



Nature Notes

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President's Corner

Rich Thoma

Ted MacRae, long time member of WGNSS and current *Nature Notes* editor, spoke at the November General Meeting about his recent travels to Brazil and Argentina. Though these were business trips, Ted made the most of each opportunity to practice his photography skills and to make observations about the animals and plants he encountered. Most of the trip was spent in and around Sao Paulo, one of the largest cities in the world with a population of nearly 20 million people. Hunting wildlife is not an easy thing to do in a city filled with streets and buildings. Ted was not deterred, just because he was in the middle of civilization. He started with the flowering plants around the hotel where he was staying. There were many insects attracted to the large showy blooms and resting on leaves. From there, he visited city parks and weedy roadsides both of which provided a cornucopia of things to photograph. Ted's close-up photos of many of the insects were really spectacular. We saw extreme close-ups of true bugs and planthoppers (Hemiptera), flies (Diptera), ants and wasps (Hymenoptera) and beetles (Coleoptera). Nearly all were very carefully stalked so that we saw live animals in natural poses. We learned that it requires patience, skill and a bit of luck to get close-up photos. For Ted, each insect had a story to tell. An example was of an ant that had a

personality all its own. This ant knew that something large was stalking it (Ted and his camera), and so it kept turning until its head faced the threat, and it then spread its mandibles wide as if to say, "Try touching me at your peril!" This made for several really showy photos. We also learned that wildlife in South American cities have many of the same problems with exotic invasives as those here in the U.S. Many of the insects Ted photographed were actually introduced from far off lands. Ted explained that introduced insects are truly a global problem. Interestingly, Ted was able to identify to species almost all the insects he showed. He acknowledged that the internet has made insect identification easier, even if they are from exotic locations.

The WGNSS December meeting will feature **Drs. Peter Bernhardt** and **Retha Meier** from St. Louis University. Drs. Bernhardt and Meier use flowers as model systems to study the evolution of reproduction that began with the experimental and interpretive work of Charles Darwin. Some of the pollination and breeding systems being studied by the Bernhardt/Meier lab include the rare and endangered Lady's-Slipper Orchids (*Cypripedium* and *Paphiopedilum*), Sun Orchids (*Thelymitra*), Mead's Milkweed (*Asclepias meadii*), and Missouri Bladderpod (*Physaria filiforme*). Field work includes understanding the biochemical and morphological changes that a flower undergoes and determining the identity of the pollinators that visit. Pollen samples are brought back to the lab for further study. In a continued celebration of the 150th

- In This Issue -

President's Corner.....	1
WGNSS December General Meeting.....	2
September Bird Report.....	2
July Botany Report (part 2).....	7
August Botany Report (part 1).....	9
October Entomology Meeting	17
Remembering Walter Liddell.....	17
"Paint the Parks" Exhibit	18
Lectures at St. Louis Zoo.....	18
Nature Walks at Emmenegger Park.....	18
Group Activity/Walk Schedules	19
Nature Notes Back Issues Needed!.....	19
Editor's Corner	20
Administrative Information	21

anniversary since the publication of *On the various contrivances by which British and foreign orchids are fertilised by insects, and on the good effects of intercrossing*, Drs. Bernhardt and Meier will be speaking on, "Darwin's Orchids: The Flowering of Evolutionary Theory 1862 to Present Day."

Please note that WGNSS is now accepting applications for the 2012 Mickey-Scudder and Menke Scholarships. If you are a student or know of a student that is doing field research, and would like to know more, look on the WGNSS web site www.wgnss.org or contact **Emily** and **John Christensen** (Education Chairs) listed in the Administrative Information section of *Nature Notes*.

On a more somber note, WGNSS recently lost two of its long time members, **Walter Liddell** and **Jim Zoebel**. Both have recently been recognized for the many years of service participating as board members and field trip coordinators with WGNSS Lifetime Achievement awards. Walter and Jim's contributions to WGNSS will long be remembered. A memorial to Walter and Jim can be found within this issue of *Nature Notes*.

On behalf of the board, may everyone in WGNSS have a happy and safe Holiday season. Remember, there are still many WGNSS activities going on. If you happen to find yourself with an extra day off, think about joining one of the many field trips or other activities WGNSS has to offer.

WGNSS December General Meeting

George Yatskievych

Join us on **Wednesday, December 7** at Powder Valley Conservation Nature Center beginning at 7:30 p.m. Our speakers will be Drs. Peter Bernhardt and Retha Meier of St. Louis University, who will be speaking on, "Darwin's Orchids: The Flowering of Evolutionary Theory, 1862 to Present Day." The program will discuss pollination biology, starting with the early work of Charles Darwin, who was fascinated with the adaptations of orchids and their pollinators and who in 1862 published a book entitled, *On the various contrivances by which British and foreign orchids are fertilised by insects, and on the good effects of intercrossing*. The program will also describe the recent research by Drs. Bernhardt and Meier on the pollination mechanisms of the genus *Cypripedium*, the lady's slipper orchids. Those who would like to have dinner with the presenters before the meeting at a local restaurant may meet us at the Powder Valley parking lot by 5:30 p.m.

September Bird Report

David Becher

Fall migration was in high gear in September. The land bird migration peaked around the middle of the month as usual. The shorebird habitat was better than usual in the area with good habitat at Riverlands and in Monroe County, Illinois.

September is usually not a very exciting month for ducks and this year was typical. Blue-winged Teal made their usual return and there were small number of other puddle ducks. The only excitement was a Mottled Duck seen by a few



Merlin, Heron Pond, 9/24, David Becher.

people at the large wetland along the road to the Confluence at Riverlands.

Hérons and Egrets were present in the usual large numbers around the area.

Black Vultures continued to be seen in southern Monroe County. Sharp-shinned Hawks continue to be hard to find in the Saint Louis area, but Josh Uffman reported an early one on the 4th at Riverlands. The first Osprey of the season was spotted by Jean Cook on the Thursday trip at Riverlands on the ninth. The first reported Northern Harrier of the month was along the Confluence Road at Riverlands on the first. John Solodar found a lingering Mississippi Kite Webster Groves on the 20th.

The big movement of Broad-winged Hawks was on the 23rd and 24th. On the 23rd Connie Alwood observed a flight of about 300 with one Sharp-shinned hawk in a short period in Wildwood. Bob Ortmeyer saw another 200 in Ferguson. The next day the Saturday birding group saw over 250 passing over Riverlands at mid-morning.

The local Peregrine Falcons found the migrating shorebirds an irresistible attraction. There were multiple sightings at both Riverlands and at Mitchee Road in Monroe County, Illinois. There were two reports of Merlins in the area. Mike Thelan Merlin found one at the O'Fallon Illinois Sewage Treatment Plant on the 18th. The Saturday group was lucky enough to find one perched in a tree near Heron Pond on the 24th. It sat in view of a considerable time before finally flying away across the pond.

Wally George found at least nineteen Common Gallinules (three adults and sixteen juveniles) in



Black-bellied (left) and Golden Plover, Mitchee Rd., 9/4, David Becher.



Golden Plover, 9/5, Bill Rudden.

the remains of a drying wetland along Route B in Monroe County on the first. The birds that clearly nest in the area were still present on the 10th.

The shorebird migration was better than usual this year since there was excellent habitat both in the Riverlands area and in Monroe County. The wetlands tended to dry as the month went on and most of the best observations later in the month



Willet, Heron Pond, 9/17, David Becher.



Ruddy Turnstone, 9/4, David Becher.



Marbled Godwit, Confluence Road, 9/2, Bill Rudden.



Sanderling, 9/13, David Becher.

were at Heron Pond. The staff at Riverlands made significant efforts to manage the water level in Heron Pond for good shorebird habitat. Outside the immediate Saint Louis area, there were reports of excellent shorebirds from the Whitetail area on the east shore or Carlyle Lake.

American Golden Plovers were fairly common this year both at the wetlands and sod farms around the area, but Semipalmated Plovers were rather scarce and Black-bellied Plovers were hard to find. Josh Uffman found one along Confluence Road and David Becher another at Mitchee Road in Monroe County on the 4th.

Black-necked Stilt numbers were down from the large numbers present in August, but small numbers continued to be seen. Avocets were also still present. There were eight at the Confluence Road ponds at the start of the month and there was still one bird present in the area on the 24th despite the ponds having dried out considerably.

Willetts were reported from the Riverlands area several times this month. Dave Haenni had one

on Confluence Road on the first. Another was found along the rip-rap on the 3rd by the Malones, two were seen flying at Heron Pond by Mary Ann Auer and Mike Brady on the 4th, and another was at Heron Pond on the 17th.

The Marbled Godwit continued at the Confluence Road ponds where it associated with the Avocets. It was present until at least the 18th. Ruddy Turnstones were found at both Mitchee and Confluence Road areas. On the first, Wally George found four at Mitchee and Jim Hickner had three on Confluence Road. They remained in both areas for a few days. The only Red Knot report was a bird seen by the Saturday group at Mitchee Road on the 10th. It was not very cooperative and could not be refound when the group returned to the area.

Mike Brady and Mary Ann Auer reported two Sanderlings from Heron Pond on the 4th. There were one or two birds with the other shorebirds in the first half of the month.



White-rumped Sandpiper, Heron Pond, 9/11, Bill Rudden.



Buff-breasted Sandpiper, Cora Island, 9/3, David Becher.



White-rumped Sandpiper, Heron Pond, 9/13, Bill Rudden.



Upland Sandpiper, Cora Island Rd., 9/3, David Becher.

Least Sandpipers were as usual the commonest shorebird in most areas. There were also good numbers of Semipalmated and Baird's Sandpipers and smaller numbers of Westerns. The find of the month was a small flock of White-rumped Sandpipers found by Bill Rowe. He found all five peep species at Riverlands on the 10th. The White-rumps were present until at least the 13th. Most White-rumped Sandpipers migrate along or off the east coast and they are rare to accidental in the mid-west in the fall.

The only report of Dunlin, a species that mostly shows up later in the fall, was two seen by Dave Haenni on the first at the Confluence Road.

Buff-breasted Sandpipers were remarkably common this year. Not only were they at the local sod farms where they are usually found, but also at virtual every location that had good numbers of shorebirds. Josh Uffman counted 36 at Riverlands on the fourth. The Saturday group found an Upland Sandpiper hiding in the grass at Cora Island Road on the third and Dave Rogles

reported two more from the Confluence pools the same day.

Dowitchers on the other had remained hard to find. Jim Hickner found three Short-bills on the Confluence Road on the first and Josh Uffman reported eight on the fourth. Red-necked Phalaropes continued to be unusually common this year. They were present at Cora Island Road, Confluence Road, Mitchee Road, and Carlyle Lake. An exceptional 20 birds were reported from Carlyle Lake by Charlene Malone on the 10th. Wilson's Phalaropes continued to be uncommon. The only report was one seen by Jim Hickner on Confluence Road on the 12th. There was also a Red Phalarope seen by the boat trip on Carlyle Lake on the 17th.

For the first time in several years there were no September Jaeger reports. The Laughing Gull was refound along Confluence Road on the through the third. Dave Rogles found a Franklin's Gull in the same area on the third. Franklin's Gulls were not easy to find this month, but David Becher had



American Pipit, 9/30, Bill Rudden.



Female Magnolia Warbler, 9/16, David Becher.

one at Carlyle on the 20th and Brian Prather had some at Creve Coeur Lake on the 30th.

Josh Uffman found a 2nd cycle Lesser Black-backed Gull at Riverlands on the 9th. It is apparently the earliest fall record by one day. It was not apparently refound, but by the 17th there were at least three at Carlyle Lake. Dan Kassebaum spotted nine immature Sabine's Gulls



Bobolink, Clarence Cannon, 9/3, David Becher.

at Carlyle on the fourteen and three on the eighteenth. Charlene Malone had one on the 24th.

Terns were not numerous this fall. There were a few Caspian and Black Terns reported early in the month. The only Common Tern report was one at Riverlands on the 27th.

The first Yellow-bellied Sapsucker and the first Red-breasted Nuthatch were both reported by Chrissy McClarren at Tower Grove Park on the 14th.

Sedge Wrens appeared to be missing from the areas where they are usually found in the early fall this year. Charlene Malone reported hearing one on the 24th at Riverlands, but there were no reported sightings. It appears that they did not attempt their usual second nesting in the area. Marsh Wrens were in contrast quite common and may have nested near Heron Pond where they were found all summer. More unusually one was recorded by Andrew Reago in Tower Grove Park on the 27th.

The first Veery report of the month was from Tower Grove Park on the 4th Andrew Reago reported three.

The warbler migration was fairly normal. Andrew Reago reported eighteen species of wood warblers in Tower Grove Park on the fourth. Highlights included two Golden-winged, two Mourning, three Bay-breasted, five Canada, and three early Orange-crowned Warblers. On the 6th he reported a Hooded Warbler at the entrance to the Gaddy Garden. The migration peaked about the 14th when Chrissy McClarren reported 25 warbler and six vireo species including a female Black-throated Blue in Tower Grove Park on a damp cloudy day.

There was a male Black-throated Blue at Hazlet Park at Carlyle on the 17th. Chrissy McClarren reported an amazing 32 Rose-breasted Grosbeaks in Tower Grove Park on the 22nd.

Several small flocks of Bobolinks were reported in the area. Josh Uffman reported them at Riverlands on the fourth and David Becher had a flock at Clarence Cannon on the third.



July Botany Report (part 2)

Compiled by George Van Brunt

July 25, 2011—Missouri Botanical Garden, St. Louis, MO (contributed by George Van Brunt).

St. Louis was still under the same heat warning that forced cancellation of last week's field trip so we decided to meet at 9 am at the Ridgway Building of the Missouri Botanical Garden, spend an hour outside, and then go inside to view the Henry Shaw Cactus and Succulent Society Show. Joining the group on this very hot, humid, and sunny day were Fr. Sullivan, Jason Allen, Jack Harris, Pat Harris, Bill Summers, Steve Turner, Scott Goldman, Bill Knight, Mary Havlicek Bub, Wayne Clark, Nancy Clark, Lynn McGoogan, John Oliver, Louise Langbein, and George Van Brunt.

Our outdoor time was spent going to, through, and back from the Lucy and Stanley Lopata Prairie Garden. As we approached the Climatron, we smelled an odor similar to skunk. The plants producing this odor were *Phuopsis stylosa* (crosswort), a member of the Rubiaceae (madder family) native to the Caucasus region. When we brushed the plants lightly, the odor was apparent. In the Prairie Garden, we identified many native plants that we often see on our weekly field trips. One species that we have never seen on our field trips was *Rudbeckia maxima* (great coneflower). This very large plant's small native range is eastern Texas, western Louisiana, western and southern Arkansas, and southeastern Oklahoma. It has been introduced in Missouri and South Carolina, but in Missouri is presently known only from herbarium specimens. Fr. Sullivan said that *Rudbeckia maxima* was his "plant of the day" (see a photograph of this species see <http://www.bustaniplantfarm.com/rudbeckia-maxima.html>).



Astrophytum myriostigma var. *quadrilocata* (bishop's cap cactus), family Cactaceae, native of Mexico. Thick, "rounded" form slows water loss. Plant (7 years old) grown by Pam Schnebelen. Side (top) and top (bottom) views.



Dudleya brittonii (chalk dudleya), family Crassulaceae, native of Baja California. White color caused by dusty coating of wax which slows water loss. Plant grown by Mike Heumann.

The Henry Shaw Cactus and Succulent Society show included many species of cacti and other succulents that were grown by the Society's



Euphorbia lactea fo. *cristata* (elkhorn), family Euphorbiaceae, native of tropical Asia. Elkhorn grafted onto another species. Plant grown by Mike Cushner. Side (top) and top (bottom) views.



Pachypodium lamerei crest form (Madagascar palm), family Apocynaceae, native of Madagascar, Winner of The Dorothy Weitz 2011 Best Succulent Award. Plant grown by Lillian Giessow. Side (top) and top (bottom) views.



Matelea cyclophylla (synonym: *Gonolobus cyclophyllus*), family Apocynaceae, native of Mexico. Plant grown by Pam Schnebelen.

members. All cacti are succulents, but not all succulents are cacti. The term "succulent" is not a classification category as is a family such as

Cactaceae or Euphorbiaceae; succulents occur in many families. Deciding whether a plant is a succulent or not is somewhat arbitrary, but generally succulents are desert-adapted plants that can store water in leaves, stems, and/or roots to enable the plant to survive periods of little or no rainfall. Succulents not only store water, but they have evolved mechanisms to greatly reduce the loss of water that is experienced by plants living in wetter climates. The growth habit of a succulent is often very compact, in the form of a sphere or a column, reducing water loss by minimizing the surface to volume to ratio; surface area is related to the evaporation rate while water storage is related to volume. Succulents often have very small leaves or no leaves at all, further reducing water loss; often the photosynthetic organ of a succulent is the stem. Succulents often further conserve water by producing an outer surface covered with waxy



Lithops sp. (living stones), family Aizoaceae, native of southern Africa. Photo by George Van Brunt.



Myrtillocactus geometrizans fo. *monstrose* (bilberry cactus), family Cactaceae, native of Mexico. Plant grown by Mary Adams.

material to retard evaporation and dense hairs or spines to reduce air movement at the plant's surface. The layer of dense hairs or spines has the effect of retaining what little moisture evaporates from the plant and increasing the humidity of the air in direct contact with the plant. This further retards water loss. Succulents also tend to have extensive root systems near the surface so they can quickly soak up any moisture that contacts the soil. Not all succulents have all these characteristics, of course, but succulents have evolved many combinations and variations of the above characteristics, making for plants which have many unusual and wondrous forms. This, I suppose, is what interests people in cultivating and studying these plants. Additional interesting forms are produced by grafting one plant on another.

While we were viewing the show, WGNSS member Pam Schnebelen, who had a large number of her succulents on display, answered our questions and gave us much interesting information on these plants. I have included photos of a few species that "caught my eye" but there were many others of interest. For more information on the Henry Shaw Cactus and Succulent Society visit <http://www.hscactus.org>.



August Botany Report (part 1)

Compiled by George Van Brunt

August 1, 2011—Weldon Spring, St. Charles County, MO (contributed by Jeannie A. Moe).

Time: 9:30 a.m. to noon.

Conditions: Hot, temperatures 90's F.

Participants: Fr. Sullivan, Kathy Thiele, George Van Brunt, Wayne Clark, Nancy Clark, Jack Harris, Pat Harris, John Oliver, Dave Tylka, Steve Turner, Ruth TenBrink, Jeanne Clauson, and Jeannie Moe.

The botany walk started out in the Howell Prairie Garden in front of the Interpretive Center. Father Sullivan identified the *Vernonias* (ironweeds) growing in the garden as *Vernonia missurica* (Missouri ironweed). Father Sullivan also identified the *Apocynum* (dogbane) as *Apocynum cannabinum*. The *Asclepias sullivantii* (Sullivant's or prairie milkweed) plants with the sign are what I think of as typical of the plant. The seed pods are smooth and the leaves have a prominent red vein down the center. In another part of the garden the seed pods on the *A. sullivantii* look more like *Asclepias syriaca* (common milkweed) with tubercles (warts) on the seed pods and the vein down the center of the leaf isn't as red. John Oliver explained that *A. sullivantii* can have tubercles on the seed pods. John also pointed out that the atypical *A. sullivantii* was still prairie milkweed based on the subcordate shape of the leaf base, the very short petiole, and the glaucous leaves. *A. syriaca* has a narrow leaf base, a longer petiole and hairs on the leaves. Other plants in bloom on the walk through the garden included *Rudbeckia subtomentosa* (sweet coneflower), *Ruellia humilis* (wild petunia), *Asclepias incarnata* (swamp milkweed), *Silphium laciniatum* (compass plant),



Howell Prairie. Photo by Jeannie Moe.

Silphium integrifolium (rosin weed), and *Silphium terebinthinaceum* (prairie dock). Butterflies in the garden included *Papilio troilus* (Spicebush), *Battus philenor* (Pipevine), *Epargyreus clarus* (Silver-spotted Skipper), *Erynnis horatius* (Horace's Duskywing), and *Papilio glaucus* (Tiger Swallowtail). We then walked around behind the Interpretive Center and noted the *Palafoxia callosa* (pink palafoxia) in bloom.

Then we took a short walk on Howell Prairie. Plants in bloom on the prairie included *Vernonia arkansana* (curly-top ironweed), *Liatris pycnostachya* (prairie blazing star), compass plant, prairie dock, rosinweed, and *Heliopsis helianthoides* (false sunflower). The *Desmanthus illinoensis* (Illinois bundleflower) was in seed. Butterflies on the prairie included *Phyciodes tharos* (Pearl Crescent), *Papilio troilus* (Spicebush), *Speyeria cybele* (Great Spangled Fritillary), and *Colias eurytheme* (Orange Sulfur).

After we returned from the prairie, it was getting very hot so we retired indoors to watch some digital slides that various members had brought. Jack Harris gave us a short update on the patch-burn-graze controversy. Steve Turner went in depth on identifying various wetland plants including arrow leaf.

August 8, 2011—Klondike County Park, St. Charles County, MO (contributed by Steve Turner).

Time: 9:00–11:30 a.m.

Conditions: Cloudy to sunny, low 80s F.

Participants: Nancy Clark, Wayne Clark, Pat Harris, Jack Harris, Jeannie Moe, Burt Noll, John

Oliver, Fr. Sullivan, Kathy Thiele, Steve Turner, George Van Brunt.

The day's botanizing began at the same area where the day's group of eleven botanists assembled: at the parking lot for the Visitor's Center. The numerous planters in and surrounding this area have had plants deliberately added, so their presence does not necessarily reflect natural occurrence in St. Charles County. Most of the cultivated plants represented species native to Missouri (though not necessarily native to this area). Perhaps the most striking were tall (>2 m) specimens of a sunflower, a few of which were just beginning to bloom. These plants were characterized by numerous long, arched, very narrow leaves, which were folded longitudinally and regularly toothed along the margins, and a pronounced glaucous coating on the stems. Although the narrowness of the leaves seemed reminiscent of *Helianthus salicifolius* (willow-leaved sunflower), the toothed leaf margins were most consistent with the identity of *Helianthus grosseserratus* (sawtooth sunflower). Another sunflower, somewhat unusual for this area, was *Helianthus occidentalis* (western, or naked-stemmed sunflower); these plants were found in the periphery of the parking lot. Several *Liatris* individuals, which were just beginning to flower, were keyed to *L. squarrosa* (a blazing star). A number of specimens of *Salvia azurea* (blue sage) were seen to be in bloom.

We next headed for a large depression located immediately southwest of the Visitor's Center. This depression, which sits near the base of some of the dolomite and sandstone bluffs for which Klondike Park is noted, is wet for much of the year, presumably from runoff. At times in the past there has been a small pond located there, though on today's trip a relatively minor amount of standing water was present. Along the way toward this destination, we noted a number of additional species common to our area. These included *Chamaecrista fasciculata* (showy partridge pea), *Vernonia baldwinii* (interior ironweed), *Campsis radicans* (trumpet vine), and *Equisetum hyemale* (scouring rush). The lettuce tribe of the composite family was represented by flowering examples of *Lactuca canadensis* (Canada lettuce), which has smooth leaves and tan sap, and *L. serriola* (prickly lettuce), which has white sap and small spines



Echinodorus berteroi. Photo by Steve Turner.

along the abaxial midribs of the lower leaves. Aggressive and weedy species were also noted, including *Lespedeza cuneata* (sericea lespedeza), *Medicago lupulina* (black medic), and *Ambrosia artemisiifolia* (common ragweed).

Additional plants found within the area of the depression included *Eupatorium serotinum* (late boneset), and also *E. altissimum* (tall boneset), *Commelina erecta* (dayflower), *Verbena stricta* (hoary vervain), *Verbascum thapsus* (flannel plant), *Croton glandulosus* (sand croton), *Euphorbia nutans* (nodding spurge), *Froelichia gracilis* (slender snake-cotton), and vines of *Fallopia scandens* (false buckwheat).

After returning to our cars, we drove to another area of the park about 0.5 miles westward, to the site of the Tavern Quarry, and parked in the new and convenient, gravel-finished parking area at the Bluff Trail trailhead. The quarry is ringed by a trail covered with chipped bark; however, in the past few years large portions of the area have been covered by standing water throughout much of the year. As a result, the area is characterized largely by wetland flora. Particularly well represented were members of the Alismataceae, including *Echinodorus berteroi* (cellophane plant), *Alisma subcordatum* (southern water plantain), and *Sagittaria calycina* (Mississippi arrowhead). Hundreds of specimens of the first two species were observed, and many were nicely in bloom. *Sagittaria calycina* is easily differentiated from other species of *Sagittaria* growing in Missouri by the sepals, which in this species are appressed to, and partially covering, the fruits. Other *Sagittaria* species have sepals which are reflexed in the fruiting stage.



Utricularia gibba. Photo by Steve Turner.

Another interesting obligate wetland species observed was *Utricularia gibba* (humped bladderwort). Growing in mud or shallow standing water, this carnivorous plant has small, bright yellow flowers and a submerged tangle of stolons and tiny leaves. Located on the stolons are numerous tiny bladders armed with trigger hairs. In response to stimulus from a nearby swimming aquatic insect, the pods will suddenly inflate, sucking in water and the insect, and then snap shut, trapping the insect. Enzymes then digest the insect, providing nourishment to the plant. Experiments have indicated a 50% decrease in growth if the bladders are removed from an individual. Additional information on this interesting genus may be found at: http://www.botany.org/carnivorous_plants/utricularia.php, as well as on the Wikipedia page.

Additional wetland species evident in the area included *Ammannia coccinea* (toothcup), *Lycopus americanus* (bugleweed, characterized by pinnatifid lower leaves), *Penthorum sedoides* (ditch stonecrop), *Asclepias incarnata* (swamp milkweed), *Phylla lanceolata* (northern fog fruit), *Eclipta prostrata* (yerba de tajo) and *Lythrum salicaria* (purple loosestrife). An excellent opportunity for direct comparison of closely related species was provided by two species of *Mimulus* growing within a few feet of each other. *M. alatus* (sharpwing monkey flower, usually the more common species in this area), has leaves with well-defined petioles, whereas *Mimulus ringens* (Allegheny monkey flower) has leaves which clasp the stem. Both plants were in flower, with blooms which are nearly identical in appearance.

Finally, the somewhat drier periphery of the quarry contained assorted additional species, including



The signature “Twisted Pine” (*Pinus echinata*) at Millstream Gardens. Photo by John Oliver.

Sabatia angularis (rose gentian), *Helianthus hirsutus* (bristly sunflower), *Pycnanthemum tenuifolium* (slender mountain mint, in fruit), *Pycnanthemum pilosum* (hairy mountain mint, in flower), *Eryngium yuccifolium* (rattlesnake master), *Croton capitatus* (woolly croton), *Verbena hastata* (blue vervain), *Leucospora multifida* (Obi-wan conobea), *Conoclinium coelestinum* (mist flower), *Teucrium canadense* (American germander), and *Conyza canadensis* (horseweed).

August 15, 2011—Millstream Gardens Conservation Area, Madison County, MO (contributed by John Oliver).

Time: 9:30–11:30 a.m.

Participants: Fr. Sullivan, George Van Brunt, Jack Harris, Pat Harris, Steve Turner, Ruth TenBrink, Kathy Thiele, Nels Holmberg, Jason Allen, Dave Tylka, Wayne Clark, Nancy Clark, Bill Knight, John Oliver, Bill Summers, Louise Langbein, and Burt Noll.

The lowest point in Missouri is on the St. Francis River. The extreme southwest tip of the “boot heel” is 230 feet above sea level where the slow-moving, muddy river enters Arkansas. 150 miles upstream and almost 500 feet higher in elevation, the upper St. Francis is a strikingly different stream. Here, when spring thaws the ice and rains swell the tributaries, the St. Francis is a true white-water river, offering a challenge to expert kayakers and canoeists, and breath-taking scenery for all visitors. In the 5½ miles between Highway 72 and the Silvermines Recreation Area at Highway D, the average gradient is 20 feet per mile. Rivers in this area are known for another feature as well – the Ozark “shut-in.” This term refers to a gorge cut by

a stream whose valley is locally constricted as it cuts through or between resistant igneous knobs, and our destination, Millstream Gardens Conservation Area, contains the largest shut-ins in the state. The prospect of such scenery and a delightfully cool (for August) day lured 17 botanists to rural Madison County. The 612-acre conservation area is named for the historic Millstream Gardens, an Ozark theme village established by Elmer Tiemann, a landscape architect from St. Louis. The shut-in also bears his name. The 1.2-mile Tiemann Shut-in and a buffer zone on either side of the river was designated as the St. Francis River Natural Area in 1983 for the significant geologic feature. The area where we

parked is the area where a number of buildings stood when Tiemann owned it, and where visitors paid a fee to board a wagon ride tour of the same path along the river where we walk today. At that time, a covered bridge (now with the top removed), and semi- and pseudo-historical displays dotted the path, interspersed with scenic stops to view the river from strategically situated overlooks above the large rapids and rock formations in the shut-in below. Tiemann took his role as landscape architect seriously, never doubting his ability to improve on nature. All his favorite plants were displayed for the visitors and those which survived the end of his tenure and loving care are still in evidence and line the path. It may seem incongruous to us to see a variety of irises (a particular favorite of his), yuccas, cacti and ornamental grasses naturalized along the trail, but they still serve to please the eye of visitors to this very attractive property. Tiemann also groomed the slopes below his house and the overlooks to give an unimpeded view of the scenery, and those who remember the more open look of that time sometimes bemoan the loss of the landscaper’s touch. His house too, is gone, after many years of serving as a landmark for whitewater enthusiasts that the long series of rapids was about to begin, and a short tenure as a residence for the state employees assigned as caretakers. A concrete slab which once served as the patio looking down on the head of Tiemann shut-ins is all that remains. A picturesque and much-photographed twisted pine tree sets off the view, and those who have been there will certainly remember it.

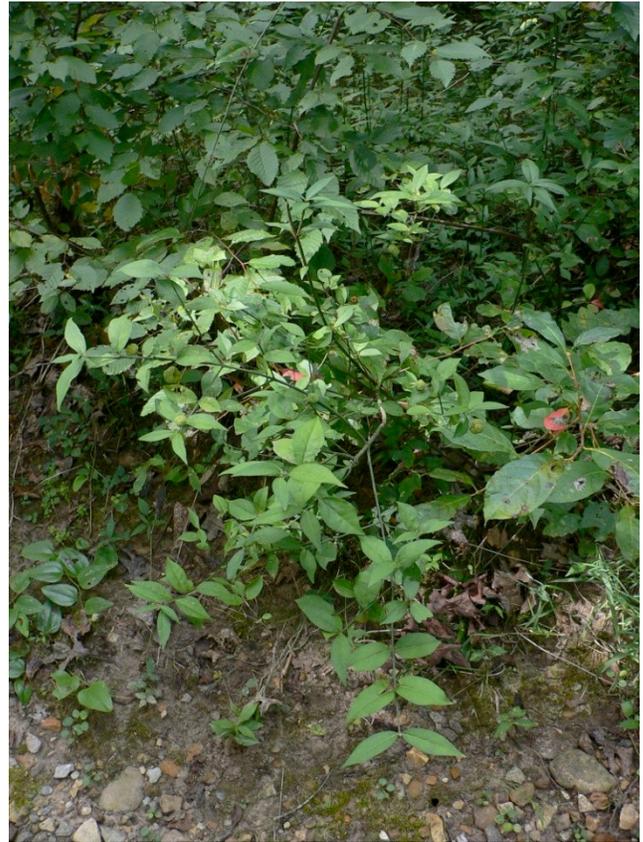


Clitoria mariana, flower. Photo by George Van Brunt.

Elmer Tiemann, after selling the property to the state, continued to live in the area until his death in 1996. He chose to be buried in the nearest cemetery, just a couple of miles north of his beloved property, on Highway K.

Walking along the trail, we noticed several areas where we suspected the handiwork of Mr. Tiemann was responsible for the vegetation. In others, the scenery was much more natural and reverting to a pre-Millstream Gardens condition. Trips during the “dog days” of August usually produce fewer showy flowers than would be in evidence in the flush of spring. Nevertheless, we saw a few notable species, including *Clitoria mariana* (butterfly pea), *Hypericum hypericoides* (St. Andrew’s cross), *Euonymus americanus* (American strawberry bush), a nice patch of *Rudbeckia laciniata* (golden glow) coming into bloom, the beautiful color of *Vernonia missurica* (Missouri ironweed), and growing in the sand at river level, Nels Holmberg spotted *Urochloa texana* (browntop signalgrass), an introduced species that looks a bit like a *Panicum*. This was apparently the fourth time it has been found in the state, and one of the previous sightings, in Dunklin county, was made by another of the people in our group, Bill Summers.

The complete list of plant species observed on this trip: *Aesculus pavia* (red buckeye), *Arnoglossum atriplicifolium* (pale Indian plantain), *Celastrus scandens* (American bittersweet), *Chamaecrista nictitans* (sensitive partridge pea), *Cheilanthes lanosa* (hairy lip fern), *Clitoria mariana* (butterfly pea), *Commelina diffusa* (climbing dayflower), *Commelina virginica* (Virginia dayflower), *Coryza canadensis* (Canadian horseweed), *Cumila origanoides* (dittany), *Dasistoma*



Euonymus americanus, growth habit (top) and fruit (bottom). Photos by George Van Brunt.

macrophylla (mullein foxglove), *Diodia teres* (rough buttonweed), *Diodia virginiana* (Virginia buttonweed), *Elephantopus carolinianus* (elephant's foot), *Euonymus alatus* (burningbush), *Euonymus americanus* (American strawberry bush), *Euphorbia corollata* (flowering spurge), *Euphorbia cyathophora* (fire-on-the-mountain), *Hamamelis vernalis* (Ozark witch hazel), *Hypericum hypericoides* (St. Andrew’s cross), *Ilex decidua* (deciduous holly), *Ipomoea pandurata* (man of the earth), *Laportea canadensis* (Canadian wood nettle), *Lobelia inflata* (Indian



Diodia virginiana (Virginia buttonweed). Photo by Pat Harris.



Elephantopus carolinianus (elephant's foot). Photo by Jack Harris.



Hypericum hypericoides (St. Andrew's cross). Photo by Pat Harris.

tobacco), *Nyssa sylvatica* (black gum), *Oenothera biennis* (common evening primrose), *Oxalis violacea* (violet wood sorrel), *Pinus echinata* (shortleaf pine), *Polanisia dodecandra* (redwhisker clammyweed), *Rudbeckia laciniata* (golden glow), *Saponaria officinalis*

(bouncing bet), *Silphium perfoliatum* (cup plant), *Smilax hispida* (bristly greenbriar), *Solidago gigantea* (late goldenrod), *Solidago nemoralis* (old field goldenrod), *Symphyotrichum patens* (spreading aster), *Toxicodendron radicans* (poison ivy), *Ulmus alata* (winged elm), *Urochloa texana* (browntop signalgrass), *Vaccinium pallidum* (low-bush blueberry), *Verbesina alternifolia* (yellow ironweed), *Verbesina virginica* (white crownbeard), *Vernonia missurica* (Missouri ironweed), *Wisteria frutescens* (American wisteria).

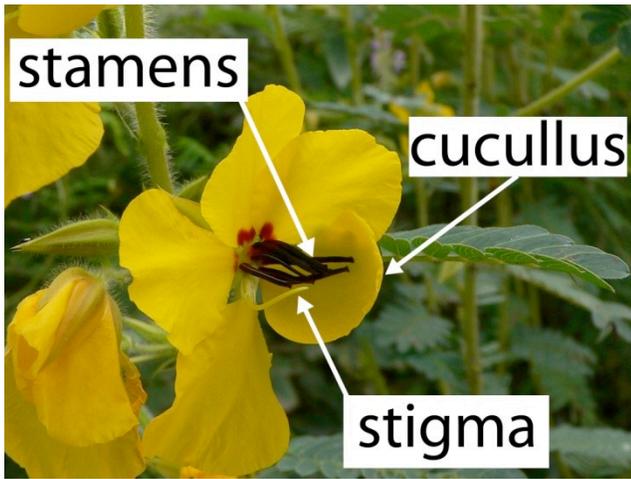
August 22, 2010—Marais Temps Claire Conservation Area, St. Charles County, MO (contributed by George Van Brunt).

Map: to view a map of the area that we explored and the features referenced in the text of this report, please visit http://extra.mdc.mo.gov/documents/area_brochures/7902map.pdf.

Eleven botanists met at the park headquarters parking lot at Marais Temps Claire Conservation Area. Early arrivers encountered an unpredicted shower, but the rain stopped by the "official" beginning of our botany walk at 9:30am. Accompanying Fr. Sullivan were Steve Turner, Jeannie Moe, Louise Langbein, Kathy Thiele, Jack Harris, Pat Harris, Lillian Collins, John Oliver, Jim Wiant, and George Van Brunt.

First, we botanized the parking lot area finding *Desmodium illinoense* (Illinois tick clover), *Lactuca serriola* (prickly lettuce), *Helianthus mollis* (ashy sunflower), *Persicaria amphibia* var. *emersa* (water smartweed), *Chamaecrista fasciculata* (partridge pea), *Persicaria pensylvanica* (pink smartweed), *Oenothera biennis* (common evening primrose), *Tridens flavus* (purple top), *Ambrosia trifida* (giant ragweed), and *Oenothera filiformis* (formerly *Gaura longiflora*) (long-flowered beeblossom). All of these were blooming. The *Ambrosia trifida* inflorescences were rich with yellow pollen waiting to be shed.

Chamaecrista fasciculata (partridge pea) is a wide ranging species common in Missouri. Its flowers bear 10 stamens, 9 small stamens originating on one side of the pistil and one large stamen originating on the other side. One petal, the cucullus, is rigid and is bent inward toward the group of 9 stamens. The flowers do not produce nectar and are visited by bumblebees seeking pollen. The bees squeeze the stamens and vibrate their bodies releasing the pollen from a pore in the



Chamaecrista fasciculata, flower (top) and petiolar gland (bottom). Photos by George Van Brunt.

end of each anther, a process called "buzz pollination". The cucullus is thought to guide the bumblebees and its experimental removal results in the flower producing a reduced number of seeds. The leaf petioles of this species bear a gland that may or may not be borne on a short stalk. The petiolar glands, unlike the flowers, produce a nectar which is attractive to ants. The ants defend their nectar sources from other insects and coincidentally protect the plant from herbivorous insects. In experiments in which ants were excluded from partridge pea plants, the plants suffered more insect damage than normal and also produced a reduced number of seeds. The information in this paragraph comes from Steyermark's *Flora of Missouri* Volume 2, page 1065.

Next, we set off walking north on Island Road to the pool 7 parking lot, a short distance from the headquarters parking lot. Along the way we identified *Phyla lanceolata* (fog fruit) and *Campsis radicans* (trumpet creeper) in flower, and *Carya*



Sium suave, Marais Temps Claire. Photos by George Van Brunt.

illinoensis (pecan) and *Asparagus officinalis* (asparagus) in fruit. *Cardiospermum halicacabum* (balloon vine) displayed both flowers and its characteristic balloon-like fruits. Around the pool 7 parking lot, we found *Hackelia virginiana* (stickseed) and *Verbena urticifolia* (white vervain) in fruit.



Sagittaria latifolia var. *latifolia*, growth habit (top), staminate flowers (middle) and pistillate flowers (bottom). Photos by George Van Brunt.

The rest of our walk followed a loop through and around various parts of the 7 and 10 pool areas and back to the headquarters parking lot. On this part of the walk, we identified *Hibiscus lasiocarpus* (rose mallow) and its smaller cousin, *Sida spinosa* (prickly sida), both in bloom. *Sium suave* (water parsnip), *Asclepias incarnata* (swamp milkweed),

Lycopus americanus (common water horehound), and *Sagittaria latifolia* var. *latifolia*, were also blooming. *Cephalanthus occidentalis* (button bush) and *Iva annua* (marsh elder) were in fruit.

Sium suave (water parsnip) is a native species in the Apiaceae (carrot family). The genus name, *Sium*, is the ancient Latin name of the European greater water parsnip (*Sium latifolium*). The species name, *suave*, is a Latin word meaning "agreeable to the taste". Like its cousin, *Cicuta maculata* (water hemlock), *Sium suave* inhabits wet areas such as bottomland prairies, streambanks, and roadside ditches. The identification of the two species might be confused, but both are toxic. People generally are poisoned when they consume seeds which apparently have a good taste. *Sium suave* is classified as moderately hazardous, while *Cicuta maculata* is classified as extremely hazardous. All parts of both plants are poisonous due to polyacetylenes which cause nausea, vomiting, diarrhea, slow heartbeat, weakness, muscle paralysis, and death.

We found a large colony of *Sagittaria latifolia* var. *latifolia* (duck potato, common arrowhead) in a drying pool near the water gate in pool 10. The genus name, *Sagittaria*, is a Latin word meaning "armed with arrows". This name refers to the arrow-shaped leaf blades possessed by many, but not all, of the approximately 25 - 30 species in this mainly new world genus. *Sagittaria latifolia* var. *latifolia* is widespread in North America and is also native to the Caribbean and the northern part of South America. This species has sagittate leaves and is generally monocious, bearing separate male (staminate) and female (pistillate) flowers on the same plant; the pistillate flowers are produced below the staminate flowers on the same inflorescence. Sometimes, dioecious plants are found, bearing staminate flowers and pistillate flowers on separate plants. These plants are easily cultivated and produce a fleshy corm which is edible raw or cooked. Native American peoples used this plant frequently as a food source. The corms can be cooked like potatoes and are said to have a similar taste.



October Entomology Meeting

Jane Walker

Eight entomology enthusiasts met at the Butterfly House on the evening of October 17 to begin the process of sorting, pinning, and identifying insects collected from sandstone and dolomite glades at LaBarque Creek C.A.

Last June the Entomology group embarked on a project to document the insects of the sandstone and dolomite glades at LaBarque Creek Conservation Area. The information we gather will give the Missouri Department of Conservation some baseline data on the insects present on these glades as they begin a management program including cedar removal and burning on the glades into the surrounding woodland. Over the past several years our group has been concerned over the possible negative effects of prescribed fire on insect diversity. Mike Arduser from MDC, and an entomology group member, suggested we could test some of concerns at LaBarque Creek C.A. MDC was in the process of developing management plans for the Conservation Area and would probably begin prescribed burning in 2012.

Early in April, Rich Thoma and I went on a scouting trip to look at the glades. We decided to use the glades along the trail as our study sites. Then on Saturday, June 11 we had our first collection trip. Rich, Jennifer Picker, Francis Lloyd and I met at LaBarque Creek and hiked up to our first collection site. The cloudy weather with occasional drizzle was not our best friend, but we managed to collect a decent amount of insects. We sampled six small sandstone glades and two small dolomite glades. We swung our nets, beat the grasses, picked insects off of plants, and crawled on our knees picking up ants. Rich Thoma made two additional collection trips, one earlier in May and a later one in August, to give us a more complete sample. Rich stored all the collections in his freezer until we could sort, pin, and identify the insects and spiders.

At our meeting Rich divided the samples according to collection dates. Chris Hartley spent most of the evening sorting the large June sandstone glade collection. Rich and I pinned

insects collected on the dolomite glades. John Christensen cut out labels and Steve Penn filled vials with 80% ethanol. Laura Chisholm from the Butterfly House pinned grasshoppers collected by Rich in August. Finally, Ted MacRae and Mark Paradise worked through the May collection. Ted gave everyone a primer on attaching the smaller insects to points. The meeting was a relaxing evening of banter and wordplay as we spread, pinned, and labeled.

The next step will be identifying our collection. Rich will look into dividing the insects into groups to send off to experts for determination. We will then compile a species list to submit to the Conservation Department. The final destination for the collection will be the Conservation Department or the Enns Museum of Entomology in Columbia.



Remembering Walter Liddell

Richard W. Coles

Walter Liddell, 92, longtime member of WGNSS, died October 19, 2011. At our Spring Banquet last May, Walter and Vivian, his wife of many years, were recognized with our Lifetime Achievement Award. Although ill health prevented Walter's attendance, Vivian was on hand to receive it.

A self-described hillbilly from Campbell, MO, Walter was trained as an engineer at the University of Missouri at Rolla. He applied his learning as a sales engineer. He purveyed products of the Johns Manville Company to various clients, especially railroads. Walter could be very persuasive, particularly about topics on which he was well-informed, and I suspect it was difficult for a potential customer to resist his enthusiastic logic. Later, as the vigor of the railroads declined, he represented other companies and products, among them the early computers of The Wang Company.

But most of us remember Walter as a big fan of Mother Nature's grandeur, as both photographer and traveler. He found satisfaction in applying his intellect, logic, patience, and attention to detail as a focused nature photographer. He assembled an arsenal of equipment to support this avocation; each purchase was the result of thorough

scientific, artistic and financial investigation. He made photographs, not merely taking pictures. A purist, he took the time to await the perfect moment to capture an image. He viewed with some disdain the nature fakery employed by some to obtain rigged results.

Walter belonged to the St. Louis Camera Club and to the photography section of the St. Louis Audubon Society. He presented many beautifully illustrated talks to the local nature community. There have been several showings of his photographs, most recently at the Powder Valley Nature Center. His photograph of a Pileated Woodpecker, artistically captured on a dramatically diagonal limb, was selected as the primary image of that species in the gigantic Birds of North America project.

Walter's travels with Vivian provided the substrate for much of his photographic enterprise. And they went almost everywhere! Antarctica, Australia, Botswana, Nepal, Peru, the Galapagos (twice), Sri Lanka, China, Argentina, Thailand, Costa Rica, Egypt - these destinations, among others, some of them more local, give one a glimpse of the results of Liddell wanderlust. Selected images collected on these journeys were shared, along with informative commentary, with us. For this we are grateful.

Appropriately, we pause to recognize the passing of Walter Liddell with sadness and respect.



“Paint the Parks” Exhibit

George Yatskievych

The Paint America Association organizes two of the largest juried annual art competitions in the country. One of these is known as the “Paint the Parks” exhibit and is open to entries from painters in a variety of media, with the only restriction being that the subject matter must be based on a unit of the National Park Service. The top 100 paintings each year are displayed at various sites across the country. It is a well-kept secret that this traveling show has appeared in St. Louis during most years. The Old Courthouse downtown is part of the Jefferson National Expansion Memorial, which includes the Gateway Arch. Its central

rotunda is the place to see these amazing works of art. The show opened October 7 and runs through January 9, 2012. Admission is free and the Old Courthouse is open daily from 8:00 a.m. to 4:30 p.m. For more information, please consult the following web page:

<http://www.nps.gov/jeff/parknews/paint-the-parks-exhibit.htm>



Nature Walks at Emmenegger Park

Submitted by Anne McCormack

Walks meet at the trailhead shelter by the creek. Sponsored by Kirwood Parks and Recreation.

- **Saturday, January 21.** “Cabin Fever” Bird Walk. Leader Sue Gustafson. Walk begins at 9:30 a.m.



Lectures at St. Louis Zoo

Submitted by Sandra Faneuff¹

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 p.m.

SCIENCE SEMINAR SERIES

- **Wednesday December 7.** *Bringing Wind Energy Home*[®], by Tom Carnahan, JD.

CONSERVATION CONVERSATIONS

- **Tuesday, December 6.** *Conservation Medicine: What It Is, Why Care, and How It Can Help with the Survival of Species*, by Sharon L. Deem, DVM, PhD.

The *Whitney and Anna Harris Conservation Forum*, a public forum partnership of the Academy of Science-St. Louis, the University of Missouri-St. Louis Whitney R. Harris World Ecology Center, the St. Louis Zoo and the Missouri Botanical

¹ Office Manager, Education Department, St. Louis Zoo.

Garden, presents *Missouri's Ice Age Megafauna: St. Louis Area Big Bones*—lecture and book signing, by Bruce Stinchcomb, PhD at the St. Louis Zoo Living World on **Tuesday, December 13**, 7–8:30 p.m.

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



Group Activity/Walk Schedules

BOTANY GROUP

Chair—George Van Brunt

Monday Botany Walks, Leader—Fr. James Sullivan; now in his **44th 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

Monday, November 21. Phil Koenig will be updating us on his ongoing Swamp Metalmark (*Calephalis muticum*) searches for the U.S. Fish & Wildlife Service. Butterfly House—Faust Park, 15193 Olive Blvd., Chesterfield. Program begins at 7 p.m.

There will no December meeting.

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:

➤ **Tuesday, December 13.** *Winterdance* by Gary Paulson.

➤ **Tuesday, January 10.** *Finding Beauty in a Broken World* by Terry Tempest Williams.

ORNITHOLOGY GROUP

Chair—David Becher

Saturday Bird Walks, Leader—David Becher. All walks are at Des Peres Park and begin at **8 a.m.** 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. No trip is planned for Thanksgiving Day, November 24.

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



Nature Notes Back Issues Needed!

Ted C. MacRae

Did you know that a complete, bound set of *Nature Notes* is deposited in The Missouri Botanical Garden Library? Issues are typically bound in 5-year volumes, and it is now time to bind years 2006–2010. Unfortunately, there are a few issues that we are missing before this can be done, and **we need your help** in locating copies to complete the set. If you have issues **80(1)–80(6)** (January–

June 2008) or **80(10)** (December 2008), please contact me at Ted.C.MacRae@Monsanto.com and let me know. If desired we can photocopy the issues and return the originals to you.



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!

