



Nature Notes

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President's Corner

By Ann Earley

About thirty WGNSS members and friends attended Timothy Lescher's presentation on the Alligator and Eastern Snapping Turtles at the April general program meeting. Recipient of the 2009 Mickey Scudder Scholarship from WGNSS, Timothy described his ongoing research on these turtles and their habitats in southeastern Missouri. If you would like to safely observe these fascinating creatures up close, Powder Valley has two on display in the tanks near their interior bird feeder viewing area. We thank Timothy for his informative program, and for his work in educating local schoolchildren about the importance of Missouri's turtles and their conservation.

Also at the April program meeting, our Society annual meeting was held. Members voted to approve the revised Society Constitution and By-Laws as distributed through the March and April issues of *Nature Notes*, and the election of officers and Board members was held. Those elected include: Rich Thoma, President; George Yatskievych, First Vice President (in charge of programs); Anne McCormack, Second Vice President (in charge of publicity); and Burt Noll, who will be joining the Board as a Member-at-Large. Congratulations to all of you, and thank you for agreeing to serve the Society in these important positions!

This year's WGNSS banquet will be held on **Thursday evening, May 13**, and our featured speaker will be **Professor David Wagner**, author of **Caterpillars of Eastern North America: A Guide to Identification and Natural History**. He will be speaking about the many defenses caterpillars use to avoid predators, especially birds, and how birds have evolved to overcome these defenses. You will also hear about the research being conducted by this year's WGNSS scholarship recipients. Registration information and additional details are included elsewhere in this newsletter. If you have questions about the banquet or your reservations, please contact Jane Deschu.

At the banquet we will also be honoring the recipients of the **2010 Lifetime Achievement Award**. This year the WGNSS Board voted to honor **Pat and Jack Harris** with this award. Plan to join us on May 13 to honor Pat and Jack and thank them for their many contributions to WGNSS.

As this is my last "President's Corner," I want to thank everyone who has contributed volunteer time and effort to the Society during my terms of office. It has been a privilege to get to know and work with many of you over the years. I wish each of you and the Society all the best in the future as we all continue to learn about and appreciate our natural world!

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February Bird Report

Compiled by Jim Ziebol

Lapland Longspurs were especially numerous and conspicuous this winter. Winter Finch were practically absent and Gulls were below average. Best birds were a N. Shrike-TB, MT, Golden Eagle-JC, and an adult California Gull-BRu.

Sightings: Am. W. Pelicans wintered in good numbers in 2010. Thirteen Cormorants arrived at HL on 2/10. On 2/21, 1000 White-fronted Geese passed through HL between 7:00 and 8:30 a.m., along with 50+ Snows and a few Cackling. A small mixed flock of Geese on Bruns Rd. , included 2 Ross' on 2/17-FH. On 2/18, 150 White-fronted, 25 Snows and 10 Redheads were present at HL-FH. Thousands of Ruddy Ducks and hundreds of Lesser Scaup were seen at HL on 2/21-PB. 254 Com. Mergansers were seen on the Hwy. 203 side of HL on 2/14-FH. About 2/10, Am. Golden Plover and Long-billed Dowitcher appeared at the Confluence Rd.-DR, TBo, and that day Josh Uffman had a Tree Swallow and Pipits at

CB. On 2/20 at CB, a mixed flock of Lesser and Greater Yellowlegs and Snipe, a single Golden Plover and Killdeer and a few Blue-winged Teal were reported-DB. By mid March, Pectoral Sandpipers and Long-billed Dowitchers had arrived at Confluence Park-CA. The following Gulls were reported by Bill Rudden in February: 2/1 ad. Thayer's RMBS, 2/10 1st W. Great Black-backed plus 3 Lesser Bb HL, 2/12 Nelson's Gull-Herring X Glaucous Hybrid, 2/15 2nd W. Iceland HL, 2/24 1st W. Thayer's RMBS and 2/29 Glaucous at RMBS. 15+ species of ducks were seen at HL on 2/21.

Sharp-shinned Hawks were reported at HL on 2/1-FH, and RMBS on 2/14-BRu. On 2/16, a pair of Cooper's Hawks appeared to be courting one another at HL-SMcC,JZ. Frank Holmes found a Rough-legged Hawk at HL on 2/15. A Peregrine Falcon was seen at the dam on 2/16-BRu. Bill also found the Merlin at Carondelet Pk on 2/20. On 2/28 a Cooper's, a Sharp-shinned and 15 Green-winged Teal appeared at HL-FH,JZ. On 2/3 Jackie Chain had very good looks at an immature Golden Eagle along Int. 44 near Eureka. Tom Borman showed the WGNSS Saturday group 2 Short-eared Owls at Peabody Coal Conservation Area on 2/20. On February 6, Connie Alwood observed 6 Long-eared Owls at CL, unfortunately outside the 50 mile circle.

On 2/12, Sherry McCowan reported a Hairy Woodpecker and a Sharp-shinned Hawk at TGP and on 2/16, a Hairy at HL. A No. Shrike, a Loggerhead Shrike and a Harris Sparrow were excellent finds at Ballwin Lake-TB,MT. A Brown Thrasher was seen at HL on 2/8-BRu.

Dennis Bozzay had 3 Rusty Bb at Claire Gemp Pk on 2/22. Lapland Longspurs were seen at HL on 2/16-BRu. Also on 2/16 over 100 Longspurs were seen on Sand Prairie Lane-SMcC, JZ.

A typical day at Ballwin/Peabody included: Snow Goose, Ross's Goose, Canada Goose, Mallard, Common Goldeneye, N. Bobwhite, Pied-billed Grebe (many), AW Pelican, Great Blue Heron, Turkey Vulture, N. Harriers in different plumages, Red-tailed Hawk, Am. Kestrels (numerous), Am. Coots, Killdeer, Ring-billed Gulls, Rock Pigeons, Mourning Doves, Belted Kingfisher, Red-bellied Woodpecker, Downy Woodpecker, N. Flicker, Northern Shrike, Blue Jay, Am. Crow, Horned

Lark, Tufted Titmouse, Am. Robins, N. Mockingbird, E. Starling, Field Sparrow (?), Song Sparrow, DE Juncos, N. Cardinals, Red-winged Blackbirds, E. Meadowlarks, House Finch, Am. Goldfinch-JC.

Backyard Birds: Jane Allen had the following birds the weekend of 2/8: pair of Cardinals (male is feeding female), 2-3 Blue Jays, 4-5 White-throated Sparrows, 6 Eurasian Tree Sparrows, 5 House Sparrows, 4 Dark-eyed Juncos, Red-bellied Woodpecker, Downy Woodpecker, Northern Flicker, two Chickadee species, Tufted Titmouse, 8-10 E. Starlings, Song Sparrow, 2 Northern Mockingbirds, 4-5 Mourning Doves, numerous Pigeons on the wires, two male and four either female or immature House Finches and the Eastern Towhee comes in, but not regularly (18 species).

Contributors: J. Allen, C. Alwood (CA), D. Becher (DB), D. Bozzay (DBo), P. Bauer (PB), T. Berger (TB), T. Borman (TBo), J. Chain (JC), F. Holmes (FH), S. McCowan (SMcC), D. Rogles (DR), B. Rudden (BRu), M. Thelen (MT), Josh Uffman, J. Ziebol (JZ).

Abbreviations: CB, Columbia Bottoms Conservation Area; CL, Carlyle Lake; RMBS, Riverlands Migratory Bird Sanctuary; TGP, Tower Grove Park.



February Botany Report¹

Compiled by George Van Brunt

February 1, 2010—Riverlands Environmental Demonstration Area (REDA) and Jones-Confluence State Park, St. Charles County, MO (contributed by Jack Harris, with assistance from Jeannie Moe and Edna Alexander).

Time: 9:30 - 11:30am; Temp: 31-35 degrees;
Wind: a c-o-o-l 5 mph +/-; Partly cloudy.

Participants: Wayne & Nancy Clark, John Oliver, Jeanne Clauson, Jack Harris, Jeannie Moe, Paul Corley, Edna Alexander, and Carol Brown. The Botany Group field trip leader (Rev. Jim Sullivan)

¹ There are no reports for February 8 and February 15, which were cancelled due to adverse weather conditions.

relayed his regrets that he could not attend the trip on this date.

The winter hardy trippers gathered at the Visitor Center parking area before heading out for the day. Turns out it was a many fine-feathered day. Along the road toward the Melvin Price lock & dam site, several temporary stops were made to view the water fowl. Jeannie Moe had advised the Botany Group that several interesting winter waterfowl visitors had been seen in the area. At the last such stop a large number and wide variety of birds were visible. Several had field glasses but Jeannie Moe, noting the degree of interest, set up her Meade, 4 inch mirror lens, 1000 inch focal length, spotting scope. There was soon a queue waiting for their turn at viewing the many Trumpeter Swans, one of which was sporting a bright yellow neck collar. A sample listing of a few of the other fine-feathered friends subjected to scrutiny would include Bald Eagles, Ring-billed Gulls, Herring Gulls, and Canvasback, Mallard, Merganser, Bufflehead ducks. And along the road were Horned Larks. While this was going on, Edna Alexander also set up her spotting scope, a Kowa TSN-2 with 20x60 zoom eyepieces, and soon had a second line waiting to view the swans, bald eagles, et al, under high magnification. We wish to thank Jeannie and Edna for bringing along their spotting scopes and sharing the close-up viewing capability. For us bird watching novices, seemed like we were eye-to-eye with the swans. Jeannie and Edna generously did not charge fees for a turn at their spotting scopes.

Meanwhile back at the plant kingdom, the group proceeded to the area immediately south/west of the Locks & Dam (Missouri side of the river). The search was on for signs of *Boltonia decurrens* (decurrent false aster). This species, listed as “Threatened” under the ESA system, had been reported in the area late in 2009. Finding the winter form of a rare plant seen infrequently in the season when the remnant visible portion of a perennial plant is highly desiccated is at least problematic. Looking for diagnostic characters, e.g., remnant decurrent tissue from the leaves that continues down the slightly ridged stem was one example. Adding to the difficulty in this case, the robust main stems of the plants had been brush-hogged off while the plant was still

growing and small stems had re-sprouted from below. However, with a little persistence, we concluded that we had found the population where it had been growing in association with *Symphyotrichum pilosum* (white heath aster), *Persicaria amphibia* (swamp smartweed), et al.

The group then moved on to the Jones-Confluence State Park just a few miles down the gravel road. Exploring big river bottomland, a wide variety of plants were noted including: *Desmanthus illinoensis* (Illinois bundle flower) with its characteristic spherical clusters of curled brown seed pods, unusually large specimens of remnant *Ambrosia trifida* (giant ragweed), and *Symphyotrichum pilosum* (white heath aster), *Solidago altissima* (tall goldenrod), and *Lycopus americanus* (American bugleweed). They obviously find the habitat to their liking. Based on the findings at the stop near the Locks and Dam, the group was keeping an eye out for *Boltonia decurrens* in this area also. There were several examples of what could have been a *Boltonia*, a *Helianthus* sp., or ?, but no conclusion could be reached with the material at hand.



Boltonia decurrens (decurent false aster) seeds – one of two kinds of seeds produced by the plant. Note the crown of irregular awns with two larger ones resembling antennae. Photograph by Jack Harris.

February 22, 2010—Missouri Botanical Garden, St. Louis, MO (contributed by John Oliver).

Cold weather with the threat of snow was only part of the reason we headed to the Missouri Botanical Garden for our Monday field trip. The

annual Orchid Show was also a motivating factor and helped to attract 11 indoor botanists: Fr. Sullivan, Jeanie Moe, Jack and Jackie Mitchell, Jack and Pat Harris, Burt and Carolyn Noll, Wayne and Nancy Clark, and John Oliver.



Trichocentrum splendidum.

The Orchid Show is one of the Garden's most popular events, and always attracts a good crowd, eager for the promise of extravagant floral beauty in the depths of late winter St. Louis. In 1876, Mrs. Henry T. Blow presented Garden founder, Henry Shaw, with a sampling of orchids collected by her husband while serving as minister to Brazil under President Grant. In 1918, Dr. D.S. Brown, a noted local orchid fancier donated his well-known collection to the Garden as well. From these beginnings, the Missouri Botanical Garden has built one of the nation's largest and finest orchid collections, including over 8,100 orchid plants in hundreds of varieties. Some of the Garden's orchids date back to those 19th century orchids collected by Dr. Brown; others are familiar favorites, leaving the greenhouse just once a year to be publicly viewed at the annual Orchid Show. Abroad, the Garden began its first forays into the tropical regions of Central and South America. In 1923, horticulturist George Pring spent six months collecting plants in Panama and Columbia and returned with forty burro-loads – or some eight tons – of orchids. The Garden's first orchid show was held the following year, attracting 8,000 visitors. Later that decade, the Garden established a tropical field station in Panama, greatly facilitating orchid collection. Today, the Garden's annual orchid show attracts over 30,000 people – including us.



Ascocenda Navy Blue.

We wandered the display, which this year is inspired by a French "Butterfly's Garden," entering through a Parisian-style café, "Café de Monarque," and through the main room where the delightful electric trains this year travel by recognizable Paris locations to a soundtrack of French music. (For a small sample of what we saw, visit http://www.youtube.com/watch?v=kuhdW_t00_E). The staff starts with about 800 plants and switches out approximately 50 to 100 plants each week, replacing them with fresh blooms from the greenhouse. The display is meant to look as natural as possible, with epiphytic orchids growing in trees and terrestrial orchids growing along the ground. The temporary landscape is surrounded by bark with a surface treatment of moss to give a feeling of being in the tropics.



Cymbidium Mini Beacon 'Red Torch'.

Orchids typically come in two main forms, monopodial orchids and sympodial orchids. Monopodial orchids have stems that grow

indefinitely. In this type of orchid, leaves always grow from the end of a stem. Monopodial orchids often produce aerial roots along their stems. The flower spikes (or inflorescence) in monopodial orchids grow from the side of the stem (not from the end). Popular cultivated monopodial orchids include the *Vandas* and the Spider or Scorpion orchids (*Aracnis* and related genera).



Dendrobium spectabile.

Sympodial orchids are characterized by having a succession of shoots or bulb like stems, referred to as pseudobulbs, each arising from the base of the one before it. Each pseudobulb has limited growth. Roots tend to form at the base of pseudobulbs, or along the rhizome (occasionally however, young plants complete with roots may form high up on the parent stem). The flower spike of sympodial orchids arise from the base of the pseudobulb, the end of the pseudobulb, some point along it, or even from a rhizome. The majority of tropical orchids are sympodial. Popular cultivated sympodial orchids include the *Cattleyas*, *Dendrobiums*, *Oncidiums* and *Spathoglottis* genera. While many of the largest and most spectacular orchids on display fall into some of

these well-known groups, we also found many of the smaller – in some cases, tiny – less familiar forms to be particularly interesting.



Camellia japonica.

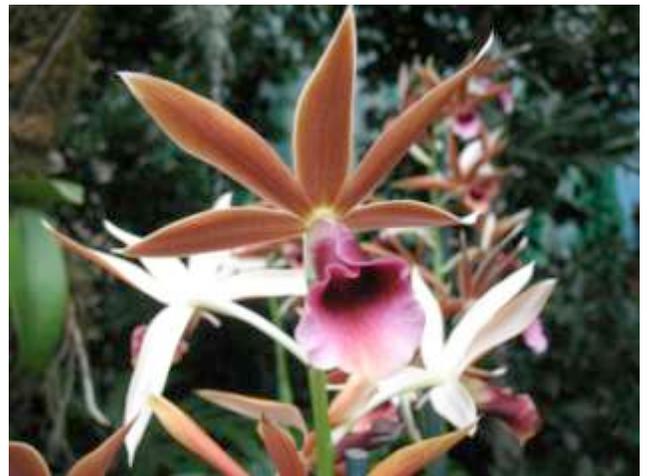
and a visit to the camellia collection in the Linnaean House, we adjourned to the Garden cafeteria for lunch.



Paphiopedilum Copenhagen.



Paphiopedilum Maudiae (Dark Form).



Phaius tankervilleae.

As an added treat, Jackie Mitchell, a long-time Garden volunteer, arranged for us to have access to the orchid greenhouse area where thousands of plants were being tended in several large growing rooms with differing temperature and moisture conditions, awaiting their turn in the spotlight. After a turn through the Climatron



Phalenopsis hybrid.



March Entomology Report: The “Other” Odonates

By *Richard S. Thoma*

Jane Walker, past Vice President and long-time member of WGNSS, was our speaker for the March WGNSS Entomology Group meeting. At the meeting, Jane talked about her favorite subjects, dragonflies and damselflies. Jane has spent many years gathering natural history observations about Odonata and is considered one of Missouri’s experts on these insects. Typically, when talking about Odonata, one thinks about dragonflies, the active hunting predators of the sky. This night’s discussion however was on the “other” group of odonates, the damselflies.

As an introduction, Jane talked about what makes damselflies unique. Most are small and slender and have wings that can be folded over their backs like a butterfly. Most of the time the front and back pairs of wings are equal in size, and if you look closely you will notice that the head is barbell shaped. Unlike dragonflies, which are considered active hunters, damselflies are gleaners, picking food off the vegetation. Adult damselflies are often heavily parasitized by mites. Like all odonates, damselfly immatures (called “naiads”) are aquatic. External gills separate damselflies from dragonflies. We learned that if one knows the species of damselfly, one can get an indication of water quality. For example, the orange bluet, *Enallagma signatum*, is associated with stagnant water. Another species, the springwater dancer, *Argia plana*, is found only at clearwater springs. Damselfies naiads, however, can be very difficult to identify to species, and adults can travel far distances from the body of water in which they developed. For these reasons it can be difficult to use damselflies as water quality indicators.

Next, Jane introduced us to the wide variety of damselflies in Missouri. Many, such as *Calopteryx maculate*, are very colorful. Males of this damselfly have black wings and metallic blue or green bodies. This common damselfly may be found fluttering along wooded streams in the state. Another colorful species in Missouri is the ruby-spotted damselfly, *Hetaerina americana*, which has bright red spots on the wings. Ruby-spotted damselflies can be found in sunny areas along

several of southern Missouri’s clear streams and rivers. Because they are often small and have clear wings, many species of damselfly can be difficult to follow in flight. Up close, the bodies of many of these small damselfies have exquisite blues, pinks and yellows, often in complicated patterns. Jane did warn everyone that these colors fade very quickly after death. For preserved specimens colors are unreliable for species identification. Other body characteristics must be relied upon to accurately identify a preserved damselfly.

Several species of damselfly have the potential to be listed on the “Missouri Species and Communities of Conservation Concern” checklist. The duckweed firetail, *Telebasis byersi*, has been found at only one site in the bootheel of southeastern Missouri. A related species, the desert firetail, *Telebasis salva*, has only a few records from southwestern Missouri. There is still much we don’t know about damselfies in Missouri. Recently, Jane found a new state record, the tiny sphagnum sprite, *Nehalennia gracilis*. This species is typically associated with bogs; however, in Missouri it has been found in a few fens in the same habitat where the federally endangered Hine’s emerald dragonfly, *Somatochlora hineana*, has been found. Jane is currently helping to formulate plans to study the distribution of the sphagnum sprite in Missouri.



2010 Mickey Scudder and Menke Scholarship Winners

By *Richard S. Thoma*

Congratulations to the following students who have been chosen as this year’s recipients of the Menke and Mickey Scudder scholarships:

2010 Menke Scholarship recipient: Kaylan Kemink (University of Missouri – Columbia), “The Missouri Greater Prairie Chicken: Historic Decline and Present Day Survival and Movement”.

Missouri’s Greater Prairie-Chickens are thought to have numbered in the thousands prior to the arrival of the first European settlers. Populations of the birds peaked as the newcomers eliminated bison herds from the landscape and planted concentrated agricultural food sources. However,

the Greater Prairie-Chicken population expansion was short-lived and numbers soon fell. Current estimates place the state population below 100 birds.

The Missouri Department of Conservation (MDC) has engaged in a range of recovery efforts to address the declining population of Greater Prairie-Chickens. A recently initiated five year plan took steps toward maintaining and augmenting populations in the state's southwestern region. Despite substantial progress, however, there are remaining gaps in information needed to ensure success.

Ms. Kemink's research is designed to help fill in these gaps. First she intends to examine the impacts of land-use change, weather, and predator densities on the historical population processes of Missouri's Greater Prairie-Chickens. Habitat destruction and fragmentation are two of the most often cited causes for the decline of the Greater Prairie Chicken. Additional data also indicate that weather extremes and predation can significantly impact population trends. To examine the relative influence of these factors on historical Greater Prairie-Chicken population levels, Ms. Kemink plans to model the relationship between historic population data and each of these possible contributors to their decline. Historic population data will be obtained from Missouri Department of Conservation lek count records between 1945 and present-day. The second objective is to investigate adult survival and movement of resident birds. In short, the data should provide detailed information about Greater Prairie-Chicken survival in each of Missouri's major habitat types, and about bird movements among habitats. The third objective is to model juvenile Greater Prairie-Chicken vital rates for the first year after hatch. Numerous population models have demonstrated the importance of the first year of survival, and more specifically, nest and brood survival to Greater Prairie-Chicken population growth rates. Consequently, current management strategies focus on the maintenance of nesting and brooding habitat and the translocation of juveniles to Missouri. Despite the putative importance of this life history stage, no studies estimate the survival of these birds from hatch to the first breeding season.

2010 Mickey Scudder Scholarship recipient: Kristin Powell (Washington University), "Understanding Scale-Dependent Effects of Plant Invaders on the Understory Plant Community".

Biological invasions are often cited as one of the largest threats to biodiversity and have clear negative impacts on local, wildlife communities. However, current literature argues that biological invasions, *specifically plant invasions*, rarely cause extinctions and often increase the overall number of species at broad spatial scales. Through field work in three U.S. states on three plant invaders, Ms. Powell has shown that this discrepancy is due to plant invaders causing scale-dependent effects on understory plant communities. With increasing spatial scale, she found a smaller loss in the number of plant species due to plant invaders. Thus, the goal of her research is to investigate the empirical patterns and mechanisms in the field that cause plant invaders to have scale-dependent effects on plant biodiversity. Ms. Powell plans to show how plant invaders negatively affect plant biodiversity despite few extinctions at broad spatial scales.

To accomplish this, Ms. Powell will focus on the effects of the plant invader *Lonicera maackii* on understory plant communities in the St. Louis metropolitan area. *Lonicera maackii* has been shown to have large negative effects on biodiversity due to strong reductions in light levels reaching the forest floor. Her hypothesis is that scale-dependent effects on native plant species richness is caused by invaders negatively affecting the abundance of locally common species more than rare species. Preliminary work from 2009 supports this hypothesis. In 2010, Ms. Powell intends to further test this hypothesis using field-based, observational and experimental work that incorporates both community and population-level studies.

The WGNSS scholarship committee found that the research project proposals written by these two students' best exemplify the requirements for wildlife habitat of the Menke scholarship and field biology of the Mickey Scudder scholarship. The scholarship committee felt that each of these research proposals offered a unique perspective on how to learn more about the natural world around us. Each has the potential to have a significant impact on how we manage our natural

communities. Kaylan Kemink, this year's Menke scholarship winner will receive an award of \$1500. Kristin Powell, this year's Mickey Scudder scholarship winner will receive an award of \$1000. The money is to be used toward completion of their respective research projects.

We would like to thank the members of the scholarship committee, John Christensen, Emily Christensen, Anne McCormack, Ted MacRae, Mark Paradise, and Richard Thoma for the time they took to read all the applications and to decide who would be this year's scholarship winners.



Clubmoss along the Ozark Trail¹

By Ted C. MacRae

It has been a long, hard winter – one of the toughest I can remember during my years here in Missouri in terms of amount and frequency of precipitation and persistent cold temperatures. Tough winters, however, are no deterrent to my favorite wintertime activity – hiking. I've mentioned several times the goal of my friend Rich and I to hike all 350 miles of the [Ozark Trail](#). We're at ~250 miles now (more than 2/3 done), thanks to the two 10-mile stretches of the [Wappapello Section](#) that we did on the days after Thanksgiving and New Year's.

Hiking these trails is an opportunity to imagine the Ozark Highlands in their wild, pre-settlement state – expansive hardwood forests covering miles and miles of rugged up-and-down terrain. Of course, try as I might to pretend otherwise, the Ozarks have changed, and evidence of man's pervasive presence are everywhere. Some are overt, such as this [mass grave](#) of domestic cattle, dumped by their former owner for others to worry about when disease prevented them from realizing their economic potential. Others are much more subtle, but to the discriminating naturalist they are everywhere – even in the most pristine-looking of areas. A cedar-choked glade here, it's rich, tawny, native warm-season grasses pushed the margins and interspaces; a monotonous, stunted black oak

forest there, sprigs of herbaceous plants giving a hint of the diverse understory just waiting for a fire to bring back the more open woodland it needs to thrive. Settlement has brought with it not only direct impacts to the land, but also changes in its ecology and vegetational character. Once a fire-mediated landscape with shifting mosaics of bald ridges, grassy woodlands, and riparian forests, a century of logging, grazing, and fire suppression have turned much of the Ozark Highlands into homogenous stands of oak with depauperate mid- and understories.

While loss of diversity has been the overwhelming trend in response to settlement, additions to the state's flora are also being seen. The Wappapello Section is the southeastern most of all the Ozark Trail sections, lying almost entirely in Wayne County, and as we traversed the rugged terrain north to [Sam A. Baker State Park](#) we encountered this most unusual of plants – a clubmoss. Since they are vascular plants, clubmosses are not really moss (which are non-vascular). Clubmosses are not flowering plants either, nor do they even produce seeds, reproducing instead by spores – just like ferns, horsetails, and other 'primitive' (sorry, Alex!) vascular plants. Practicing botanists include them in a group known as "fern allies", meaning that they are not ferns (ferns have multiple branching veins in their delicate fronds, while clubmosses have a single vein in their small, scale-like leaves), but they are somewhat like them.



This particular clubmoss belongs to the genus *Lycopodium*, or ground cedars – the name obviously derived from the resemblance of their foliage to various gymnospermous plants known as cedars (though completely unrelated) but growing very low to the ground. There are three species of *Lycopodium* in Missouri (Yatskievich 1999), all

¹ Reprinted from an article posted March 17, 2010 on the author's website: <http://beetlesinthebush.wordpress.com>
All photos by the author.

confined to the Ozark Highlands and all considered species of conservation concern due to their rarity in the state (Missouri Natural Heritage Program 2010). Two of these species are highly restricted (designated S1 for “critically imperiled”), boreal species occurring only on moist sandstone bluffs in Ste. Genevieve County as Pleistocene relicts – holdovers from a time when glaciers advanced to within about 50 miles to the north and cool, wet conditions prevailed throughout the rest of the state. The third species, shown here, is *Lycopodium digitatum*. Although more widespread in the cool forests of the northeastern U.S. and Canada, it is apparently expanding its range and was first found in Missouri in 1993. While still considered uncommon (and accordingly designated S2, or “imperiled”), its range has since expanded to a core of several southeastern Missouri Ozark counties that include Carter, Iron, Madison, Reynolds, and Wayne Counties (Doolen and Doolen 2008). We found this colony at the base of a moist wooded slope amongst an invading stand of *Juniperus virginiana* (ironically, called “cedars” by local residents).



“Running ground cedar” has been used as a common name for *L. digitatum*, most likely due to its habit of spreading by rhizomes – or “runners” – along the soil surface. From a distance, the spore-producing strobili stood out in bright yellow contrast to the dark glossy green foliage that carpeted the ground – itself in stark contrast with the surrounding brown leaf litter. It is these club-like strobili from which the common name “clubmoss” is derived, and from a distance of 20 m away I knew instantly that this was something unusual and worthy of investigation. Despite the gray November skies and cool temperatures, the strobili were actively shedding spores – clouds of yellow dust swirling briefly with each knock of the finger before dissipating into the air.



Hundreds of millions of years ago, the Carboniferous earth was covered with vast forests of giant clubmosses – extinct relatives of this species that soared to heights of one hundred feet. These giants eventually gave way to new kinds of plants – first the seed-bearing conifers, and later the flowering angiosperms. The giant clubmosses are gone, but their descendents have survived the

vastness of time, represented today by these humble, diminutive forms – extant members of an ancient group hiding in the nooks and crannies of the modern flora. I don't know whether the recent appearance of *L. digitatum* in the Ozark Highlands is a result of the anthropogenic changes brought upon the area in recent years, but given its ancient, relictual qualities, it is one change in the flora of Missouri that I do not mind.

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Ozark Witch Hazel along the Ozark Trail¹

By Ted C. MacRae



Spring is beginning its “march” across the nation, and in typical fashion the month started out with the promise of pleasant weather but is throwing a few tantrums before giving way to April. For most folks in the lower Midwest, spring began a week or so ago when daffodils began popping up from nowhere and dotting the suburban and semirural

landscapes with their yellow smiles. Forsythia are also set to burst forth, their appearance temporarily put on hold by this latest cold/wet snap, but when they do most people here will be satisfied that spring has finally come. For me, spring comes much earlier, and it's not planted ornamentals that mark its beginning, but native trees. Silver maples (*Acer saccharinum*) and American elms (*Ulmus americana*) are first, bursting open in the very first warm days of early March. These are followed by the sugar maples (*A. saccharum*) and red maples (*A. rubrum*) that are in full bloom now, which will themselves give way to the redbuds (*Cercis canadensis*) and serviceberrys (*Amelanchier arborea*) that will close out the month before flowering dogwood (*Cornus florida*) dominates the area's understories in April.

There is one tree in this part of the country, however, that shows its amazing blooms in January and February while winter's grip is still strong. Ozark witch hazel (*Hamamelis vernalis*) is restricted to the Ozark Highlands of Missouri and Arkansas, where it grows along the rocky creeks and streams that dissect this ancient landscape. I have long wanted to see its striking blooms, but despite my many wintertime hikes throughout the Ozarks, I have never found myself in the right place at the right time – until a few weeks ago when I hiked the Mina Sauk Trail at **Taum Sauk Mountain State Park**. I found these plants growing below Mina Sauk Falls and along Taum Sauk Creek below, and even though it was the first weekend of March (and the very first warm day of the season), many of the plants had already passed their peak bloom. Fortunately, I was able to find these several plants with flowers still in good shape.



¹ Reprinted from an article posted March 26, 2010 on the author's website: <http://beetlesinthebush.wordpress.com>
All photos by the author.

There is only one other species in the genus – eastern witch hazel (*Hamamelis virginiana*). Although distributed widely across eastern North America, it is restricted in Missouri to these same St. Francois Mountains where I saw *H. vernalis*. The two species are very similar by the characteristics of their foliage but can be easily distinguished by floral characters. *Hamamelis virginiana* blooms in fall rather than winter, and its flowers, while nearly twice the size, rarely show the amount of red on the inner calyx that is seen in this species. *Hamamelis vernalis* flowers are also quite fragrant; having what has been described as a “vanilla” scent. The photographs here show the rather unusual color range of the flowers of this species, which can vary from orange to deep red to deep yellow. I suspect that flower color also changes with age, in that petals are initially deep red and later fade to yellow, as in the photo below. It’s difficult to explain why *H. vernalis* is restricted to the Ozark Highlands while *H. virginiana* occurs so broadly, but the Ozarks are a well-known refugium for a number of other plants and animals, especially Ice Age relicts.



Sitting on a rhyolite ledge overlooking Taum Sauk Creek as I ate lunch, I wondered about the pollination biology of a plant that flowers during winter. It was a warm day - certainly an unusual occurrence during the period in which this plant flowers – and even still it was too early in the season for a lot of insect activity. I watched one of the nearby plants as I ate to see what insects came to the flowers, and for a time all I saw were a couple of European honey bees. Clearly, the plant did not evolve in association with this now ubiquitous insect. I continued watching, and at last I saw a native insect visiting the flowers – a large species of hover fly (family Syrphidae),

perhaps something in the genus *Helophilus*. After taking a few more photographs (unfortunately, none of the fly), another of the same species visited the plant. Flies in general are famous for appearing during warm days in winter, and I wonder if the unusually extended bloom period of this species is intended to take advantage of those few, unpredictable days during winter when temperatures are sufficient for flies to become active.



Catch the buzz on bees and other pollinators.

By *Jim Jordan*¹

BEE PART OF POLLINATOR WEEK

June 21 – 27, 2010.

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

THE POLLINATOR DINNER

Tuesday, June 22, 2010 6 – 9 p.m.

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

¹ Curator of Education, Saint Louis Zoo.

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



Group Activity/Walk Schedules

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.**

May 1—Tower Grove Park at Gaddy Garden

May 8—Big Day/Migration Count

May 15—Castlewood State Park at HQ

May 22—Des Peres Park

May 29—Weldon Springs, Lost Valley Trail

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

BOTANY GROUP

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

Botany Walks

Fr. James Sullivan, Leader

(now in his 44th year as Botany Walk Leader!)

Botany walks are every Monday. The WGNSS Botany Group visits many of the same locations as the Bird group: Busch Conservation Area, Shaw Nature Preserve, the Missouri Botanical Garden, Babler State Park and Cuivre River State Park.

Learning plants will help you learn butterfly host plants. Sign up for WGNSS Botany Group emails from Jack Harris by contacting him at

jahar@mac.com or (314) 368-0655 and receive an

email no later than Sunday about the next Monday's trip.

ENTOMOLOGY GROUP

Rich Thoma, Chair—(314) 965-6744

Upcoming Meetings

Sunday, April 18, 7:00 p.m. On the 151st anniversary of the publication of *On the Origin of Species*, join the WGNSS Entomology Group for an evening of discussion on “Charles Darwin, the Entomologist.” Come to learn how Charles Darwin at an early age used insect collecting as a springboard to become established as a well renowned natural history scientist in the scientific community of Victorian England. Also come to the meeting to find out what the English entomological community thought of “On the Origin of Species” and learn who came to Charles Darwin’s defense. For this evening’s event, Richard Thoma, chairman of the entomology group will lead the presentation. The location for this meeting will be at the home of Richard Thoma, 320 Frieda Ave., Kirkwood, MO. From the intersection of I-64/40 and I-270, take I-270 south to the Dougherty Ferry exit. Make a left and go east 0.25 miles. Make a right turn on Ballas Rd. At the bottom of the hill, the road splits. Stay to the right (this is still Ballas) and drive up the next hill and cross the bridge over railroad tracks. Make a left on Ann. Once again go down a hill and up the next. Make a left on Frieda. For additional assistance with directions contact Richard Thoma at 314-541-4199.

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

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



Editor's Corner

By *Ted C. MacRae*

NATURE NOTES BY EMAIL

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

CALL FOR SUBMISSIONS

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

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

