



# Nature Notes

## Journal of the Webster Groves Nature Study Society May 2011, Vol. 83, No. 5

First Issue November 1929



### President's Corner

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#### *Rich Thoma*

Long time WGNSS members, **Layne** and **George Van Brunt** spoke at the April general meeting about their travels to the southern ocean in February 2010. While we were struggling with freezing cold in the northern hemisphere, Layne and George were enjoying the height of summer on a cruise to remote places like the Falkland Islands, South Georgia, South Orkneys and the Antarctic Peninsula. We learned that even though it was summer, it was extremely windy and freezing temperatures were experienced for most of the trip. If the Van Brunt's were looking to get away from the cold February weather in St. Louis, this was not the trip to take. During the presentation, photos of George or Layne were often seen. However, it was hard to tell who we were really looking at. A bit of nose or forehead was all that could be seen. Every other body part was buried under multiple layers of clothing, hat, and gloves. On the islands, the flora was limited to short flowering plants and grasses. We saw photos of many different plants on the Falklands. Traveling south, the number of flowering plant species decreased significantly. The Van Brunt's saw 50% of all the flowering species on the Antarctic Peninsula. That's really not saying much because there are only 2 flowering plant species on the whole continent. Layne and George had the opportunity to visit several bird and seal rookeries

on this trip. As Layne described it, each island seemed to have its own species of seal, penguin and oceanic bird. For example on South Georgia, Fur Seals and King Penguins were abundant. A whole different fauna lived on the Antarctic Peninsula, including Leopard Seals, Crab-Eater Seals, Skuas, and Adelie Penguins. All told, the Van Brunt's saw at least six species of penguin on the trip. Other honorable mentions included Menke Whales and Albatrosses that were seen from the boat. For the Van Brunt's, this was the adventure of a lifetime, one in which they encouraged everyone in the audience to take some day.

Time is running out to make your reservation for the annual WGNSS spring banquet on Wednesday, May 4. The banquet features **Dr. Peter H. Raven**, President Emeritus from the Missouri Botanical Garden, as our guest speaker for the evening. On the eve of his retirement, Dr. Raven will speak at the WGNSS banquet about "**How to Conserve Species in a Changing World**". Join us in this celebration of a life dedicated to biodiversity and conservation. Also at this year's banquet, WGNSS is honored to present the 2011 Lifetime Achievement award to **Vivian and Walter Liddell**. Both Vivian and Walter have been active members of WGNSS for over 40 years. They have run birding field trips for many years and put in countless hours holding multiple board member positions. The Liddell's literally have each spent a lifetime enjoying the great outdoors and studying all that nature has to

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offer. The banquet will be at Orlando Gardens on Watson Rd., in Webster Groves. Doors open at 5:30 p.m., and dinner begins at 6:00 p.m. with the presentation of the Lifetime Achievement and Scholarship awards and our feature presentation following. This year the banquet is open to both WGNSS members and non-members. For more information about the banquet, a reservation form can be found later in this issue of Nature Notes. Extra reservation forms can also be downloaded from the WGNSS web site [www.WGNSS.org](http://www.WGNSS.org).

In addition to the banquet, please let me point out the many different spring field trips WGNSS has to offer. The weather has warmed up and it's time to get outside. This is the busy season for field trips. The birders are going out every Thursday and most Saturdays looking for migrating birds. The Botany Group is also enjoying all the flowering plants that are now emerging after a long cold winter. Botany field trips take place every Monday. In addition, the Entomology Group is planning to do insect surveys at LaBarque Creek Conservation Area. Field trips are open to all who are interested in learning about Missouri's plants

and wildlife. Be sure to look in the Group Activity/Walk Schedules section in this issue of *Nature Notes* for field trip locations and times.

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## May Banquet

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Mark your calendars for the WGNSS spring banquet on May 4. This year the banquet will be at Orlando Gardens on Watson Rd., Webster Groves. **Dr. Peter H. Raven**, President Emeritus from the Missouri Botanical Garden will be our guest speaker for the evening. Dr. Raven is possibly best known for his important work *Coevolution of Insects and Plants*, published in the journal *Evolution* in 1964, which he coauthored with Paul R. Ehrlich. In St. Louis, Peter Raven has been the director of the garden for nearly forty years and has made it one of the premier botanical research organizations in the world. Under Dr. Raven's tenure, the Garden has grown to include the Shaw Nature Reserve and the Sophia M. Sachs Butterfly House. On the eve of his retirement, Dr. Raven will speak at the WGNSS banquet about **"How to Conserve Species in a Changing World."** Join us in this celebration of a life dedicated to biodiversity and conservation. For more information about the banquet, there is a reservation form later in this issue of Nature Notes. Extra reservation forms can also be downloaded from the WGNSS web site [www.WGNSS.org](http://www.WGNSS.org).

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## March Bird Report

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*David Becher*

The weather in March was variable as usual. After a fairly normal start a warm middle of the month was followed by an unusually cold period with a couple of small snowfalls. Despite, or maybe because of, the unsettled weather, the bird migration appeared to go on fairly normally.

The Trumpeter and Tundra swans appear to have moved north at the end of February, since none could be found at REDA (Riverlands Environmental Demonstration Area) or Columbia

Bottom on the third. The Mute Swan was still present in the same pool where it had been with a mixed flock of swans in February, but it soon also moved on.

Other than the resident Canada Geese only a few goose stragglers appeared to remain. The most interesting ducks in March were the pair of adult plumaged White-winged Scoters that were seen just above the dam at Alton. Adult plumaged birds Scoters are rare in Saint Louis and to have a pair is even more so. On the 11<sup>th</sup> only the female bird could be found and the next day both were gone. The numbers of other species appeared to be fairly normal. Blue-winged Teal began arriving early in the month with the first reports from Columbia Bottom on the 3<sup>rd</sup> and the first flock on the 5<sup>th</sup>. Good numbers of other dabbling duck species were also present at Columbia Bottom. A large flock of Pintails at Columbia Bottom on the fifth was noteworthy. Low water levels at REDA reduced the duck numbers there. Columbia Bottom, however, had large numbers of a variety of puddle ducks and shallow water divers throughout the month, although the species distribution changed over the month as the migration continued. On the deeper lakes Ruddy Ducks predominated with smaller numbers of Lesser Scaup and a smattering of Bufflehead, Redheads, Mergansers of all three species and similar divers.

The only Common Loon report was by Bryan Prather – a breeding plumage bird on Creve Coeur Lake on the 24<sup>th</sup>. Unfortunately, it was apparently anxious to head north and not seen again.

Horned Grebes were reasonably common and were seen at REDA, Columbia Bottom, Horseshoe Lake, and Creve Coeur Lake among other places. Creve Coeur Lake hosted at least nine including several that were in nearly full breeding plumage.

American White Pelican numbers went up sharply during the month and were soon seen by the hundreds along the river. Double-crested Cormorant numbers were lower, but they have begun to appear at REDA and occasionally elsewhere.

Hérons began to appear in the Saint Louis area on schedule. The first Great Egret report was by Keith McMullen at Canteen Lake in Granite City,

Illinois. Frank Holmes also saw them on the 6<sup>th</sup>. By the middle of the month, they were being seen in Forest Park and other places. The first Snowy Egret was reported in Forest Park by Chris Ferree on the 21<sup>st</sup>. The first Little Blue Heron on the 22<sup>nd</sup> on the Monroe County, Illinois levees by Archie Keiper. By the 26<sup>th</sup> all three species were at Horseshoe Lake and looking rather sorry for themselves in the cold and snow. The first American Bittern was found on the 23<sup>rd</sup> by Connie Alwood and Columbia Bottom.

The first Soras of the year were reported by Bryan Prather at Little Creve Coeur on the evening of the 31<sup>st</sup>, just barely qualifying as March birds.

The shorebird migration began about the middle of the month with mostly small numbers of the common species. The first American Golden Plover report was a flock of 25 by Jackie Chain at Columbia Bottom CA on the 22<sup>nd</sup>. By the 24<sup>th</sup> the number was at least forty and they were seen off and on about the area thereafter. Although there is a lot of other suitable habitat they have not yet appeared elsewhere.

The Audubon Woodcock walk on the 12<sup>th</sup> was very successful with good views and numbers of American Woodcock. Wilson's Snipe numbers continued to increase and they were reported in many areas. The first Pectoral Sandpiper report was by Frank Holmes from Horseshoe Lake on the 13<sup>th</sup>. On the 20<sup>th</sup>, Randy Korotev reported more Pectoral Sandpipers and 3 Lesser Yellowlegs from Clarence Cannon and Frank Holmes found Greater Yellowlegs near Horseshoe Lake. On the 22<sup>nd</sup>, Archie Keiper reported a Willet and about 30 Pectoral Sandpipers from the Monroe County, Illinois levees. The same day Jackie Chain and Rose Ann Bodman also had Pectoral Sandpiper and Lesser Yellowlegs at Columbia Bottom along with the American Golden Plovers.

Below is a picture of the Mew Gull (center back) found last month by Bill Rudden. Note the smaller slighter and unmarked bill and the smaller lighter build than the surrounding Ring-billed Gulls. Thanks to Bill for the picture.

The Glaucous Gull was still present at REDA at the beginning of the month and was reported by the Thursday group on the 3<sup>rd</sup> and 11<sup>th</sup>. Connie Alwood reported the first Bonaparte's Gulls on the 9<sup>th</sup> at Teal Pond. Frank Holmes had one at



Mew Gull (center back) found last month by Bill Rudden. Photo by Bill Rudden.

Horseshoe Lake on the 25<sup>th</sup> and Saturday group had two at Creve Coeur Lake on the 26<sup>th</sup>. Connie also reported the only Franklin's Gull on the mudflats at REDA on the 11<sup>th</sup>. The best gulls continued to be at Carlyle Lake in Illinois with reports of Glaucous, Thayer's, and Greater and Lesser Black-backed Gulls the week of March 5<sup>th</sup>.

On the 12<sup>th</sup> the Audubon group was successful in calling in a pair of Barred Owls at Busch Wildlife while waiting for the sky to darken for Woodcocks. The Great Horned Owls in Tower Grove Park had three owlets off the nest.

The first swallows of spring began to appear around the middle of the month. Mike Brady had a Tree Swallow on the 11<sup>th</sup> at Castlewood State Park and another was seen on the 13<sup>th</sup> by Frank Holmes at Horseshoe. By the next week they were appearing in small numbers at a variety of places. The first reports of Purple Martins were by Chris Ferree in Forest Park on the 15<sup>th</sup> and at Indian Lake on the 24<sup>th</sup> by the Thursday group. The only March Barn Swallow was one reported in Forest Park on the 21<sup>st</sup> again by Chris.

Red-breasted Nuthatches continued to be seen in the pines at Busch Wildlife on the Fallen Oak Nature Trail and near Lake 6. Pipit reports were few, but 3 or 4 were seen by the Thursday group on Cora Island Road on the third. Cedar Waxwings continue to be notable by their absence. There were again no reports.

The warblers began arriving with the first Pine Warbler report from Busch Wildlife on the 9<sup>th</sup> by Dave Pierce. On the 23<sup>rd</sup> Debbie Trowbridge

reported that there were two. The first Louisiana Waterthrush report was by Mike Brady at Castlewood on the 19<sup>th</sup>. By the 22<sup>nd</sup> Charlene Malone reported seven along the road at Rockwood Reservation.

The Saturday group had six species of blackbirds in Saint Charles County on the 5<sup>th</sup> including good numbers of Rusty Blackbirds and a few Brewer's Blackbirds, both Grackle species and of course Red-winged Blackbird and Brown-headed Cowbird. Additional Rusty Blackbird reports were received from Frank Holmes at Horseshoe on the 13<sup>th</sup> and by Josh and the Saturday Group at Busch on the 12<sup>th</sup> and 19<sup>th</sup>.

Finch reports remained low. There was one female Purple Finch seen at the Columbia Bottom feeders on the 5<sup>th</sup>. This is not an area where they are commonly seen and it may have been a migrant.



## February Botany Report

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*Compiled by George Van Brunt*

**February 7, 2011 – Missouri Botanical Garden, 2011 Orchid show *et al.*, St. Louis, MO** (contributed by Jack H. Harris).

Time: 9:30–11:30 a.m. (+/-).

Conditions: Cloudy, Temp: 29–32° F., winds: calm.

Participants: Rev. Jim Sullivan, Jack Harris, Pat Harris, Jeannie Moe, Burt Noll, John Oliver, Steve Turner, Ruth TenBrink, John Christensen, Emily Christensen, and Larry Morrison.

The track for the day began with: 1) the 2011 Orchid Show in the Ridgway Bldg., then a brief scamper outdoors to 2) the Mediterranean House, and 3) the Climatron, and finally, closing the loop by heading for the Sassafras Restaurant for lunch. The visit to the orchid show has become an annual event for the WGNSS Botany Group.

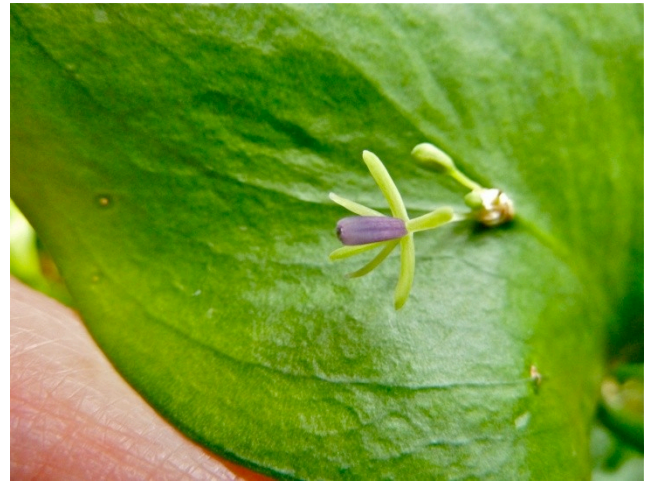
This year's FLORA MAYA theme was cast by the entry way 'gestalt' of wall decorations including a map of the MAYA WORLD and an image of the currently famous "2012 Calendar". Featured in this year's exhibit were 800 blooming orchids (on a rotating display basis), much of which is on view at any one time.



**Dressed for the occasion! A Mayan figure in the 2011 Orchid Show, Missouri Botanical Garden. Photo by Jack Harris.**

Accordingly the floral display was occasionally punctuated by elegant life sized Mayan male and female figures whose patina (on classic statues) was replaced by a surface of mosses (in texture and color). Each figure apparently patronized the same milliner and was crowned with a regal and colorful assemblage of ferns, feathers, orchids, and a various other stylish foliage. And if one should raise their eyes in amazement of this spectacle, he or she would be greeted by aerial displays of plant materials sculpted into parrots/macaws.

The seemingly endless variety of combinations and permutations of shape, color and texture of the orchid flowers was present on every dimension AGAIN this year. A listing of merely a few representative species on exhibit on that day would include: *Laeliocattleya cantaloupe*; *Trichocentrum splendidum* of Guatemala and Honduras; *Epicattelya rene marques* 'Flame Thrower'; *Paphiopedilum harrisianum* var. *luteola*; and *Oncidium divaricatum*. Although we barely viewed a very few of the large



**Flower & stem of *Ruscus hypophyllum* of the Ruscaceae (Butcher's broom family), Missouri Botanical Garden. Photo by Pat Harris.**

numbers of orchids on display, it was soon time to move on to our next stop for the day.

After a brisk, refreshingly cold outdoors walk we entered the Mediterranean House. One unusual plant soon caught the attention of the group. Seemingly, out of the center of the relatively large ( $\approx 25$  mm x  $\approx 45$  mm) citrus like ?leaf?, was a very small ( $\approx 4$  - 5 mm diameter), 6 petaloid tepaled, pale yellow/green flower. The nearby signage told us that this was *Ruscus hypophyllum*, a member of the lily family. However recent literature places this plant in the Ruscaceae, i.e., the Butcher's broom family. "Seemingly" is the appropriate word here because the apparent leaves (called phyloclades) are actually flattened branches. The real leaves are inconspicuous membranes attached to the base of the flattened branches. These soon wither and dry out. The native range of this plant is from Madeira to the Caucasus.

Farther along, the group encountered a more familiar plant type with an intriguing flower structure despite its familiarity. It was *Aristolochia californica* (California snakeroot), a California endemic vine in full bloom. This is a relative of our Missouri native and look-alike *A. tomentosa* (Dutchman's pipe). *Aristolochia tomentosa* ranges across most of the eastern U.S. and is known for its curious flower structure. Both species listed here are hosts for the pipevine swallowtail butterfly caterpillars. While finding the strange looking flowers of these plants entertaining, we did not over look the strange fruit of *Citrus medica* (Buddha's hand 'Fingered'). A 'lemon with fingers'



*Aristolochia californica* (California snakeroot) of the Aristolochiaceae (birthwort family). Photo by Jack Harris.



*Citrus medica* (Budda's hand ... 'Fingered') of the Rutaceae (Citrus family). Photo by Jack Harris.

might convey somewhat of an idea about the shape and color of this fruit.

But you have to see'm it to believe'm.

**February 14, 2011 – Missouri Botanical Garden, Monsanto Center, St. Louis, MO** (contributed by John Oliver).

Time: 9:30–11:30 a.m.

Participants: Emily Christensen, John Christensen, Bridget Schaefer, John Schaefer (toddler), Wayne Clark, Nancy Clark, Fr. Sullivan, Burt Noll, John Oliver, Jack Harris, Pat Harris, George Yatskievych, Tina Mathes, George Van Brunt, Jeanne Clauson, Jeannie Moe, Steve Turner, Ruth TenBrink, Susan McNeill, and Bill Knight.

Studying winter botany is tricky. Just when the details of leaf arrangement and flower structure are beginning to make inroads into the graying matter of one's brain, the killing frosts of winter leave a suddenly unfamiliar crime scene where the clues you have relied on are missing; a desiccated, dehiscent landscape where even well-known plants become mysterious. Common trees without their accustomed leaves are transformed into a sort of bundle-scarred and budded Sanskrit to be puzzled over, often in vain.

For the most part, the WGNSS Botany Group welcomes this challenge and continues its field trips through the winter season. Occasional inclement weather causes changes in our schedule, and we have also acquired what we view as the wisdom and creativity of age to include relevant alternative activities during this period. On Valentine's Day, 19½ of our members gathered to tour the herbarium and library facilities at the Missouri Botanical Garden's Monsanto Center. Our host and expert guide was George Yatskievych.

We convened in the lobby of the Monsanto Center, which was built in 1997. When it opened the following year, the \$19.4 million, 79,000 square foot building was considered a front-runner among "green" facilities, and its lobby features tree-shaped columns made from plantation-grown tropical trees and flooring from wood blocks of end-grain fir from the door manufacturing industry. As part of the "earthquake-proof" design, the entire building rests on 42 shock-absorbing base isolators fastened to pillars reaching into bedrock below its foundation. A dozen years after it opened, the building received an energy "make-over" which resulted in its designation by the U.S. Green Building Council as a "silver" certified

existing building under the Leadership in Energy and Environmental Design program. Of about 200 buildings earning such accreditation nationwide, the Monsanto Center was the first in Missouri.

While in the lobby, George also gave us a brief history of the Garden as research institution. The Missouri Botanical Garden's Herbarium is one of the world's outstanding research resources for specimens and information on bryophytes and vascular plants. The collection is limited to these two major groups of organisms. As of January 1, 2011, the collection contained 6,231,759 specimens (5,706,547 vascular plants and 525,212 bryophytes). It is the second largest in the U.S. and fifth largest in the world. However, in terms of acquisitions, its collection is the fastest-growing in the world. The Herbarium is divided between two buildings. The Bryophytes, Pteridophytes, Gymnosperms, Monocots and Dicots through the Fabaceae (family 128) are located in the Lehmann Building, at the south end of the Garden grounds, while Dicot families from Pandaceae (family 128A) through Asteraceae (family 280) are in the Monsanto Center. Over 90 % of known species are represented.

We then went to the fourth floor to visit the Missouri Botanical Garden Library, one of the world's finest botanical libraries. Founded in 1859 by Henry Shaw, the library is an essential part of the Garden's research program. It is used in conjunction with the herbarium by Garden research staff, botany students, and visiting scientists from around the world. The general collection consists of more than 200,000 volumes of monographs and journals. More than 800 current periodicals are received through subscription and on exchange. The main emphasis of the collection is on plant taxonomic literature, current and retrospective, collected in all languages. Other special collections include: over 3,000 reference works; 1,100 Sturtevant Pre-Linnaean volumes; 2,000 post-1753 rare books; over 1,000 folio volumes; the personal collections of Ewan (11,000 books), Steere (1,000 volumes), and Niederlander (600 volumes); 7,000 items of botanical art; map and atlas collection (over 7,000 items); and microfiche (45,000 records). A sample of the historic botanical literature from the Missouri Botanical Garden Library may be viewed online at <http://www.botanicus.org/>.



Missouri Botanical Garden Herbarium shelf units. Photo by Steve Turner.

The MBG Library is also a member of the Biodiversity Heritage Library, a consortium of 12 natural history and botanical libraries that cooperate to digitize and make accessible the legacy literature of biodiversity held in their collections and to make that literature available for open access and responsible use as a part of a global "biodiversity commons." Access to the searchable collection is online at <http://www.biodiversitylibrary.org/> (try searching for "Micrographia" to see one of MBG's rare books contributed to the collection. This is the book where on page 116, Robert Hooke first uses the word "cell" to describe the fundamental unit he observed in cork. The famous drawing may be found at "Tab XI")

Of particular interest to our group of course, were the historical documents and specimens relating to the natural history of Missouri and of the St. Louis area. Much of this history is connected with botanists associated with the Missouri Botanical Garden, but even before the Garden existed, early explorers used St. Louis as a base for scientific expeditions. On the walls of the library are portraits of French scientist Andre Michaux, the botany predates Linnaeus and the home of the first botanical garden in France. For those interested in the early history of botanical research and collection in the St. Louis area, the following article (in three parts) is highly recommended: <http://www.botanicus.org/page/1154844>. Here you will learn some of the fascinating stories related to us by George about the early collectors John Bradbury (whose first person account of the New Madrid earthquake is reported as the only eyewitness account of the earthquake from a



One of the Garden's rare specimens: an herbarium sheet showing a fern collected by Charles Darwin in December, 1834 while he was naturalist on the Beagle. Photo by John Oliver.

person with a scientific background), Thomas Nuttall and the eccentric and reclusive Henry Eggert, who may have saved the wine industry in Europe. The Library also houses treasures like the exemplary Master's Thesis of WGNSS member Jeannie Moe, and the archival set of WGNSS Nature Notes which date back to the founding of our society as a part (and one of the few survivors) of a national movement in the 1920's by the Smithsonian Institution to encourage citizen scientists to study natural history.

Next we visited the portion of the herbarium housed in Monsanto Center. George showed us the long rows of sliding shelf units on tracks which conserve space and allow access to the folders which contain the herbarium sheets themselves. They are arranged by family and color-coded to indicate the area of the world where they were collected. Noting the many boxes of specimens which have yet to be cataloged and stored, George



George Yatskievych shows us another rare and historic herbarium sheet. This one is a *Solanum* sp. collected by Daniel Solander on Captain Cook's first voyage to the Pacific in 1768. Photo by John Oliver.

explained that the existing facilities have an estimated ten years of growth capacity left before expansion will be required.

Finally, we were given a glimpse of another area in which the Missouri Botanical Garden is leading the way for world botanical institutions. The problem of storage and retrieval of the vast amount of botanical knowledge contained in many millions of records located at various places in the world is insurmountable given the number of individuals qualified and actively engaged in the task – that is, until the advent of the computer age. In the late 1980s they became inexpensive enough, reliable enough, and powerful enough to become an effective tool for botanists. TROPICOS, the Garden's botanical information system, is the world's largest botanical database, containing more than a million published names, information on more than Included here is the Flora of Missouri Project the ongoing effort to update and compile



information on the state's flora. *Steyermark's Flora of Missouri, Second Edition*, Volumes 1 and 2 each contain more than 1000 pages featuring dot maps, descriptions, identification keys, flowering times and habitat information, along with new, original black-and-white illustrations of nearly all of the species. Current efforts are focused on completing the research and writing of Volume 3, which will complete the dicot treatments, with publication expected in early 2012. In the last two years, the project has embarked on an ambitious effort funded by the Institute for Museum and Library Services (IMLS) to make information on Missouri plants more widely accessible on the World Wide Web. Text from the printed Volumes 1 and 2 has been reformatted and digitized to allow full access on the web. Additionally, high-resolution scans of herbarium specimens of Missouri plants are available, and many photographs of plant species in the field are being uploaded. New tools have been developed to produce maps of the county-level distributions of the plants as well as other views of specimen occurrences. All of this material is available through the TROPICOS website at <http://www.tropicos.org/Project/MO>

Field work by Missouri botanists from colleges and universities, state and federal agencies, and private organizations, along with specimens donated by amateur enthusiasts like us, continue to increase the Garden's holdings of the state's flora

by about 5,000 specimens per year. It's gratifying to know that we have a part, however small, in such a massive and important undertaking. Thanks to George Yatskievych and the Garden for their hospitality and the opportunity to see "behind the scenes" at a world-class institution!

**February 21, 2011 – Pea Ridge Conservation Area**, Washington County, MO (contributed by George Van Brunt).

Five hardy botanists (Fr. Jim Sullivan, Jack Harris, John Oliver, Burt Noll, and George Van Brunt) met at Pea Ridge Conservation Area in Washington County on a windy morning with steadily falling temperatures in the 40°Fs. Rain of varying intensity, mostly light, was a constant companion on our two hour exploration.

This trip was our annual pilgrimage to see *Hamamelis vernalis* (Ozark witch hazel) in bloom. Gravel bars in Indian Creek support the growth of



*Hamamelis vernalis* flowers. Photos by Burt Noll (top) and George Van Brunt (bottom, 2006).

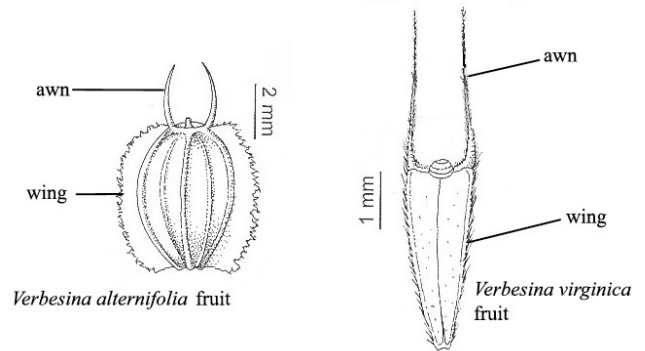
a healthy population of this species. Indeed, the witch hazel was in bloom, the pleasant fragrance being evident as we explored the area. Most other plants that we identified were still in their dormant state or were last year's senescent growth. These included *Hypericum punctatum* (spotted St. John's wort), *H. prolificum* (shrubby St. John's wort), *Euonymus atropurpureus* (wahoo), *Amphicarpaea bracteata* (hog peanut), *Trichostema brachiatum* (fluxweed), *Ruellia strepens* (smooth ruellia), *Penstemon digitalis* (beard-tongue), *Elephantopus carolinianus* (Carolina elephant's foot), *Dasistoma macrophylla* (mullein foxglove), and *Monarda fistulosa* (wild bergamot). Senescent grasses included *Andropogon gyrans* (Elliott's broom sedge), *A. virginicus* (broom sedge), and *Diarrhena americana*



*Diarrhena americana* (American beakgrass). Photo by Burt Noll.

(American beakgrass). John Oliver found the winter leaf of *Aplectrum hyemale* (Adam-and-Eve orchid) on a short off-trail excursion. *Verbesina alternifolia* (wingstem), *V. virginica* (frostweed), *Symphoricarpos orbiculatus* (coral berry), and a species of *Dioscorea* (probably *villosa*) (wild yam) were still bearing fruits. We examined some wingstem and frostweed fruits and discussed their characteristics. Each fruit in these species is a flattened achene with bilateral wings. The fruit of *V. alternifolia* is roughly egg-shaped usually with broad wings, while that of *V. virginica* is lance-shaped with narrower wings. The promise of spring was noted not only with the blooming of *Hamamelis vernalis* but also the fresh green leaves of *Claytonia virginica* (spring beauty), and *Antennaria neglecta* (field pussytoes). Although the weather was decidedly unspringlike, we did sense another harbinger of spring, the calls of *Hyla crucifer* (spring peeper).

The goal of the modern classification system, started by the Swedish botanist Carl Linnaeus, is to group species together according to the closeness of their relationships. For most of the time since Linnaeus, 1707–1778, classification of flowering plants has been based mostly on morphology, especially the anatomy of flowers. In the last few decades, molecular (DNA and proteins) similarities and differences have been playing a much larger role in determining relationships. In most cases, molecular data has supported the older, morphology-based classification, but in some notable cases it has not. This has resulted in some turmoil in plant names and groupings. The Angiosperm Phylogeny Group (APG) is an international group of taxonomists who are trying to update the classification of flowering plants



*Verbesina* spp. fruits. Figures adapted from Steyermark's *Flora of Missouri, Volume 2* (pl. 291). Used by permission.

mostly using molecular data. This group has published three reports, the first in 1998, the second in 2003, and the latest in 2009. The Missouri Botanical Garden plant database, TROPICOS, classifies flowering plants according to the APG III system. One result of APG's work is the establishment of some new families, elimination of other families, and the reclassification of some genera in different families. One family greatly affected by this reclassification is the Scrophulariaceae, the snapdragon family. Many former genera have been dispersed to other families. For instance, two former members of the Scrophulariaceae that we observed on our field trip, *Dasistoma macrophylla* and *Penstemon digitalis*, have been reclassified. *Dasistoma macrophylla* is now included in the Orobanchaceae (broomrape family), while *P. digitalis* is now classified in the Plantaginaceae (plantain family). *Claytonia virginica*, formerly of the Portulacaceae, is now classified in the newly recognized family, Montiaceae. Both Scrophulariaceae and Portulacaceae are still accepted families, just much reduced in the number of genera included.

Near the end of our walk we found an area with an abundance of *Usnea* sp. lichens (old man's beard) growing on the trees. Fr. Sullivan showed us that *Usnea* sp. can be distinguished from other similar looking lichens by pulling off the outer sheath on the main stem, exposing a white cord in the center. Lichens which do not have this white cord are not *Usnea* sp.

**February 28, 2011 – Katy Trail State Park, Weldon Spring Access, St. Charles County, MO** (contributed by Burton Noll).



*Conium maculatum* (poison hemlock). Photo by Burt Noll.



*Packera glabella* (butterweed). Photo by Burt Noll.



*Polymnia canadensis* (leafcup). Photo by Burt Noll.

Participants: Wayne Clark, Jeanne Clauson, Jack Harris, Jeannie Moe, George Van Brunt, Burton Noll, John Oliver, and Father Jim Sullivan.

We met at the Weldon Spring Site Interpretive Center expecting to follow the Hamburg Trail, but it was cold (about 35 degrees F) and windy. Instead we moved to the Katy Trail where we were sheltered from wind in the lee of the bluff.

This was a day to observe the late winter rosettes of a number of species. We did not identify many of these. It is hard to find labeled photographs of them, and it would be a worthwhile project to compile a reference set. The first we saw as we started east on the trail was *Conium maculatum* (poison hemlock). It is frequently found along railroad tracks, and it is still along the trail. Another rosette that looked quite healthy was *Packera glabella* (butterweed). Also seen were those of *Polymnia canadensis* (leafcup), which have purple color, unlike the mature plants, *Verbascum blattaria* (moth mullein, introduced), and *V. thapsus* (mullein, flannel plant, introduced).

At a clearing for a pipeline that crosses the trail, there were again many rosettes of *C. maculatum*. Below the trail in wet ground nearby were *Cephalanthus occidentalis* (buttonbush), ten feet tall and still bearing weathered, brown buttonball seed heads. It was pointed out that the stems of this shrub have large buds in whorls of three to aid in identification.

We observed a seed pod of *Campsis radicans* (trumpet creeper) which had been perforated multiple times by a woodpecker. When we opened the pod there was one small white worm left inside.

One small winter leaf of *Aplectrum hyemale* (Adam and Eve orchid, puttyroot) was found right next to the trail. Some other plants identified were *Equisetum hymenale* (horsetail) and *Ruellia strepens* (wild petunia).

Finally, we observed one plant in bloom: *Veronica polita* (speedwell, introduced), whose blue flowers were just beginning to open.

By the time we departed, the day had warmed and brightened.



## February Entomology Report

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*Jane Walker*

The Entomology group met on February 21 at the Butterfly House. We wish to thank Laura Chisolm for hosting our meeting on behalf of the Butterfly House. Our guest for the evening was Mark Grueber, Urban Forester for the Missouri Department of Conservation. Mark spoke to a group of about ten attendees on the emerald ash borer (EAB) and its potential future impact in Missouri. Outside of the Lake Wappapello quarantine area, the arrival of EAB in the rest of the state is not a matter of if, but when.

EAB is a wood boring beetle in the family Buprestidae. Originating from eastern Asia, EAB attacks all species of ash trees (*Fraxinus* sp.), from 1/2 inch saplings to mature trees. The larvae feed on the vascular tissue beneath the bark, making serpentine tunnels as they feed. They can feed from one to two years before pupating and emerging as a bright, metallic-green, bullet-shaped beetle with a copper or purple abdomen. Adult beetles are 5/8 inches in length. Two signs of EAB are the 1/8-inch “D” shaped exit holes in the bark where the adult beetle emerged through the bark, and the serpentine galleries underneath the bark are a “dead” giveaway. Symptoms of EAB in ash trees include: thinning of the crown, epicormic branching or twiggy clusters up and down the tree trunk, and woodpecker damage.

EAB was first discovered in Detroit, Michigan in 2002. It has since rapidly spread throughout the state of Michigan, into Indiana, Ohio, Illinois, Wisconsin, and recently into Kentucky. In 2007 EAB was discovered in Greenville, Missouri around Lake Wapappello by Brian Deschu, son of WGNSS member Jane Deschu. The area has been under quarantine since Brian discovered EAB in one of the traps set out by USDA. Close monitoring is ongoing. EAB is spread primarily through the intra- and interstate movement of infested firewood and logs.

The future prospect for ash trees is dire. Missouri has four species of ash: green ash (*Fraxinus Americana*), white ash (*F. pennsylvanica*), blue ash (*F. quadrangulata*), and pumpkin ash (*F. profunda*).



*Cephalanthus occidentalis* (buttonbush) showing whorl of three buds. Photo by Burt Noll.



*Cephalanthus occidentalis* (buttonbush) seedheads. Photo by Burt Noll.



*Veronica polita* (speedwell) in bloom. Photo by Burt Noll.

Foresters estimate 3.1% of the Missouri forest makeup is in ash species. However, ash makes up on average 15% of landscape trees, and in some places as much as 30–50%. This larger representation of ash trees in the landscape will have huge implications for communities down the road. EAB decline and death is rapid, leaving behind hazardous trees vulnerable to wind and storm damage. Falling trees can damage cars, homes, and cause power outages by falling on power lines. Immediate tree removal becomes necessary to remove the physical hazard and to dispose of the infested wood. The cost of removal for communities, homeowners, and government agencies that may provide funding will be enormous. A study done in Ohio (Sydnor, Bumgardner, and Todd 2007) estimated costs in a worst case scenario could be as high as \$7.5 billion for the state of Ohio. This includes loss of landscape value, removal, and replacement of ash trees.

So, what is in the future for Missouri? What is our plan? The plan can be divided into four stages. The first stage is in monitoring for the presence of EAB. The first way of detection is by visual survey. A second way is by using purple prism traps similar to gypsy moth traps. Unfortunately, the purple prism traps are less effective than other detection methods. EAB is not readily attracted to sex pheromone mimics, but rather responds to the smell of ash trees. The third method of detection is through “detection” trees. Healthy trees are girdled to create an attractant odor from the wounded tree. These trees are then checked for the presence of EAB.

The second stage involves quarantine of the area where EAB is detected. (Mark believes that if EAB is discovered in St. Louis, the whole state will be placed in quarantine). Think of this quarantine area as a bulls-eye target. The bulls-eye is the infested tree(s). These trees are destroyed. A ring of “detection” trees is created around the bulls-eye. Then a ring of “lethal” trees is set up outside the “detection” tree ring. “Lethal” trees are those trees injected with EAB effective systemic insecticides. These include imidacloprid, dinotefuran, or emamectin benzoate. These three chemicals are designated by EPA as Reduced-Risk insecticides for use on certain food crops. Studies conducted on these chemicals have shown no

significant risk to ground and surface water, aquatic organisms, woodpeckers, or the ash trees themselves (Hahn, Herm, and McCullough 2011). While the systemic use of these chemicals on wind-pollinated ash trees, especially, imidacloprid, will not harm honey bees, care should be taken to not plant nectar/pollen producing flowers in the vicinity of treated trees (Hahn, Herm, and McCullough 2011).

The third stage involves creating a special seed bank for native ash trees. Researchers, government agencies, and volunteers have gone out into our forests to collect seeds from our four ash species to save for future generations, possibly a time when EAB can be controlled or is no longer present. The Center for Plant Conservation at the Missouri Botanical Garden has been coordinating some of these efforts.

The last stage which involves the first three stages is developing a state action plan. Government agencies, federal, state, and local; and research institutions have joined in this battle to collaborate and coordinate efforts. Some of these agencies include: USDA APHIS, PPQ (Animal and Plant Health Inspection Service-Plant Protection and Quarantine), U.S. Forest Service, U.S. Army Corps of Engineers, Missouri Departments of Agriculture, Conservation, and Natural Resources, and the University of Missouri Extension Service. The Missouri Department of Agriculture has hired Joanie Straub as EAB Outreach Coordinator to help educate the public about the impending invasion. The Missouri Invasive Forest Plan, a state action plan for EAB and other potential invasive forest pests is in the planning stages and should be completed in the fall of 2011. Local governments also need to start developing their own action plans. The economic costs to these communities will require funding sources that will be limited from the cutting back of federally funded programs and a financially strapped Missouri state government.

## Resources

Hahn, J., D. A. Herm and D. G. McCullough. 2011. Frequently asked questions regarding potential side effects of systemic insecticides used to control emerald ash borer.

<http://www.emeraldashborer.info>

Sydnor, T. D., M. Bumgardner and A. Todd. 2007. The potential economic impacts of emerald ash borer (*Agrilus planipennis*) on Ohio, U.S., communities. *Arboriculture & Urban Forestry* 33(1):48–54.

<http://www.eab.missouri.edu>

EAB hotline: (866) 716-9974

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## Mysterious Sounds of the Night

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Anne McCormack<sup>1</sup>



Common Pauraque in Estero Llano Grande State Park, Hidalgo Co. Texas. Photo by David Marjamaa <http://david-marjamaa.smugmug.com/>. Used by permission.

Before dawn on March 16, we arrived at [Bentsen-Rio Grande Valley State Park](#) outside of Mission, Texas. Our trip leader, Bill Rowe, had arranged for us to meet biologist and blogger [Mary Gustafson](#) at [Bentsen](#) to find the Common Pauraque. David Marjamaa, who took this great photo above, was part of the group too, along with me and five others.

Nightjars are fascinating creatures, loaded with folklore, cryptic coloring, and evocative names. I presume that the name of the family, “Nightjar,” comes from the fact that the typical calls of some species “jar the night,” in the sense that the voice heard in the night is startling or has a [disagreeable effect on the human listener](#). Of course, that “jar” is in the ear of the listener. I’m most familiar with one of Missouri’s nightjars, the Whip-poor-will. [Here’s a beautiful recording by Lang Elliott](#). Its

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<sup>1</sup> Reprinted from an article posted April 5, 2011 at <http://gardeningwithbinoculars.blogspot.com/>

song is one of the most beautiful and haunting sounds in nature. A Whip-poor-will can belt out his clear, “whip poor WILL! whip poor WILL!” [up to 400 times without a break](#). One breezy night in June, deep in the Ozark hills, a Whip-poor-will, perched on the ridge pole of our tent, came dangerously close to breaking that record. Tent-mate and [guest blogger](#) [I. Bowen](#) suggested solving the problem with a shotgun. I pretty much think that would be jarring in the night too, J!

But I digress. We are talking about a different nightjar, the Common Pauraque. We walked down the road in the dark, hearing the “Quawk!” of [Black-crowned Night-Herons](#) amid the sounds of unfamiliar frogs and insects to me. First we strained to hear a distant Pauraque, then a bird answered, then many more. Mary used her industrial-strength flashlight to find the birds. We saw several near the road, making strange hops and short flights like long-tailed moths. Their eyes reflected the light of the beacon like torches.

No wonder these strange birds of the night have acquired so many tales, superstitions, and names. [Their call sounds nothing like the English pronunciation of the name](#) “pah-RAH-key.” I surmised that it had originated from the Spanish, “¿Para que?”—“What for?” But it really doesn’t sound like that either. [Arthur Grosset](#) pointed me toward an [article from the Auk, 1948](#), that explains that the Mexican name for this bird in nearby Tamaulipas is “Parruaca,” pronounced “pahrrr-WAH-cuh,” which more closely resembles the call. Evidently the word “Pauraque” is an incorrect English transcription. Pauraque’s range just barely makes it into south Texas. It’s found along both coasts of Central America, on in to northern South America, south to the northern edge of Argentina. In Central America, it’s known as [“Caballero de la Noche” \(“Gentleman of the Night”\)](#) || apparently, “el Caballero” is believed to be the [Don Juan](#) of birds. Nightjars are members of the family known as Goatsuckers, based on the ancient belief that the [birds drank milk from goats](#). A pretty bizarre myth, but I guess those goats kicked up insects that the birds found tasty, and goat herders, frightened by dark, flying shapes in the night, assumed the worst. The scientific name for the family, Caprimulgidae, means the same thing in Latin. Of course, *Spanish* for Goatsucker would be [Chupacabra](#), but that’s another story.

We heard another sound; one we couldn't identify at the time. Imagine some kind of hoarse, nasal baritone saying, "Wowwww! oo Wowww!" [Try this link to my blog with a sound file attached.](#)  
**What do you think it is?**



## WGNSS 2011 Scholarship Winners

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### *Emily Christensen*

This year's Menke Scholarship winner is Megan Murphy, a Ph.D. candidate at the University of Missouri at Columbia. Megan will be determining the habitat range and population distribution of *Neoconocephalus exiliscanorus* throughout southeast Missouri. These katydids are habitat selective. It is Megan's hope to inform and contribute to the restoration of wetland habitats, which are the home to many invertebrate species. She will be sampling about 80 square miles in and around Stoddard County, MO. The identification of the species will be auditory. She states that "If *Neoconocephalus* are found to be predictors of habitat health; as has been found of *Neoconocephalus* prairie species, their presence or absence will be a simple and quick method of determining success in wetland restoration." This could be helpful to the wetland restoration project at Eagle Bluffs Conservation Area. Megan's award is \$1,050, which will cover what she asked: Travel to Puxico, MO from Columbia, MO, a campground for three weeks, and gas for the mapping and sampling trips.

We have two Mickey Scudder Scholarships winners this year. Travis Wood, a master's degree student at SIUE, aims to discover linkages between burn frequency, time since last burn, vegetation characteristics and bird communities at Riverlands Migratory Bird Sanctuary. His award of \$1,000 will allow him to purchase a digital voice recorder, binoculars, and PVC pipe to mark points and cover travel costs.

Our second Mickey Scudder scholarship winner is Oyomoare Osazuwa-Peters, a Ph.D. student at the University of Missouri at St. Louis. She will be comparing tropical mature forests with secondary growth forests in Okomu Forest Reserve, Nigeria. She plans to quantify plant functional traits: plant height, specific leaf area and tissue density. Her

scholarship of \$1,000 will pay for her field accommodations.

The members of the scholarship committee were Anne McCormack, Mark Paradise, Ed Schmidt and John and Emily Christensen.



## WGNSS members honored with establishment of Prairie Gardens Fund

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### *Carol Davit*

[Missouri Prairie Foundation Establishes Prairie Gardens Fund Honoring William and Joyce Davit—Help raise \\$50,000 for prairie gardens](#)

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WGNSS members William "Bill" and Joyce Davit were among the early pioneers in the native plant movement in Missouri. Starting in the late 1970s they walked along railroad tracks collecting prairie seeds, trained volunteers on seed cleaning techniques, propagated and planted tens of thousands of native plant seedlings at Shaw Nature Reserve and elsewhere, pulled weeds, cut fire breaks, led prairie hikes, and talked to anyone who would listen about the virtues of native plants and prairie.

This year is Bill and Joyce's 50<sup>th</sup> wedding anniversary. The Prairie Gardens Fund honors their anniversary and their decades of work and devotion to conservation. This fund will provide permanent funding for a prairie gardens small grants program. The Missouri Prairie Foundation's goal is to raise \$50,000 in 2011 to honor their anniversary. The fund is held and invested by the Community Foundation of the Ozarks, a 501(c)(3) organization. Interest from the fund will provide money to support prairie garden projects at schools, parks, and other public venues statewide, allowing more people to enjoy the beauty and ecological benefits of our native prairie plants.

As of March 31<sup>st</sup>, we have raised \$5,600. Add your name to the list of Prairie Gardens Fund donors and help us reach our goal. Donations should be made to the Community Foundation of the Ozarks, 425 East Trafficway Street, Springfield,

Mo 65806-1121. Reference "Missouri Prairie Foundation Prairie Gardens Fund." Questions? Call (888) 843-6739.



## MPF 2<sup>nd</sup> Annual Prairie BioBlitz

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### *Carol Davit*

WGNSS members are invited to participate in the Missouri Prairie Foundation's 2<sup>nd</sup> Annual Prairie BioBlitz June 4–5, 2011 at Golden Prairie in Barton County. Be part of intensive nature study with experts on numerous groups of organisms at this National Natural Landmark. There will also be a potluck dinner, stargazing and free tent camping. Visit [www.moprairie.org](http://www.moprairie.org) or the Missouri Prairie Foundation Facebook page for details. RSVP to [info@moprairie.com](mailto:info@moprairie.com) or (888) 843-6739 – please indicate which group(s) you want to attend.



## TNC Spring 2011 Conservation Speaker Series

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The Nature Conservancy has announced their **Spring 2011 Conservation Speaker Series**. Mark your calendars – all talks are free & open to the public and are held at Schlafly Bottleworks in Maplewood.

**Tuesday, May 24; 7 p.m.**

*Natural History, Human Culture, and Conservation in Missouri* – Doug Ladd, Director of Conservation Science, The Nature Conservancy in Missouri.



## Group Activity/Walk Schedules

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### **BOTANY GROUP**

Chair – George Van Brunt

**Monday Botany Walks** (Leader – Fr. James Sullivan; now in his **44<sup>th</sup> year** as Botany Walk Leader!). 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](mailto:jahar@mac.com) or (314) 368-0655 and receive an email no later than Sunday about the following Monday's trip.

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### **ENTOMOLOGY GROUP**

Co-Chairs – Phil Koenig and Jane Walker

**Monday, April 18; 7 – 9 p.m.**

Our next meeting is on April 18 at 7:00 p.m. at the Butterfly House. We will not have a speaker for this meeting, but instead will meet to plan out our insect survey of LaBarque Creek Conservation Area on May 21<sup>st</sup>. We will outline the study areas, discuss the community type and go over collecting techniques at our meeting. Due to the fragile nature of the habitat we will be surveying, we have been asked to cause as little impact as possible. The terrain is steep in some areas and requires some strenuous hiking to reach our study areas. We ask those planning on participating in our study to contact Jane Walker at (314) 965-6522 or Rich Thoma at (314) 965-6744 in advance so that we will know how many will be helping and plan on bringing enough equipment.

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### **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 members' homes on the second Tuesday of the month from 1:30 – 3 p.m. For meeting locations and directions contact Pat Brock Diener at (314) 962-8665 or Lisa Nansteel at (636) 391-4898. All are welcome – especially newcomers! Upcoming books (note changes from list published in last month's *Nature Notes*):

- May – *Summer World* by Bernd Heinrich
  - June – *Bringing Home Nature* by Douglas W. Tallamy
  - July – *Eaarth, Making a Life on a Tough New Planet* by Bill McKibben
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## ORNITHOLOGY GROUP

Chair – David Becher

**Saturday Bird Walks** (Leader – David Becher). April and May walks begin at **8 a.m.** and 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](mailto:DavidBecher@msn.com)

- April 23 – Tower Grove Park, Gaddy Garden
- April 30 – Tower Grove Park, Gaddy Garden
- May 7 – Tower Grove Park, Gaddy Garden
- May 14 – Big Day or NAMC
- May 21 – Des Peres City Park, Ballas Rd. just north of Manchester Rd.
- May 28 – Des Peres City Park, Ballas Rd. just north of Manchester Rd.

**Thursday Bird Walks** (Leader – Jackie Chain). Subject to change, beginning Thursday May 5<sup>th</sup>, the WGNSS birding group will meet at 8 a.m. rather than 8:30 a.m. On May 5<sup>th</sup>, 12<sup>th</sup> and 19<sup>th</sup> we will meet at Tower Grove Park near the Gaddy Bird Garden in the northwest section of the park. There is parking on Magnolia Avenue as well as inside Tower Grove Park just north of the Garden for those dates. Beginning May 26<sup>th</sup> we will meet at 8 a.m. at Des Peres Park parking lot off Ballas Road just north of Manchester Rd. and east of West County Mall as before. If you have questions, please contact Jackie Chain at (314) 644-5998 or [chainjac@sbcglobal.net](mailto:chainjac@sbcglobal.net).

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



## Editor's Corner

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*Ted C. MacRae*

### **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](mailto:whittex@aol.com) to receive *Nature Notes* by email.

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### **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 field trip accounts, information about local natural areas, interesting nature sightings, or reviews of nature related books. Articles may be reprinted from other sources only by permission of copyright holders.

Please direct all submissions by email to the Editor [ted.c.macrae@monsanto.com](mailto:ted.c.macrae@monsanto.com). Please limit text formatting to bold for emphasis or italics for scientific names. Avoid tabs, extra spaces, multiple hard returns, underlining, etc. (these will be removed during final formatting). Photographs are encouraged and will be published on a space-available basis. Contributions are welcome from all – remember; this is your newsletter!





Spring Banquet Reservation Form



Peter H. Raven, Ph.D.  
Guest of Honor

WGNSS Annual  
Spring Banquet  
Wednesday, May 4

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. Peter Raven, President Emeritus at the Missouri Botanical Garden, presenting "How to Conserve Species in a Changing World" At the banquet, the 2011 Lifetime Achievement Award will be announced and we will be honoring this year's WGNSS scholarship winners.

Please make your reservation using the form printed below by April 20 and mail with a check made out to WGNSS for \$28 per person. Your check will confirm your reservation.

*Refund policy: A full refund of your banquet ticket cost of \$28 will be given if requested before April 18. After April 18, no refunds can be made. Send payment to:*

Jane Deschu  
1431 Tahoe Valley Court  
Ballwin, MO 63021

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Spring Banquet reservations for \_\_\_\_\_ persons @ \$28 per person=\$ \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

phone \_\_\_\_\_ email \_\_\_\_\_ (optional)

Vegetarian meal request \_\_\_\_\_