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President's Corner

Rich Thoma

Three of St. Louis' premier natural history organizations, the Webster Groves Nature Study Society (WGNSS), St. Louis Audubon Society (SLAS) and the Eastern Missouri Paleontological Society (EMPS) got together for a joint meeting in February. "The Early Evolution of Birds" presented by **David Peters** was of great interest to all three organizations. David is known in the paleontological community for his expertise on Mesozoic reptile evolution, in particular non-dinosaur groups. This interest includes both birds and the other Mesozoic flying animal, the *Pterosaurs*. For the evening, Dave took us on a tour through his website, ReptileEvolution.com. Bones were the currency for this talk. The talk began with a very scientific discussion of bones from an early reptile, *Prosuchus*. From this early reptile, Dave then walked us through a series of early reptiles pointing out when the first mammal-like reptiles (ancestors of today's mammals) broke away, followed by reptiles, and dinosaurs. We learned that pterosaurs closest living relatives may be turtles. The skies of the Jurassic and Cretaceous were filled with pterosaurs in a variety of forms. Dave chose the evening to describe a few less familiar ones, including *Sharovipteryx*, which used hind legs for flying, and *Jeholopterus*, a vampire pterosaur. After leading us through the pterosaurs, Dave then switched gears and talked about the other flying animal of the Cretaceous, the birds. We learned that birds evolved from theropods, a group best known from the movies as the fierce predators *Tyranosaurus* and *Velociraptor*. Feathers were common in nearly all theropods. Dave hypothesized that the first feathers initially were sexual ornamentation and not used for flight. Dave firmly believes that today's birds are just small theropods. The first official bird, *Archaeopteryx*, had a bony tail, teeth and an anatomy more in line with the theropods of the day. Without feather impressions in the fossil, *Archaeopteryx* would have been classified as a small theropod. There was lots of discussion on whether theropods learned to fly by running very fast across the ground or leaping from tree branches. Dave believes flight took place using a combination of both.

At the March general meeting, **Tim Guetersloh**, spoke about his "Adventures on the Appalachian Trail". Tim is an avid photographer that still uses the classic 4" x 6" film format to create artistic visuals of the landscapes, plants and animals he has found. Many of his photos have been featured at numerous art exhibits. With 15 pounds of camera equipment along with all the other hiking gear, Tim has hiked the Appalachian Trail twice. For this evenings talk, Tim brought over 200 slides for all to enjoy. The slide show was set up to show a slide every 13 seconds so that the whole presentation lasted for 45 minutes. The slide show began where the trail begins at Springer Mountain in Georgia in early spring. Slides then followed Tim's northward journey until he reached Mount

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Katahdin in Maine, six months later. This was a total of 2181 miles. In the bottom left hand corner was a mile marker so that the audience could follow the progress. While the slides were being shown, Tim filled us in on his impressions from the trip. In Tim's opinion, to hike the Appalachian Trail one must be task oriented, have good logistics, be confident it can be done and one must have a love of nature. To be able to complete the trail in 6 months one must hike 13 to 15 miles each day. We learned that Tim hiked the trail without support. He was able to do this by mailing supplies to himself for pickup at numerous Post Offices along the route. Hiking the Appalachian Trail requires a lot of confidence. By his best estimate, the elevational changes were equivalent to climbing Mt. Everest 16 times. And finally, Tim clearly has a love of nature as his photos vividly illustrated. It was challenging, watching the spectacular photos and at the same time listening intently to what Tim had to say. At the meeting, WGNSS welcomed guests from the St. Louis Orienteering Club and the St. Louis Camera Club who came to here Tim speak.

April's general meeting can be broken up into two parts. The first is the annual election of officers. Please note that the following positions are up for election at the April general meeting. These include President, 1st Vice President, and 2nd Vice President (Publicity). All three positions are vital for WGNSS to function properly. At the time this issue of Nature Notes is published there is only one nomination for each of the three positions open. Nominees are as follows: **Richard Thoma** (President); **George Yatskievych** (1st vice-president) and **Anne McCormack** (2nd vice-president in charge of publicity). Each nominee this year is a long time members of WGNSS and is committed to making our organization great. A brief bio of each of the nominees can be found later in this issue of Nature Notes.

Also at the April meeting, **George Yatskievych** has arranged for **Kate Danna**, from the "Friends of the Children's Eternal Rainforest" to speak. This organization has a 55,000 acre nature preserve in Monteverde, Costa Rica. Friends of the Children's Rainforest are a team of scientists, conservationists, teachers and nature lovers dedicated to supporting and protecting rainforest. One of their goals is to raise awareness about conservation issues relevant to rainforest habitats. More details about this presentation can be found later in this issue of Nature Notes.

WGNSS April General Meeting

George Yatskievych

Join us at Powder Valley Nature Center on 4 April at 7:30 p.m. for the next general meeting! Our speaker will be Kate Danna, who is on the board of the Friends of the Children's Eternal Rainforest. Some of you may know this organization under its former name, the Monteverde Conservation League, which runs a 55,000-acre nature preserve in the Monteverde area in Costa Rica. This UNESCO Biosphere Preserve is home to about 3% of Earth's biodiversity, including 154 species of amphibians and reptiles, 121 species of mammals, 450 bird species, thousands of species of plants, and more than a million different insects. Fresh from a recent trip to the area, Kate's will present a program on: "The Children's Eternal

Rainforest—A Cornerstone of Conservation." Don't forget that we will meet at the Powder Valley parking lot at 5:30 p.m. for those who would like to join our speaker for supper at a local restaurant.

January Bird Report

David Becher

The mild winter continued into January. There was one cold spell in the middle of the month that froze most of the local lakes, but overall the weather was much warmer than normal. Because of the warm weather many water birds that normally would have been forced out by freezing conditions remained in the area and there were a number of interesting observations. There was a major Snowy Owl invasion across North America this winter and a few birds made it to the Saint Louis area. Winter finches were few and far between. However, a pair of Common Redpolls at the RMBS headquarters was an outstanding find.

Charlene Malone reported four Tundra Swans at RMBS on the 11th among the many Trumpeters. There were several reports of a Trumpeter Swan with large amounts of yellow on the bill. This is a caution for all those seeking to find Tundra Swans among the flocks.

Andrew Reago reported six Mute Swans at B. K. Leach on the 14th, while visiting the Snowy Owls. This species is currently not recognized by the Missouri Records Committee although it is by the Illinois one. However, a group of six birds in this area seems very unlikely to be from a park or domestic source.

The Clarence Cannon CBC was blessed with open water and had record numbers of several species of waterfowl. Particularly notable is a count of over seven thousand White-fronted Geese, a species that is normally not found in the area in such large numbers. There were repeated reports of large flocks of this species in the area all month.

A flock of at least 40 White-fronted Geese also visited the Teal Pond area repeatedly throughout the winter mixing with the Canada Geese. There were occasional reports of one or two Cackling Geese in the group as well, but they were notably scarce this winter.

The goose flock at Carlyle Lake was huge this winter. The number of Snow Geese was certainly in the multiple hundreds of thousands. The resting flock covered a huge area of the lake. There were also plenty of White-fronted, Ross', Canada, and Cackling Geese reported in the flock. On the weekend of the 24th, Dan Kassebaum spotted three Brant as they flew in to join the flock. Unfortunately, there were never re-found, although they could have easily hidden within the huge flock out on the lake.

The warm weather and open water encouraged many puddle ducks to stay in the area. Most species were found easily. A Black Duck was reported by Charlene Malone on Heron Pond at RMBS on the 8th and Josh Uffman found four near Ellis Island on the 14th. On the 28th, Josh Uffman found a Blue-winged Teal near Winfield Dam. This species is extremely rare in Saint Louis in winter. Diving duck numbers in contrast were relatively low although all of the common species were present. The Long-tailed Duck and Black Scoter reported earlier in the winter remained at Riverlands throughout the month.

Dan Kassebaum and Mark Seiffert found a Red-throated Loon at Carlyle Lake on the first and it remained until at least the following weekend when it was re-found by a lucky few.

A Horned Grebe was reported on the Confluence CBC on the 1st as well.

Frank Holmes found a Red-necked Grebe at Horseshoe Lake in Granite City, Illinois on the 8th, which was re-found by those who were able to chase. It does not appear to have been seen after that day and lake soon froze in the winter's one real cold snap.

Chris Ferree reported an American White Pelican from Jefferson Lake in Forest Park on the 4th. Pelicans are now often found year round in Saint Louis, but this seems an odd location for this species at any season. There were also a few including one injured bird at RMBS during the month. A few Double-crested Cormorants also spent the winter at RMBS.

There were reports of Rough-legged Hawks from a number of areas, but none that were reliably

findable. Dan Kassebaum had one or two birds all month in the Carlyle area that were seen by a lucky few. David Becher reported one near B. K. Leach on the 15th and Dave Rogles reported seeing one at least twice in the Saint Peters area during the month. Bill Rudden photographed a nice Merlin at Columbia Bottom CA on the 14th.

Killdeer were present near Little Creve Coeur from the first week of January. The large gulls apparently stayed north this year and except for one or two Lesser Black-backed Gulls at Carlyle and a few Herring Gulls there was little in the way of large gull reports. However, large flock of Bonaparte's Gulls wintered at Carlyle Lake, which is unusual. On the 16th, Dan Kassebaum found a adult Little Gull flying among them. It remained for at least a couple of weeks.

The Common Ground Dove at Weldon Springs was re-found on the 1st by David Becher. The last report was by Debbie Trowbridge on the 9th.

The staff at Clarence Cannon NWR found a Snowy Owl at B.K. Leach Conservation area on the 12th. The bird which was very cooperative and seen by many was very white with few dark markings. It was certainly an adult bird and probably a male. On the 14th, Clark Creighton found a second bird that was much more heavily barred with black. Both birds remained in the area for some time although the second one was seen less often. The pale bird was last reported on the 18th by Jason Harrison. However, on the 19th the young bird flushed out of a roadside ditch for the Thursday group and landed nearby for a time until deciding to roost further from the road. As far as I know that was the last sighting of either bird. Short-eared Owls were also seen in the same area of B. K. Leach on a number of occasions.

Loggerhead Shrikes seem still be declining in the area, but Dan Kassebaum reported at least a couple wintering near Carlyle Lake that were repeatable for at least some people.

The only Red-breasted Nuthatch report was apparently one found by Josh Uffman at Lake 6 at Busch Wildlife on the 15th. Shawn Chubb reported two in the same area on the 18th.

The Mountain Bluebird continued along Bischoff Road near Granite City, Illinois throughout the month. Although it was often had to find, most people managed to get it for the year.

A Spotted Towhee was observed by Bill Rowe and the Marjamaas in an area of dense cover near the confluence on the 1st at Columbia Bottom during the CBC there. Efforts to re-find it the next day were unsuccessful. Bryan Prather found a Harris Sparrow near the beginning of the Blue Grosbeak trail on the 6th. On the 7th the Saturday group found at least three LeConte's Sparrows in the fields near the ponds along the Blue Grosbeak trail. This is at least the second year in a row that this species has wintered in this area. The numbers of White-crowned and White-throated Sparrows seemed low, possibly related to the warm winter, but Fox Sparrows usually very rare in mid-winter were reported with some frequency, including one was seen in the area of the Busch Wildlife Headquarters Parking Lot in early January on more than one occasion. Lapland Longspurs were scare, but Dave Haenni reported 10 along the Confluence Road near RMBS on the 12th and Josh Uffman reported 25 in the same area on the 14th.

Josh Uffman found nine Rusty Blackbirds near Winfield Dam on the 14th. This species is normally not found in Saint Louis at mid-winter; probably another sign of the very mild weather.

Winter Finches were not numerous, but David Becher reported two male Purple Finches at the Fallen Oak Trail feeders on the 15th and Shawn Chubb had a male and a female at the HQ on the 18th.

On the 28th a Common Redpoll was found at the feeders at the Audubon Center at Riverlands. The next day it was confirmed that there were actually two birds (both females) present. They continued to be seen at the feeders or in the nearby trees in following days.

November Botany Report

Compiled by George Van Brunt

November 7, 2011—Weldon Spring Interpretive Center, St. Charles County, MO (contributed by Wayne Clark).

It was an overcast rainy day with the temperature in the lower 60's F. The rain stopped upon arrival at the meeting place, the parking lot at the Interpretive Center. Those in attendance were Jeannie Moe, Richard Abbott, George Van Brunt, Wayne Clark, Nancy Clark, Fr. Jim Sullivan, Steve Turner, Jack Harris, Burt Noll, and John Oliver.

We first investigated the flower garden around the flag pole in front of The Interpretive Center. There we found *Opuntia humifusa* (eastern prickly pear), *Silphium laciniatum* (compass plant), *Silphium terebinthinaceum* (prairie dock), *Symphyotrichum oblongifolium* (aromatic aster), and *Helianthus salicifolius* (willow-leaved sunflower) to name a few. *H. salicifolius* is a native that grows in the poor, dry soils of the unglaciated plains of western Missouri south of the Missouri River. It didn't look like it was going to rain soon so we went on the Hamburg Trail. There we found *Cirsium discolor* (field thistle), *Erigeron annuus* (daisy fleabane), *Heliopsis helianthoides* (ox-eye), *Trifolium aureum* (yellow clover), *Solidago altissima* (tall goldenrod), *Setaria faberi* (nodding foxtail), *Desmanthus illinoensis* (Illinois bundleflower), *Hypericum sphaerocarpum* (round-fruited St John's-wort), *Symphoricarpos orbiculatus* (coral berry), *Baptisia alba* (white wild indigo), and *Echinacea purpurea* (purple coneflower). It started raining while we were on the trail. When it became apparent that the rain was not going to quit anytime soon, we retreated to a small conference room. We had a discussion of the acorns in Fr. Sullivan's acorn collection while the projection equipment to show photos was being set up. Photos by Steve Turner, Burt Noll, Nancy Clark, and Jack Harris were shown.

November 14, 2011—Edmund A. Babler Memorial State Park, St. Louis County, MO (contributed by Steve Turner).

Time: 10:00 a.m.–12:30 p.m.
Conditions: Overcast, 70° F.
Participants: Richard Abbott, Wayne Clark, Nancy Clark, Bob Coffing, Jack Harris, Nels Holmberg, Jeannie Moe, Larry Morrison, Burt Noll, John Oliver, John Putz, Sam Putz, Abigail Putz, Fr. Sullivan, Steve Turner, Ruth TenBrink, Kathy Thiele, George Van Brunt (18 attendees).

The group of 18 assembled on an unseasonably warm mid-November day and began botanizing from a parking lot at the south end of Bates Road. This old residential road, which is blocked off to traffic and not shown on the official park map, is located in the northern end of the park and intersects Wild Horse Creek road near the park's northernmost extent. Our foray covered the approximately half-mile length of this road.

Although there was not a lot in bloom due to the advanced stage of the season, there was still plenty to be seen. The fruiting vines of *Celastrus orbiculatus* (oriental bittersweet) were abundant along the roadside. These vines coil tightly around the trunks and limbs of the trees upon which they grow, and for small trees this association can be lethal. In appearance, this introduced species is similar to the native American bittersweet, *C. scandens*. The two can be distinguished by the arrangement of the flowers and fruits, which are axillary in *C. orbiculatus* and terminal in *C. scandens*. At this time of year, the fruits are showy and attractive, with a bright red arillate seed framed by three yellow reflexed ovary walls. The flowerlike appearance of these fruits lends a welcome touch of color to an otherwise rather muted and drab landscape.

A second notable plant, detected with considerably greater difficulty due to its inconspicuous appearance, was *Calycanthus floridus* var. *floridus* (Carolina allspice). Appearing in early April, the large flowers of this species are a striking dusky red color, leading to the moniker of "wine flower" used in some parts of the world. During the time of our exploration, this shrub, like most others except for the omnipresent *Lonicera maackii*, is devoid of leaves and looks like nothing more than bare sticks arising from the ground. This species can be differentiated from other shrubby growth by a distinctive flaring of the twigs at the bud nodes, lending a wedgelike aspect. Some specimens also presented persistent, flask-shaped fruit receptacles appearing as golf-ball sized, brown pods. Inside of each are several hard, hairy brown achenes about the size of corn kernels. Cutting or scratching the twigs releases a strong fragrance not unlike that of *Lindera benzoin* (spicebush), though with a somewhat stronger terpenoid note. A recent paper described the analysis of essential oil from the closely related *Calycanthus floridus* ssp. *oblongifolius*. Twenty terpenoid constituents accounted for about 94% by weight of the stem oil (*Chem. Nat. Comp.* **2008**, *44*(5), 661), with cineol, bornyl acetate, and

***Calycanthus floridus* flowers, 8 Apr 2009. Photo by George Van Brunt.**

***Calycanthus floridus* pod with fruits. Photo by Steve Turner.**

***Celastrus orbiculatus* fruits. Photo by Steve Turner.**

pinenes predominating. The leaves are also reported to contain small amounts of camphor. Little wonder that the plant is aromatic!

Seeds of plants in the *Calycanthus* genus (of which two are recognized in North America by *Flora of North America*) also contain alkaloids, including (+)-calycanthine, isocalycanthine, and chimonanthine. The predominant alkaloid, calycanthine, causes convulsant physiological effects similar to strychnine, though it is structurally unrelated. Interestingly, the leaves, roots, and bark of the plant have been dried and used as a substitute for cinnamon, though this practice seems inadvisable due to the alkaloid content of other plant tissues.

Fruiting remnants of several forbs were also observed, including *Dasistoma macrophylla* (mullein foxglove), *Symphoricarpos orbiculatus* (coral berry), *Lobelia inflata* (Indian tobacco), *Elephantopus carolinianus* (elephant foot), *Erechtites hieracifolius* (pilewort), *Anemone virginiana* (thimbleweed), and *Urtica dioica* (stinging nettle). Remarkably for this late in the year, several plants were found still in flower, including *Rudbeckia triloba* (brown-eyed Susan), *Viola sororia* (common violet), and *Campanula americana* (American bellflower). In addition, the beginning of next year's season was evident in many vegetative rosettes and cotyledons, though these sometimes prove challenging for unambiguous identification.

November 21, 2011—Queeny County Park, St. Louis County, MO (contributed by John Oliver).

Time: 9:30–11:30 a.m.
Participants: Fr. Sullivan, George Van Brunt, Burt Noll, Wayne Clark, Nancy Clark, Steve Turner, Jack Harris, Richard Abbott, Nels Holmberg, John Oliver, Jeannie Moe, and Bill Knight.

On an overcast but pleasant morning in late November, a dozen botanists invaded Queeny Park. The park has survived invasion in the past by other hordes bent on hockey, band concerts, graduation ceremonies, dog shows, art, and other interests far stranger than ours. The park was once part of the estate of the late Mr. and Mrs. Edgar M. Queeny. Mr. Queeny was the former president and chairman of the board of Monsanto Chemical Company, which was founded by his father John F. Queeny. The elder Queeny was forced into a variety of jobs at the age of 12 as a result of the Chicago Fire of 1871, eventually relocating to St. Louis where he began manufacturing patent chemicals for sale to food and drug companies. He called his company by his wife's maiden name (Olga Monsanto), and began to produce the artificial sweetener saccharin. By 1905 John Queeny's company was also producing caffeine and vanillin and was beginning to turn a profit. In 1908 Queeny felt confident enough about his

Lonicera maackii **(Amur honeysuckle) dominates the understory in this Queeny Park panorama. Photo by John Oliver.**

firm's future to leave his part-time job with another drug house to work full time as Monsanto's president. The company continued to grow, with sales surpassing the $1 million mark for the first time in 1915. World War I created more opportunities for Monsanto because many chemicals were only manufactured by or under patents controlled by German chemical companies. U.S. companies stepped up production to meet domestic demand. Looking back on the significance of the war for Monsanto, Queeny's son Edgar, a Cornell University-trained chemist, remarked, "There was no choice other than to improvise, to invent and to find new ways of doing all the old things. The old dependence on Europe was, almost overnight, a thing of the past." In 1928, with his father ill from cancer, Edgar, age 30, took over the family business. A year later, the company listed on the New York Stock Exchange. One share of the company's stock bought then would be worth more than $22,000 today. Expanding the company from a saccharin producer to a chemical giant, Edgar saw the company's sales grow from $9 million in 1918 to $1 billion by the time he retired in 1962.

When the Queenys bought the land as a country retreat in 1931, there were two historic residences on the property, Jarville House, built in 1853 by Hyacinth Renard, and the Henry Weidman house off Weidman Road. One of the best surviving examples of the Greek Revival style in Missouri, Jarville had been saved and renovated into livable space by the O'Fallon family in 1924, but the Queenys hired architect William Crowell to complete the transformation of the property. The house as it is today is largely according to his vision. In 1987, the Dog Museum moved to the Jarville House from New York City, and the County added a large addition connecting the house to the circa 1931 garage in 1990. The Queenys sold their property to the American Investment Company Realty Corporation in 1964, giving the proceeds to Barnes Hospital. St. Louis County subsequently purchased the property from the American Investment Company in March, 1970 for $3,310,000 from 1969 Bond Issue funds. The Greensfelder Family Recreation Complex, which includes the ice-rink and exhibition space, was constructed with matching $1 million donations from Ethel Queeny and the A.P. Greensfelder Foundation which also donated $50,000 for landscaping.

The park is not a pristine natural area and contains many introduced species as a result of prior farming or landscaping efforts, or simply by seeds carried by wind and animals. The usual suite of invasive plants found in disturbed locations in our area may be found here as well. We found extensive stands of *Rosa multiflora* (multiflora rose), *Euonymus alatus* (burningbush), *Lonicera japonica* (Japanese honeysuckle), and *Lonicera maackii* (Amur honeysuckle). This last species is a particular problem in the St. Louis area, and is now the dominant understory plant in many places. From mid-October to mid-November, after frost and shortening daylight cause most of our woody plants to drop their leaves, the extent of the honeysuckle invasion may be clearly seen by even the most casual observer. During this period, virtually the only green leaves retained in the understory belong to the invasive *L. maackii* and are easily visible from any highway or trail in this region. The huge number of plants and the scale of the area affected are painfully evident, and since

***Alnus glutinosa* (black alder) fruits (top) and immature male catkins (bottom), Queeny County Park. Photos by John Oliver (top) and Burt Noll (bottom).**

our visit was during this autumnal "viewing window," a toxic yellow-green layer as far as the eye could see revealed the truly alarming extent of this invader's presence at Queeny Park.

This is probably the most aggressive exotic woody plant which has naturalized in the state's urban areas. It leafs out in April before trees and native shrubs and casts shade over spring wildflowers before they have a chance to fruit and store energy from the sun for the next year. In addition to this significant resource competition, allelopathy has been demonstrated, negatively affecting some native plant species, and a recent Washington University study investigated the suppression of *Lithobates clamitans* (green frog) numbers in areas with high *L. maackii* population densities and correlating it to changes in microclimate such as suppression of average daily temperatures.[1]

There are, however, interesting things to see in Queeny Park for botanists. The low area in the south-central valley has a number of wetland species including *Alnus glutinosa* (black alder), a European species not commonly found in Missouri and considerably larger than our native alder. These were probably planted during the landscaping of the late 60's and are now full-size trees. Like other alders, they bear separate staminate (male) and pistillate (female) flowers. We were able to see and photograph both the immature male catkins which will mature next spring and the fruits, the cone-like cluster of purple-brown woody bracts which formed from last year's female catkins.

Also in this area, group member and Missouri Botanical Garden employee Richard Abbott spotted a large tree he did not recognize. It appeared to be a willow, but we had little more than a few leaves on which to base a determination. Richard took a sample to the Botanical Garden where George Yatskievych agreed it was probably a willow, but not any of the native Missouri species. We will return to the site in spring to gather more data, and hope to be able to make a determination then.

The complete list of plant species observed on this trip: *Acer negundo* (boxelder), *Acer saccharinum* (silver maple), *Ageratina altissima* (white snakeroot), *Alnus glutinosa* (black alder), *Ampelopsis cordata* (raccoon grape), *Betula nigra* (river birch), *Bidens frondosa* (devil's beggarticks), *Carduus nutans* (musk thistle), *Carya ovata* (shagbark hickory), *Celastrus orbiculatus* (oriental bittersweet), *Cercis canadensis* (eastern redbud), *Chenopodium ambrosioides* (Mexican tea), *Cornus florida* (flowering dogwood), *Duchesnea indica* (mock strawberry), *Elephantopus carolinianus* (elephant's foot), *Euonymus alatus* (burningbush), *Euonymus atropurpureus* (wahoo), *Eupatorium serotinum* (late thoroughwort), *Ginkgo biloba*

(maidenhair tree), *Gleditsia triacanthos* (honey locust), *Hackelia virginiana* (beggar's lice, stickseed), *Juglans nigra* (black walnut), *Lactuca floridana* (Florida lettuce), *Lamium purpureum* (purple deadnettle), *Lepidium virginicum* (Virginia pepperweed), *Lindera benzoin* (spice bush), *Lonicera japonica* (Japanese honeysuckle), *Lonicera maackii* (Amur honeysuckle), *Maclura pomifera* (Osage orange), *Mimulus alatus* (monkey flower), *Morus rubra* (red mulberry), *Penthorum sedoides* (ditch stonecrop), *Phlox divaricata* (woodland phlox), *Phytolacca americana* (American pokeweed), *Platanus occidentalis* (sycamore), *Rosa multiflora* (multiflora rose), *Sassafras albidum* (sassafras), *Solidago altissima* (tall goldenrod), *Stellaria meadia* (common chickweed), *Symphoricarpos orbiculatus* (buckbrush), *Symphyotrichum pilosum* (hairy white oldfield aster), *Taxodium distichum* (bald cypress), *Teucrium canadense* (Canada germander), *Tilia americana* (American basswood), *Ulmus americana* (American elm), *Viola sororia* (common blue violet).

[1] Watling, J. I, Hickman, C. R., and Orrock, J. L. (2011). Invasive shrub alters native forest amphibian communities. *Biological Conservation, 144(11).* 2597–2601. http://dx.doi.org/10.1016/j.biocon.2011.07.005

November 28, 2011—Robertsville State Park, Franklin County, MO (contributed by George Van Brunt).

An overcast sky, a few snow flurries, wind, and a temperature in the 30°sF combined to give a wintery feel as 11 botanists assembled at the boat launch area parking lot in Robertsville State Park. Accompanying Fr. Sullivan on this late fall day were Nels Holmberg, Richard Abbott, Jeannie Moe, Wayne Clark, Nancy Clark, Kathy Thiele, John Oliver, Jack Harris, Burt Noll, and George Van Brunt.

During the course of the morning, we explored two areas: Meramec River bottomland forest and an open area along a powerline. The latter included the Roberts Family Cemetery which we visited.

A few species were flowering including some normally spring-flowering species. In the forest, we found *Lepidium virginicum* (common pepper grass)(not really a grass but a member of the mustard family) and *Lobelia inflata* (Indian tobacco) in bloom. In the Roberts Cemetery, we found *Capsella bursa-pastoris* (shepherd's purse) and *Cardamine hirsuta* (hoary bitter cress) in bloom. It is

Lepidium virginicum **(common pepper grass), 28 Nov 2011. Photo by George Van Brunt.**

Lobelia inflata **(Indian tobacco) on 28 Nov 2011. Photo by George Van Brunt.**

not unusual to find small numbers of a few spring-blooming species blooming again in the fall.

Many of the plants we identified were senescent. Senescence is the death of all or part of the plant; the dead parts usually dry out and turn brown and may persist throughout the winter. Identifying these dry, brown plant remnants is one of the challenges of winter botany. The presence of fruits makes the task of identification easier and many of the senescent plants we identified still bore fruits from the recent growing season. These included *Chasmanthium latifolium* (inland oats), *Verbesina alternifolia* (wingstem), *Elephantopus carolinianus* (Carolina elephant's foot), *Boehmeria cylindrica* (false nettle), *Senna marilandica* (Maryland senna), *Symphoricarpos orbiculatus* (coral-berry), and *Pseudognaphalium obtusfolium* (fragrant cudweed).

Pseudognaphalium obtusifolium is a native plant that flowers in late summer and early fall. The plants grow up to 2.5 feet tall; the lower half of the stem is unbranched and the upper half has short

Pseudognaphalium obtusifolium **(fragrant cudweed) fruiting heads, 1 Sep 2008 (top) and 28 Nov 2011 (bottom). Photos by George Van Brunt.**

Aplectrum hyemale **(Adam-and-Eve orchid), 2 leaf blades. Photo by George Van Brunt.**

branches. The upper branches are densely hairy and appear whitish-green in color. The long, narrow leaves are arranged alternately on the stem. The flower heads are conical in shape, attached at the base, and have a blunt apex. (See photo of flowers). As the flowers are pollinated and the fruits develop, the flowerhead becomes more open and wider as seen in the photograph taken on this field trip. The flowers are odorless, at least to the

Tremella mesenterica **(witches' butter). Photo by George Van Brunt.**

human nose, but the stems and leaves when crushed may have a mild balsam-like fragrance.

In the forest, as anticipated, we found a number of *Aplectrum hyemale* (Adam-and-Eve orchid) leaves. In the January 11, 2010 *Nature Notes*, I wrote "The common name of this orchid, Adam-and-Eve, refers to its corms, short, vertical underground stems. Each corm lasts 2 years and gives rise to another corm connected to the first by a short, horizontal underground stem called a rhizome; this is reminiscent of the Genesis account of Eve being formed as an extension of Adam, from his rib. A single plant may form a string of connected corms over a period of years. It is only the youngest corm of each plant that forms one fairly large leaf (4 - 5 inches long) in the late fall. This leaf lies flat on the ground and photosynthesizes all winter, storing food in the corm. It withers in the spring after which the corm sends up its flowering stem. The strategy of producing its leaf in winter allows the plant to be exposed to sunlight without shading from taller plants. The species name *hyemale* means "belonging to winter", referring to this winter leaf." Unexpectedly, we found a plant with two leaf blades; Richard confirmed that the leaf blades were attached to the same petiole and were not just two closely positioned plants. I don't know how common this occurrence is, but it is the first one I have ever seen. George Yatsievych explains, "Such teratologies are caused by damage to the meristem of the leaf primordium early during the development. This can happen by physical damage, insect damage, or disease. It isn't common. It also does not appear to have a genetic component, so the plant likely will not produce a "twinned" leaf next year."

Other species produce winter leaves as well. We found fresh green leaves of *Glechoma hederacea* (ground ivy), *Claytonia virginica* (spring beauty), *Chaerophyllum procumbens* (wild chervil), *Packera glabella* (butterweed), *Phlox divaricata* (wild sweet William), cf. *Draba verna* (spring draba), and *Lamium amplexicaule* (henbit). Winter leaves typically are close to the ground where it is warmer, and they often have a different morphology than the spring-summer-fall leaves of these species. The different appearance of winter leaves presents an interesting challenge in identification.

A very interesting find was *Tremella mesenterica* (witches' butter), a fungus which is parasitic on several species of wood-decay fungi of the genus *Peniophora*. This widely ranging Basidiomycote is found in temperate and tropical forests of North America, South America, Eurasia, Africa, and Australia. The yellow fruiting body appears on dead branches which are still attached to the tree or which have recently fallen from the tree. The specific epithet comes from two Greek words; μεσος (mesos) meaning middle, and εντερον (enteron) meaning intestine. A mesentery is a membrane that attaches to the various twists and folds of our intestines (and those of other vertebrates) and holds the intestines in place while still allowing some movement. The mesentery keeps the intestines from tying in knots and is also a place where yellow fat may be stored. As seen in the accompanying photograph, *Tremella mesenterica* looks somewhat like a mesentery.

February Entomology Group Meeting

Jane Walker

The Entomology Group met February 20 at the Butterfly House to hear Rich Thoma speak on insect camouflage. The title of his talk was "Camouflage: The Art of Not Being Seen While in Plain Sight". Camouflage is a type of mimicry and is important in both insect defense, hiding from potential predators; and insect predation, hiding from potential prey.

Rich covered three types of mimicry or camouflage in his talk. First is eucrypsis where the predator is unable to distinguish the prey from the background. We also call this blending in with the background. To illustrate this type of camouflage, Rich challenged us to find the hidden grasshopper as he showed us several shots of lichen covered boulders. The irregularly spotted lichen grasshopper was very difficult to see against this background. Other examples included green caterpillars against a green leaf background, or brown, bumpy *Catocala* moth caterpillars against a brown tree trunk. The above examples are all forms of passive eucrypsis. Sometimes orientation of the insect on its background was important to not being detected. Here, Rich showed us an example of an adult Catocala moth with vertical, wavy lines in its wings. In order to blend in with the bark of a tree, the moth would have to orient itself vertically on the trunk. A bird would be able to detect the moth if it landed horizontally, as the wavy lines would be perpendicular to the wavy lines in the tree bark.

In active eucrypsis, the insect makes its own camouflage. In an example I gave Rich to show the group, the camouflaged looper (Wavy-lined Emerald) glues pieces of flower petals to its body to resemble the flowers it is eating. Another example would be caddisfly larvae that build "homes" out of materials that make them undetectable by fish, such as grains of sand or small pebbles.

A second type of camouflage is "special protective resemblance", where a predator sees the prey, but confuses it with something inedible. Examples of this type of camouflage include a leafhopper resembling a thorn, or a caterpillar resembling a bird dropping as in Tiger and Giant Swallowtail caterpillars.

Finally, a third way of fooling a predator's eyes is what Rich called "prey escape responses". Prey escape responses can involve the use of flashing or large eyes. Flashing occurs when the prey suddenly displays a bright color, the flash, and then quickly hides it. This appearing and disappearing flash of color can confuse the predator as to the prey's exact position. Rich showed us a video clip of a Morpho butterfly flying where one could see the butterfly as it opened its wings and flashed blue, and then closed its wings and disappeared. One moment the butterfly was in one spot (first flash) and the next moment it was much further along as

we saw the second flash. Some insects have large eye patterns on their bodies. Examples are the large eyes of a Spicebush Swallowtail caterpillar or the large eyes on the wings of a Polyphemus moth. These large eyes can momentarily surprise a predator, just long enough to make the predator hesitate and the prey escape.

Rich shared many examples of camouflage in the insect world, drawing from his growing library of photos as well as from the internet. The audience in turn was able to share other examples of insect camouflage making for a real interesting evening.

Oedipodine Rex

Ted C. MacRae[1]

Ever since my current fascination with band-winged grasshoppers (family Acrididae, subfamily Oedipodinae) began, I have been obsessed with photographing one species above all others—*Trimerotropis saxatilis*, the lichen grasshopper. Like most species in the group, lichen grasshoppers utilize an interesting survival strategy that I call "conspicuous crypsis"—the use of stunning colors and contrasting markings to help them blend into the mottled and variably-colored environments that they inhabit. Lichen grasshoppers take this strategy to the extreme, culminating in some individuals with the most gorgeous shade of blue-green in perfect match to the crustose lichens that cover the rock outcroppings of their preferred glade habitats. In my opinion, they are the kings of the oedipodines! I have seen them before in past years in the igneous and sandstone glades that dot the Ozark Highlands of southern Missouri. Crustose lichens abound in these acid environments, providing the perfect backdrop to make invisible these otherwise conspicuous grasshoppers. This past June during a couple of visits to a marvelous sandstone glade complex near Calico Rock in north-central Arkansas I got my wish, and shown here are

Sandstone glade habitat for *Trimerotropis saxatilis*, vic. Calico Rock, Arkansas.

***Trimerotropis saxatilis* with classic lichen-green coloration.**

some of my favorites from the many, many photographs I took during those sessions.

Lichen grasshoppers are actually quite variably colored—not all individuals exhibit the green coloration for which they are so famous. Despite this, they are the only member of the genus occurring in the eastern U.S. and, thus, are immediately recognizable. While they are beautiful in all of their color variations, I cannot lie—it is the green individuals that I constantly find myself admiring the most. While many other grasshoppers are green, only a handful (themselves members of the same subfamily) exhibit the same stunning shade of blue-green that this one does. Add to that an abundance of black speckling and contrasting bands, and you've got one gorgeous grasshopper. Yet, for all their overt beauty, they are absolutely impossible to see in their native habitat until they take flight when approached. Fortunately, their escape flights are short and not terribly erratic—

[1] Originally posted 15 July 2011 at *Beetles in the Bush*: http:beetlesinthebush.wordpress.com. Photos by the author.

with a little practice it becomes rather easy to track them in flight (aided by their interrupted buzzing crepitation) and watch where they land. They may not be immediately visible after landing, but with careful study of the landing area they are usually quickly relocated. Once detected, slow deliberate movements are all that are needed to allow a close approach and a good look (and photographs if desired).

Of course, the problem with 'conspicuous crypsis' (or any form of crypsis, for that matter) is that it only works when in the right environment. I chased the above lichen-colored individual onto this patch of dark moss while trying to photograph it, at which point it became overtly visible.

As previously mentioned, lichen grasshoppers come in a variety of colors and shades. While the green individuals may be the most stunning, I was captivated also by the below individual, darker brown and black, with the most beautiful, contrastingly colored orange eyes. This individual may not blend in as well as the green individuals when sitting on lichen-encrusted rocks; however, its coloration and patterning seem perfectly adapted to the more barren, darkly colored rock exposures. This helps explain why not all lichen grasshoppers are green—the rock exposures in the glades that they inhabit are not uniformly lichen-encrusted, but rather consist of both encrusted and barren expanses of rock, with diverse coloration being a result of multiple and sometimes conflicting selective pressures.

A third individual resembles the second in that it is more brown than green. However, the base coloration is lighter with greater contrast to the dark bands. Like the second individual the eyes are spectacular orange, but it also exhibits a green shading on the back of the head behind the eyes not seen in the second individual.

Not only did I find the adults, but I also found a rather young nymph that certainly represents this species (I'm guessing maybe 3rd instar based on the degree of wing pad development). This nymph exhibits the same stunning green coloration that the first individual above shows, and its fortuitous occurrence on both lichen-encrusted and (relatively) barren rocks provide an excellent demonstration of the effectiveness of its coloration in achieving crypsis.

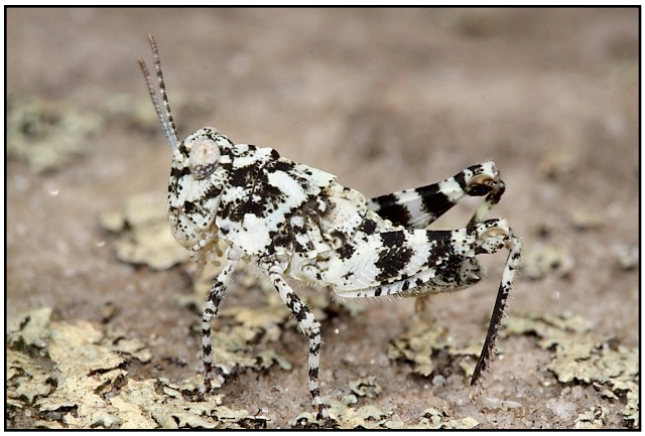
The stunning green contrasts starkly against a dark moss backdrop.

The mottling of the colors is almost as fascinating as the colors themselves.

A darker brownish individual with spectacular orange eyes.

Another brownish individual, more contrastingly marked.

Now you see me…



The lichen-colored nymph is easily seen against barren rock...

…now you don't!

...but blends in marvelously amongst the lichens.

Grampus and go-devil

Ted C. MacRae[2]

***Corydalus cornutus* female at a blacklight sheet in Sam A. Baker State Park, Wayne Co., Missouri.**

Ever taken a close look at a female dobsonfly's head? Female dobsonflies don't get nearly as much attention as the males due to the latter's ridiculously elongated mandibles. While female mandibles are more modestly proportioned, don't think they're ineffectual—females are quite capable of inflicting a blood-letting nip if one is not careful. Certainly the female head is no less dinosaurian in appearance than the male's, and while I know that *Corydalus cornutus* is the product of the same amount of evolutionary time as any other species on earth today, I can't help but think they look so "primitive."

While dobsonfly is the commonest name applied to these insects, I much prefer "go-devil" (not sure of the origin) and "grampus" (from "Krampus"—a mythical horned, creature in Alpine countries). The latter name in particular pays more appropriate homage to the monstrous appearance of these insects.

[2] Originally posted 20 Feb 2012 at *Beetles in the Bush*: http:beetlesinthebush.wordpress.com. Photos by the author.

WGNSS Officer Elections: Candidate Biographies

President—Richard Thoma

Richard Thoma has been a member of WGNSS for approximately 25 years. Most of that time has been spent participating in the Entomology Natural History group. Insects have always been a fascination. Rich has given numerous presentations at WGNSS entomology meetings. Other areas of interest include paleontology, ecology, evolution and hiking. He has hiked over 300 miles of the Ozark Trail. Rich loves to be outdoors. Every field trip brings something new to learn and fascinating to see. In addition, Rich has a strong desire to teach students to have a love of nature. He volunteers to speak to school groups and other youth organizations. Usually the talk is about the amazing world of insects. He has also been a Boy Scout leader as a camp counselor as a young adult and as a pack leader when his son was a cub scout. In addition, he joined the WGNSS Scholarship Committee in 2004. Richard became the chairman of both the Entomology and Scholarship Groups in 2006 and held those positions for 4 years. In 2010 Richard was elected President of WGNSS and has held the position for 2 years. Richard is seeking his second term as president of WGNSS at the April elections.

1st Vice President—George Yatskievych

George Yatskievych has been a WGNSS member since 1987, when he and his wife, Kay, moved to St. Louis. George is a curator in the Science and Conservation Division at the Missouri Botanical Garden, where his duties focus on the Flora of Missouri Project. He is active with the WGNSS Botany Group and has been on the Board for several years as a Board Member, then as a Vice President. He enjoys hiking with his wife and dog and also is a nature photographer. George lives in Des Peres in a house surrounded by a small, perpetually out of control woodland perennial garden.

2nd Vice President—Anne McCormack

Wax On, Wax Off; WGNSS in the 21st Century. Remember *The Karate Kid*? In the 1984 movie, a martial arts master, played by Pat Morita, demonstrates that you don't have to be stronger that your opponent to win. Reflect your opponent's strength back at him, and then you can defeat him with his own weapons.

Let's apply this philosophy to our own organization. We'd all like to see WGNSS continue its mission for many years to come, but how can we compete with Netflix, iPads, and Xbox360? Well, we can use Facebook, YouTube, Flickr and all the amazing 21st Century tools to get the word out about the wonderful group of people that belong to Webster Groves Nature Study Society. We have to publicize our programs, entomology meetings, botany walks, birding, and nature book discussions in ways that will grab the attention of the digital citizen.

I've attempted to do this as 2nd Vice President in charge of publicity by establishing a free website to promote WGNSS's current events, starting a WGNSS photo-sharing group on Flickr, and participating in discussions on WGNSS's Facebook page. There's much more that we can do to spread the word about the opportunities we offer to appreciate and understand nature through direct experience. I have no doubt that there are many people in our area who would become enthusiastic members if only we could reach them. I'd love to have your support for another term as 2nd Vice President.

By the way, if the links in the paragraph above don't work for you, copy the ones below and paste them into the address bar of your Internet browser.

WGNSS current events: http://sites.google.com/site/neverenoughnature/

Photo sharing and discussion on Flickr: http://www.flickr.com/groups/wgnss/

WGNSS's Facebook page: https://www.facebook.com/groups/150365395220/

Jane and Whitney Harris Lecture

Submitted by Patricia Hinton

Dr. Peter Kareiva, Chief Scientist, The Nature Conservancy, presents "Towards a new

conservation: Strange bedfellows, broadening the constituency, and rejecting false metaphors." Dr. Peter Kareiva joined The Nature Conservancy in 2002 after more than 20 years in academics and work at the National Oceanic and Atmospheric Administration, where he directed the Northwest Fisheries Science Center Conservation Biology Division. In addition to his duties as the Conservancy's chief scientist, his current projects emphasize the interplay of human land-use and biodiversity, resilience in the face of global change, and marine conservation. Peter has authored over 100 scientific articles and has written (with Dr. Michelle Marvier) a textbook: *Conservation Science: Balancing the Needs of People and Nature* (Roberts & Company 2010). In 2011, Peter was named a member of the National Academy of Sciences for his excellence in original scientific research. Peter received a master's of science degree in environmental biology from the University of California, Irvine, and his Ph.D. in ecology and evolutionary biology from Cornell University.

Shoenberg Auditorium, Ridgway Center, Missouri Botanical Garden, 4344 Shaw Boulevard, 7:30 p.m. Tuesday, April 3, 2012. This event is free and open to the public. For more information call (314) 516-5219.

April Lectures at St. Louis Zoo

Submitted by Sandra Faneuff[3]

The Academy of Science-St. Louis, in partnership with the Saint Louis Zoo, presents the 2011–2012 Science Seminar Series with *Science Seminars* and *Conservation Conversations*. Adults, teachers, middle and high school students, and the general public are invited to attend these no-cost lectures on topical issues in science. Lectures are from 7:30–9:00 p.m.

CONSERVATION CONVERSATIONS

- **Tuesday, April 10.** *Reintroduction of the Island Fox*, by Cheryl Asa, PhD.

For information on these and other events at the Academy of Science-St. Louis check their website www.academyofsciencestl.org or call (314) 533-8586.

[3] Office Manager, Education Department, St. Louis Zoo.

Group Activity/Walk Schedules

BOTANY GROUP

Chair—George Van Brunt

- **Monday Botany Walks**, Leader—Fr. James Sullivan; now in his **45th year**! 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 following Monday's trip.

ENTOMOLOGY GROUP

Co-Chairs—Phil Koenig and Jane Walker

Monthly meetings are held September through May and normally occur on the third Monday of the month.

- **Monday, March 19, 7:00 p.m.** John Christensen will be our speaker. The title of his talk is "The Nine Senses of Insects". Knowing John this will most likely be a humorous as well as scholarly talk. Butterfly House (Faust Park), 15193 Olive Blvd., Chesterfield.
- **Monday, April 16, 7:00 p.m.** Dr. Bob Marquis from the University of Missouri-St. Louis will speak to our group. The title of his talk is "Caterpillars as engineers: Build it and they will come". Dr. Marquis has studied oak herbivory in the Ozarks as part of the Missouri Department of Conservation's long term MOFEP project. Butterfly House (Faust Park), 15193 Olive Blvd., Chesterfield.

NATURE BOOK CLUB

Chair—Lisa Nansteel

The Nature Book Club is a group of naturalists who meet once a month to discuss a book chosen for its general interest from botany to zoology. The group meets at the Evangelical United Church

of Christ in Webster Groves on the second Tuesday of the month from 1:30-3:00 p.m. For more information and directions contact Lisa Nansteel at (636) 391-4898. All are welcome—especially newcomers!! Upcoming books:

- **Tuesday, April 10.** *The View From Lazy Point* by Carl Safina.
- **Tuesday, May 8.** *Ant Hill* by E. O. Wilson.

ORNITHOLOGY GROUP

Chair—David Becher

- **Saturday Bird Walks**, Leader—David Becher. All walks are at Des Peres Park. Walks normally go through early afternoon, so bring lunch if you wish to stay out. Everyone is welcome. The leader reserves the right to change the schedule if necessary. If you have questions, contact David at (314) 576-1146 or DavidBecher@msn.com.
- **Thursday Bird Walks**, Leader—Jackie Chain. The WGNSS Birding Group meets at 8:30 a.m. at Des Peres Park parking lot off Ballas Road just north of Manchester Rd. and east of West County Mall. Please contact Jackie Chain at (314) 644-5998 or chainjac@sbcglobal.net if you have questions. If there is a change in meeting time or place, we will advise by posting on MOBIRDS.

For general information about WGNSS activities, contact Membership Chairman Joe Whittington at whittex@aol.com or (314) 645-3272.

Editor's Corner

Ted C. MacRae

***NATURE NOTES* BY EMAIL**

Nature Notes is available by regular post or email; however, there are significant advantages to receiving it by the latter method. These include elimination of printing and mailing costs (reducing not only the cost of your subscription, but also decreasing its environmental impact) and the ability to view *Nature Notes* **in full color**. Embedded hyperlinks allow instant navigation to email addresses and websites. Of course, you can always print your electronic copy of *Nature Notes* if you wish (please use recycled paper and print on both sides). *Nature Notes* by email is sent as a PDF, which can be opened using Adobe Reader (download free at http://get.adobe.com/reader/). Contact Joe Whittington, Assistant Treasurer, at whittex@aol.com to convert your subscription.

CALL FOR SUBMISSIONS

We welcome announcements of nature related events in the St. Louis area, notices of publications, and original nature oriented articles. Suggested topics include field trip accounts, information about local natural areas, interesting nature sightings, or reviews of nature related books. Articles reprinted from other sources must obtain permission from copyright holders.

Send submissions to ted.c.macrae@monsanto.com. Limit text formatting to bold for emphasis and italics for scientific names. Avoid tabs, extra spaces, multiple hard returns, underlining, etc. (these will be removed during final formatting). Photographs will be included on a space-available basis. Contributions are welcome from all—remember, this is your newsletter!

May Berenbaum, Ph.D. to speak about "The Secret Life of Parsnips"

WGNSS Annual Spring Banquet Thursday, May 10

at Orlando Gardens, 8352 Watson Rd., in General Grant shopping center, Webster Groves

The social hour will begin at 5:30 pm. Mingle with other members and meet featured speaker Dr. May Berenbaum, Department of Entomology Chair from the Univ. of Illinois-Champagne/Urbana. At the banquet, the 2012 Lifetime Achievement Award will be announced and we will be honoring this year's WGNSS Scholarship winners.

Reservation Deadline: April 26, 2012. Send payment to:

Jane Deschu
1431 Tahoe Valley Court
Ballwin, MO 63021

Spring Banquet Reservations for _____ persons @ $29 per person _____

Name _____
Address _____
Phone _____e-mail (optional) _____