Lake; RMBS, Riverlands Migratory Bird Sanctuary; TGP, Tower Grove Park.

March Botany Report

Compiled by George Van Brunt

Correction: Credit for the photographs accompanying the February 22, 2010 Botany Report (May 2010 *Nature Notes*) was omitted. All photographs in the report were by Pat Harris. I apologize for the omission.

March 1, 2010—Robertsville State Park and Shaw Nature Reserve, Franklin County, MO, (contributed by Jack Harris).

9:30–11:20 a.m.; temp: 31–39 degrees; wind a c-o-o-l 5 mph+/-; cloudy.

Participants: Wayne Clark, Nancy Clark, John Oliver, Jack Harris, Burt Noll, and Jane Deschu. The Botany Group field trip leader (Rev. Jim Sullivan) relayed his regrets that he could not attend the trip on this date. The winter hardy trippers gathered at the Robertsville State Park boat launch & picnic area parking lot.

A casual stroll through the area where *Erigenia bulbosa* (harbinger of spring) has been known to occur in abundance produced no results. A closer and more extensive examination by John Oliver located one specimen in bloom (see photo). Using the one plant to establish the search image for the Botany Group, another half dozen or so plants in bloom were found. The small number of plants in bloom at this site likely means that for this year, March 1 was seasonally early for this species (and probably for many other species). *Erigenia bulbosa* is reputed to be Missouri's earliest blooming forb. Nearby and close to the Meramec River bank were a few *Asimina triloba* (pawpaw) with the dark brown paint brush twig tips and signs of emerging small dark brown flower buds. Although these signs of spring were sparse and tenuous, when one is looking for a promise?

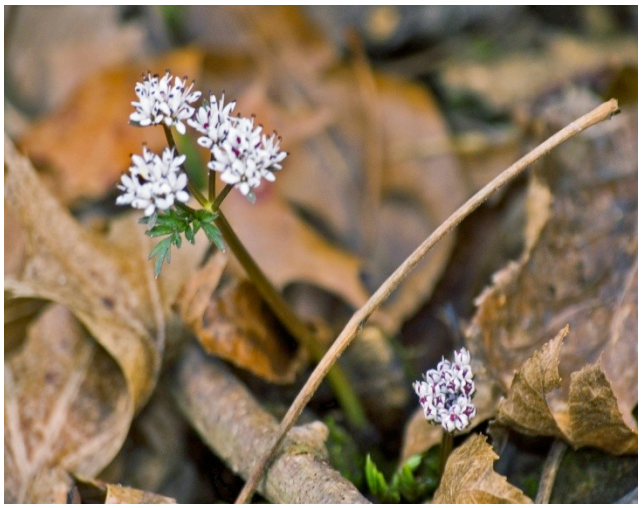
After inspection of a small area, it was clear that the winter season was still in full sway at this area so the group then moved on to the Shaw Nature Reserve, just a few miles down the road. There we toured the Whitmire Wildflower Garden. At the Garden, one of the first sights to catch the attention of the group were the distinctive dark brown, upright, fruiting fronds of *Matteuccia struthiopteris* (ostrich fern) with the desiccated sterile fronds lying about. Nearby in similar condition were the fruiting fronds of *Osmunda sensibilis* (sensitive fern). A little farther along the trail were specimens of *Hamamelis virginiana* (eastern witch-hazel) in fruit, and conveniently nearby for species comparison, *Hamamelis vernalis* (Ozark witch-hazel). The latter was in flower and produced an attractive fragrance. The black bark of *Prunus serotina* ssp. *serotina* (black cherry) was distinctive when juxtaposed among the pale gray, sinuous *Carpinus virginianum* (musclewood) tree trunks. *Polemonium reptans* var. *reptans* (Jacob's ladder) over wintering leaves were scattered among the leaf litter along the trail.

In the vicinity of the tall grass prairie area, one of the few plants maintaining remnants of its summer array of green grass-like leaves was a small clump of *Arundinaria gigantea* (giant cane). This native bamboo look-alike once grew in large, dense stands in the rich alluvium of the flood plains of many Ozark rivers. It was an occasional bane to the travel of early explorers such as Schoolcraft in 1818–1819. Unfortunately for the population of cane colonies, its favored habitat was deemed to be valuable land for farming and pastures.

The scenic view of the Whitmire Wildflower Garden and the adjacent prairie was one of a large black area (the mark of recent prescribed fire) laced with graceful curving lines of pale grey paved pathways. To the eyes of the wildflower aficionados, this was highly welcome and left one with an elevated anticipation of spring beyond that of the flowers on the Ozark witch-hazel. Native plants normally respond to fire with a robust irruption of wildflowers, including occasionally a species that was not known to be present. We trust that this year will be the same and look forward to a return to the area.

One advantage of practicing winter botany identification skills in the Whitmire Wildlower Garden is that for every species present there is a name tag associated with a specimen of that species somewhere in the garden. If not specifically at the location at hand, a short search will soon confirm or correct any conjecture. An educational feature enjoyed by the botany group.

On the way back to the parking area and passing near the Bascom House, an introduced species in vigorous bloom was discovered. It was *Galanthus nivalis* (snow drops). Being sheltered by landscape shrubbery and adjacent to the building it had apparently escaped the wrath of hard freezes of the recent winter and had maintained its intrinsic early blooming schedule.



Prima facie evidence of the coming of spring! *Erigenia bulbosa* (harbinger of spring, pepper & salt), a member of the carrot family (Apiaceae). Robertsville State Park, March 1, 2010. Photograph by John Oliver.

March 8, 2010—Pea Ridge Conservation Area, Washington County, MO (contributed by Nels Holmberg).

Our annual trip to see the witch hazel at Pea Ridge Conservation Area in Washington County brought out a group of 14 on a perfect spring-like day. And yes, the Ozark Witch Hazel (*Hamamelis vernalis*) was in full bloom, and those with sensitive noses detected its wonderful aroma, although it was faint. It was growing in abundance in the gravel along Indian Creek, where it sends its roots through the gravel and into the soil below to secure water throughout the year.

After admiring the witch hazel, the group was hard pressed to find anything else so exciting. Along the creek, we noted a few other shrubs

and trees: musclewood/American hornbeam (*Carpinus caroliniana*), spice bush (*Lindera benzoin*), sycamore (*Platanus occidentalis*), and shrubby St. John's-wort (*Hypericum prolificum*). In the nearby weedy fields, we found the remains of last year's flowers and fruits: grayheaded coneflower (*Ratibida pinnata*), black-eyed Susan (*Rudbeckia hirta*), white verbesina (*Verbesina virginica*), Queen Anne's lace (*Daucus carota*), sericea lespedeza (*Lespedeza cuneata*), wild bergamot (*Monarda fistulosa*), and brown-eyed Susan (*Rudbeckia triloba*).

The fungus of the day was Dead Man's Fingers (*Xylaria polymorpha*) which is said to be a "species complex," of 5-10 species which aren't easily told apart, and like its name indicates, has blue-black fingers reaching up along the side of a small decaying limb. This is a wood decay fungus which digests the glucan and other glues and leaves the cellulose and lignin behind.

***Xylaria polymorpha*, dead man's fingers. Photograph by Nels Holmberg.**

The lichen of the day was strigose beard lichen (*Usnea strigosa*) found hanging like Spanish moss on several branches in an area of sparse woods. It was first found at this site by our group in 2008 and identified by Carl Darigo.

But finally, on the way back to the parking lot, the group spotted 3 plants in flower: hairy bittercress (*Cardamine hirsuta*), spring Whitlowgrass (*Draba verna*), and gray field speedwell (*Veronica polita*). Even though all had very small flowers and all were non-native, we were pleased to find flowers after a long winter when all we could see were winter buds and old seed heads!

***Usnea strigosa*, strigose beard lichen. Photograph by Jack Harris.**

March 15, 2010—Washington State Park, Washington County, MO (contributed by John Oliver).

Cabin fever often manifests itself among those interested in field botany well before the plants themselves emerge from their winter rest. In this part of Missouri, small groups huddled around a swelling bud or peering quizzically at a basal rosette of leaves, usually can be identified as the WGNSS Monday botany group—even without a field guide. Hoping to spot the earliest signs of spring, we gathered, a dozen strong, in Washington State Park. Those in attendance were Fr. Jim Sullivan, George Van Brunt, Bill Knight, Larry Morrison, Jack Harris, Nels Holmberg, Wayne and Nancy Clark, Paul Corley, Steve Turner, Ruth TenBrink, and John Oliver.

Our initial meeting point was the Petroglyph parking lot, but a quick reconnaissance of the glade area was unproductive and we decided to move on to the Thunderbird Lodge parking lot where the trailhead to the 1000 Steps Trail is located. This trail was originally constructed by the Civilian Conservation Corps during the 1930s

and extends along a mesic north-facing slope which is particularly rich in spring-flowering species. Our walk had barely begun when we spotted the traditional "first forb," the salt-and-pepper blossoms of *Erigenia bulbosa* (harbinger of spring). Like a prospector's first glint of gold, the sight of this modest little flower always stirs the hearts of wildflower aficionados, holding all the promise of a great season of botanizing to come. With the search image of the plant now firmly in mind, we continued to see hundreds of them all along the trail. Although we found no other spring wildflowers in abundance on this day, their presence was indicated by recognizable leaves building strength for the imminent blooming season. *Claytonia virginica* (spring beauty) was obvious in leaf and bud all along the base of the hill and eventually we did spot one open flower. *Dicentra cucullaria* (Dutchman's breeches) and *Rudbeckia laciniata* (goldenglow) were also identified by their leaves. Many of the trees here were also in bud, and we observed *Lindera benzoin* (spice bush), *Aesculus glabra* (Ohio buckeye), and *Asimina triloba* (pawpaw), each with small but identifiable flower buds. Some of the maples however, were in full bloom. Never have *Acer negundo* (box elder) and *Acer rubrum* (red maple) received more attention than when they found themselves the floral centerpiece and object of interest on a botany walk! One strikingly red-budded tree species became the subject of one of Father Sullivan's "Terrible Tests." These mature winter buds of *Tilia americana* (American basswood) were distinctive, and as I noted later, not marked as being collected in Washington County. This is an example of how even fairly common species can go unreported in certain areas.

And speaking of terrible tests, we finally reached the trail's eponymous "1000 steps" which lead up the bluff and were constructed at the same time as the CCC trail. Since the footing was slick and many of us are of a similar age and level of maintenance as the steps, we were cautious in our foray up part of the slope in search of *Anemone acutiloba* (sharp-lobed hepatica). While we saw several whorls of last year's leaves, and a few closed buds, the day was not sunny enough to coax the flowers to open, and we moved on, saying that it might be worth another visit soon.

We returned to the cars by way of the open, lawn-like area along the river road, and on the way saw a large number of tiny flowers in bloom. These all fell into the category of introduced and weedy species familiar to us, possibly from our own lawns. We observed *Veronica polita* (gray field speedwell), *Microthlaspi perfoliatum* (claspleaf pennycress), *Lamium amplexicaule* (henbit deadnettle), *Holosteum umbellatum* (jagged chickweed), and *Cardamine hirsuta* (hoary bitter cress) in this way. This last species seems to be increasing in our area and we have noticed it more than once this spring in Washington County although it, too, is officially unreported from there. Also in bloom along the Big River frontage road was the third member of our bouquet of maples, *Acer saccharinum* (silver maple). This species is the earliest of the maples to flower and blooms before the leaves are in evidence. It can be distinguished from the other maples by several tests, the most entertaining of which is the "scratch and sniff" test for the unpleasant odor of the twigs, as performed by uninitiated members of the group. We left with a relatively small list of flowering species, but with our appetites thoroughly whetted for the abundant spring wildflowers soon to come.

March 22, 2010—St. Francois State Park, Mooner's Hollow Trail, St. Francois County, MO (contributed by Fr. James Sullivan).

Burt Knoll got us started with this eloquent verse:

Spring is here—
The grass is riz.
We wonders where
The flowers is…

One flower we were after today was the early blooming hepatica (*Anemone acutiloba*). We found a remarkable number of blooming plants along the trail. Unfortunately, the flowers were all bowing their heads to the cold rain of the last 24 hours. But the group marched on: George Van Brunt, Wayne and Nancy Clark, Jack Harris, John Oliver, Theresa Vogt, Jack and Jackie Mitchell, Burt Knoll, and myself.

The rain was over and no snow had fallen here, but the heavy snow belt was in central Missouri—and our spring plants seemed to know that. We saw no sign of the fen plants. The

introduced watercress (*Nasturtium officinale*) was the greenest thing here. It grows in spring water which is cold, but doesn't freeze. The flower buds of spicebush (*Lindera benzoin*) were expanding, and a few of them were in bloom. A hazelnut bush (*Corylus americana*) was in bloom, and we could see the tiny red female flowers. Toothworts (*Cardamine concatenata*) were covering some slopes, but blooming would be later. John Oliver saw a tiny bloodroot (*Sanguinaria canadensis*), and its flower will soon appear—but not today.

Microthlaspi perfoliatum (our smaller pennycress) was on the lawn. Art Christ was the first one to report that plant in Missouri. It was a rare discovery then. Now it is everywhere!

***Corylus americana* (hazelnut) in bloom. Hazelnut is monoecious, separate male and female flowers on the same plant. A male catkin is in the left foreground, while two female catkins with red stigmas are in the center of the photograph. Photograph by George Van Brunt.**

March 29, 2010—Klondike County Park, St. Charles County, MO (contributed by George Van Brunt).

Fourteen early spring botanists met at the Boat Ramp and Parking Lot adjacent to the northeastern end of Klondike County Park in St. Charles County. The Katy Trail passes between the county park and the parking lot and we walked west on the trail. It was a beautiful sunny morning with a temperature ranging from the upper 40s to mid 50s. Father Sullivan, Wayne Clark, Nancy Clark, Steve Turner, Ruth TenBrink, Paul Corley, Jack Harris, Pat Harris, John Oliver, Jeannie Moe, Burt Knoll, Jeanne Clauson, and Marlene Bopp were all serenaded on our walk by three species of very energetic frogs. These were the boreal chorus frog (*Pseudacris maculata*), spring peeper (*Pseudacris crucifer*, formerly *Hyla crucifer*), and southern leopard frog (*Lithobates sphenocephalus*, formerly *Rana sphenocephala*).

WGNSS Botany Group, left to right: Paul Corley, Steve Turner, George Van Brunt, Rev Jim Sullivan, John Oliver, Marlene Bopp, Nancy Clark, Wayne Clark, Jeanne Moe, Pat Harris, Jeanne Clauson. KATY Trail State Park @ Klondike County Park, St. Charles Co., MO, March 29, 2010. Photograph by Jack Harris.

Our first observation was a row of *Populus deltoides* (eastern cottonwood) trees that were in bloom. Even though the flowers were far overhead, it was easy to distinguish the male trees from the female trees in this dioecious species. The male catkins were bright red, particularly visible against the cloudless blue sky, while the female catkins were yellowish-green. The 3 to 5 inch long male catkins bear 30 to 60 stamens in flowers lacking petals. They produce copious amounts of wind-borne pollen that we observed in several catkins that had fallen from the trees before all of their pollen was shed. The somewhat shorter (1 to 2.5 inches long) female catkins bear petal-less flowers with very distinctive 3 parted, fan-shaped stigmas.

Continuing along the Katy Trail, we found plants in every stage of their spring "awakening". Some species were still in their winter dormancy, others were sprouting fresh green leaves, while still others were in full bloom. Some of the dormant species we found included *Robinia pseudoacacia* (black locust), *Acer saccharinum* (silver maple), *Carpinus caroliniana* (American hornbeam), *Celtis occidentalis* (hackberry), and *Gymnocladus dioica* (Kentucky coffee tree). The Kentucky coffee trees were still bearing last season's fruits.

We observed fresh green leaves of *Saxifraga pensylvanica* (swamp saxifrage), *Urtica dioica* ssp. *gracilis* (stinging nettle), *Galium aparine* (cleavers), *Conium maculatum* (poison hemlock), and *Alliaria petiolata* (garlic mustard), but the most exciting find was the mottled leaves of *Phacelia bipinnatifida* (fernleaf phacelia). This native biennial herb is found in a block of states ranging from Iowa, Illinois, Indiana, Ohio, and Pennsylvania (only one PA county) in the north to scattered counties in Mississippi, Alabama, and Georgia in the south. Its east-west range extends from the Atlantic seacoast to Iowa, Missouri, Arkansas, and Mississippi. Many counties in Tennessee, Kentucky, and the southern half of Indiana have populations of this species. Fernleaf phacelia has been found in 13 Missouri Counties in a band from St. Charles County at the northeastern end of its Missouri range to Texas, Shannon, Oregon, and Carter counties at the southwestern end. This 1 to 2 foot high plant likes rich, moist woods and blooms in early to mid spring of its second year. It self sows its seeds readily. The plants that we saw seemed to be competing successfully with *Alliaria petiolata*, the two species mixed together in some places. It will be very interesting to see which species wins the struggle for space. In the photograph below, *Phacelia bipinnatifida* leaves are those that are deeply cleft while *Alliaria petiolata* leaves are crenate (with rounded teeth along the margin).

Strange Bedfellows: *Phacelia bipinnatifida* & *Alliaria petiolata*. Photograph by John Oliver (March 29, 2010).

There were many species in bloom, both native and introduced. Native species in bloom included *Ulmus americana* (American elm), *Acer negundo* (box elder), *Dicentra cucullaria* (Dutchman's breeches), *Claytonia virginica* (spring beauty), *Corydalis flavula* (pale corydalis), and *Sanguinaria canadensis* (bloodroot). Some introduced bloomers were *Lamium amplexicaule* (henbit), *Microthlaspi perfoliatum* (claspleaf pennycress), *Lamium purpureum* (deadnettle), *Stellaria media* (common chickweed), *Thlaspi arvense* (pennycress), *Ranunculus abortivus* (small-flowered crowfoot), and *Capsella bursa-pastoris* (shepherd's purse).

***Sanguinaria canadensis* (bloodroot), Papaveraceae, KATY Trail State Park @ Klondike County Park, St. Charles Co., MO, March 29, 2010. Photograph by Jack Harris.**

April Entomology Report: Charles Darwin—Entomologist

By Richard S. Thoma

Almost everyone is familiar with Charles Darwin's round the world travels on the "H.M.S. Beagle", and how the observations he made in South America and on the Galapagos Islands led him to the idea of Natural Selection. What is not so well known is that before he became famous, Charles Darwin was an entomologist, specifically studying beetles. Along with his families influence, Darwin's connections in the entomological community helped to get him that position on the

"Beagle". It was those same entomological connections that later gave him the most trouble after his most famous publication. On the 151st anniversary of the publication of *On the Origin of Species* and the 201st year of his birth, the entomology group got together to reflect on Charles Darwin's interest in insects.

University of Cambridge—Charles Darwin Beetle Collection.

Much of Charles Darwin's academic career was spent collecting insects, primarily beetles. It was a cousin, William Darwin Fox who introduced Darwin to insect collecting while at Cambridge. The following quote from his autobiography, illustrates how much Darwin enjoyed collecting insects in his early years.

> *But no pursuit at Cambridge was followed with nearly so much eagerness or gave me so much pleasure as collecting beetles. It was the passion for collecting, for I did not dissect them and rarely compared their external characters with published descriptions, but got them named anyhow. I will give proof of my zeal: one day on tearing off some old bark, I saw two rare beetles and seized one in each hand; then I saw a third and new kind, which I could not bear to lose, so that I popped the one which I held in my right hand into my mouth. Alas it ejected some acrid fluid, which burnt my tongue so that I was forced to spit the beetle out, which was lost, as well as the third one.*

Darwin's ability to collect rare insects got him noticed by the entomologists of the time and at the young age of 22 he was contributing to several major entomological publications. In the 1800's, only the exceptional few published anything as students. Darwin was extremely proud of his contributions to *British Entomology*, by James Francis Stephens. Several of the insects Darwin collected were described and illustrated in this publication.

At the young age of 25, Charles Darwin traveled the world on the H.M.S. Beagle. While away, his colleagues back in England made him a member of the Entomological Society of London. Upon his return, Charles Darwin settled down to the country gentleman life, writing and lecturing about his travels. The important part is that from an entomological point of view, is that Darwin shifted his focus from collecting specimens to collecting observations. Twenty years after his voyage on the Beagle, "On the Origin of Species" was published.

On the Origin of Species was the booked that changed the world's views about life. Darwin was counting on support from all his colleagues, in particular the entomologists. Instead many of the entomologists rejected Darwin's ideas and turned against him in a series of extremely harsh reviews. John Obadiah Westwood, Thomas Vernon Wollaston and Andrew Murray were a few of the entomologists that spoke out vehemently against Darwin. In the 1800's Christian views about life were very prevalent and these entomologists couldn't get past their faith. The first few years after the publication of *Origin* were very trying times for Darwin. Fortunately, there were a few entomologists that did back Darwin. Alfred Russell Wallace, coauthor with Darwin on the first publication about Natural Selection was a great supporter. So was young Henry Walter bates (of Batesian Mimicry fame). Instead of joining the vocal discussion however, both gentlemen instead chose to support *Origin* by producing scientific publications using their own data to support the evolutionary view of Darwin. By the late 1800's, Darwin had additional supporters from around the world and Natural Selection became more widely accepted. Two people in America of note were Benjamin D. Walsh, one of the founders of the Illinois Natural History Survey and Charles Valentine Riley, State Entomologist of Missouri.

Great ideas traditionally come with predictions and Natural Selection was no exception. The most famous entomological prediction made by Charles Darwin came from his observations on a species of orchid, *Angraecum sesquipedale*. Darwin was astounded to find that the nectary in this flower was one foot long. He believed the long nectary was an adaptation to attract moths to the flower for pollination. However, in 1862, no known insect had a tongue long enough to extend so deep

into the flower to accomplish the pollination. With these observations, Darwin predicted that there was an unknown insect (probably a large hawk moth, Sphingidae) that had evolved a tongue about a foot long specifically for reaching the nectar in the orchid and thereby pollinating the flower. And so began a forty year quest for the insect. In 1903, Rothschild and Jordan finally found the moth. Just as Darwin had predicted, it was a hawk moth and its tongue was exactly one foot long. In honor of Charles Darwin's prediction, Rothschild and Jordan named the moth *Xanthopan morgani praedicta*.

To learn more about Charles Darwin's life go to http://darwin-online.org.uk/. This web site contains all the known publications and letters written by Darwin. The volumes of books and publications written by Darwin that are found in this web site speak to true greatness for the father of modern evolution.

Ozark Trail—Marble Creek Section[1]

By Ted C. MacRae

If you know wilderness in the way that you know love, you would be unwilling to let it go… This is the story of our past and it will be the story of our future. Terry Tempest Williams

Marble Creek, Madison Co., MO.

[1] Reprinted from an article posted May 28, 2008 on the author's website: http://beetlesinthebush.wordpress.com. All photos by the author.

During the past several years that Rich and I have been hiking the Ozark Trail, most of our hikes have taken place in the fall and winter months. From a hiker's perspective, I really enjoy these off-season hikes—the foliage-free canopy affords unobstructed views of the terrain and vistas, the cool (even cold) temperatures are more comfortable under exertion (provided one has properly layered), and there are no mosquitoes to swat, ticks to pick, or gnats to incessantly annoy. I also enjoy them as a naturalist, for the world is quiet and still, allowing me to focus on things I may not notice amidst the cacophony of life during the warmer months. By the end of winter, however, the biologist in me yearns to once again see bugs and flowers and the great interplay of life. Unfortunately, this makes something as simple as hiking from point A to point B rather difficult—too many distractions! Nevertheless, each spring Rich and I try to hike a small leg of the Ozark Trail before the crush of summer activities fills our calendars. Last week, we chose the Marble Creek Section, an orphan stretch (for the time being) in the rugged St. Francois Mountains that eventually will connect to the famed Taum Sauk Section. It would be our first return visit to the St. Francois Mountains since we first embarked on our goal to hike the entirety of the Ozark Trail.

Crane Lake, Iron Co., MO.

The St. Francois Mountains are the geologic heart of the Ozark Highlands. Since their primordial birth 1.5 billion years ago, recurring cycles of erosion and deposition have worn them down and covered them up, only to see them reemerge once again as the younger rocks covering them were themselves stripped away. The Ozarks are an

ancient landscape with ancient hills, and none are older than those of the St. Francois Mountains. It's as if the Earth itself began in these mountains. We began our hike at Crane Lake, a clear, blue 100-acre lake built in the 1970s by the Youth Conservation Corps. The trail surrounding the lake was built in 1975 and is, in its own right, a National Recreation Trail. It meanders along the lakeshore and through hillside igneous glades and descends into a deep ravine below the dam where Crane Pond Creek cascades through spectacular rhyolite shut-ins. East of the lake the trail connects to the Ozark Trail proper and continues to Marble Creek campground. All told, we would be hiking a 9-mile stretch.

***Tradescantia longipes* (dwarf spiderwort).**

I knew we were in a special place almost from the beginning when I noticed a small flowering plant growing next to the trail under the mixed pine/oak canopy. I'm not a very good botanist, but I instantly recognized the plant as dwarf spiderwort (*Tradescantia longipes*), an Ozark endemic known from only a handful of counties in Missouri and Arkansas. I knew this only because I had just the night before read about this wonderful plant on Ozark Highlands of Missouri, a superb natural history blog focused on my beloved Ozarks. Reading about this lovely, diminutive member of the genus, I wondered if I might encounter it on my own hike the next day. As we searched off the trail and near the lakeshore we encountered dozens of the plants, each with one or two exquisite blue flowers. Our excitement at seeing a true Ozark endemic increased with each plant we encountered, giving us confidence that its future, at least in this area, appears secure. Of the numerous photographs I took, I share two that show its short, squat habit and filament-covered stamens. Eventually we decided we needed to move on—we had spent 20 minutes and only hiked 100 ft!

***Viola pedata* (birdfoot violet).**

Looping around the south side of the lake, the trail traversed mesic to dry-mesic upland forest and afforded spectacular views of the lake and rugged north shore. The spring ephemerals had already come and gone, replaced by such classic woodland denizens as birdfoot violet (*Viola pedata*, pictured), fire pink (*Silene virginica*), cream wild indigo (*Baptisia leucophaea*), four-leaved milkweed (*Asclepias quadrifolia*), Pursh's phacelia (*Phacelia purshii*), and shooting star (*Dodecatheon meadia*). Insect life was abundant, however, the

***Acmaeodera ornata* (jewel beetle) on *Rubus* sp. flower.**

only species seen in one of my chosen specialties, metallic wood boring beetles (family Buprestidae), were early spring species of *Acmaeodera*—pictured here is *A. ornata* on a dewberry (*Rubus* sp.) flower. This pretty little beetle occurs throughout eastern North America in early spring on a variety of flowers, where adults feed on pollen and mate. Eggs are laid on dead branches of certain hardwood trees, through which the larvae tunnel as they develop. Dry, dead wood contains little nutritional value, and the larvae cannot digest the cellulose. As a result, they eat considerable volumes of wood, extracting whatever nutrients they can for growth and ejecting the bulk as sawdust, which they pack tightly in their tunnels behind them. A year or more might be required before they have grown sufficiently to transform into the adult and emerge from the wood. A smaller relative, *Acmaeodera tubulus*, was also seen on flowers of native dwarf dandelion (*Krigia biflora*).

We stopped for lunch on a little point extending out towards the lake. The forest overstory was dominated by an open mixture of white oak (*Quercus alba*) and shortleaf pine (*Pinus echinata*).Thickets of highbush huckleberry (*Vaccinium stramineum*) and carpets of reindeer moss in the open areas belied the acidic nature of the igneous substrate. Stands of bastard toad flax (*Comandra richardsiana*) in full bloom were found at the tip's dry, rocky tip. These interesting plants feed parasitically on neighboring plants, attaching to the roots of their hosts by means of their long, thin rhizomes. Resuming our hike, we descended down into a shaded, moist draw feeding the lake and saw a huge royal fern (*Osmunda regalis var. spectabilis*) bush. I had never seen this aptly named fern before, but it was immediately recognizable by its large size (~5 ft in height) and presence of distinctive, fertile leaflets on some of its upper branches—a very striking and handsome fern, indeed. Nearby was a smaller, but no less attractive species of fern that I take to be marginal shield fern (*Dryopteris marginalis*)—another species I have not seen before (or at least made the effort to notice).

***Comandra richardsiana* (bastard toad flax).**

***Osmunda regalis* var. *spectabilis* (royal fern).**

***Dryopteris marginalis* (marginal shield fern).**

Crane Pond Creek Shut-ins below Crane Lake.

Soon, we reached the dam and for the first time saw the spectacular rhyolite shut-ins. While perhaps not quite as impressive as the nearby and much more famous Johnson's Shut-Ins, Rich and I nonetheless watched entranced as the water roared over the smooth igneous rock exposure, forming elegant cascades, rushing through narrow chutes, and swirling into small pools. Steep canyon walls rose

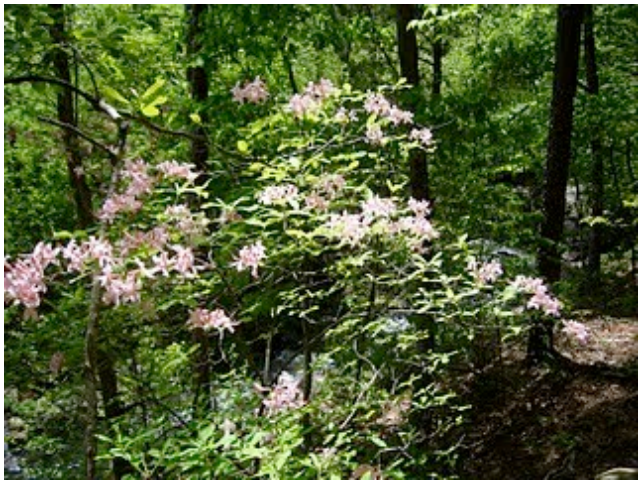
***Asplenium trichomanes* (maidenhair spleenwort).**

sharply on each side of the shut-ins, as if standing guard. Clambering amidst the pines and cedars that cloaked them, we found this maidenhair spleenwort (*Asplenium trichomanes*) nestled within a crack on a vertical rock face under continuous deep shade. Reaching the top of the bluffs, we were greeted by one of my favorite of all Ozark habitats—the igneous glade. Glades are natural island communities surrounded by a sea of forest. Their shallow, dry, rocky soil conditions support plants and animals more adapted to prairie or desert habitats. Specific communities are influenced by the type of rock below—igneous and sandstone substrates support lichens, mosses, and other acid soil-loving plants, while limestone and dolomite substrates support a more calcareous flora.

Igneous glade above Crane Pond Creek.

The photo here shows the massive boulder outcroppings typical of igneous glades and their weather-resistant bedrock. We hoped to see a collared lizard (*Crotaphytus collaris*), perhaps Missouri's finest saurian reptile, but today was not the day. We did, however, see adults of the beautiful and aptly named splendid tiger beetle (*Cicindela splendida*) sunning themselves on the bare rock surfaces—flashing brilliant green and clay-red. The adults we saw had spent the winter deep inside tunnels dug into the rocky soil the previous fall and were now looking for mates. Male tiger beetles grab females by the neck, their jagged, toothy jaws fitting precisely in grooves on the female neck designed specifically for such. As I looked upon this prairie island within the forest, I thought about how the St. Francois Mountains were once themselves islands. I realized the landscape we were exploring today was itself a fossil—with rhyolitic 'islands' amidst a 'sea' of cherty dolomite laid down a half billion years ago in the warm, tropical, Cambrian waters that surrounded the St. Francois Islands, by then already a billion years old themselves. Yes, the Earth itself seems to have begun here.

Leaving the glade and once again entering the acid pine forest, we came upon one of the most striking floral displays that either of us have ever witnessed—wild azalea (*Rhododendron prinophyllum*) in the midst of full bloom! I have known about several colonies of this plant for many years now but had only seen them at the very end of the bloom period, with just a few, pitiful, limply hanging flowers still attached. Today, the plants were absolutely dazzling. The blossoms were not only visually attractive, a deep pink color, but also unexpectedly fragrant. We stood amongst several specimen plants as tall as ourselves, taking picture after picture amidst the clove-like aroma wafting around us.



***Rhododendron prinophyllum* (wild azalea).**

We checked our watches—we were now 3 hours into our hike and had traversed just 2 miles. Clearly, this was not a sustainable pace, so we put our heads down and focused on covering ground. Once leaving the vicinity of Crane Lake, the trail became rather difficult to follow—it obviously receives little use, and in one stretch some logging activities had obliterated the trail completely. Were it not for the sporadic pieces of orange flagging tape tied just within sight of the previous, we would not have known where to go. At one point, we got completely off-track and had to backtrack a full half mile before we found the proper trail. The day put our contour map reading skills to their greatest test yet. It was difficult and strenuous terrain, with steep up and down grades and few long ridgetop stretches until (thankfully) the final 2 miles, which terminated in a long descent (more thankfully) to Marble Creek Campground. Despite the difficulties in following the trail and our not bringing enough water, I would have to rank this section a close second to the Taum Sauk stretch for its ruggedness, spectacular vistas, and unique plant communities. Yes, the St. Francois Mountains are truly the heart of the Ozarks.

Catch the Buzz on Bees and Other Pollinators[1]

BEE PART OF POLLINATOR WEEK

June 21–27, 2010.

Pollinators make one out of every three bites of food you eat. Buzz by the Monsanto Insectarium during National Pollinator Week to celebrate the many reasons we should bee thankful for pollinators!

THE POLLINATOR DINNER

Tuesday, June 22, 2010 6–9 p.m.

Join us for a special dinner where you can sample the many foods pollinators help provide. Before dinner, sip mead and enjoy a honey tasting as you peruse tables and displays about bees and other pollinators. After dinner, enjoy a presentation on pollinators and what you can do to help them bee.

For more information and to make reservations, call (314) 646-4857.

POLLINATORS FACING PROBLEMS—OR—THE POLLINATOR EQUATION

By Ed Spevek[2]

About 80% of all flowering plants need the help of animals to move pollen from flower to flower for the production of fruits and seeds. Most pollinators, about 200,000 species, are beneficial insects such as bees, flies, beetles, wasps, ants, butterflies and moths. About 1,000 species of pollinators are vertebrates like birds, bats, lizards and small mammals.

What is Halloween without pumpkins? Thanksgiving without cranberries? And life without chocolate? Of the estimated 1,330 crop plants grown worldwide for food, beverages, fibers, condiments, spices, and medicines approximately 75% are pollinated by animals. Insect pollination is critical for the production of many important crops in the United States including alfalfa, almonds, apples, blackberries, blueberries, canola, cherries, cranberries, pears, plums, squash, sunflowers, tomatoes and watermelons. In the U.S, European honey bee and native bee pollination accounts for almost $20 billion worth of crop production. Native bees also help maintain plant communities that provide food and shelter for other animals. About 25% of birds and many mammals, from grizzly bears to

[1] Submitted by Jim Jordan, Curator of Education, St. Louis Zoo.

[2] Curator of Invertebrates, St. Louis Zoo.

squirrels, feed on fruits and seeds that depend upon pollinators to produce.

Native bees are arguably the most important group of pollinators. In fact there are more species of bees in the world than all mammal and bird species combined. In North America there are over 4,000 species of bees. In Missouri there are over 400 species of bees, including 10 species of bumblebees. European honey bees are an exotic species first introduced into North America in 1622. They are found throughout the U.S. because of our ability to manage these semi-domesticated social invertebrates for their pollination services and honey production.

The numbers of several species of bees and butterflies have declined across their range. Their loss is due to several factors including: loss of habitat, misuse of pesticides, and disease. You can help these and other native pollinators by planting a pollinator friendly garden. This is an easy hands-on form of conservation that can have an impact on the survival of many species.

Help Native Pollinators

- Use local native plants. Research suggests native plants are four times more attractive to native pollinators than exotic flowers. Avoid horticultural plants, such as marigolds and roses, bred as "doubles" that provide little or no pollen and nectar for bees and butterflies
- Choose several colors of flowers and provide a mix of flower shapes to accommodate different species.
- Provide a succession of blooming plants throughout the growing season, spring through fall.
- Plant flowers in clumps. It will attract more pollinators than individual scattered plants
- Plant host plants to feed caterpillars as well as nectar plants for adult butterflies.
- Choose non-chemical solutions to insect and plant problems. Avoid using pesticides and herbicides.
- Provide nesting habitat for bees, such as bare ground for digger bees and sweat bees and wood and dried plant stems for leaf cutter bees and carpenter bees.
- Practice peaceful coexistence. Bees sometimes choose to nest in inconvenient places. Rather than exterminating them, think of it as an opportunity to see and learn about them up close.

SAVE THE BEES

By Ed Spevek[1]

Pollination of plants by animals is a critical cornerstone of most ecosystems. About 80 % of all flowering plants need the help of animals to move pollen from flower to flower. In fact, without animal pollinators most plants could not produce seeds or fruits. Additionally, around 25% of birds and many mammals, from bears to squirrels to people, feed on the fruits and seeds produced through the actions of pollinators. Plants and animals and their ecosystems all depend upon pollination.

What is Halloween without pumpkins, Thanksgiving without cranberries, and life without chocolate? Each of these depends upon the work of animal pollinators. Most pollinators are beneficial insects such as bees, flies, beetles, wasps, ants, butterflies, and moths. Of the estimated 1,330 crop plants grown worldwide for food, beverages, fibers, condiments, spices, and medicines, approximately 75% are pollinated by animals. In North America bumble bees, sweat bees, carpenter bees, leafcutter bees, European honey bees and the rest of the 4,000+ species of native bees are the most important group of pollinators. In the U.S, European honey bee and native bee pollination accounts for approximately $20 billion worth of crop production.

[1] Curator of Invertebrates, St. Louis Zoo.

Many people take services like pollination for granted believing that they are invulnerable and infinitely available. However, our actions of use and abuse of the environment through conversion of natural habitats, pollution, misuse of pesticides and herbicides, and the introduction of alien species and diseases have impacted many species and the service they provide.

In recent years honey bees have been disappearing due to many factors including mites, fungal infections, misuse of pesticides, and loss of habitat. Because of this we must rely more on native pollinators for our agriculture. In fact many native bees are far superior to and more efficient than honey bees for the pollination of many crops. However, a number of native bees are already in trouble for many of the same reasons. Several species of bumble bees have already disappeared across North America., and sadly, one species may be extinct. For many of these native bees we have little to no information about their status. Additionally, for many regions of the country we have no idea of what bee species even exist.

The Saint Louis Zoo's Native Pollinator Conservation Initiative (NPCI) was initiated to focus on the importance and diversity of our native pollinators, especially bees. The activities of NPCI include surveys of wild bee populations to assess diversity and population health, examination of the effects of pollinator loss on our crops, and education and outreach programs to involve local people in pollinator conservation.

Alpine Shop Lectures[1]

The Alpine Shop in Kirkwood is offering the following lectures during the month of June:

TEN STEPS TO BETTER OUTDOOR PHOTOGRAPHY

Monday, June 7, 2010, 7 p.m.
Alpine Shop, Kirkwood (book area)

Ever wonder why the photos of your outdoor adventures look so mundane while those that professionals take are so beautiful? This course is designed to help photographers of all skill levels to improve the quality of their shots. These techniques can be used with any camera from a simple point and shoot to a professional grade SLR. Call 314-962-7715 for information or to register. Free to the public.

BIRD PHOTOGRAPHY WITH STEVE PATTEN

Wednesday, June 16, 2010, 7 p.m.
Alpine Shop, Kirkwood

Join award winning bird photographer Steve Patten for this rare opportunity to learn from a master. Steve has won numerous awards for his photographs of our feathered friends. His program will cover the basic and advanced techniques for getting that award winning shot. Advance registration is required by calling 314-962-7715. The fee is $5—participants receive a coupon for $5 off their next purchase at the Alpine Shop.

FIRST AID IN THE OUTDOORS

Thursday, June 24, 2010, 7–9 p.m.
Alpine Shop, Kirkwood

You know the old saying, "what can go wrong will go wrong"? This course will provide the basics of first aid for outdoor activities including hiking, camping, paddling, cycling, climbing, and many other outdoor pursuits. This course is educational in format and does not lead to certification. It will provide you what you need to know to handle medical issues when in the outdoors. Advance registration is required by calling 314-962-7715. The fee is $5—participants receive a coupon for $5 off their next purchase at the Alpine Shop.

[1] Submitted by Martin Koch, Program Director, Alpine Shop, Kirkwood, MO.

Group Activity/Walk Schedules

ORNITHOLOGY GROUP
David Becher, Chair—(314) 576-1146

Saturday Bird Walks
David Becher, Leader—(314) 576-1146

Saturday Trips will break for the summer and resume in September.

Thursday Bird Walks
Jackie Chain, Leader—(314) 644-5998

Jackie Chain will be leading Thursday birding trips from Des Peres Park parking lot (east side of Ballas Rd. just north of Manchester Rd.) beginning at **8:00 a.m.** throughout June and August. For July dates, please contact Jackie in mid-June at (314) 644-5998 or chainjac@sbcglobal.net. Bring lunch, beverage, binoculars and if you have one, a scope/tripod. Return is usually by 3:30 p.m., but you may leave at your convenience.

BOTANY GROUP
George Van Brunt, Chair—(314) 993-2725

Botany Walks
Fr. James Sullivan, Leader
(now in his 44th year as Botany Walk Leader!)

Botany walks are every Monday. The WGNSS Botany Group visits many of the same locations as the Bird group: Busch Conservation Area, Shaw Nature Preserve, the Missouri Botanical Garden, Babler State Park and Cuivre River State Park. Learning plants will help you learn butterfly host plants. Sign up for WGNSS Botany Group emails from Jack Harris by contacting him at jahar@mac.com or (314) 368-0655 and receive an email no later than Sunday about the next Monday's trip.

ENTOMOLOGY GROUP
Rich Thoma, Chair—(314) 965-6744

Upcoming Meetings

Saturday, May 29 to Sunday, May 30. Join the Entomology Group for a field trip to Penn-Sylvania Prairie (Dade County) in southwestern Missouri. On the prairie we will be participating in an all day BioBlitz put on by the Missouri Prairie Foundation. Take part in intensive nature study with experts on mammals, amphibians, reptiles, **bees**, **butterflies**, **moths**, plants, soils, snails and more. The official start of the event begins at 2 p.m. on Saturday and goes through the next morning. There will be a potluck dinner for all participants. In addition, amateur astronomer Dan Zarlenga will set up a telescope and interpret the night sky. Contact Richard Thoma (314-965-6744) for carpooling, and visit the Missouri Prairie Foundation website: www.moprairie.org for more information about the event.

For general information about WGNSS, contact Membership Chairman Paul Brockland at pbrockland@sbcglobal.net or (314) 961-4661.

Editor's Corner

By Ted C. MacRae

SUMMER BREAK
Nature Notes will take a short break for the summer and resume publication with the September issue. The submission due date for that issue is **August 6**— mark your calendar and send your group reports, articles, and activity schedules by that date to the Editor at ted.c.macrae@monsanto.com. An updated schedule of submission due dates and mailing dates for the year's remaining issues can be found on the "Administrative Information" page.

NATURE NOTES BY EMAIL
Nature Notes is available not only by regular post, but also by email. Not only does this save paper and reduce mailing costs, it allows viewing of the newsletter and the included photos **in full color**. Embedded hyperlinks also allow instant navigation to email addresses and websites. Of course, you can always print your electronic copy of *Nature Notes* if you wish (if you do, please be sure to use both sides of the paper ☺). The electronic newsletter is sent as a PDF, which can be opened using Adobe Reader (free download available at http://get.adobe.com/reader/). Send your name

and email address to the Assistant Treasurer at whittex@aol.com to receive *Nature Notes* by email.

CALL FOR SUBMISSIONS

We welcome all announcements of WGNSS or other nature related events in the St. Louis area, notices of published articles—especially those authored by members, and original nature oriented articles. Suggested topics include accounts of field trips you have taken, information about local natural areas, interesting nature sightings, or reviews of nature related books. Reprinting of articles from other sources requires permission from the copyright holder. Previous *Nature Notes* issues are a good source of ideas—copies of recent issues can be provided upon request.

Please direct all submissions by email to the Editor at ted.c.macrae@monsanto.com. Limit text formatting to bold for emphasis and italics for scientific names. Additional formatting (e.g., use of tabs and extra spaces, multiple hard returns, underlining, etc.) should be avoided, since it must be removed by the Editor during final formatting. Photographs are encouraged and will be published on a space-available basis. Contributions are welcome from all but especially encouraged from members—remember; this is your newsletter!