



# Nature Notes

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## President's Corner

### *Ann Earley*

WGNSS members gathered with St. Louis Audubon to celebrate the holidays on Sunday, December 6 at The Green Center in University City. About thirty people attended and enjoyed socializing, along with good food, the holiday atmosphere, and great attendance prizes. Thanks to everyone who attended, brought food to share, and donated attendance prizes for the occasion.

There will be no general program meeting in January, but planning is underway for programs in early 2010, as well as the WGNSS Spring Banquet in May. Additional information will be provided as details are finalized, so watch for further updates in future issues of the newsletter.

You may have seen the WGNSS display table at events you attended during 2009, most recently in November at the Whitney and Anna Harris Conservation Forum at the St. Louis Zoo. WGNSS was represented at this event by Education Chair Rich Thoma and Treasurer Paul Brockland, who staffed our display table and educated many attendees about WGNSS and our scholarship program. Thank you, Rich and Paul, for attending the Forum and helping to spread the word about WGNSS! Watch for the display table at upcoming events in 2010.

Marjorie Richardson, who has faithfully overseen the distribution of *Nature Notes* for many years,

recently retired from that position. Marjorie's persistence and dedication in this role, sometimes under various challenging circumstances, serve as a terrific example of long-time volunteer service to the Society. Although most members did not have an opportunity to see her in action or work with her directly, her contributions have greatly contributed to WGNSS in many ways, as reflected in her Lifetime Achievement Award. We will miss you, Marjorie, but hope you will enjoy having some well-deserved time for rest and relaxation.

The New Year will bring additional opportunities to become involved and participate in your Society. Elections for officers and Board members will be held in the first part of 2010, and your input and assistance are needed! We are seeking nominating committee members, as well as candidates for several offices, including President, Vice President, Member-at-Large, and committee chair positions. Please contact me or another Board member for additional information or suggestions about these openings. WGNSS needs your skills and talents!

As 2009 draws to a close, I want to thank all of the dedicated volunteers who have made our WGNSS activities possible during this past year. Whether you have presented a program, been a field trip leader or participant, served on the Board, helped with mailings, or committed your time and talents to WGNSS in other ways, your efforts are very much appreciated. Many thanks to you all, and best wishes to all WGNSS members and friends for a very Happy New Year!

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*Symphotrichum oolentangiense* (azure aster), *Sorghastrum nutans* (Indian grass), and *Spiranthes magnicamporum* (Great Plains ladies' tresses) orchid. *Spiranthes magnicamporum* was scattered throughout the glade. The trail entered a wooded area where *Carex eburnea* (sedge) was growing as a beautiful dense colony under *Juniperus virginiana* (red cedar). The habitat is under *J. virginiana* on glades, on the ledges of bluffs, and talus slopes. *Carex* is the largest genus of Missouri flora with 128 species. The 128 species are divided into 32 Sections with *C. eburnea* being the sole species in Section Albae<sup>1</sup>. The trail exited this short wooded area out onto the glade again. We abandoned the trail before it entered another woods and explored the glade and the edge of the glade. There we found: *Sporobolus heterolepis* (prairie dropseed), *Bouteloua curtipendula* (sideoats grama), *Sideroxylon lanuginosum* (woolly buckthorn), *Aureolaria grandiflora* (big-flowered gerardia), *Clematis fremontii* (Fremont's leatherflower), *Dalea purpurea* (purple prairie clover), *Silphium terebinthinaceum* (prairie dock), *Gentiana puberulenta* (closed gentian), *Helianthemum bicknellii* (hoary frostweed), *Symphotrichum laeve* (smooth aster), *Rosa carolina* (pasture rose), *Quercus muehlenbergii* (chinkapin oak), *Sabatia angularis* (rose-pink), *Liatris cylindracea* (blazing star), and *Rhamnus*

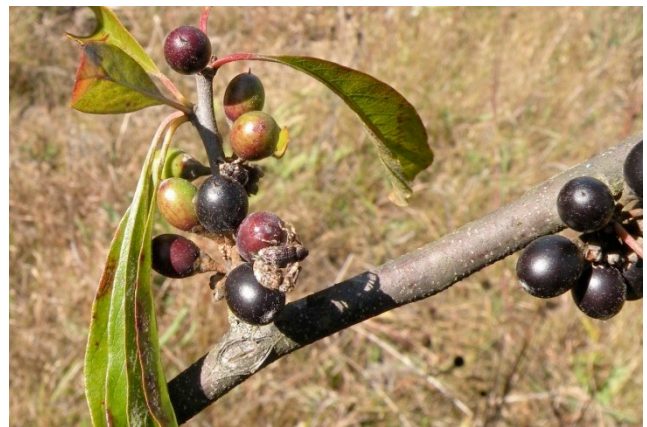


## October Botany Report

*Compiled by George Van Brunt*

**October 5, 2009—Valley View Glade,** Jefferson County, MO (contributed by Wayne Clark).

On a sunny cool day 12 botanists, Bob Coffey, Dave and Mary Visintainer, George Van Brunt, Fr. Sullivan, Jeannie Moe, Jeannie Clauson, Jack and Pat Harris, Rex Hill, and Wayne and Nancy Clark, gathered to explore the glade and woods. The trail from the parking lot goes through a woods to a T-intersection in the glade. We explored that area of the glade and found: *Solidago nemoralis* (old-field goldenrod), *S. altissima* (tall goldenrod), *S. gattingeri* (goldenrod), *Rudbeckia missouriensis* (Missouri coneflower), *Allium stellatum* (wild onion), *Oenothera macrocarpa* (Missouri evening primrose),



*Rhamnus caroliniana* (Carolina buckthorn) in fruit. Photo by Jeannie Moe.

*caroliniana* (Carolina buckthorn) with black fruit. In the wooded areas there was *Solidago ulmifolia* (elm-leaved goldenrod), *Symphotrichum anomalum* (manyray aster), *Danthonia spicata* (poverty grass), *Erechtites hieracifolius* (fireweed), *Cunila origanoides* (dittany), *Hieracium gronovii* (beaked hawkweed),

<sup>1</sup> Yatskievych, G. 1999. *Steyermark's Flora of Missouri, Vol. 1.*

*Uvularia grandiflora* (bellwort), *Carex glaucodia* (blue sedge), *Polystichum acrostichoides* (Christmas fern), *Acharia stimulea* (saddleback caterpillar) on a *Rhus aromatica* (fragrant sumac) leaf, *Polygala senega* (Seneca snakeroot), *Ageratina altissima* (white snakeroot), and *Silphium integrifolium* (rosin weed).



*Acharia stimulea* (saddleback caterpillar) on a *Rhus aromatica* (fragrant sumac) leaf. Photo by Jeannie Moe.

**October 12, 2009—Katy Trail, St. Charles County, MO** (contributed by Nels Holmberg).

A group of 9 of the Monday Botany Hike regulars met along the Katy Trail at Augusta for a hike east along the trail. The trail was shared with a steady stream of bikers, some looking like they were on their way to Sedalia, and some there for a family reunion ride. Fr. Sullivan started the hike with an insect question “Has anyone been bitten by the Asian lady beetle (*Harmonia axyridis*)?” The biting feature of this insect had been mentioned in the journal *The Coleopterists Bulletin*, and yes, the author and others had been bitten, and the beetles stink when in revenge you smash them.

Botanically, the hike was dominated by vining plants (12 species noted) and non-native plants (11 species noted), and there were plenty of plants in flower (13 species noted). The one plant that fell into all 3 categories was Japanese honeysuckle (*Lonicera japonica*). The most irritating and worrisome non-natives were Himalaya berry (*Rubus discolor*, formerly *R. procerus*) and garlic mustard (*Alliaria petiolata*). Although Himalaya berry is probably underreported, it seems to be spreading across the state, forming dense, spiny thickets. It may be recognized by spines that curve down (even the ones on the back of its leaves) and

leaves with 5 leaflets originating mostly from one point.

Among the interesting flowering plants found were Drummond's aster (*Symphotrichum drummondii*), heath aster (*S. pilosum*), white aster (*S. lanceolatum*), tall bellflower (*Campanula americana*), and roughpod copperleaf (*Acalypha ostryifolia*).

Among the smallest flowering plants found was black nightshade (*Solanum ptycanthum*). It was found in the mown area along the trail, reaching 2½ inches tall, but with both flowers and mature fruit. The mature fruit were picked and eaten (small tasty sweet tomatoes). At the other end of the scale, Wayne Clark documented a giant ragweed (*Ambrosia trifida*) at 16 feet 5 inches and a puffball mushroom at 9¼ inches diameter (which was not picked and eaten).



*Urtica dioica* (tall nettle). Photo by Nancy Clark.

Two more edible plants were seen in abundance: patience dock (*Rumex patientia*) and tall nettle (*Urtica dioica*). Both can be eaten as potherbs, cooked and tasting like spinach.

On a sad note, 2 small snakes, a black rat snake (*Elaphe obsoleta*) and a western ribbon snake (*Thamnophis proximus*), were found dead on the trail, probably road kill.



*Elaphe obsoleta* (black rat snake). Photo by Nancy Clark.

**October 19, 2009—Weldon Spring Site, St. Charles County, MO** (contributed by Jeannie Moe).

Fifteen members of the botany group assembled on a beautiful fall day to visit the Weldon Spring Site. The Howell Prairie Garden and the Howell Prairie were planted in 2002 after a superfund cleanup of the area was conducted and the waste was buried in a 75-foot high disposal cell behind the interpretive center. The cleanup was conducted by the Department of Energy to remove waste left over from a plant that made TNT on the site during World II and Uranium waste left over from the Manhattan project that moved out to the Weldon Spring Site from near Lambert Field in the late 1950's. Read more

about the history of the cleanup at

<http://www.Im.doe.gov/land/sites/mo/weldon/weldon.htm>

We started in the one-acre Howell Prairie Garden in front of the interpretive center. Sunflowers in bloom in the garden included *Helianthus salicifolius* (willowleaf sunflower) and *H. maximiliani* (Maximilian sunflower). The goldenrods blooming in the garden included *Solidago ulmifolia* (elmleaf goldenrod) and *S. rigida* (stiff goldenrod). *Pycnanthemum tenuifolium* (slender mountain mint) was blooming. We observed the fruit on *Asclepias sullivantii* (prairie milkweed) and noted that it can be told from the common milkweed (*A. syriaca*) because it has a smooth seedpod, while the common milkweed has warty bumps on its seedpod. *Teucrium canadense* (American germander) was in fruit. *Cyperus esculentus* (yellow nutsedge) was in bloom. *Carex grayi* (Gray's sedge) had its little sputnik shaped fruits. Asters in bloom included *Symphyotrichum oblongifolium* (aromatic aster), *S. novae-angliae* (New England aster), *S. puniceum* (silky aster) and *S. pilosus* (white heath aster). This garden has all four species of *Silphium* including: *S. perfoliatum* (cup plant), *S. terebinthinaceum* (prairie dock), *S. integrifolium* (rosinweed), and *S. laciniatum* (compass plant). *Salvia azurea* (azure blue sage) was in bloom and in fruit.



Compass Plant on Howell Prairie. Photo by Jeannie Moe.

We walked through the new garden behind the building on the way to the prairie. Plants in bloom in the garden included *Rudbeckia subtomentosa* (sweet coneflower), *Palafoxia callosa* (Spanish needles), and *Lobelia siphilitica* (great blue lobelia).

The botany group looked at the TNT survivors' group garden by the Interpretive Center's back door. *Callirhoe involucrata* (purple poppy mallow), *Rudbeckia fulgida* (orange coneflower), and *Ratibida columnifera* (long-headed coneflower) were still in bloom.

We followed the path out onto the Howell Prairie and around the disposal cell. Plants blooming included azure blue sage, New England aster, *Oenothera biennis* (common evening primrose) (a few still blooming at this late date), *Heliopsis helianthoides* (ox-eye sunflower), *Cichorium intybus* (chicory)<sup>1</sup>, *Helianthus mollis* (ashy sunflower), *Trifolium pratense* (red clover)<sup>1</sup>, *Echinacea purpurea* (purple coneflower), and *Bidens aristosa* (tickseed sunflower). Plants in fruit included *Ambrosia artemisiifolia* (common ragweed), *Dalea purpurea* (purple prairie clover), *Gaura biennis* (biennial beeblossom), *Chamaecrista fasciculata* (partridge pea), *Veronicastrum virginicum* (culver's root), *Echinacea simulata* (glade coneflower), and *Eryngium aquaticum* (rattlesnake master). Grasses included *Schizachyrium scoparium* (little bluestem), *Andropogon gerardii* (big bluestem), *Sorghastrum nutans* (Indian grass), *Setaria faberi* (nodding foxtail), and *Panicum virgatum* (switch grass).

Downhill from one of the toes, gravel areas that drain the disposal cell, we found *Typha angustifolia* (narrowleaf cattail), *Physostegia virginiana* (obedient plant), and the plant of the day; *Epilobium coloratum* (cinnamon willow herb). Michelle Lee, our regular botany visitor from California, identified the plant and Fr. Sullivan confirmed it with his copy of Mohlenbrock's Flora of Illinois.

Animals on the prairie included Orange Sulfur and Monarch butterflies, Killdeer and Turkey Vultures.

**October 26, 2009—Busch Memorial Conservation Area**, St. Charles County, MO (contributed by George Van Brunt).

Five intrepid botanists (Fr. Sullivan, Jack Harris, Wayne Clark, Paul Corley, and George Van Brunt) converged on the Visitor Center parking

lot of the Busch Memorial Conservation Area in St. Charles County. The temperature held steady in the mid-50s°F with cloudy skies and light on-again-off-again rain. In the well-tended area around the parking lot, we found *Symphyotrichum oblongifolium* (aromatic aster) and *S. novae-angliae* (New England aster), both in full bloom. We also noted *Ilex decidua* with its bright red fruits.

A short walk across the parking lot brought us to the Jim Ziebol Butterfly Garden. WGNSS member Jeannie Moe tends this well-cared-for garden of Missouri native plants. There we found *Symphyotrichum pilosum* (white heath aster) in bloom, and *Senna marilandica* (Maryland senna), *Amsonia illustris* (Ozark bluestar), *Asclepias syriaca* (common milkweed), and *Celastrus scandens* (American bittersweet) in fruit.

A short drive brought us to the 0.2-mile long Prairie Trail. This is a mown path through tall-grass prairie consisting primarily of *Sorghastrum nutans* (Indian grass), *Panicum virgatum* (switch grass), and *Andropogon gerardii* (big bluestem). We also identified *Silphium laciniatum* (compass plant), *Desmanthus illinoensis* (bundle flower), *Helianthus maximilianii* (Maximilian sunflower), *Eryngium yuccifolium* (rattlesnake master), and *Prenanthes aspera* (rattlesnake root). We found senescent specimens, fruiting specimens, and flowering specimens of *Rudbeckia hirta* (black-eyed Susan).

Another short drive brought us to our final destination, the Field Archery Range. No archers were present so we felt fairly confident that we could walk with impunity on an old road from the Field Archery Range parking lot to a bridge across Kraut Run Creek. Kraut Run Creek flows into Lake 33 and from there into Dardenne Creek. This wet walk took us through bottomland forest where we identified the winter leaves of *Boechera laevigata* (smooth rock cress), *Phlox divaricata* (wild sweet William), and *Aplectrum hyemale* (Adam-and-Eve orchid). These plants take advantage of the lack of canopy cover during the winter and carry on photosynthesis all during this season. We also found *Diarrhena americana* (American beakgrass), a species that remains green late into

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<sup>1</sup> Introduced species

the fall. Other species of interest included *Hydrastis canadensis* (golden seal), *Elephantopus carolinianus* (Carolina elephant's-foot), and both forms of *Botrychium dissectum*, f. *obliquum* (grape fern) and f. *dissectum* (cut-leaved grape fern). We also found a medium-sized *Catalpa* tree. There are three species of *Catalpa* in Missouri; *Catalpa speciosa* (northern catalpa), *Catalpa bignonioides* (southern catalpa) and *Catalpa ovata* (Chinese catalpa). *Catalpa bignonioides* is a native of the southeastern U.S. from Florida to Texas, but has been introduced in Missouri, as has the Chinese catalpa. *Catalpa speciosa* is a native of the Mississippi Lowlands Division but has been introduced widely, as far north as Ontario and as far west as Utah. Without flowers or fruits, it is very difficult to determine whether the plant we saw was the northern or the southern catalpa. It likely was the northern species since that is more common in Missouri. Catawba is the Native American name for these trees and some people use this common name. The genus name, *Catalpa*, arose from an error transcribing Catawba in the first scientific description of the genus by Giovanni Antonio Scopoli, 1723-1788, a Tyrolian physician and botanist. Linnaeus honored Scopoli by naming the genus *Scopolia*, a member of the Solanaceae. *Scopolia carniolica* is the species from which the motion sickness drug, scopalamine, was first isolated.



## November Entomology Meeting: Plants, Pollinators and People: A Love Story

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### *Rich Thoma*

Kyra Krakos, Washington University graduate student and winner of the 2009 Menke scholarship was the guest speaker at the November WGNSS Entomology Group meeting. Shaw Nature Reserve was our gracious host for the evening. At the meeting, Kyra introduced herself and talked about her graduate research on plant-pollinator interactions.

For a master's degree, Kyra was fortunate enough to be able to do her research in Hawaii. There she studied how the native cotton plant, *Gossypium*

*tomentosum*, is pollinated. A tiny sap beetle, *Aethina concolor* (Nitidulidae), was found to be the primary pollinator of this plant. Interestingly, the beetle only comes to the flower at night. A single flower may contain hundreds of these little beetles. At daybreak, however, the beetles leave and the flowers close. No one knows where the beetles go during the day. An interesting problem to this study was that the sap beetle is not native to Hawaii and is believed to have been introduced on shipments of Pineapples. This leaves a second unknown: what pollinated the native cotton plant before the arrival of the sap beetle?

Kyra's doctoral work looked at another pollination system, this time in a much less exotic location; glades, prairies and fields of Missouri and nearby states. Kyra studied the role of reproductive trait shifts in the diversification of *Oenothera* (Onagraceae). The hypothesis is that as plants become specialized, they become reproductively isolated which will then lead to diversity. For her research, *Oenothera* was a ideal group of plants to study because flowers vary tremendously from one species to the next and the pollinators that come to the flowers appear to be evolutionarily labile. This is important because in today's world we know that the environment is shifting. Global warming and exotic species introductions are changing the habitats the plants live in. Not only do the flowering plants have to adapt to these changes, but so do the pollinators of these plants. If one changes without the other, both could be threatened.

For the first four years, Kyra's research was principally on how to define pollinator systems. Pollination falls on a continuum, from the generalist (plants that can be pollinated by a large number of species) to the specialist (a plant can only be pollinated by one species). Most people that study pollination systems look only at the insects that visit the flowers. What made Kyra's research unique was that she went a step further by measuring which species were actually carrying the pollen. To get this information, she collected three critical pieces of information. The first was to identify the species of insects visiting the flower. The second was to determine if the insects came in contact with the stigma of the flower. Thirdly was to collect the insects and wash them to measure the pollen load. With these data, Kyra was able to

determine that flower visitation does not equal pollination. Kyra found that in *Oenothera*, there are many species of insects that may visit a flower but only a few species are actually carrying the pollen.

*Oenothera* species appear to have a much more specialized pollination system than once believed. For example, hawk moths (Sphingidae) have been found to be the primary pollinator of yellow evening primrose, *Oenothera flava*. This plant blooms at night when the pollinator is active. However, a closely related species, little evening primrose, *O. perennis*, is pollinated during the day by flower flies (Syrphidae) and small bees. Skipper butterflies, bumblebees and honeybees were found to pollinate other species of *Oenothera*. One observation Kyra made was that if a flower was not pollinated at night by its primary pollinator, the flower stayed open and was pollinated the next morning by a day-flying insect.



*Manduca quinquemaculata* (five-spotted hawkmoth) (at flower) and *Sphinx eremitus* (hermit sphinx) (above) at flowers of *Oenothera macrocarpa*. Photo by Kyra Krakos.

Kyra's research is nearing completion. At this point she believes she has collected enough data to make some very compelling ecological stories about *Oenothera* and their pollinators. With the data, Kyra hopes to be able to add insight into pollination systems in general. One point of note! Future pollination studies by other researchers are likely going to need additional data besides simple identification of insects visiting the flower. Actual pollen loads and ultimately pollen transfer data will be necessary to determine which species are the true pollinators of any plant. In the final year, she will be compiling all the data for a final dissertation. We in the WGNSS Entomology Group wish her success in this endeavor!



## Sanctuary for the Betulaceae<sup>1</sup>

*Ted C. MacRae*

Nestled on the eastern side of the St. Francois Mountains, where the craggy exposures of the Ozarks most ancient rocks begin to subside underneath the Cambrian sandstones laid down over them, lies [Hawn State Park](#)—considered by many to be the loveliest of Missouri's state parks. I have written previously about Hawn—in fact, it was the subject of my [very first post](#) on this blog. I have long treasured Hawn for its excellent insect collecting, diversity of plants and habitats, and unbridled beauty. I have hiked the incomparable Pickle Creek and Whispering Pine Trails many times—far more than any other trail in the state, and each time I fall more deeply in love with what, to me, represents the essence of the Missouri Ozarks in their most pristine state.

The charm of Hawn results from a unique combination of geological features. The Lamotte sandstone outcrops that dominate Hawn's landscape are the oldest sedimentary rocks in the state, formed from coarse sand deposits that were laid down over the Precambrian rhyolites and granites that form the core of the St. Francois



Lamotte sandstone exposure along Pickle Creek Trail.

Mountains. These sand deposits were themselves buried under limestone and dolomite layers

<sup>1</sup> Reprinted from an article posted February 25, 2009 on the author's website: <http://beetlesinthebush.wordpress.com>  
All photos by the author.

formed at the bottom of vast seas that later covered much of the interior of the continent. Subsequent periods of uplift and erosion once again exposed these sandstones, whose unique ability to hold groundwater has resulted in the formation of spring-fed streams that have cut deep into their soft layers to create canyon-rimmed valleys with tall vertical cliffs.



Igneous rhyolite "shut-ins" along Pickle Creek Trail.

One of these streams is Pickle Creek, which is fed throughout the year by [Pickle Spring](#) and has in some places cut all the way down to the underlying igneous rock to form "shut-ins." In contrast to the slow, sandy-bottomed stretches where Pickle Creek is still cutting through sandstones, the water in these igneous shut-ins rushes through narrow openings in the highly resistant rock. The igneous and sandstone exposures found in Hawn are spectacularly beautiful and support a unique flora due to the acid soils they produce. One group of plants that has taken sanctuary in these moist, acid soils is the Betulaceae, or birch family. Missouri is home to five native species of Betulaceae<sup>1</sup>, and while none of them are extraordinarily uncommon they are limited in their occurrence to natural communities with sufficient moisture and exhibit a clear preference for acidic soils. This confluence of conditions occurs perfectly along Pickle Creek, allowing all five native species to grow here side-by-side—a betulaceous "hot spot" that represents not only the full diversity of the family in Missouri,

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<sup>1</sup> Dr. George Yatskievych, in his recently published *Steyermark's Flora of Missouri* (2006), regarded the presence of *Corylus cornuta* in Missouri as unlikely despite earlier reports of such. Dr. Yatskievych also recorded a single escape of the European species *Alnus glutinosa* from Springfield, Missouri.

but also the total generic diversity of the family in North America. In fact, only one other genus (*Ostryopsis*, shrubs related to *Corylus* and restricted to China) is assigned to the family on a global basis (Furlow 2004).

The Betulaceae are deciduous trees and shrubs that occur primarily in the boreal and cool temperate zones of the Northern Hemisphere, although outposts are also known from high elevations in the Neotropics and, as mentioned above, China. Fossils of this ancient lineage of flowering plants are traceable to the late Mesozoic (upper Cretaceous), and the family appears to form a clade with hamamelidaceous plants. As would be expected from a group with boreal affinities, most species exhibit adaptations for survival in cold climates, such as small stature, shrubby growth habits, and small leaves. Several of Missouri's species have performed well and gained acceptance as ornamental trees and shrubs, while others are important as sources of hazelnuts (genus *Corylus*) or ecologically for their ability to fix nitrogen (genus *Alnus*).

My interest in these plants has nothing to do with their economic importance, but rather in their role as host plants for several rarely encountered species of woodboring beetles. Often, insects in this group may be collected on foliage of their hosts during the summer, making host identification fairly easy due to the presence of leaves. This is not always possible, however, due to limited periods of adult activity or low population densities. Rearing these insects from their hosts provides additional opportunity to document their occurrence, and winter is often the best time to collect the dead branches in which they breed, since by that time they have nearly completed their development and will be ready to emerge as soon as temperatures rise during spring. Identifying woody plants without foliage can be a challenge, but the ability to distinguish host plants by non-foliage characters such as bark, growth habit, bud shape, etc. greatly facilitates studies of wood boring beetles through rearing. In the past I have relied heavily on Cliburn and Klomps' (1980), *A Key to Missouri Trees in Winter*, which utilizes mostly details of the twigs and buds to discriminate among Missouri's 160+ species of trees. However, after a certain level of familiarity is gained, one eventually learns to recognize winter



trees and even downed logs or fallen branches simply by their “look”.

### *Betula nigra*



*Betula nigra* (river birch) is the only member of this largely boreal genus found in the middle and southern latitudes of the U.S. and, thus, cannot be confused with any of Missouri’s other betulaceous species<sup>1</sup>. It is the largest of the five and, along with the following species, is the most demanding in terms of keeping its “feet” wet. Trees are usually encountered right at the water’s edge, with tall, slender, often twisted or leaning trunks. Young trees and large branches on older trees exhibit gorgeous reddish brown bark peeling in thin, papery sheets, becoming thick and scaly on the main trunks of older trees. Small branches are dark, purplish brown in color with smooth bark and distinctly horizontal lenticels. I have reared a small jewel beetle from fallen, dead branches of

<sup>1</sup> The widely planted but dreadfully non-adapted *Betula pendula* (European white birch) and *B. papyrifera* (paper birch) can be recognized by their distinctly white bark. These species are limited to urban landscapes where they rarely achieve significant stature before declining and eventually succumbing to insect pests such as *Agrilus anxius* (bronze birch borer). River birch provides an equally attractive and much more durable choice!

this tree collected at several locations in Missouri—this beetle turned out to be new to science, which I described and named *Agrilus betulanigrae* in reference to its (then) only known host (MacRae 2003). I have also reared tremendous series of another jewel beetle, *Anthaxia cyanella*, which at the time was not known to utilize this host and was considered uncommon. As it turns out, *Betula nigra* is its preferred host, and the rearing of large series from many locations resulted in improved knowledge about color forms and variability in this species (MacRae & Nelson 2003).

### *Alnus serrulata*



*Alnus serrulata* (common alder, hazel alder, smooth alder, tag alder...) also demands to be next to (or even in) the water. Unlike *B. nigra*, however, this species rarely reaches true tree status, instead usually forming shrubby thickets along the water’s edge. Saplings can resemble those of *B. nigra* due to their smooth brownish bark, but the latter is usually more purplish, and the lenticels of *A. serrulata* are not distinctly horizontal as in *B. nigra*. The large purple-red buds also differ from the small brown buds of *B. nigra*, and during winter *A. serrulata* is adorned with numerous [staminate catkins](#). The persistent woody cones also cannot be mistaken for those of any other species of

Betulaceae in Missouri. Associated with this plant is the longhorned beetle, *Saperda obliqua*, which reaches its southwestern-most distributional limit in Missouri on the basis of a single specimen collected some 25 years ago right here along Pickle Creek and given to me by lepidopterist George Balogh. Numerous attempts to find this species here since then have not (yet!) been successful.

### *Carpinus caroliniana*



*Carpinus caroliniana* (blue beech, hornbeam, musclemwood) is one of my favorite betulaceous species. The [beautifully fluted trunks](#) and smooth, light gray bark are reminiscent of the limbs of a sinewy, muscular person—every time I see this tree I cannot resist the temptation to grab and stroke the hard limbs (should I be admitting this?). This character begins to show even in very young trees, making its identification during winter quite easy. These trees also like to be near water, but they are not so demanding to be right at the water's edge as are the previous two species. They usually form small trees, often in clumps with multiple trunks. There are some notable insect associations that I've found with this plant. One is a small jewel beetle, *Agrilus ohioensis*, which I reared from dead branches of this plant collected along

Pickle Creek (Nelson & MacRae 1990), and which after more than 20 years still remain the only known Missouri specimens of this species. Another is the longhorned beetle, *Trachysida mutabilis*, a single adult of which I reared from a dead (almost rotting) branch of this plant collected not too far from Pickle Creek in Iron Co. This beetle also is the only representative of its species known from Missouri (MacRae & Rice 2007).

### *Ostrya virginiana*



*Ostrya virginiana* (hop hornbeam, American hornbeam) has a form and growth habit very similar to *C. caroliniana*, but its [leaves that persist](#) through the winter make it instantly recognizable from afar. In Missouri, this habit is most often seen with the oaks (*Quercus* spp.). This species can be found even further away from the water than the previous species, and its small stature combines with the orangish, persistent leaves to form a distinctive understory layer during winter. Also, in contrast to the smooth gray bark of *Carpinus*, this species exhibits scaly, light reddish brown to brownish gray bark. I have succeeded in rearing one of the two known Missouri specimens of another jewel beetle, *Agrilus champlaini*, from *O. virginiana* collected along Pickle Creek (the other specimen was reared from wood collected at Graham Cave State Park, another site where sandstone bedrocks favor an *O. virginiana* understory). Unlike most other jewel beetles, *A. champlaini* forms galls in small living branches of its host. I have collected the distinctive swellings during winter on many occasions but managed to rear only these two individuals (plus one ichneumonid parasitoid). I have also noted similar swellings on *Carpinus* but have not yet managed to definitely associated them with this beetle.

## *Corylus americana*



*Corylus americana* (hazelnut, American hazelnut) is the smallest of Missouri's five betulaceous species, always forming shrubs, sometimes in thickets, and never assuming the form of a tree. Its [staminate catkins](#) present during winter immediately identify plants of this species as Betulaceae, but the small, [globe-shaped buds](#) are unlike the more pointed buds of *Ostrya* and the elongated, reddish buds of *Alnus*. This species is the least demanding in terms of being near water and can be found even in upland prairies and glades. I haven't yet associated any woodboring beetles with this plant in Missouri, but there are several jewel beetles known from the eastern U.S. that utilize *Corylus* (*Agrilus corylicola*, *A. fulgens*, and *A. pseudocoryli*) and could occur in Missouri.

### Upland habitats

The upland habitats at Hawn are of interest as well. Lamotte sandstones are the dominant



*Rhododendron prinophyllum* (wild azalea) in fruit along Whispering Pines Trail.



Controlled burns are being used to restore pine savanna at Hawn State Park (Whispering Pines Trail).

bedrock, creating acid soils that support a canopy dominated by Missouri's only native species of pine, *Pinus echinata* (shortleaf pine), several species of oak, and a diversity of acid-loving shrubs primarily in the family Ericaceae (including the stunningly beautiful *Rhododendron prinophyllum*, or wild azalea).

Historically, so-called "pine savanna" was prevalent in this area, a natural community in which periodic fires maintained an open structure amongst the fire-adapted pines and allowed a diverse herbaceous layer beneath the open canopy. Much of Hawn has closed up after decades of fire suppression; however, the Department of Natural Resources has implemented a rotational burn management regime to recreate pine savanna habitat within Hawn's Whispering Pines Wild



Pine savanna needs fire to create open canopies under which warm-season grasses and other herbaceous plants can thrive.

Area. Evidence of what appeared to be very recent burns could be seen at several places as I hiked along the Whispering Pines Trail, and while many visitors might have been alarmed at the apparent “damage” they were observing, my heart sang with the prospect of seeing mature pine savanna communities taking hold throughout my beloved Hawn. As I stood atop this ridge and looked back down from where I had come, I could almost see Henry Schoolcraft and Levi Pettibone in the distance on horseback, perhaps pausing to gaze at an elk.

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## A New Parasitic Plant in Missouri

For many years, botanists have recognized two ecological "races" of *Orobanche ludoviciana*

(Louisiana broomrape), a parasitic plant in the family Orobanchaceae. One of these races is found primarily in the Great Plains region, where it is associated with upland habitats and utilizes perennial species of *Grindelia* (gumweed), *Artemisia* (sagebrush), and *Heterotheca* (false goldenaster). The other race is more confined to bottomlands associated with major river systems in central and eastern U.S., where it parasitizes annual species of *Ambrosia* (ragweed), *Xanthium* (cocklebur), and *Dicoria* (twinbugs). The latter race is now recognized as a distinct species—*O. riparia*—as a result of additional investigations by George Yatskievych and colleagues and presented in a recent issue of the *Journal of the Botanical Research Institute of Texas*. In addition to their ecological isolation, the two forms show numerous differences in floral characters and flowering periods that seem to support their recognition as distinct species.



*Orobanche riparia* ("riparian" broomrape). Photo provided by George Yatskievych.

*Orobanche riparia* is known from Missouri by a single population along the Meramec River near Crescent (St. Louis County). Even more interesting, however, is the apparent gap in further occurrences of this species until additional populations are found in east-central Nebraska and the Great Plains. These western populations of *O. riparia* tend to exhibit more deeply colored and pubescent floral parts compared to plants from Missouri and further east. The authors note that it is uncertain whether this represents a true disjunction in the species' distribution or simply reflects a lack of intensive fieldwork to locate obscure populations of this uncommon species. *Orobanche riparia* flowers late in the season (August–October), and its preference for bottomland stands of ragweed and cocklebur could make it very difficult to find amidst dense stands of these plants—especially during allergy season!

#### REFERENCE:

Collins, L. T., A. E. L. Colwell, and G. Yatskievych. 2009. *Orobanche riparia* (Orobanchaceae), a new species from the American Midwest. *Journal of the Botanical Research Institute of Texas* 3 (1):3–11.



## White House Bird Count: A Holiday Affair<sup>1</sup>

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*Dennis W. Brezina*

In the fall of 1969 during the intermission of a preview of "Ring of Bright Water," a nature film about frolicking otters that was a sequel to "Born Free," the poignant tale of Elsa, the lioness, I was in polite conversation with U.S. Senator Charles "Mac" Mathias of Maryland. The Senator commented on how unfortunate that Washington, D.C. had, except for perhaps Rock Creek Park, very little green left due to development and growth.

In one of those fortuitous moments when a lot can happen quickly, I responded, "You're right,

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<sup>1</sup> U.S. Senate Oral History Project, August, 2005 (adapted from) [www.senate.gov/](http://www.senate.gov/) Chesapeake City, MD 21915 December 1, 2009

Senator! Except for the White House and its 18 acres of green."

Then I mentioned a May 3, 1919 article from the "Washington Star" (offered to me one day by Shirley Briggs, good friend of Rachel Carson and the first Secretary of the Rachel Carson Trust) that gave historic context to and printed President Teddy Roosevelt's early 20th Century list of 94 species of birds sighted in and around the White House grounds when he wasn't either running the nation or keeping an eye on his highly-spirited daughter, Alice. (He admitted that he couldn't both govern and parent Alice [later Alice Roosevelt Longworth] at the same time.) The President's sightings on the White House grounds included many birds no longer likely to be seen in downtown Washington - saw whet owl, screech owl (nesting), sparrow hawk (wintering pair), bluebird ("Bring the Bluebird Back to the South Lawn?"), red-headed woodpecker (nesting), yellow-billed cuckoo, orchard oriole (nesting), tree sparrow, blue-winged warbler, black and white warbler (nesting), and warbling vireo (nesting). My impromptu pitch ended by saying how great if bird watching returned to the White House.

The Senator seemed intrigued, knew I was a legislative assistant to Senator Gaylord Nelson of Wisconsin (for whom I was helping to craft the first Earth Day on April 22, 1970), and asked me to meet him in his office next week.

Later, when escorted into Senator Mathias' private office, I was motioned behind his desk where he pointed out a photograph of several dignified gentlemen in top hats and long coats riding in an open limousine. The Senator's grandfather sat right next to Teddy Roosevelt when the former President, nominee of the Bull Moose Party, was challenging Woodrow Wilson and President William H. Taft in the 1912 election.

"My grandfather was one of the original members of the Bull Moose Party," Senator Mathias beamed proudly. Moreover, he liked the birdwatching idea, asking for a memo before contacting the White House.

That memo played up the Teddy Roosevelt precedent, the importance of recording and reporting bird sightings, and included recent wild animal stories from the White House. Rex Scouten, the long time head usher at the White

House, reminisced about Ike's battle over squirrels planting nuts on his putting green, Jackie's yearning for deer on the South Lawn that was vetoed by JFK after the National Park Service insisted on an eleven foot fence, and LBJ's ordering of a screeching red-shouldered hawk recording to be played at sunset to keep starlings from roosting under the eaves.

Senator Mathias contacted the Nixon White House, a staffer was quickly assigned who brought the Department of Interior into the loop, and the decision was made to open the grounds to a single birdwatcher as part of the National Audubon Society's Annual Christmas Bird Count. Requests to make migratory and nesting surveys were eventually approved.

On December 27, 1969, more than sixty years after Teddy Roosevelt's sightings, Dr. Fred Evenden, Executive Director of the Wildlife Society, traipsed around the White House grounds. On that bitterly cold morning, more reporters than birds showed up, generating stories like "Fewer Birds Visiting White House," on the front-page of the Sunday New York Times. Starlings and house sparrows topped the list with a crow, white-throated sparrow and a few other species completing the tally. Sadly, the White House staffer did not dress warmly, almost catching pneumonia, a fact that he later informed me of only half in jest.

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#### POST SCRIPT:

The White House Christmas Bird Count and, eventually, annual migratory and nesting surveys on the grounds have provided valuable trend data over the past forty years, interrupted only by security flaps from time to time. Subsequent winter counts included Sparrow Hawk, Hermit Thrush and Purple Finch. Springtime sightings featured Bewick's Wren, White-eyed Vireo, Louisiana Water Thrush, Canada Warbler, Evening Grosbeak and White-crowned Sparrow.

**A CALL TO GREATER SERVICE:** In this time of extraordinary challenge in American history, the millions of bird watchers and other environmentalists are encouraged to extend their outreach into crucial environmental and public health issues, with a generosity of spirit and creativity to make the 21st Century proud -- even

"'TWEETING' and Texting (while not driving) Into the Wee Hours."



## Pearl, the Girl(?) White Squirrel

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### *Marjorie Richardson*

On October 4, 2009, a sparkling white squirrel appeared in my yard and provided me with two months of great backyard nature watching. Pearl's coat has gradually changed to a very, very pale gray—first her tail, then her back, then her legs and finally her head. But she's still quite light and very visible. The other squirrels do not tolerate her so she's learned to run and climb very fast. They chase her constantly, but I've never seen her turn around and chase them. Pearl has also learned that yew bushes make great hiding places! I hope these lessons stay with her because Coopers and red tail hawks patrol our neighborhood and perch on bare branches, watching and waiting.

Pearl comes readily to the cracked corn scattered under the yews and in a covered feeder. Of course the grey squirrels think it's for them (and also the cardinals, juncos, white throated sparrows, E.T.S.s and mourning doves). Pearl has learned to share!

I hope that this beautiful little creature will make it through the winter and treat my yard to another year of unique and fascinating backyard nature watching.



## 2010 WGNSS Scholarships Announcement

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### *Rich Thoma*

The Webster Groves Nature Study Society is pleased to announce that it will award two scholarships in 2010. The two scholarships are:

#### **Mickey Scudder Scholarship in Field Biology**

Mickey Scudder is well remembered for her infectious enthusiasm towards fieldwork, particularly with wild birds. Consequently, graduate students planning field work in such areas as ornithology, systematics of plants or animals, entomology, forestry, ecology, behavior,

population genetics, etc. or those desiring to attend a field station to take formal course work in such areas are invited to apply for the competitive scholarship.

This will be the 26<sup>th</sup> year WGNSS has awarded a Mickey Scudder Scholarship. The scholarship is awarded to a graduate student to support the fieldwork in natural history. Eligible graduate students are those registered for advanced degrees (M.S., M.A. or Ph.D.) in universities of the Greater St. Louis Metropolitan area. These institutions include: St. Louis University, the University of Southern Illinois, Edwardsville, the University of Missouri at St. Louis and Washington University.

### **Menke Scholarship for Wildlife Habitat in Missouri**

Don Menke was an avid outdoorsman, naturalist, and conservationist. He enjoyed many activities such as canoeing, birding, observing wild flowers and bluebird nests, camping, and photography. He and Nell Menke were members of the Webster Groves Nature Study Society for over 30 years. She was a charter member of the Missouri Native Plant Society. In 1977, she and Betty Nellums started the Tuesday wildflower tours at the Shaw Nature Reserve, and in 1985, she received special recognition for her continued leadership on the wildflower tours. Her journals record flower location and blooming at the Nature Reserve.

This will be the 10<sup>th</sup> year WGNSS has awarded a Menke Scholarship. The scholarship's goals are to improve wildlife habitat in Missouri by supporting (a) field work or (b) attendance at off-campus courses or conferences (the courses may include short-term internships with the Missouri Botanical Garden, the Nature Conservancy, or similar organizations). Undergraduate and graduate students in Missouri colleges or universities are eligible. Applicants typically major in areas such as natural history, environmental education, ecological research or management, natural horticulture, fisheries and wildlife, forestry, geology, conservation, etc., but meeting the scholarship goals is more important than the major field itself.

Applications for both scholarships must be submitted by February 12, 2010. Further details and a copy of the application may be found at [www.WGNSS.org](http://www.WGNSS.org) under "Scholarships."

Questions regarding the scholarships and application process should be addressed to Richard Thoma, WGNSS Education Chairman, at [thomarkas4@sbcglobal.net](mailto:thomarkas4@sbcglobal.net).

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## Busch Memorial Conservation Area Christmas Bird Count

### *Anne McCormack*

Join WGNSS on Sunday, January 3, for a great nature event, the Christmas Bird Count at August A. Busch Memorial Conservation Area in St. Charles County MO.

Meet at Busch Conservation Area HQ parking lot at 8 A.M. Bring lunch and dress for the weather. You may contact me, Anne McCormack, by phone to arrange your portion of the count circle. Walk-ins welcome too! Call (314) 965-8091 or email me at [annemccormack@sbcglobal.net](mailto:annemccormack@sbcglobal.net)

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## St. Louis Zoo Lecture Series

### *Jim Jordan<sup>1</sup>*

The St. Louis Zoo presents two lecture series: *Conservation Conversations* and *Science Seminar Series*. Both series are co-sponsored by the Academy of Science –St. Louis. Programs are **FREE** and open to the general public, no reservations required. Programs are held in the Living World, with free parking available in the North parking lot. Call (314) 646-4544 for more information.

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### CONSERVATION CONVERSATIONS

Adult lectures that focus on worldwide conservation issues and efforts supported by the Saint Louis Zoo.

#### **Race for Survival: Cheetahs in Peril**

Bircher, Curator of Carnivores  
Tuesday, January 26, 7:30 – 9 P.M.

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<sup>1</sup> Curator of Education, Saint Louis Zoo

**Undertaking Conservation:  
The Recovery of the American Burying Beetle**  
Bob Merz, Zoological Manager - Invertebrates  
Tuesday, February 16, 7:30 – 9 P.M.

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SCIENCE SEMINAR SERIES  
St. Louis scientists present timely topics and/or recent "discoveries."

**Citizen Science:  
From the Cosmos to Coneflowers**  
Dr. Pamela Gay, SIU-Edwardsville  
Wednesday, February 10, 7:30 – 9 P.M.

**Subversive Science:  
Sustainability and Architecture**  
Dr. Bruce Lindsey, Washington University  
Wednesday, March 10, 7:30 – 9 P.M.

**Salmon in the Trees:  
Life in Alaska's Tongass Rain Forest**  
Amy Gulick, award-winning photographer and author, *Salmon in the Trees*  
Wednesday, April 7, 7:30 – 9 P.M.



## Go Green—Receive *Nature Notes* by Email!

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*Nature Notes* is now available 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 print your electronic copy of *Nature Notes* if you wish (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 (pre-installed on most computers, available for free download 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.



## Call for Articles, Announcements, and Reports

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

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







## Group Activity/Walk Schedules

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### ORNITHOLOGY GROUP

**David Becher, Chair—(314) 576-1146**

#### Saturday Bird Walks

**David Becher, Leader—(314) 576-1146**

Saturday Trips meet at **8:00 A.M.**

January 9—Des Peres Park

January 23—Des Peres Park

February 6—Des Peres Park

February 20—Des Peres Park

March 6—Des Peres Park

March 20—Teal Pond at Riverlands

March 27—Des Peres Park

#### Thursday Bird Walks

**Jackie Chain, Leader—(314) 644-5998**

Thursday trips meet at at the Des Peres Park parking lot (east side of Ballas Rd. just north of Manchester Rd) at **8:30 A.M.** (to avoid school and rush hour traffic). Depending on what birds are around, we may continue to other areas. Bring lunch as we usually have lunch in the field unless you plan to leave early. We will normally return by 3 or 3:30 P.M. If you have questions, please contact Jackie Chain at (314) 644-5998 or

[chainjac@sbcglobal.net](mailto:chainjac@sbcglobal.net)



### BOTANY GROUP

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

#### Botany Walks

**Fr. James Sullivan, Leader**

(now in his 44<sup>th</sup> year as Botany Walk Leader!)

Botany walks are every Monday. The WGNSS Botany Group visits many of the same locations as

the Bird group: Busch Conservation Area, Shaw Nature Preserve, the Missouri Botanical Garden, Babler State Park and Cuivre River State Park. Learning plants will help you learn butterfly host plants. Sign up for WGNSS Botany Group emails from Jack Harris by contacting him at

[jahar@mac.com](mailto:jahar@mac.com) or (314) 368-0655 and receive an email no later than Sunday about the next Monday's trip.



### ENTOMOLOGY GROUP

**Rich Thoma, Chair—(314) 965-6744**

#### Upcoming Meetings

There will no Entomology Group meeting in December due to the holidays.

**Sunday, January 24, 7:00 P.M.** Chris Hartley, an entomologist at the Sophia M. Sachs Butterfly House, will talk about his graduate research, "Arthropod life in the leaf litter habitat with a special focus on the beetle family, Latridiidae." The meeting will take place at the Butterfly House in Chesterfield. From St. Louis, take U.S. 40/I-64 west. Exit on Clarkson/Olive Blvd. and drive north approximately 1.2 miles. The Butterfly House will be on the left. Entry can be gained through Faust Park. Should you lose your way, call (314) 541-4199 for additional guidance.



For general information about WGNSS, contact Membership Chairman Paul Brockland at

[pbrockland@sbcglobal.net](mailto:pbrockland@sbcglobal.net) or (314) 961-4661.

